Quarterly Monitoring Report for the Period
July 1 through September 30, 1992
Area A and the South-Central Portion of Area B
Yerba Buena Project Site
Emeryville and Oakland, California

October 23, 1992
1649.02

Prepared for:

Catellus Development Corporation
201 Mission Street
San Francisco, California 94105

LEVINE·FRICKE

92 OCT 26 PM 3:12

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

October 23, 1992 LF 1649.02

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

Subject: Quarterly Monitoring Report for the
Period July 1 through September 30, 1992
Area A and the South-Central Portion of Area B
Yerba Buena Project Site
Emeryville and Oakland, California

Dear Ms. Hugo:

The enclosed quarterly monitoring report presents results of ground-water monitoring conducted during the period July 1 through September 30, 1992, in Area A and the south-central portion of Area B of the Yerba Buena Project Site in Emeryville and Oakland, California. The monitoring was conducted and this report is submitted in accordance with the December 6, 1991 "Sampling and Analysis Plan for Quarterly Ground-Water Monitoring in Area A," prepared by Levine•Fricke, Inc., and submitted to the Alameda County Health Care Services Agency.

If you have any questions or comments concerning this report, please call either of the undersigned.

Sincerely,

James D. Levine, P.E.
President

Jenifer Beatty
Project Hydrogeologist

Enclosure

cc: Ric Notini, Catellus
Don Marini, Catellus
Pat Cashman, Catellus
Kimberly Brandt, Catellus
Lester Feldman, RWQCB

1649/1649092.QMR/NAS

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

Other offices in Irvine, CA; Sacramento/Roseville, CA; Tallahassee, FL; Honolulu, HI

CONTENTS

LIST OF TABLES

LIST OF FIGURES

October 23, 1992 LF 1649.02

QUARTERLY GROUND-WATER MONITORING REPORT FOR THE PERIOD JULY 1 THROUGH SEPTEMBER 30, 1992 AREA A AND SOUTH-CENTRAL PORTION OF AREA B YERBA BUENA PROJECT SITE EMERYVILLE AND OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents results of quarterly ground-water monitoring conducted during the period July 1 through September 30, 1992, for Area A and the south-central portion of Area B of the Yerba Buena Project Site ("the Site") located in Emeryville and Oakland, California (Figure 1). This work was conducted by Levine·Fricke, Inc. ("Levine·Fricke"), on behalf of Catellus Development Corporation ("Catellus") in accordance with the December 6, 1991 "Sampling and Analysis Plan for Quarterly Ground-Water Monitoring in Area A" (SAP), prepared by Levine·Fricke and submitted to the Alameda County Health Care Services Agency (ACHA). This report summarizes results from the most recent ground-water sampling event and presents historical ground-water elevation and ground-water quality data for Area A and the south-central portion of Area B.

The site layout is presented in Figure 2. As illustrated, the Site was divided into Areas A, B, and C to aid in organizing the sampling and analysis program previously conducted for the Site.

2.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

The Site covers approximately 51 acres. From the early 1900s to approximately 1990, the Site was used by a variety of industrial and commercial businesses. These businesses included warehouse storage of predominantly dry goods and limited quantities of hazardous materials (oxides and acids [a complete record of materials stored at the Site is not available]); metal foundries; truck maintenance and repair; an auto storage and wrecking yard; a construction yard; and several passenger and freight rail lines.

Environmental investigations at the Site were initiated in September 1989 by Levine·Fricke on behalf of Catellus and have continued over the past 3 years (Levine·Fricke 1990, 1991a, 1991b, 1991c, 1992a, 1992b). Results of ground-water sampling and analyses conducted in Area A of the Site indicated concentrations of 1,1,1-trichloroethane (1,1,1-TCA) and 1,1,1-dichloroethene (1,1-DCE) in excess of drinking water standards (Maximum Contaminant Levels [MCLs] or Cal-EPA Department of Toxic Substances Control [DTSC] Recommended Action Levels for Drinking Water) in wells LF-4, LF-4D, and LF-5.

To inhibit off-site migration of ground water affected by volatile organic compounds (VOCs), a shallow ground-water collection trench (french drain) was installed in January 1992 along the western boundary of Area A (downgradient with respect to ground-water flow) to intercept VOC-affected ground water from Area A. Ground water entering the trench will be pumped and treated on site using a conventional treatment technology. It is anticipated that the treatment system will be installed following the completion of grading activities. For a more detailed discussion concerning ground-water remedial activities for Area A, refer to the February 11, 1991 "Site Remedial Plan," prepared by Levine·Fricke (Levine·Fricke 1991b) and approved by the ACHA.

A sampling and analysis plan for quarterly monitoring in Area A and the south-central portion of Area B was developed to monitor the effectiveness of the shallow ground-water extraction trench and to monitor the presence of VOCs in ground water in Area A and the south-central portion of Area B (Levine·Fricke 1991d). The quarterly monitoring program was implemented at the Site in January 1992. Results of the recent monitoring event are presented below.

3.0 GROUND-WATER ELEVATIONS AND FLOW DIRECTION

Table 1 summarizes depth-to-water and ground-water elevation data collected at the Site. Depth to ground water ranged from 5.64 feet below ground surface (bgs) (LF-11) to 18.43 feet bgs (LF-18) for measurements collected on July 22, 1992. Ground-water elevations in shallow sediments are presented in Figure 2. These data indicate that the general direction of shallow ground-water flow beneath the Site at the time of water-level measurement was generally west to southwest in the northern portion of the Site (north of Yerba Buena Avenue) and varied

from the southwest to northwest in the southern portion of the Site (south of Yerba Buena Avenue). The average hydraulic gradient for the Site in July 1992 was approximately 0.008 and 0.01 ft/ft, as measured between wells LF-8 and LF-12 and wells LF-1 and LF-6, respectively.

Water levels measured in wells located in the western portion of Area A decreased significantly between July and December 1991. The ground-water elevation measured in well LF-17, in particular, decreased approximately 4.28 feet between July 12, 1991 and December 17, 1991 (see Table 1). As discussed in Section 5.0, it appears that dewatering activities along Yerba Buena Avenue initiated in August 1991 by the East Bay Municipal Utility District (EBMUD) may have affected ground-water elevations beneath the Site. Reportedly, these dewatering activities ceased in April 1992. Water-level measurements collected in January, April, and May 1992 indicate that ground-water elevations increased between December 1991 and January 1992, but remained relatively consistent between January and May 1992. Water-level measurements collected from well LF-17 during July 1992 indicate that ground-water elevations have decreased by 1.3 feet since May 1992.

The northwesterly direction of ground-water flow during the third quarter 1992 is consistent with first and second quarter data. Prior to EBMUD's dewatering activities along Yerba Buena Avenue, the flow direction previously reported for this area was westerly. The potential effect of this apparent change in ground-water flow direction is discussed in Section 5.0.

4.0 GROUND-WATER QUALITY

Ground-water samples were collected for chemical analyses on July 23 and 24, 1992, from on-site monitoring wells LF-3, LF-4, LF-4D, LF-4Z, LF-5, LF-5D, LF-6, LF-17, LF-18, LF-19, LF-19D, LF-20, and LF-21, and off-site wells LF-22 and LF-23.

4.1 Ground-Water Sampling Procedures and Chemical Analyses

Before ground-water samples were collected, 3 to 5 well volumes of water were purged from each well using a centrifugal or submersible pump until indicator parameter readings (pH, specific conductance, and temperature) stabilized. After the well had been purged, ground-water

samples were collected using a clean Teflon bailer and sample containers were filled to overflowing by pouring ground water directly from the bailer. Ground-water sampling procedures and water-quality sampling sheets are included in Appendix A.

Ground-water samples were submitted to Anametrix, a state-certified laboratory, under strict chain-of-custody procedures. For laboratory quality assurance, a field blank and a duplicate ground-water sample were collected for well LF-17 (labeled LF-17FB and LF-117, respectively). A second field blank was collected from well LF-4D and labeled LF-4D-FB. The field blank collected from well LF-4D was submitted to the analytical laboratory on a hold basis, pending the analysis of the remaining ground-water samples. With the exception of the field blank collected from well LF-4D, all ground-water samples, including the field blank and duplicate sample collected from well LF-17, were analyzed for VOCs using EPA Method 8010. Ground-water samples collected from wells LF-3, LF-4, LF-5 and LF-19 were also analyzed for heavy fraction total petroleum hydrocarbons (TPH; C_{12}-C_{22} and C_{22}-C_{36}) using modified EPA Method 8015. Laboratory certificates are included in Appendix B.

4.2 Ground-Water Quality Results

Analytical results for ground-water samples collected in July 1992 are presented on Figure 3. Historical ground-water quality data collected at the Site are summarized in Table 2.

Shallow Monitoring Wells

With the exception of wells LF-6 and LF-17, analytical results for ground-water samples collected in July were similar to previous results for the Site.

No VOCs were detected in ground-water samples from four (LF-3, LF-18, LF-20, and LF-21) of the 11 shallow wells (less than 25 feet deep) sampled. 1,1-DCE and 1,1,1-TCA were detected in the remaining wells at concentrations ranging from 0.0061 ppm (LF-23) to 0.47 ppm (LF-5), and from 0.0013 ppm (LF-23) to 0.080 ppm (LF-5), respectively.

Well LF-6 is located near the western boundary of Area A and off-site wells LF-22 and LF-23 are located west of Area A (Figure 3). The presence of PCE and 1,2-DCE in ground-water samples collected from these wells may indicate an unknown source of these compounds, potentially off site.

Historically, these compounds have not been detected in on-site wells and have only recently been detected in well LF-6 (since the change in ground-water flow direction noted in this area since August 1991; see Sections 3.0 and 5.0).

The concentration of 1,1-DCE in ground-water samples collected from well LF-17 appear to have increased between April 1990 (0.009 ppm) and January 1992 (0.490 ppm). Analytical results for ground-water samples collected from well LF-17 in July 1992 were similar to previous results reported in January and April 1992 and indicate the presence of 1,1-DCE in ground water at concentrations up to 0.460 ppm.

No TPH in the C_{12}-C_{22} range (diesel range) was detected in the four samples submitted for TPH analysis. TPH in the C_{22}-C_{36} range (motor oil range) was detected in wells LF-4, LF-5, and LF-19 at concentrations of 0.052 ppm, 0.058 ppm, and 0.200 ppm, respectively.

Deeper Monitoring Wells

Monitoring wells LF-4D, LF-5D, and LF-19D are screened in intermediate-depth sediments, generally between 29 and 43 feet bgs (Table 1). Monitoring well LF-4Z is screened in deeper sediments, from 52 to 62 feet bgs. No VOCs were detected in intermediate-depth well LF-5D. 1,1-DCA was detected in the ground-water sample collected from well LF-19D at a concentration of 0.0007 ppm. Previously, VOCs have not been detected in samples collected from well LF-19D. 1,1-DCE and 1,1,1-TCA were detected in the ground-water sample collected from well LF-4D at concentrations of 0.15 ppm and 0.018 ppm, respectively. These concentrations are similar to those reported for the ground-water sample collected from shallow well LF-4, located within 10 feet of well LF-4D and screened in shallow sediments (9.5 to 19.5 feet bgs). No VOCs were detected in deeper well LF-4Z, located within 10 feet of well LF-4D, indicating that VOC-affected ground water in the vicinity of well LF-4D has not migrated to deeper sediments.

5.0 DISCUSSION OF RESULTS

With the exception of shallow monitoring wells LF-6 and LF-17, and intermediate depth well LF-19D (as discussed in previously), analytical results for ground-water samples collected in July 1992 are similar to previous results for the Site. Results indicate that the plume of VOC-affected ground water likely extends approximately 300 to 400 feet northeast of well LF-5, and approximately 1,600 to 1,700 feet southwest

of well LF-5 in a band approximately 550 to 650 feet wide (Figure 4). These results are consistent with results from ground-water samples collected in January and April 1992. However, the width of the VOC plume appears to have expanded in the vicinity of well LF-17 as compared to analytical results for ground-water samples collected in 1990 (Figure 4). January, April, and July 1992 results indicate 1,1-DCE at a concentration of 0.490 ppm, 0.360 ppm, and 0.460 ppm, respectively (Table 2). Ground-water quality results previously reported for well LF-17 (in April 1990) indicated 1,1-DCE at a concentration of 0.009 ppm (Figure 5).

Based on ground-water elevation measurements collected at the Site in July, August, and December 1991, and January, April, and May 1992, it appears that dewatering activities conducted along Yerba Buena Avenue may have affected ground-water elevations and flow directions beneath this portion of the Site. EBMUD initiated the installation of a sanitary sewer interceptor line beneath Yerba Buena Avenue in August 1991. As part of installation activities, EBMUD conducted dewatering activities along the trench excavated for the sewer pipe beneath the ground-water surface by pumping ground water from the trench at a location west of Hollis Street. It is possible that the increase in VOC concentrations detected in samples collected from well LF-17 is attributable to a change in ground-water flow direction in response to pumping ground water from the sewer line trench (well LF-17 is located approximately 75 feet south of the sewer line). Based on telephone conversations with the contractors installing the sewer line on behalf of EBMUD, dewatering activities conducted along the interceptor line trench ceased in April 1992.

6.0 ACTIVITIES PROPOSED FOR THE PERIOD OCTOBER THROUGH DECEMBER 1992

Ground-water level measurements will be collected from all on- and off-site wells in October 1992. Ground-water samples will be collected for chemical analysis from selected on-site wells in Areas A and B and from off-site wells LF-22, LF-23, and LF-30.

As discussed in previous reports, based on low VOC concentrations detected in well LF-6, it appears that dewatering activities along Yerba Buena Avenue have not affected the extent of VOC-affected ground water in the western portion of Area A. However, based on the apparent increase in VOC concentrations detected in ground-water samples collected from well LF-17, it appears that the VOC

plume has expanded northward in the vicinity of well LF-17, possibly in response to dewatering activities along Yerba Buena Avenue. A shallow ground-water monitoring well (well LF-30) was installed in the interceptor trench backfill west of Hollis Street to assess the presence, if any, of VOCs in the trench backfill. A report summarizing well installation activities and results will be incorporated into the next quarterly report.

REFERENCES

Levine·Fricke, Inc. 1990. Phase I and phase II environmental investigation, Yerba Buena Project Site, Emeryville and Oakland, California. August 15 (REVISED October 26, 1990).

———. 1991a. Phase III environmental investigation, Yerba Buena Project Site, Emeryville and Oakland, California. February 6.

———. 1991b. Site remedial plan, Yerba Buena Project Site, Emeryville and Oakland, California. February 11.

———. 1991c. Additional ground-water investigation, Yerba Buena Project Site, Emeryville and Oakland, California. September 6.

———. 1991d. Sampling and analysis plan for quarterly ground-water monitoring in Area A and the south-central portion of Area B of the Yerba Buena Project Site, Emeryville and Oakland, California. December 6.

———. 1992a. Quarterly ground-water monitoring report for the period January through March 1992, Area A and south-central portion of Area B, Yerba Buena Project Site, Emeryville and Oakland, California. April 30.

———. 1992b. Quarterly ground-water monitoring report for the period July through September 1992, Area A and south-central portion of Area B, Yerba Buena Project Site, Emeryville and Oakland, California. July 31.

TABLE 1
WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
YERBA BUENA, EMERYVILLE, CALIFORNIA
(all elevations in feet above mean sea level)

Well Number	Well Elevation	Well Depth (feet)	Screened Interval (feet)	Sample Date	Depth to Water	Ground-Water Elevation
LF-1	29.74	21	11-21	23-Feb-90	8.89	20.85
				23-Apr-90	9.57	20.17
				06-Jan-92	9.56	20.18
				15-Apr-92	8.74	21.00
				14-May-92	10.71	19.03
				22-Jul-92	12.28	17.46
LF-2	30.36	22	11.5-21.5	23-Feb-90	4.26	26.10
				23-Apr-90	4.52	25.84
LF-3	25.29	25	14.5-24.5	23-Feb-90	10.10	15.19
				23-Apr-90	11.50	13.79
				06-Jan-92	13.03	12.26
				15-Apr-92	10.71	14.58
				14-May-92	12.51	12.78
				22-Jul-92	14.02	11.27
LF-4	26.09	20	9.5-19.5	23-Feb-90	11.11	14.98
				23-Apr-90	12.20	13.89
				12-Jul-91	13.04	13.05
				07-Aug-91	14.48	11.61
				17-Dec-91	16.01	10.08
				06-Jan-92	12.50	13.59
				15-Apr-92	11.64	14.45
				14-May-92	13.50	12.59
				22-Jul-92	15.23	10.86
LF-4D	26.20	39	29-39	23-Apr-90	12.38	13.82
				07-Aug-91	14.87	11.33
				06-Jan-92	12.80	13.40
				15-Apr-92	12.25	13.95
				14-May-92	13.89	12.31
				22-Jul-92	15.56	10.64
LF-4Z	NS	62	52-62	07-Aug-91	13.48	NS
				06-Jan-92	13.02	NS
				15-Apr-92	11.42	NS
				14-May-92	12.48	NS
				22-Jul-92	13.62	NS
LF-5	27.01	25	10-25	23-Feb-90	10.86	16.15
				23-Apr-90	12.32	14.69
				07-Aug-91	14.20	12.81
				17-Dec-91	15.02	11.99
				06-Jan-92	13.32	13.69
				15-Apr-92	10.68	16.33
				14-May-92	12.74	14.27
				22-Jul-92	14.61	12.40
LF-5D	27.09	44	34-44	23-Feb-90	10.61	16.48
				23-Apr-90	10.61	16.48
				07-Aug-91	11.42	15.67
				06-Jan-92	10.66	16.43
				15-Apr-92	8.63	18.46
				14-May-92	10.09	17.00
				22-Jul-92	11.47	15.62
LF-6	18.12	19.5	9.5-19.5	23-Feb-90	7.55	10.57
				23-Apr-90	8.66	9.46
				12-Jul-91	9.90	8.22
				07-Aug-91	12.85	5.27
				17-Dec-91	14.60	3.52
				06-Jan-92	9.71	8.41
				15-Apr-92	12.24	5.88

TABLE 1
WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
YERBA BUENA, EMERYVILLE, CALIFORNIA
(all elevations in feet above mean sea level)

Well Number	Well Elevation	Well Depth (feet)	Screened Interval (feet)	Sample Date	Depth to Water	Ground-Water Elevation
				14-May-92	12.15	5.97
				22-Jul-92	13.30	4.82
LF-7	37.94	22	8-18	23-Feb-90	7.21	30.73
				23-Apr-90	8.22	29.72
				22-Jul-92	10.33	27.61
LF-8	29.70	18	7.5-17.5	23-Feb-90	6.05	23.65
				06-Jan-92	5.04	24.66
				15-Apr-92	6.51	23.19
				14-May-92	8.54	21.16
				22-Jul-92	10.19	19.51
LF-9*	14.59	15.5	5.5-15.5	23-Feb-90	2.82	11.77
				23-Apr-90	3.10	11.49
LF-10	14.09	22.5	7.5-22.5	23-Feb-90	4.09	10.00
				06-Jan-92	4.04	10.05
				15-Apr-92	5.55	8.54
				14-May-92	5.81	8.28
				22-Jul-92	6.15	7.94
LF-11	10.06	20.5	10.5-20.5	23-Feb-90	1.88	8.18
				23-Apr-90	2.50	7.56
				15-Apr-92	2.30	7.76
				14-May-92	4.71	5.35
				28-May-92	4.94	5.12
				22-Jul-92	5.64	4.42
LF-12	8.18	16	5.5-15.5	23-Feb-90	5.64	2.54
				23-Apr-90	6.63	1.55
				06-Jan-92	6.70	1.48
				15-Apr-92	7.41	0.77
				14-May-92	7.13	1.05
				22-Jul-92	7.48	0.70
LF-13	9.19	20	5-20	23-Feb-90	4.10	5.09
				23-Apr-90	6.20	2.99
				06-Jan-92	4.54	4.65
				15-Apr-92	7.25	1.94
				14-May-92	6.81	2.38
				22-Jul-92	7.52	1.67
LF-14	14.56	18	5.5-15.5	23-Feb-90	6.30	8.26
				23-Apr-90	7.40	7.16
LF-16	17.56	20	5-20	23-Feb-90	5.98	11.58
				06-Jan-92	6.04	11.52
				15-Apr-92	6.40	11.16
				14-May-92	6.46	11.10
				22-Jul-92	6.68	10.88
LF-17	25.60	20.5	10-20	23-Apr-90	13.71	11.89
				12-Jul-91	14.62	10.98
				07-Aug-91	17.72	7.88
				17-Dec-91	18.90	6.70
				06-Jan-92	16.67	8.93
				15-Apr-92	16.03	9.57
				14-May-92	16.82	8.78
				22-Jul-92	18.12	7.48
LF-18	28.48	20.5	10-20	23-Apr-90	15.63	12.85
				12-Jul-91	16.40	12.08
				07-Aug-91	17.73	10.75

TABLE 1
WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
YERBA BUENA, EMERYVILLE, CALIFORNIA
(all elevations in feet above mean sea level)

Well Number	Well Elevation	Well Depth (feet)	Screened Interval (feet)	Sample Date	Depth to Water	Ground-Water Elevation
				17-Dec-91	19.24	9.24
				06-Jan-92	16.28	12.20
				15-Apr-92	15.50	12.98
				14-May-92	16.86	11.62
				22-Jul-92	18.43	10.05
LF-19	20.88	20.5	10-20	23-Apr-90	11.18	9.70
				12-Jul-91	11.86	9.02
				07-Aug-91	14.06	6.82
				17-Dec-91	16.19	4.69
				06-Jan-92	11.86	9.02
				15-Apr-92	12.69	8.19
				14-May-92	12.82	8.06
				22-Jul-92	14.14	6.74
LF-19D	23.87	43	33-43	07-Aug-91	17.53	6.34
				06-Jan-92	16.94	6.93
				15-Apr-92	16.87	7.00
				14-May-92	17.40	6.47
				22-Jul-92	18.36	5.51
LF-20	33.24	20.5	7-22	23-Apr-90	11.18	22.06
				07-Aug-91	12.67	20.57
				06-Jan-92	8.91	24.33
				15-Apr-92	8.86	24.38
				28-May-92	11.05	22.19
				22-Jul-92	13.07	20.17
LF-21	NS	23.5	8-23	07-Aug-91	12.57	NS
				06-Jan-92	11.18	NS
				15-Apr-92	8.92	NS
				14-May-92	11.30	NS
				22-Jul-92	14.07	NS
LF-22	18.02	20	10-20	12-Jul-91	9.64	8.38
				07-Aug-91	11.49	6.53
				17-Dec-91	13.62	4.40
				06-Jan-92	10.76	7.26
				15-Apr-92	11.07	6.95
				14-May-92	10.90	7.12
				22-Jul-92	12.36	5.66
LF-23	18.05	20	10-20	12-Jul-91	9.70	8.35
				07-Aug-91	11.97	6.08
				17-Dec-91	14.35	3.70
				06-Jan-92	10.58	7.47
				15-Apr-92	1.80	6.25
				14-May-92	11.71	6.34
				22-Jul-92	12.96	5.09
LF-24	21.97			14-May-92	9.75	12.22
				28-May-92	9.86	12.11
				22-Jul-92	10.13	11.84
LF-25	23.01			14-May-92	7.02	15.99
				28-May-92	7.34	15.67
				22-Jul-92	8.38	14.63
LF-26	26.84			14-May-92	10.55	16.29
				28-May-92	10.87	15.97
				22-Jul-92	11.70	15.14

TABLE 1
WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
YERBA BUENA, EMERYVILLE, CALIFORNIA
(all elevations in feet above mean sea level)

Well Number	Well Elevation	Well Depth (feet)	Screened Interval (feet)	Sample Date	Depth to Water	Ground-Water Elevation
LF-27	22.77			14-May-92	12.87	9.90
				28-May-92	13.10	9.67
				22-Jul-92	13.55	9.22
LF-28	20.55			14-May-92	9.00	11.55
				28-May-92	9.02	11.53
				22-Jul-92	9.41	11.14

Notes:

* Well abandoned on June 18, 1991.

NS = Not surveyed

TABLE 2
GROUND-WATER QUALITY DATA SUMMARY
CHEMICAL COMPOUNDS DETECTED IN SHALLOW GROUND WATER
AREA A AND VICINITY
EMERYVILLE, CALIFORNIA
YERBA BUENA PROJECT SITE
(concentrations in parts per million)

Sample Location	Date Sampled	1,1-DCE	1,1-DCA	1,2-DCE	TCE	1,1,1-TCA	PCE	Oil	Diesel
LF-3	06-Feb-90	ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92	ND	ND	ND	ND	ND	ND	ND	ND
	23-Jul-92	ND	ND	ND	ND	ND	ND	ND	ND
LF-4	07-Feb-90	0.49	0.008	ND	ND	0.082	ND	NA	NA
	06-Jan-92	0.43	0.006	ND (1)	ND (1)	0.078	ND (1)	ND	ND
	duplicate	0.41	0.004	ND (1)	ND (1)	0.075	ND (1)	ND	ND
	15-Apr-92	0.25	ND	ND	ND	0.025	ND	NA	NA
	24-Jul-92	0.22	ND	ND	ND	0.024	ND	0.042	ND
LF-4D	25-Apr-90	0.43	0.007	ND	ND	0.087	ND	NA	NA
	06-Jan-92	0.39	0.006	ND (2)	ND (2)	0.074	ND (2)	NA	NA
	16-Apr-92	0.16	ND	ND	ND	0.020	ND	NA	NA
	23-Jul-92	0.15	ND	ND	ND	0.018	ND	NA	NA
LF-4Z	21-Nov-90	ND	ND	ND	ND	ND	ND	NA	NA
	06-Jan-92	ND	ND	ND	ND	ND	ND	NA	NA
	16-Apr-92	ND	ND	ND	ND	ND	ND	NA	NA
	23-Jul-92	ND	ND	ND	ND	ND	ND	NA	NA
LF-5	06-Feb-90	0.73	0.014	ND	ND	0.27	ND	ND	ND
	06-Jan-92	0.88	0.011	ND (3)	ND (3)	0.010	ND (3)	ND	ND
	16-Apr-92	0.44	ND	ND	ND	0.10	ND	NA	NA
	23-Jul-92	0.47	ND	ND	ND	0.08	ND	0.0058	ND
LF-5D	26-Apr-90	ND	ND	ND	ND	ND	ND	NA	NA
	29-Nov-90	ND	ND	ND	ND	ND	ND	NA	NA
	06-Jan-92	ND	ND	ND	ND	ND	ND	NA	NA
	16-Apr-92	ND	ND	ND	ND	ND	ND	NA	NA
	23-Jul-92	ND	ND	ND	ND	ND	ND	NA	NA
LF-6	07-Feb-90	ND	0.018	ND	ND	ND	ND	ND	ND
	duplicate	ND	0.018	ND	ND	ND	ND	ND	NA
	29-Nov-90	ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92	0.0048	0.011	0.0005	0.0026	0.0044	0.018	NA	NA
	15-Apr-92	0.004	0.0032	0.0025	0.0026	0.001	0.0065	NA	NA
	23-Jul-92 (5)	0.0082	0.0033	0.0094	0.0071	0.0014	0.0094	NA	NA
LF-17	25-Apr-90	0.009	0.001	ND	ND	0.003	ND	NA	NA
	duplicate	ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92	0.490	0.012	ND (2)	ND (2)	0.092	ND (2)	NA	NA
	16-Apr-92	0.350	ND	ND	ND	0.047	ND	NA	NA
	duplicate	0.360	ND	ND	ND	0.049	ND	NA	NA
	24-Jul-92	0.320	ND	ND	ND	0.035	ND	NA	NA
	duplicate	0.460	ND	ND	ND	0.053	ND	NA	NA

TABLE 2
GROUND-WATER QUALITY DATA SUMMARY
CHEMICAL COMPOUNDS DETECTED IN SHALLOW GROUND WATER
AREA A AND VICINITY
EMERYVILLE, CALIFORNIA
YERBA BUENA PROJECT SITE
(concentrations in parts per million)

Sample Location	Date Sampled		1,1-DCE	1,1-DCA	1,2-DCE	TCE	1,1,1-TCA	PCE	Oil	Diesel
LF-18	25-Apr-90		0.003	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92		0.0013	ND	ND	ND	ND	ND	NA	NA
	16-Apr-92		0.0017	ND	ND	ND	ND	ND	NA	NA
	23-Jul-92		ND	ND	ND	ND	ND	ND	NA	NA
LF-19	25-Apr-90		0.15	0.006	ND	ND	0.034	ND	NA	NA
	06-Jan-92		0.100	0.0087	ND	ND	0.018	ND	ND	0.120
	15-Apr-92		0.064	0.0028	ND	ND	0.008	ND	NA	NA
	24-Jul-92		0.032	0.0032	ND	ND	0.0039	ND	0.200	ND
LF-19D	12-Jul-91		ND	ND	ND	ND	ND	ND	NA	NA
	06-Jan-92		ND	ND	ND	ND	ND	ND	ND	ND
	15-Apr-92		ND	ND	ND	ND	ND	ND	NA	NA
	23-Jul-92		ND	0.0007	ND	ND	ND	ND	NA	NA
LF-20	26-Apr-90		ND	ND	ND	ND	ND	ND	NA	NA
	duplicate		ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92		ND	ND	ND	ND	ND	ND	NA	NA
	16-Apr-92		ND	ND	ND	ND	ND	ND	NA	NA
	24-Jul-92		ND	ND	ND	ND	ND	ND	NA	NA
LF-21	29-Nov-90		ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92		ND	ND	ND	ND	ND	ND	NA	NA
	16-Apr-92		ND	ND	ND	ND	ND	ND	NA	NA
	24-Jul-92		ND	ND	ND	ND	ND	ND		
LF-22	12-Jul-91		0.053	0.0063	0.0016	0.0007	0.012	0.0017	NA	NA
	07-Jan-92		0.041	0.0054	0.0011	ND	0.009	0.0037	NA	NA
	16-Apr-92		0.015	0.0021	ND	ND	0.0026	0.0018	NA	NA
	23-Jul-92	(6)	0.027	0.0052	ND	ND	0.0034	0.0014	NA	NA
LF-23	12-Jul-91		0.0012	0.011	0.0009	0.0039	0.0009	0.027	NA	NA
	07-Jan-92		0.0034	0.012	0.0013	0.007	0.0023	0.056	NA	NA
	16-Apr-92		0.0044	0.0044	0.0011	0.0036	0.00068	0.020	NA	NA
	23-Jul-92		0.0061	0.0044	0.0014	0.0038	0.0013	0.029	NA	NA
Field Blanks:										
LF1-7503	05-Feb-90		ND	ND	ND	ND	ND	ND	NA	NA
LF-4FB	06-Jan-92		ND	ND	ND	ND	ND	ND	ND	ND
LF-17FB (4)	16-Apr-92		ND	ND	ND	ND	ND	ND	NA	NA
LF-17FB	24-Jul-92		ND	ND	ND	ND	ND	ND	NA	NA
Detection Limit:			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.05	0.05

Notes for Table 2:

NA - not analyzed
ND - not detected

(1) Detection limit 0.003 ppm.
(2) Detection limit 0.002 ppm.
(3) Detection limit 0.005 ppm.
(4) 0.0011 ppm methylene chloride detected; methylene chloride is a common laboratory contaminant.
(5) 0.0015 ppm vinyl chloride detected.
(6) 0.00081 ppm vinyl chloride detected.

Key to abbreviations:
1,1-DCE - 1,1-Dichloroethene
1,1-DCA - 1,1-Dichloroethane
1,2-DCE - 1,2-Dichloroethene
TCE - Trichloroethene
1,1,1-TCA - 1,1,1-Trichloroethane
PCE - Tetrachloroethene

MAP SOURCE:
Alameda & Contra Costa Counties,
Thomas Bros. map, 1990 Edition

Figure 1 : SITE LOCATION MAP
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE•FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1649ALS•SFEB91•rvz

APPENDIX A

GROUND-WATER SAMPLING PROCEDURES AND WATER-QUALITY SAMPLING SHEETS

GROUND-WATER SAMPLING PROCEDURES AND WATER-QUALITY SAMPLING SHEETS

Before sample collection, depth to static water was measured in each well and the volume of water in the well casing was calculated. Three to five well casing volumes of ground-water were then purged from each well using a submersible or centrifugal pump until indicator parameter readings (pH, specific conductance, and temperature) stabilized. Indicator parameters were measured using portable field instruments and measurements were recorded on water-quality sampling forms. Purging and sampling equipment was steam cleaned before use at each well.

After the well had been purged, ground-water samples were collected using a clean Teflon bailer. Samples were collected in containers appropriate for the laboratory analysis to be performed. Samples collected for VOC analyses were collected by pouring ground water directly from the bailer into laboratory-supplied, 40-milliliter volatile organic analysis (VOA) glass vials. Vials were gently filled to overflowing, capped, and then inverted to check for trapped air. If an air bubble was observed, the vial was discarded and a new vial filled. Samples collected for total petroleum hydrocarbon as diesel and oil were poured into 1-liter amber bottles. Samples were immediately capped and placed in an ice-chilled cooler for transportation to the analytical laboratory.

Ground-water samples were submitted to Anametrix, a state-certified laboratory, under strict chain-of-custody protocol. For laboratory quality assurance, field blank ground-water samples were collected for wells LF-17 and LF-4 (labeled LF-17FB and LF-4FB, respectively). A duplicate sample was collected from well LF-17 (labeled LF-117). All ground-water samples, including one field blank and the duplicate sample, were analyzed for VOCs using EPA Method 8010. Ground-water samples collected form wells LF-3, LF-4, LF-5, and LF-19 also were analyzed for total petroleum hydrocarbons as diesel and oil using modified EPA Method 8015/3510.

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1647.02

Date 7.23.92 — Sample No. LF-3

Samplers Name SCH ROT

Sampling Location E'ville

Sampling Method Cent. pump / Teflon bail

Analyses Requested EPA 8010, TPH diesel

Number and Types of Sample Bottles used 3 VOA, 2 Amber L

Method of Shipment Courier

24.70
14.12
10.58
65
5290
6 3480
6.877

LOCATION MAP

GROUND WATER

Well No. LF-3

Well Diameter (in.) 4

Depth to Water, Static (ft) 14.12

Water in Well Box YES

Well Depth (ft) 24.7

Height of Water Column in Well 10.58

Water Volume in Well 6.87 = 7

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

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1006								Start
1008		7	20.5	6.74	1158			Sl. turbid
1009		11						Off/Dry
	<Recovery AT	~ 1 ft/min>						
1021	16.44							
1022								Start
1023		14	20.4	6.79	1154			Mod. turbid
1024		19						Off/Dry
1028								Start
1030		23	20.4	6.80	1171			Mod. turbid/off/dry
1035								Sample LF-3
1039	20.76							

Suggested Method for Purging Well

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-24-92 — Sample No. LF-4

Samplers Name SCH RDT

Sampling Location Emeryville

Sampling Method Cent. pump / Teflon bail

Analyses Requested EPA 8010, TPH-diesel

Number and Types of Sample Bottles used 2 VOA, 2 amber L

Method of Shipment Courier

GROUND WATER

Well No. LF-4

Well Diameter (in.) 4

Depth to Water, Static (ft) 15.28

Water in Well Box

Well Depth (ft) 20.71

Height of Water Column in Well 5.43

Water Volume in Well 4/

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

20.71
15.28
5.43
65
2715
32580
353

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
0851								Start
0852		4	19.5	6.58	910			V. Sl. turbid
0853		8	19.5	6.59	902			"
0856		12	19.5	6.58	906			" /Stop
0900								Sample LF-4

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena
Project No.: 1649.02
Date: 7-23-92
Sample No.: LF-4D
LF-4D-FB
Samplers Name: SCH ROT
Sampling Location: Emeryville
Sampling Method: Sub pump/Teflon bailer
Analyses Requested: EPA 8010
Number and Types of Sample Bottles used: 3 VOA
Method of Shipment: Courier

Field Blank poured using orchard supply "steam distilled" water

39.74
15.58
24.16
65
12080
144960
15704

GROUND WATER

Well No.: LF 4D
Well Diameter (in.): 4
Depth to Water, Static (ft): 15.58
Water in Well Box: NO
Well Depth (ft): 39.74
Height of Water Column in Well: 24.16
Water Volume in Well: 16

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

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1429								start
1430								stop - totalizer not working
1431								start
1433		16	20.7	6.78	944			sl. turbid
1435	INLET	32	20.6	6.76	925			"
1438	↓	48	20.5	6.77	921			" / off
1450								BLANK
1455								SAMPLED

Suggested Method for Purging Well: sub pump @ bottom

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7.23.92 — Sample No.: LF-4Z

Samplers Name: SCH ROT

Sampling Location: Emeryville

Sampling Method: Sub / pump / Teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA

Method of Shipment: Courier

GROUND WATER

Well No.: LF-4Z

Well Diameter (in.): 4

Depth to Water, Static (ft): 13.63

Water in Well Box: no

Well Depth (ft): 62.99

Height of Water Column in Well: 49.36

Water Volume in Well: 32.08 ≈ 32.5

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

62.99
13.63
49.36
65
24680
296160
32084

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
645	1352							Start
7.5	1356		32.5	20.3	6.89	643		V. sl. turbid
710	1359	inlet	65	20.2	6.85	643		sl. turbid
42.5	1405	↓	97.5	20.3	6.86	646		clear/off
	1415							sample LF-4Z
	1421	25.40						

Suggested Method for Purging Well: Sub. pump at bottom

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7-23-92 — Sample No.: LF-5

Samplers Name: TRT - SCH

Sampling Location: LF-5

Sampling Method: Centrifugal Pump / teflon bailer

Analyses Requested: EPA 8010, TPH-Diesel

Number and Types of Sample Bottles used: 3 VOA (HCL) 1-1L amber

Method of Shipment: courier

24.74
14.63
10.11
.65
5055
6066
6.57 15

LOCATION MAP

GROUND WATER

Well No.: LF-5

Well Diameter (in.): 4"

Depth to Water, Static (ft): 14.63

Water in Well Box: —

Well Depth (ft): 24.74

Height of Water Column in Well: 10.11

Water Volume in Well: 6.57 ≈ 7 gal

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

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
559 915								START
606 919		7	20.9	6.65	880			Sl. Turbid
573 921		12						Developed 1 of 4
< 0		Recovery	at	1.0'	per min.			
926								START
927		14.0	22.5	6.87	957			Sl. TURBID / OIL
928		16.0						STOP
939	21.11							
1945								START
946		21.0	21.5	6.73	940			Sl. TURBID
950								Sampled

957 2229

Suggested Method for Purging Well: Centrifugal Pump

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Verba Buena — Project No. 1649.02

Date 7-23-92 — Sample No. LF-5D

Samplers Name MT - SCH

Sampling Location LF-5D

Sampling Method Submersible Pump / Hollow bailer

Analyses Requested EPA 8010

Number and Types of Sample Bottles used 3 VOA (HCl)

Method of Shipment COURIER

GROUND WATER

Well No. LF-5D

Well Diameter (in.) 4"

Depth to Water, Static (ft) 11.54

Water in Well Box —

Well Depth (ft) 44.57

Height of Water Column in Well 33.03

Water Volume in Well 21.46 = 22 gal

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

44.57
11.54
33.03
× .65
165
1981
21.4695

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
0859								START
903		22.0	21.1	6.84	619			SL. TURBID
905		27.25	20.7	6.80	615			TURBID
								(Dewatered)
0957	30.32							
1122	21.44							
	SAMPLED AFTER 2½ Hour Recovery							
1125								SAMPLED

Suggested Method for Purging Well SUBMERSIBLE

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7-23-92 — Sample No.: LF-6

Samplers Name: RDT-SCH

Sampling Location: LF-6

Sampling Method: Centrifugal Pump / Teflon Bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA

Method of Shipment: COURIER

GROUND WATER

Well No.: LF-6

Well Diameter (in.): 4"

Depth to Water, Static (ft): 13.26

Water in Well Box: /

Well Depth (ft): 19.98

Height of Water Column in Well: 6.52

Water Volume in Well: 4.50

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

19.98
13.26
6.52
.65
3260
3912
4.2380

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1056								START
1057		4.5	20.2	6.97	1156			Clear
1059		9.0	19.5	7.04	1214			Clear / Dewatered
								STOP
1100								START
1102		13.50	19.8	6.75	1197			SL. TURB'D
1108		18.00	21.3	6.75	1237			SL. TURB'D
1115	14.40							SAMPLED

Suggested Method for Purging Well: Centrifugal Pump

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7.24.92 — Sample No.: LF.7

Samplers Name: SCH ROT

Sampling Location: Emeryville

Sampling Method: Cent. pump / Teflon bailer

Analyses Requested: EPA 8010; EPA 8015/8020

Number and Types of Sample Bottles used: 3 VOA; 3 VOA/HCL

Method of Shipment: Courier

80% recovery =
.2 × 7.33 + 10.49
1.47
= 11.96

17.82
10.49
7.33
65
3665
43980
4765

GROUND WATER

Well No.: LF.7

Well Diameter (in.): 4

Depth to Water, Static (ft): 10.49

Water in Well Box: ____

Well Depth (ft): 17.82

Height of Water Column in Well: 7.33

Water Volume in Well: 4.76 ≈ 5

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

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1244								Start
1245		5	21.6	6.60	1132			Clear
1246		8 (Recharge	.2'/	min)				off/dewatered
1300	15.86							
1303								Start
1304		10	22.8	6.64	1202			sl. turbid/off/dewater
1411	14.24							
1420								Sample LF.7

Suggested Method for Purging Well: ____

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-24-92 — Sample No. LF-17, LF-117, LF-17-FB

Samplers Name SCH RDT

Sampling Location Emeryville

Sampling Method Hand bail / Teflon bailer

Analyses Requested EPA 8010

Number and Types of Sample Bottles used 9 VOA

Method of Shipment Courier

Field Blank poured using orchard supply "Steam Distilled" Water.

21.54
18.14
3.40
65
1700
2040
2.21

GROUND WATER

Well No. LF-17

Well Diameter (in.) 4

Depth to Water, Static (ft) 18.14

Water in Well Box NO

Well Depth (ft) 21.54

Height of Water Column in Well 3.40

Water Volume in Well 2.21 ≈ 2.25

SURFACE WATER

Stream Width

Stream Depth

Stream Velocity

Rained recently? 1

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

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
0815								pH Calibrated
0820								LF-17-FB
0824								start bailing
0827		2.5	18.2	6.67	936			V. sl turbid
0831		5.0	18.2	6.73	961			"
0834		7.5	18.3	675	959			sl. turbid / stop
0835								Sample LF-17
0935								Dup LF 117
0843	←	1834						

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7.23.92 — Sample No.: LF-18

Samplers Name: SCH ROT

Sampling Location: Emeryville

Sampling Method: Hand bail / Teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 40A

Method of Shipment: Courier

GROUND WATER

Well No.: LF-18

Well Diameter (in.): 4

Depth to Water, Static (ft): 18.46

Water in Well Box: ____

Well Depth (ft): 22.16

Height of Water Column in Well: 3.70

Water Volume in Well: 2.5

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

80% =
.2 × 3.70 + 18.46
= 19.20

22.16
18.46
3.70
65
1850
22200
241

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1326								start bailing
1330		2.5	20.1	6.71	1000			V. sl. turbid
1336		5.0	19.9	6.74	925			"
1338		6.0						Dewatered / stop
1439	19.41							
1503	19.04							
1505								sample LF-18

Suggested Method for Purging Well: ____

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-24-92 — Sample No. LF-19

Samplers Name RDT - SCH

Sampling Location LF-19

Sampling Method Centrifugal Pump, Teflon Bailer

Analyses Requested EPA 8010, TPH-Diesel

Number and Types of Sample Bottles used 3 VOA 1-Liter Amber

Method of Shipment Courier

GROUND WATER		SURFACE WATER	
Well No.	LF-19	Stream Width	
Well Diameter (in.)	4"	Stream Depth	
Depth to Water, Static (ft)	14.36	Stream Velocity	
Water in Well Box	✓	Rained recently?	
Well Depth (ft)	20.50	Other	
Height of Water Column in Well	6.14		
Water Volume in Well	3.99 ≈ 4.0 gal		

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

20.50
14.36
6.14
× .65
3070
3684
3.990

6.14
× .65
3070
3684

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
926								START
928		4.0	19.5	6.38	1174			clear / sl. organic odor
929		7.5						Dewatered / left
	(	Recovery	Rate:	0.30'	per min			
9:40	18.20							
941								START
942		8.0	21.8	6.52	1243			STOP / Clear
1058	15.00							start
1100		12	21.3	6.80	1227			Clear / stop
1103								Start
1104		15	20.9	6.73	1186			Stop / Dewatered
1110								Sample LF-19

1118 19.10

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7-23-92 — Sample No.: LF-19D

Samplers Name: RDT - SCH

Sampling Location: LF-19D

Sampling Method: Centrifugal / Disposable bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA

Method of Shipment: Courier

45.30
18.36
26.94
x .65
1470
16164
17.510

GROUND WATER

Well No.: LF-19D

Well Diameter (in.): 4"

Depth to Water, Static (ft): 18.36

Water in Well Box: ✓

Well Depth (ft): 45.30

Height of Water Column in Well: 29.94

Water Volume in Well: 17.51 ≈ 18 gal

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

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1522								START
1525		18	20.1	6.93	902			Clear
1527	19.85	36	19.5	6.88	903			Clear (inlet)
1530		54	19.5	6.85	900			Clear
1540	18.80							SAMPLED

Suggested Method for Purging Well: Centrifugal pump

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-24-92 — Sample No. LF-20

Samplers Name RBT-SCH

Sampling Location LF-20

Sampling Method Centrifugal Pump / Teflon Bailer

Analyses Requested EPA 8240

Number and Types of Sample Bottles used 3 VOA

Method of Shipment Courier

24.85
13.11
11.74
65
5870
7044
7.63 10

GROUND WATER

Well No. LF-20

Well Diameter (in.) 4"

Depth to Water, Static (ft) 13.11

Water in Well Box /

Well Depth (ft) 24.85

Height of Water Column in Well 11.74

Water Volume in Well 7.63 ≈ 8 gal

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

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1023								START
1024		8	20.4	6.69	770			Clear
1027		16	19.9	6.63	745			SL. TURB
1029:30		17						Dewatered
	Recovery @ 1.0' per minute							
1039								START
1040		24.0	20.0	6.67	737			SL. TURB
1045								Sampled
1046	16.77							

Suggested Method for Purging Well

LEVINE • FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-24-92 — Sample No. LF-21

Samplers Name SCH RDT

Sampling Location Emeryville

Sampling Method Cent. pump/Teflon Bail

Analyses Requested EPA 8010

Number and Types of Sample Bottles used 3 VOA

Method of Shipment Courier

80% recovery =
.2 × 11.20 + 14.12
= 16.36 — 2.24
16.36

25.32
14.12
11.20
65
5600
67200
7.28

GROUND WATER

Well No. LF-21

Well Diameter (in.) 4

Depth to Water, Static (ft) 14.12

Water in Well Box NO

Well Depth (ft) 25.32

Height of Water Column in Well 11.20

Water Volume in Well 7.5

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

LOCATION MAP

Sampled after 2 hour recovery

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1002								Start
1004		7.5	20.9	6.59	871			Clear
1005		11.5	20.4	6.56	944			" / Dewatered
1051	20.84							
1153	18.68							
1230	17.92							Sampled

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena — Project No. 1649.02

Date 7-23-92 — Sample No. LF-22

Samplers Name RDT - SCH

Sampling Location LF-22

Sampling Method Centrifugal Pump / Teflon Bailer

Analyses Requested EPA 8010

Number and Types of Sample Bottles used 3 VOA

Method of Shipment Courier

GROUND WATER

Well No. LF-22

Well Diameter (in.) 4"

Depth to Water, Static (ft) 12.42

Water in Well Box

Well Depth (ft) 19.50

Height of Water Column in Well 7.08

Water Volume in Well 4.6 ≈ 5 gal

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

19.50
12.42
7.08
.65
3540
4248
4.6020

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1246								START
1248		5	21.7	6.81	1087			Sl. Turbid
1250		10	20.0	6.84	1054			Sl. Turbid
13:02	16.60	11.5						Dewatered / Stop *
1303								START
1305		15.0	21.3	6.90	1057			Sl. Turbid / Off
1310	17.80							SAMPLED

228
233
238
243

* Recovery @ 0.40' per minute

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 7.23.92 — Sample No.: LF-23

Samplers Name: SCN ROT

Sampling Location: E'ville

Sampling Method: Cent. pump / Teflon bail

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA

Method of Shipment: Courier

GROUND WATER

Well No.: LF-23

Well Diameter (in.): 4

Depth to Water, Static (ft): 12.93

Water in Well Box: ____

Well Depth (ft): 18.36

Height of Water Column in Well: 5.43

Water Volume in Well: 3.53 ÷ 4

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

18.36
12.93
5.43
65
2715
32580
3.53

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
615								
1218								Start
619								
1219		4	20.7	6.84	962			turbid
23								
1219:30		8	20.2	6.83	918			Sl. turbid / off / dry
127								
1223								Start
1225		12	20.1	6.80	911			Sl. turbid / off / dry
1230								Sample LF-23
1236	1540							

Suggested Method for Purging Well: Centrifugal

LEVINE•FRICKE

TELEPHONE MEMORANDUM

ROUTE	
JDL	✓
CEB	
JJB	✓
File	

DATE 5-20-92 TIME AM PROJECT NO. ~~[illegible]~~ 1649.06

FROM ALS TO ~~[illegible]~~ Don Mariz

OF ~~[illegible]~~ Catellus TELE. # (415) 974-4637

SUBJECT ~~May 15, 1992 [illegible]~~

I told Don that I was concerned about the possible affects the EBMUD's interceptor trench will have on the VOC plume @ Yerba Buena. If we are not going to initiate gas extraction until after development - possibly more than a year from now - the VOCs could migrate off-site along the interceptor pipeline backfill. I recommended as a minimum a well should be installed in the backfill to monitor the concentrations. Additionally I recommended we talk to LRD about who's responsible for what.

We patched Deborah Schmall in & summarized the situation for her. She requested I send her a map outlining the area of the plume, the interceptor & LF's trench. Also to est. cost for a temp. treatment system & for installation of a well. We will talk again on Tues 10 AM to discuss this further.

Signed ALS

TEL MEMO FORM 10AUG88

APPENDIX B

LABORATORY CERTIFICATES

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

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

Workorder # : 9207308
Date Received : 07/24/92
Project ID : 1649.02
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9207308- 1	LF-5
9207308- 2	LF-3
9207308- 3	LF-6
9207308- 4	LF-5D
9207308- 5	LF-23
9207308- 6	LF-22
9207308- 7	LF-4Z
9207308- 8	LF-4D-FB
9207308- 9	LF-4D
9207308-10	LF-18
9207308-11	LF-19D
9207308-12	LF-4
9207308-13	LF-17-FB
9207308-14	LF-17
9207308-15	LF-117
9207308-16	LF-20
9207308-17	LF-19
9207308-18	LF-21

This report consists of 32 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

9-21-92
Date

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

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

Workorder # : 9207308
Date Received : 07/24/92
Project ID : 1649.02
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9207308- 1	LF-5	WATER	07/23/92	8010
9207308- 2	LF-3	WATER	07/23/92	8010
9207308- 3	LF-6	WATER	07/23/92	8010
9207308- 4	LF-5D	WATER	07/23/92	8010
9207308- 5	LF-23	WATER	07/23/92	8010
9207308- 6	LF-22	WATER	07/23/92	8010
9207308- 7	LF-4Z	WATER	07/23/92	8010
9207308- 9	LF-4D	WATER	07/23/92	8010
9207308-10	LF-18	WATER	07/23/92	8010
9207308-11	LF-19D	WATER	07/23/92	8010
9207308-12	LF-4	WATER	07/24/92	8010
9207308-13	LF-17-FB	WATER	07/24/92	8010
9207308-14	LF-17	WATER	07/24/92	8010
9207308-15	LF-117	WATER	07/24/92	8010
9207308-16	LF-20	WATER	07/24/92	8010
9207308-17	LF-19	WATER	07/24/92	8010
9207308-18	LF-21	WATER	07/24/92	8010

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

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

Workorder # : 9207308
Date Received : 07/24/92
Project ID : 1649.02
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- In the matrix spike duplicate of sample LF-3, the percent recovery of 1,4-DCB is outside of the interim control limits for EPA Method 8010.

Department Supervisor — Date 9/18/92

Chemist — Date 9/18/92

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

Project ID : 1649.02
Sample ID : LF-5
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-01
Analyst :
Supervisor :

Dilution Factor : 20.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	20.	ND	U
74-87-3	Chloromethane	20.	ND	U
75-01-4	Vinyl Chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Freon 11	10.	ND	U
76-13-1	Freon 113	10.	ND	U
75-35-4	1,1-DCE	10.	470.	
75-09-2	Methylene Chlor	20.	ND	U
156-60-5	Trans-1,2-DCE	10.	ND	U
75-34-3	1,1-DCA	10.	ND	U
156-59-2	Cis-1,2-DCE	10.	ND	U
67-66-3	Chloroform	10.	ND	U
71-55-6	1,1,1-TCA	10.	80.	
56-23-5	Carbon Tet	10.	ND	U
107-06-2	1,2-DCA	10.	ND	U
79-01-6	Trichloroethene	10.	ND	U
78-87-5	1,2-DCPA	10.	ND	U
75-27-4	Bromodichlorome	10.	ND	U
110-75-8	Chloroethylvinl	20.	ND	U
10061-01-5	Cis-1,3-DCPE	10.	ND	U
10061-02-6	Trans-1,3-DCPE	10.	ND	U
79-00-5	1,1,2-TCA	10.	ND	U
127-18-4	PCE	10.	ND	U
124-48-1	Dibromochlorome	10.	ND	U
108-90-7	Chlorobenzene	10.	ND	U
75-25-2	Bromoform	10.	ND	U
79-34-5	1,1,2,2-PCA	10.	ND	U
541-73-1	1,3-DCB	20.	ND	U
106-46-7	1,4-DCB	20.	ND	U
95-50-1	1,2-DCB	20.	ND	U

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

Project ID : 1649.02
Sample ID : LF-3
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-02
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-6
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-03
Analyst : mf
Supervisor : cp

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	1.5	
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	8.2	
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	3.3	
156-59-2	Cis-1,2-DCE	.50	9.4	
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	1.4	
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	7.1	
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	9.4	
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-5D
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-04
Analyst : MY
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-23
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-05
Analyst : mf
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	6.1	
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	4.4	
156-59-2	Cis-1,2-DCE	.50	1.4	
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	1.3	
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	3.8	
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	29.	
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-22
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-06
Analyst : [illegible]
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	.81	
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	27.	
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	5.2	
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	3.4	
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	1.4	
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-4Z
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-07
Analyst : mf
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-4D
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-09
Analyst :
Supervisor :

Dilution Factor : 10.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	10.	ND	U
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl Chloride	5.0	ND	U
74-83-9	Bromomethane	5.0	ND	U
75-00-3	Chloroethane	5.0	ND	U
75-69-4	Freon 11	5.0	ND	U
76-13-1	Freon 113	5.0	ND	U
75-35-4	1,1-DCE	5.0	150.	
75-09-2	Methylene Chlor	10.	ND	U
156-60-5	Trans-1,2-DCE	5.0	ND	U
75-34-3	1,1-DCA	5.0	ND	U
156-59-2	Cis-1,2-DCE	5.0	ND	U
67-66-3	Chloroform	5.0	ND	U
71-55-6	1,1,1-TCA	5.0	18.	
56-23-5	Carbon Tet	5.0	ND	U
107-06-2	1,2-DCA	5.0	ND	U
79-01-6	Trichloroethene	5.0	ND	U
78-87-5	1,2-DCPA	5.0	ND	U
75-27-4	Bromodichlorome	5.0	ND	U
110-75-8	Chloroethylvinl	10.	ND	U
10061-01-5	Cis-1,3-DCPE	5.0	ND	U
10061-02-6	Trans-1,3-DCPE	5.0	ND	U
79-00-5	1,1,2-TCA	5.0	ND	U
127-18-4	PCE	5.0	ND	U
124-48-1	Dibromochlorome	5.0	ND	U
108-90-7	Chlorobenzene	5.0	ND	U
75-25-2	Bromoform	5.0	ND	U
79-34-5	1,1,2,2-PCA	5.0	ND	U
541-73-1	1,3-DCB	10.	ND	U
106-46-7	1,4-DCB	10.	ND	U
95-50-1	1,2-DCB	10.	ND	U

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

Project ID : 1649.02
Sample ID : LF-18
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-10
Analyst : MF
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-19D
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-11
Analyst : mf
Supervisor : cl

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	.72	
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-4
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-12
Analyst : mf
Supervisor : CP

Dilution Factor : 20.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	20.	ND	U
74-87-3	Chloromethane	20.	ND	U
75-01-4	Vinyl Chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Freon 11	10.	ND	U
76-13-1	Freon 113	10.	ND	U
75-35-4	1,1-DCE	10.	220.	
75-09-2	Methylene Chlor	20.	ND	U
156-60-5	Trans-1,2-DCE	10.	ND	U
75-34-3	1,1-DCA	10.	ND	U
156-59-2	Cis-1,2-DCE	10.	ND	U
67-66-3	Chloroform	10.	ND	U
71-55-6	1,1,1-TCA	10.	24.	
56-23-5	Carbon Tet	10.	ND	U
107-06-2	1,2-DCA	10.	ND	U
79-01-6	Trichloroethene	10.	ND	U
78-87-5	1,2-DCPA	10.	ND	U
75-27-4	Bromodichlorome	10.	ND	U
110-75-8	Chloroethylvinl	20.	ND	U
10061-01-5	Cis-1,3-DCPE	10.	ND	U
10061-02-6	Trans-1,3-DCPE	10.	ND	U
79-00-5	1,1,2-TCA	10.	ND	U
127-18-4	PCE	10.	ND	U
124-48-1	Dibromochlorome	10.	ND	U
108-90-7	Chlorobenzene	10.	ND	U
75-25-2	Bromoform	10.	ND	U
79-34-5	1,1,2,2-PCA	10.	ND	U
541-73-1	1,3-DCB	20.	ND	U
106-46-7	1,4-DCB	20.	ND	U
95-50-1	1,2-DCB	20.	ND	U

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

Project ID : 1649.02
Sample ID : LF-17-FB
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/29/92
Instrument ID : HP14

Anametrix ID : 9207308-13
Analyst : mf
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-17
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-14
Analyst : mf
Supervisor : CP

Dilution Factor : 20.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	20.	ND	U
74-87-3	Chloromethane	20.	ND	U
75-01-4	Vinyl Chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Freon 11	10.	ND	U
76-13-1	Freon 113	10.	ND	U
75-35-4	1,1-DCE	10.	320.	
75-09-2	Methylene Chlor	20.	ND	U
156-60-5	Trans-1,2-DCE	10.	ND	U
75-34-3	1,1-DCA	10.	ND	U
156-59-2	Cis-1,2-DCE	10.	ND	U
67-66-3	Chloroform	10.	ND	U
71-55-6	1,1,1-TCA	10.	35.	
56-23-5	Carbon Tet	10.	ND	U
107-06-2	1,2-DCA	10.	ND	U
79-01-6	Trichloroethene	10.	ND	U
78-87-5	1,2-DCPA	10.	ND	U
75-27-4	Bromodichlorome	10.	ND	U
110-75-8	Chloroethylvinl	20.	ND	U
10061-01-5	Cis-1,3-DCPE	10.	ND	U
10061-02-6	Trans-1,3-DCPE	10.	ND	U
79-00-5	1,1,2-TCA	10.	ND	U
127-18-4	PCE	10.	ND	U
124-48-1	Dibromochlorome	10.	ND	U
108-90-7	Chlorobenzene	10.	ND	U
75-25-2	Bromoform	10.	ND	U
79-34-5	1,1,2,2-PCA	10.	ND	U
541-73-1	1,3-DCB	20.	ND	U
106-46-7	1,4-DCB	20.	ND	U
95-50-1	1,2-DCB	20.	ND	U

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

Project ID : 1649.02
Sample ID : LF-117
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-15
Analyst : mf
Supervisor : CP

Dilution Factor : 20.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	20.	ND	U
74-87-3	Chloromethane	20.	ND	U
75-01-4	Vinyl Chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Freon 11	10.	ND	U
76-13-1	Freon 113	10.	ND	U
75-35-4	1,1-DCE	10.	460.	
75-09-2	Methylene Chlor	20.	ND	U
156-60-5	Trans-1,2-DCE	10.	ND	U
75-34-3	1,1-DCA	10.	ND	U
156-59-2	Cis-1,2-DCE	10.	ND	U
67-66-3	Chloroform	10.	ND	U
71-55-6	1,1,1-TCA	10.	53.	
56-23-5	Carbon Tet	10.	ND	U
107-06-2	1,2-DCA	10.	ND	U
79-01-6	Trichloroethene	10.	ND	U
78-87-5	1,2-DCPA	10.	ND	U
75-27-4	Bromodichlorome	10.	ND	U
110-75-8	Chloroethylvinl	20.	ND	U
10061-01-5	Cis-1,3-DCPE	10.	ND	U
10061-02-6	Trans-1,3-DCPE	10.	ND	U
79-00-5	1,1,2-TCA	10.	ND	U
127-18-4	PCE	10.	ND	U
124-48-1	Dibromochlorome	10.	ND	U
108-90-7	Chlorobenzene	10.	ND	U
75-25-2	Bromoform	10.	ND	U
79-34-5	1,1,2,2-PCA	10.	ND	U
541-73-1	1,3-DCB	20.	ND	U
106-46-7	1,4-DCB	20.	ND	U
95-50-1	1,2-DCB	20.	ND	U

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

Project ID : 1649.02
Sample ID : LF-20
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/29/92
Instrument ID : HP14

Anametrix ID : 9207308-16
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-19
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-17
Analyst : MM
Supervisor : CP

Dilution Factor : 2.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	2.0	ND	U
74-87-3	Chloromethane	2.0	ND	U
75-01-4	Vinyl Chloride	1.0	ND	U
74-83-9	Bromomethane	1.0	ND	U
75-00-3	Chloroethane	1.0	ND	U
75-69-4	Freon 11	1.0	ND	U
76-13-1	Freon 113	1.0	ND	U
75-35-4	1,1-DCE	1.0	32.	
75-09-2	Methylene Chlor	2.0	ND	U
156-60-5	Trans-1,2-DCE	1.0	ND	U
75-34-3	1,1-DCA	1.0	3.2	
156-59-2	Cis-1,2-DCE	1.0	ND	U
67-66-3	Chloroform	1.0	ND	U
71-55-6	1,1,1-TCA	1.0	3.9	
56-23-5	Carbon Tet	1.0	ND	U
107-06-2	1,2-DCA	1.0	ND	U
79-01-6	Trichloroethene	1.0	ND	U
78-87-5	1,2-DCPA	1.0	ND	U
75-27-4	Bromodichlorome	1.0	ND	U
110-75-8	Chloroethylvinl	2.0	ND	U
10061-01-5	Cis-1,3-DCPE	1.0	ND	U
10061-02-6	Trans-1,3-DCPE	1.0	ND	U
79-00-5	1,1,2-TCA	1.0	ND	U
127-18-4	PCE	1.0	ND	U
124-48-1	Dibromochlorome	1.0	ND	U
108-90-7	Chlorobenzene	1.0	ND	U
75-25-2	Bromoform	1.0	ND	U
79-34-5	1,1,2,2-PCA	1.0	ND	U
541-73-1	1,3-DCB	2.0	ND	U
106-46-7	1,4-DCB	2.0	ND	U
95-50-1	1,2-DCB	2.0	ND	U

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

Project ID : 1649.02
Sample ID : LF-21
Matrix : WATER
Date Sampled : 7/24/92
Date Analyzed : 7/29/92
Instrument ID : HP14

Anametrix ID : 9207308-18
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.0
Sample ID : VBLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/29/92
Instrument ID : HP14

Anametrix ID : 14B0729H01
Analyst :
Supervisor :

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.0
Sample ID : VBLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 15B0729H01
Analyst : JP
Supervisor : JP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.0
Sample ID : VBLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 15B0730H01
Analyst : [illegible]
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	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	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

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

Project ID : 1649.02
Matrix : LIQUID

Anametrix ID : 9207308
Analyst :
Supervisor :

	SAMPLE ID	SU1	SU2	SU3
1	VBLANK	97		
2	LF-3	97		
3	LF-22	100		
4	LF-3 MS	91		
5	LF-3 MSD	96		
6	LF-6	104		
7	LF-5D	91		
8	LF-23	100		
9	LF-4Z	91		
10	LF-18	92		
11	VBLANK	94		
12	LF-19D	93		
13	LF-5	92		
14	LF-4D	93		
15	LF-19MS	92		
16	LF-19MSD	94		
17	LF-19MSD	94		
18	LF-19	95		
19	LF-117	93		
20	LF-17	94		
21	LF-4	93		
22				
23				
24				
25				
26				
27				
28				
29				
30				

	QC LIMITS
SU1 = CHLOROFLUOROBEN	(51-136)

* Values outside of Anametrix QC limits

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

Project ID : 1649.02
Matrix : LIQUID

Anametrix ID : 9207308
Analyst :
Supervisor :

	SAMPLE ID	SU1	SU2	SU3
1	VBLANK	114		
2	LF-21	105		
3	LF-20	97		
4	LF-17-FB	105		
5				
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 = CHLOROFLUOROBEN	(51-136)

* Values outside of Anametrix QC limits

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

Project ID : 1649.02
Sample ID : LF-3
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/29/92
Instrument ID : HP15

Anametrix ID : 9207308-02
Analyst : mf
Supervisor : CJ

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
Freon 113	10.0	.0	9.7	97	50-150
1,1-DCE	10.0	.0	10.4	104	41-110
Trans-1,2-DCE	10.0	.0	9.7	97	47-126
1,1-DCA	10.0	.0	10.1	101	67-124
Cis-1,2-DCE	10.0	.0	10.6	106	50-150
1,1,1-TCA	10.0	.0	10.8	108	50-125
Trichloroethene	10.0	.0	10.5	105	51-131
PCE	10.0	.0	12.4	124	70-136
Chlorobenzene	10.0	.0	11.5	115	71-119
1,3-DCB	10.0	.0	8.9	89	67-120
1,4-DCB	10.0	.0	10.4	104	61-109
1,2-DCB	10.0	.0	9.8	98	70-119

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
Freon 113	10.0	9.4	94	3	25	50-150
1,1-DCE	10.0	9.2	92	12	25	41-110
Trans-1,2-DCE	10.0	8.8	88	10	25	47-126
1,1-DCA	10.0	9.6	96	4	25	67-124
Cis-1,2-DCE	10.0	10.7	107	1	25	50-150
1,1,1-TCA	10.0	9.8	98	10	25	50-125
Trichloroethene	10.0	9.8	98	7	25	51-131
PCE	10.0	11.9	119	4	25	70-136
Chlorobenzene	10.0	11.2	112	2	25	71-119
1,3-DCB	10.0	9.0	90	2	25	67-120
1,4-DCB	10.0	11.0	110 *	5	25	61-109
1,2-DCB	10.0	10.6	106	8	25	70-119

* Value is outside of Anametrix QC limits

RPD: 0 out of 12 outside limits
Spike Recovery: 1 out of 24 outside limits

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

Project ID : 1649.02
Sample ID : LF-19D
Matrix : WATER
Date Sampled : 7/23/92
Date Analyzed : 7/30/92
Instrument ID : HP15

Anametrix ID : 9207308-11
Analyst :
Supervisor :

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
Freon 113	10.0	.0	9.0	90	50-150
1,1-DCE	10.0	.0	10.0	100	41-110
Trans-1,2-DCE	10.0	.0	9.1	91	47-126
1,1-DCA	10.0	.7	10.4	96	67-124
Cis-1,2-DCE	10.0	.0	10.6	106	50-150
1,1,1-TCA	10.0	.0	10.4	104	50-125
Trichloroethene	10.0	.0	10.2	102	51-131
PCE	10.0	.0	11.3	113	70-136
Chlorobenzene	10.0	.0	10.2	102	71-119
1,3-DCB	10.0	.0	9.1	91	67-120
1,4-DCB	10.0	.0	10.9	109	61-109
1,2-DCB	10.0	.0	10.0	100	70-119

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
Freon 113	10.0	9.9	99	10	25	50-150
1,1-DCE	10.0	10.0	100	0	25	41-110
Trans-1,2-DCE	10.0	9.0	90	2	25	47-126
1,1-DCA	10.0	10.4	97	1	25	67-124
Cis-1,2-DCE	10.0	10.6	106	0	25	50-150
1,1,1-TCA	10.0	10.4	104	0	25	50-125
Trichloroethene	10.0	9.7	97	5	25	51-131
PCE	10.0	11.6	116	3	25	70-136
Chlorobenzene	10.0	10.7	107	5	25	71-119
1,3-DCB	10.0	9.1	91	0	25	67-120
1,4-DCB	10.0	10.5	105	4	25	61-109
1,2-DCB	10.0	9.9	99	1	25	70-119

* Value is outside of Anametrix QC limits

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

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

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

Workorder # : 9207308
Date Received : 07/24/92
Project ID : 1649.02
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9207308- 1	LF-5	WATER	07/23/92	TPHd
9207308- 2	LF-3	WATER	07/23/92	TPHd
9207308-12	LF-4	WATER	07/24/92	TPHd
9207308-17	LF-19	WATER	07/24/92	TPHd

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

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

Workorder # : 9207308
Date Received : 07/24/92
Project ID : 1649.02
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for all samples in this workorder are primarily due to the presence of a heavier petroleum product, possibly aged diesel fuel or motor oil. Sample LF-19 also contains several discrete hydrocarbon peaks in the early (C8-C9) range.

Cheryl Balmes 9/22/92
Department Supervisor Date

Diana Shen 9/22/92
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS C12-C22
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9207308
Matrix : WATER
Date Sampled : 07/23-24/92
Date Extracted: 07/27/92

Project Number : 1649.02
Date Released : 08/13/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9207308-01	LF-5	08/12/92	50	ND
9207308-02	LF-3	08/12/92	50	ND
9207308-12	LF-4	08/12/92	50	ND
9207308-17	LF-19	08/12/92	50	ND
DWBL072792	METHOD BLANK	08/02/92	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

Analyst 9/25/92 Date

Supervisor 9/25/9 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS C22-C36
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9207308
Matrix : WATER
Date Sampled : 07/23-24/92
Date Extracted: 07/27/92

Project Number : 1649.02
Date Released : 08/13/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9207308-01	LF-5	08/12/92	50	58
9207308-02	LF-3	08/12/92	50	ND
9207308-12	LF-4	08/12/92	50	52
9207308-17	LF-19	08/12/92	50	200
DWBL072792	METHOD BLANK	08/02/92	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

OCT - 7 1992

Analyst 9/25/92 Date

Supervisor 9/30/92 Date

9207308 (10/27) Sheet 1/2

CHAIN OF CUSTODY / ANALYSES REQUEST FORM (18) (16)

Project No.: 7649.02	Field Logbook No.:	Date: 7.24.92	Serial No.: № 9341
Project Name: Yerba Buena	Project Location: Emeryville		
Sampler (Signature): Prescott C. Hield			Samplers: SCH RDT

SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	EPA 8010	TPH diesel	8015/8020	HOLD	RUSH	REMARKS
(1) LF·5	7·23·92	0950		5	H_2O			3	2				Normal turnaround
(2) LF·3		1035		5				3	2				
(3) LF·6		1115		3				3					Anametrix Ref. # 629F
(4) LF·50		1125		3				3					
(5) LF·23		1230		3				3					Analyses:
(6) LF·22		1310		3				3					EPA 8010
(7) LF·42		1415		3				3					TPH as diesel
(8) LF·40·FB		1450		3				3			X		EPA 8015/8020 fld
(9) LF·40		1455		3				3					Gas + BTEX
(10) LF·18		1505		3				3					
(11) LF·19D	↓	1540		3				3					Contact Jenifer Beatty
(12) LF·4	7·24·92	0900		5				3	2				
(13) LF·17·FB		0820		3				3					
(14) LF·17		0835		3				3					
(15) LF·117		0935		3				3					
(16) LF·20		1045		3	↓			3					

RELINQUISHED BY: (Signature) Prescott C. Hield	DATE	TIME	RECEIVED BY: (Signature) John Chappelle	DATE 7/24/92	TIME 16:40
RELINQUISHED BY: (Signature) John Chappelle	DATE 7/24/92	TIME 17:55	RECEIVED BY: (Signature) Keith Lance	DATE 7/24/92	TIME 17:55
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, Ca 94608
(415) 652-4500

Analytical Laboratory:
Anametrix, San Jose

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

9201308 (10/27) (16) Sheet 2/2

CHAIN OF CUSTODY / ANALYSES REQUEST FORM (18)

Project No.: 1649.02	Field Logbook No.:	Date: 7-24-92
Project Name: Yerba Buena	Project Location: Emeryville	Serial No.: № 9351
Sampler (Signature): Prescott C. Heald		Samplers: SCH RDT

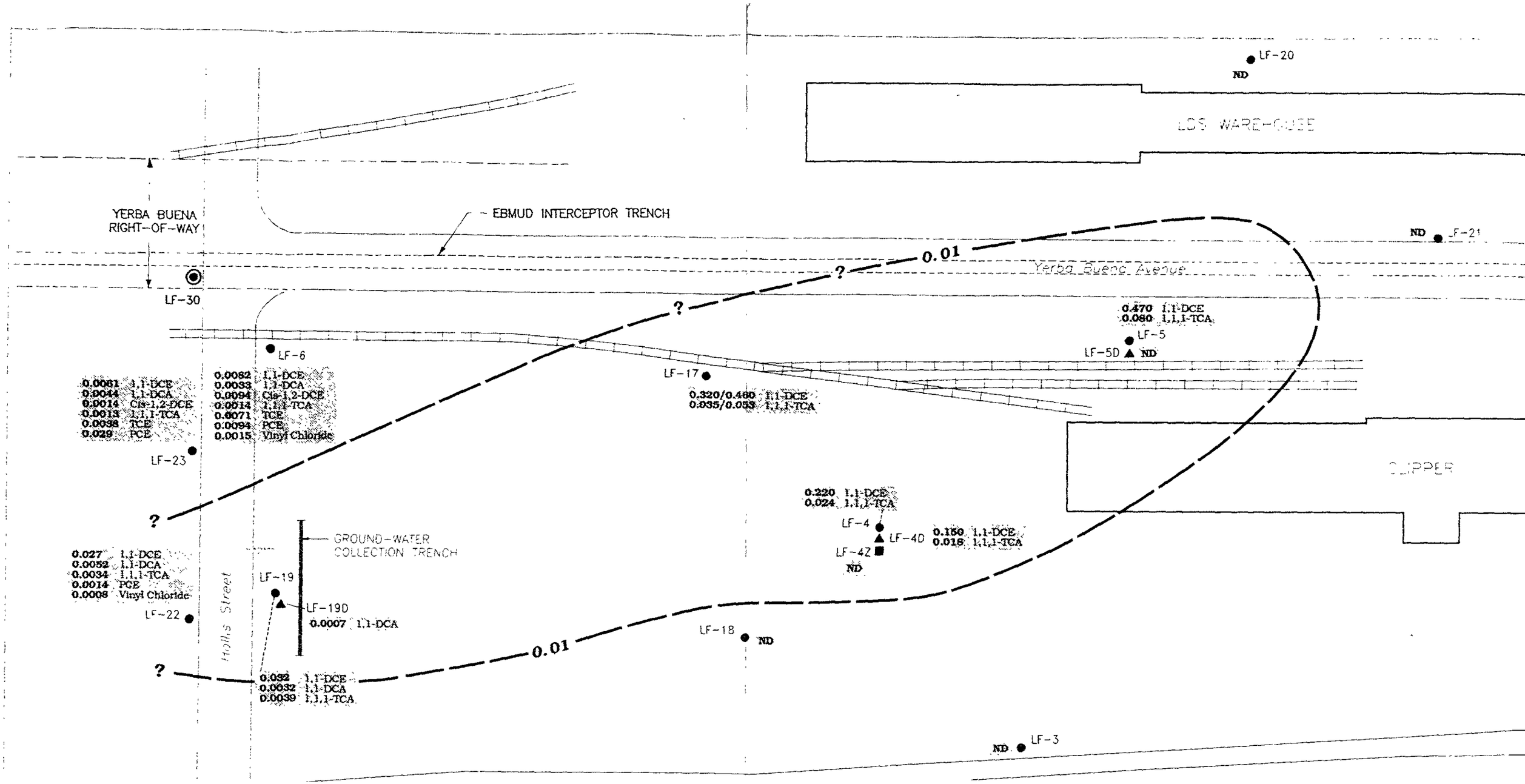
SAMPLES						ANALYSES							
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	EPA 8010	TPHdiesel	8015/8020	HOLD	RUSH	REMARKS
(17) LF-19	7-24-92	1110		5	H_2O			3	2				Normal Turnaround
(18) LF-21		1230		3				3					
(19) LF-7		1420		6				3		3			Ammetrix Ref. # 629F
													Analyses: EPA 8010, TPH as diesel, EPA 8015/8020 for Gas + BTEX
													Contact Jenifer Beatty

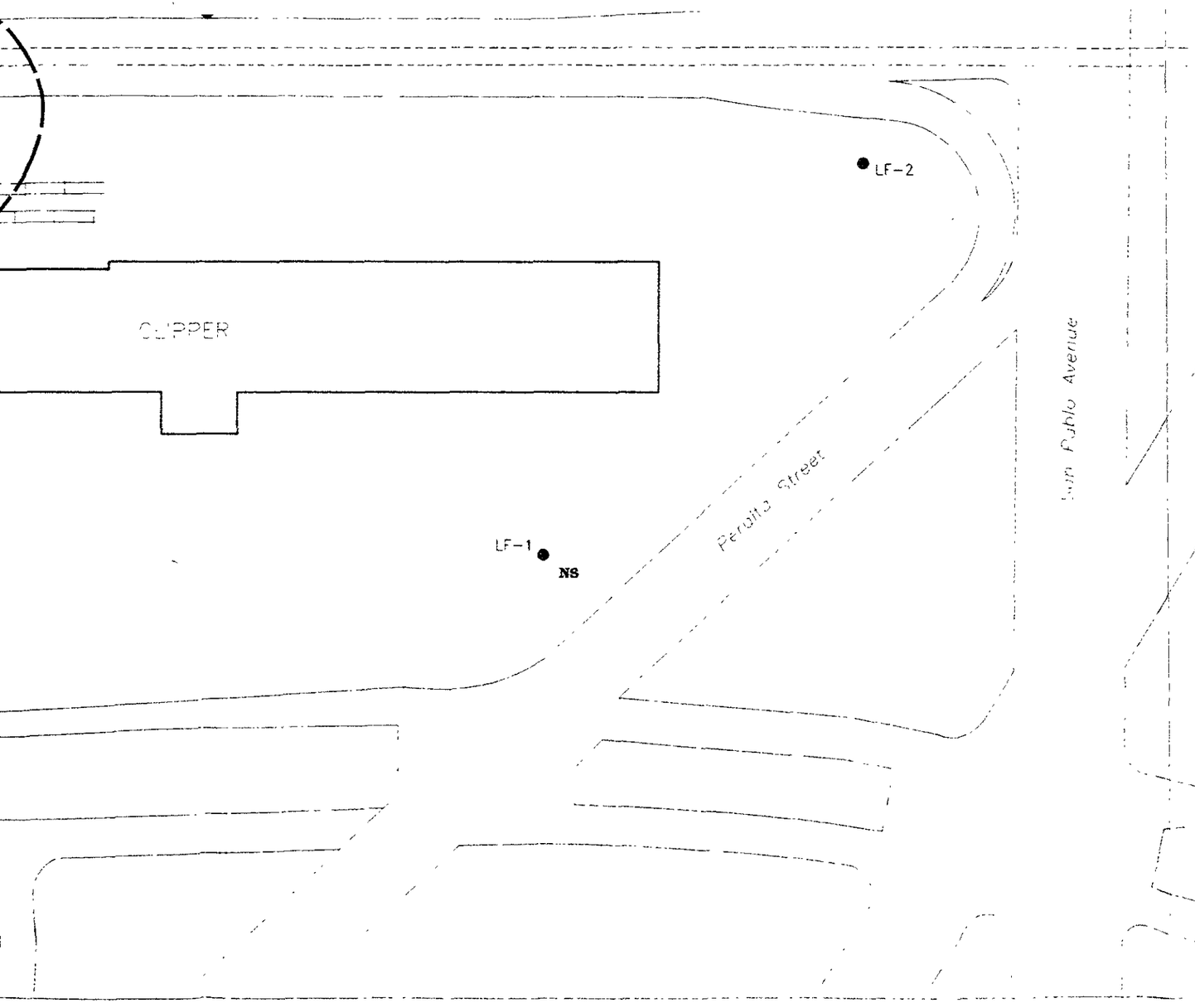
RELINQUISHED BY: (Signature) Prescott C. Heald	DATE	TIME	RECEIVED BY: (Signature) Lynn Chappelle	DATE 7/24/92	TIME 16:40
RELINQUISHED BY: (Signature) Lynn Chappelle	DATE 7/24/92	TIME 17:55	RECEIVED BY: (Signature) Maria Lanoja	DATE 7/24/92	TIME 17:55
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT: Courier	DATE	TIME	LAB COMMENTS:		

Sample Collector: LEVINE-FRICKE, 1900 Powell Street, 12th Floor, Emeryville, Ca 94608, (415) 652-4500

Analytical Laboratory: Ammetrix, San Jose

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


LF-20
ND
LOS WARE-HOUSE
YERBA BUENA
RIGHT-OF-WAY
EBMUD INTERCEPTOR TRENCH
ND LF-21
Yerba Buena Avenue
0.01
?
?
LF-30
0.470 1,1-DCE
0.080 1,1,1-TCA
LF-5
LF-5D ND
LF-6
LF-17
0.320/0.460 1,1-DCE
0.035/0.053 1,1,1-TCA
0.0061 1,1-DCE
0.0044 1,1-DCA
0.0014 Cis-1,2-DCE
0.0013 1,1,1-TCA
0.0038 TCE
0.029 PCE
0.0082 1,1-DCE
0.0033 1,1-DCA
0.0094 Cis-1,2-DCE
0.0014 1,1,1-TCA
0.0071 TCE
0.0094 PCE
0.0015 Vinyl Chloride
LF-23
CLIPPER
0.220 1,1-DCE
0.024 1,1,1-TCA
LF-4
LF-4D 0.150 1,1-DCE
0.018 1,1,1-TCA
LF-4Z
ND
?
GROUND-WATER
COLLECTION TRENCH
0.027 1,1-DCE
0.0052 1,1-DCA
0.0034 1,1,1-TCA
0.0014 PCE
0.0008 Vinyl Chloride
LF-19
LF-19D
0.0007 1,1-DCA
LF-22
Hollis Street
LF-18
ND
0.01
?
0.032 1,1-DCE
0.0032 1,1-DCA
0.0039 1,1,1-TCA
ND LF-3



0.320/0.460 1,1-DCE
0.035/0.053 1,1,1-TCA

- CHEMICAL COMPOUND
- CONCENTRATION DETECTED IN GROUND-WATER SAMPLES (PPM)
- DUPLICATE ANALYSIS

ND NOT DETECTED

NS NOT SAMPLED

ISOCONCENTRATION LINE FOR 0.01 PPM 1,1-DCE; DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN

KEY TO ABBREVIATIONS:

1,1-DCA	-	1,1-Dichloroethane
1,1-DCE	-	1,1-Dichloroethene
1,1,1-TCA	-	1,1,1-Trichloroethane
TCE	-	Trichloroethene
PCE	-	Tetrachloroethene

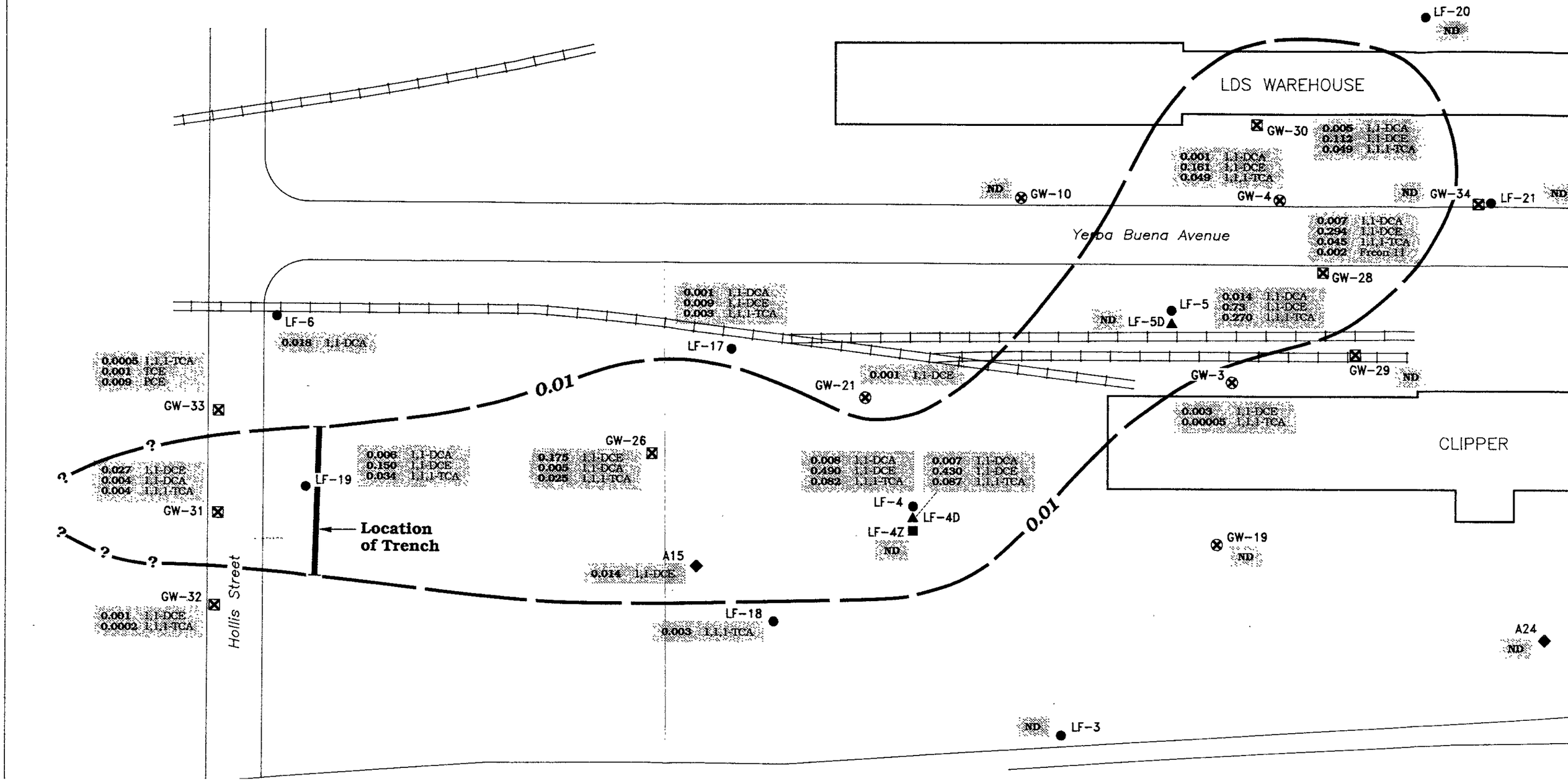
NOTES:

1. Monitoring well samples were submitted to Med-Tox Associates for volatile organic compounds analysis using EPA Method 8010.
2. Results indicated for wells LF-1, LF-2, LF-3, LF-4, LF-5, and LF-6 are from the Phase I investigation (February 1990); results indicated for wells LF-4D, LF-5D, LF-17, LF-18, LF-19, and LF-20 are from Phase II investigation (April 1990); results indicated for wells LF-21 and LF-4Z are from Phase III investigation (November 1990)
3. Ground-water wells LF-19D, LF-22 and LF-23 were not installed at the time this figure was prepared.

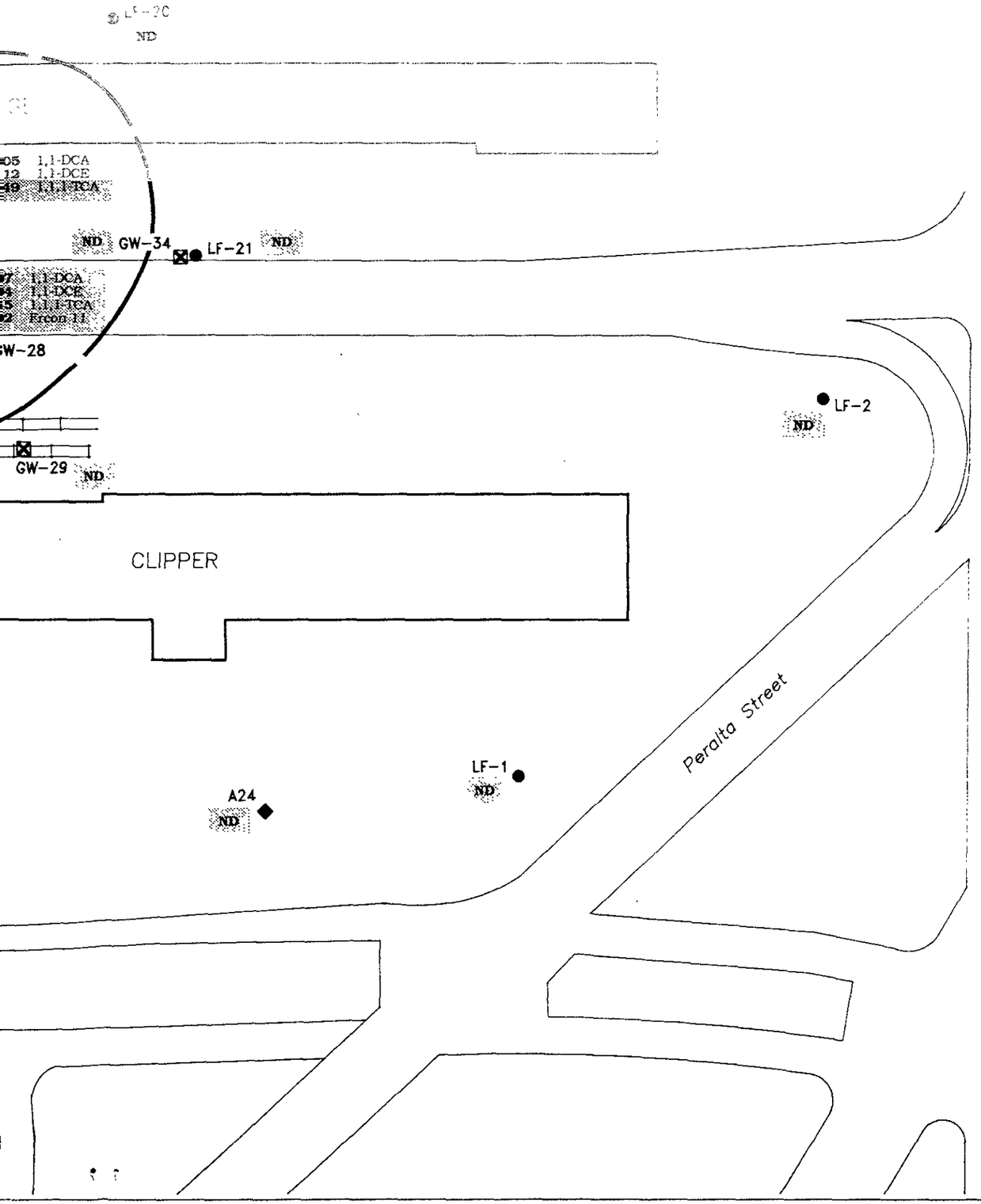
0 40 80 120 160 FEET

Figure 3 :
VOLATILE ORGANIC COMPOUNDS DETECTED IN SHALLOW GROUND-WATER SAMPLES (ppm) JULY 23 AND 24, 1992 YERBA BUENA PROJECT SITE

Project No. 164902 **LEVINE•FRICKE**
CIVIL ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS



Note: VOC's were not detected in well LF-14, located approximately 400 feet west (down gradient) of GW-31



EXPLANATION

- SHALLOW (LESS THAN 25 FEET) MONITORING WELL LOCATION
- INTERMEDIATE (35 TO 45 FEET) MONITORING WELL LOCATION
- DEEPER (62 FEET) MONITORING WELL LOCATION
- PHASE I INVESTIGATION DEEPER SOIL SAMPLING LOCATION (13 TO 18 FEET) AND GRAB GROUND-WATER SAMPLE LOCATION
- SHALLOW GROUND-WATER RECONNAISSANCE SAMPLING LOCATION (PHASE II)
- SHALLOW GROUND-WATER RECONNAISSANCE SAMPLING LOCATION (PHASE III)
- SHALLOW EXTRACTION TRENCH LOCATION
- *0.01* 0.01 ppm ISOCONTOUR LINE FOR 1,1-DCE
- 0.014 1,1-DCA / 0.73 1,1-DCE / 0.270 1,1,1-TCA
  - CHEMICAL COMPOUND
  - CONCENTRATION DETECTED IN GROUND-WATER SAMPLES (PPM)
- ND NOT DETECTED

KEY TO ABBREVIATIONS:

1,1-DCA	– 1,1-Dichloroethane
1,1-DCE	– 1,1-Dichloroethene
1,1,1-TCA	– 1,1,1-Trichloroethane
TCE	– Trichloroethene
PCE	– Tetrachloroethene

NOTES:

1. Monitoring well samples were submitted to Med-Tox Associates for volatile organic compounds analysis using EPA Method 8010.
2. Results indicated for wells LF-1, LF-2, LF-3, LF-4, LF-5, and LF-6 are from the *Phase I* investigation (February 1990); results indicated for wells LF-4D, LF-5D, LF-17, LF-18, LF-19, and LF-20 are from *Phase II investigation* (April 1990); *results* indicated for wells LF-21 and LF-4Z are from Phase III investigation (November 1990).
3. Ground-water wells LF-19D, LF-22 and LF-23 were not installed at the time this *figure was prepared.*

0 40 80 120 160 FEET

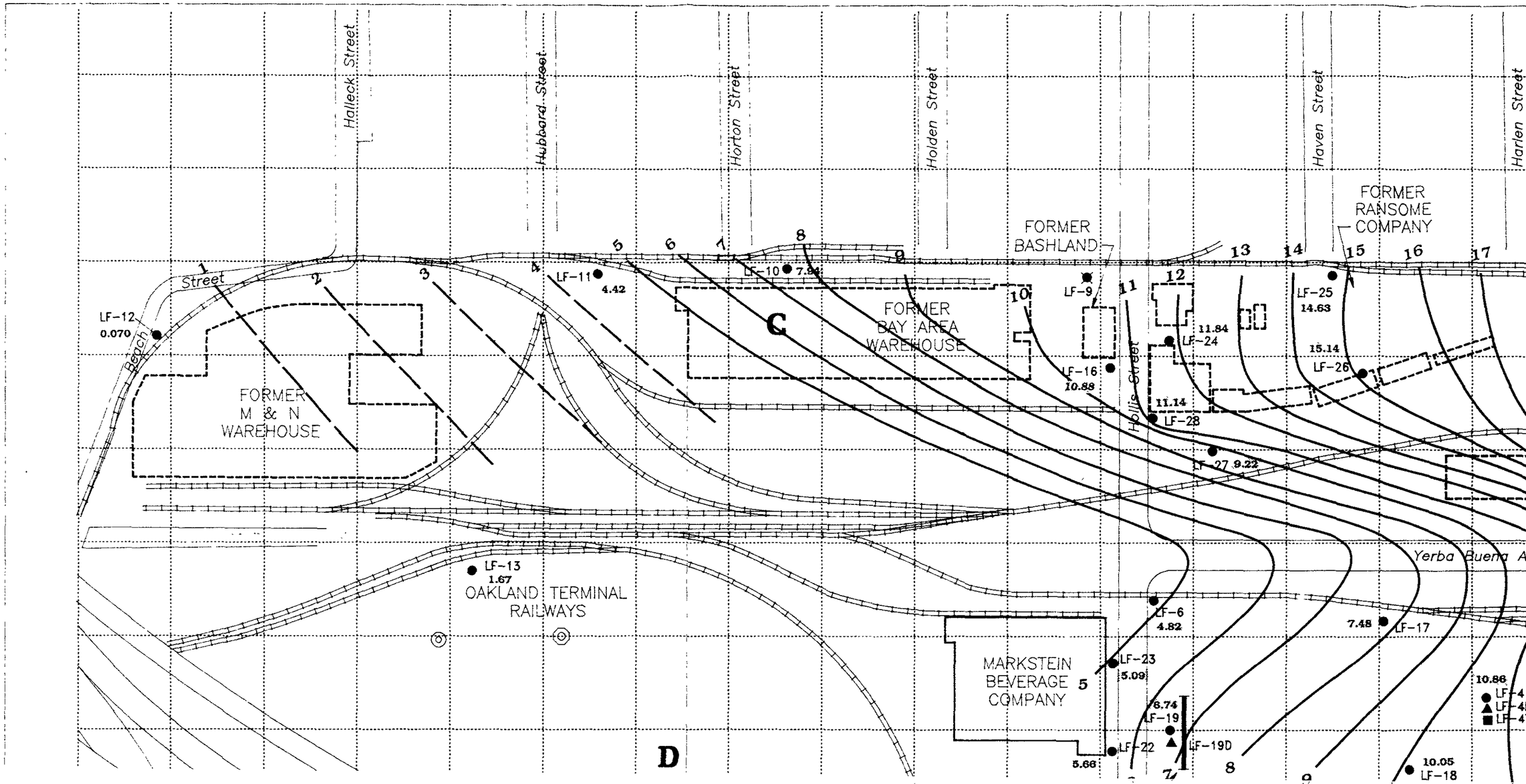
Figure 4:

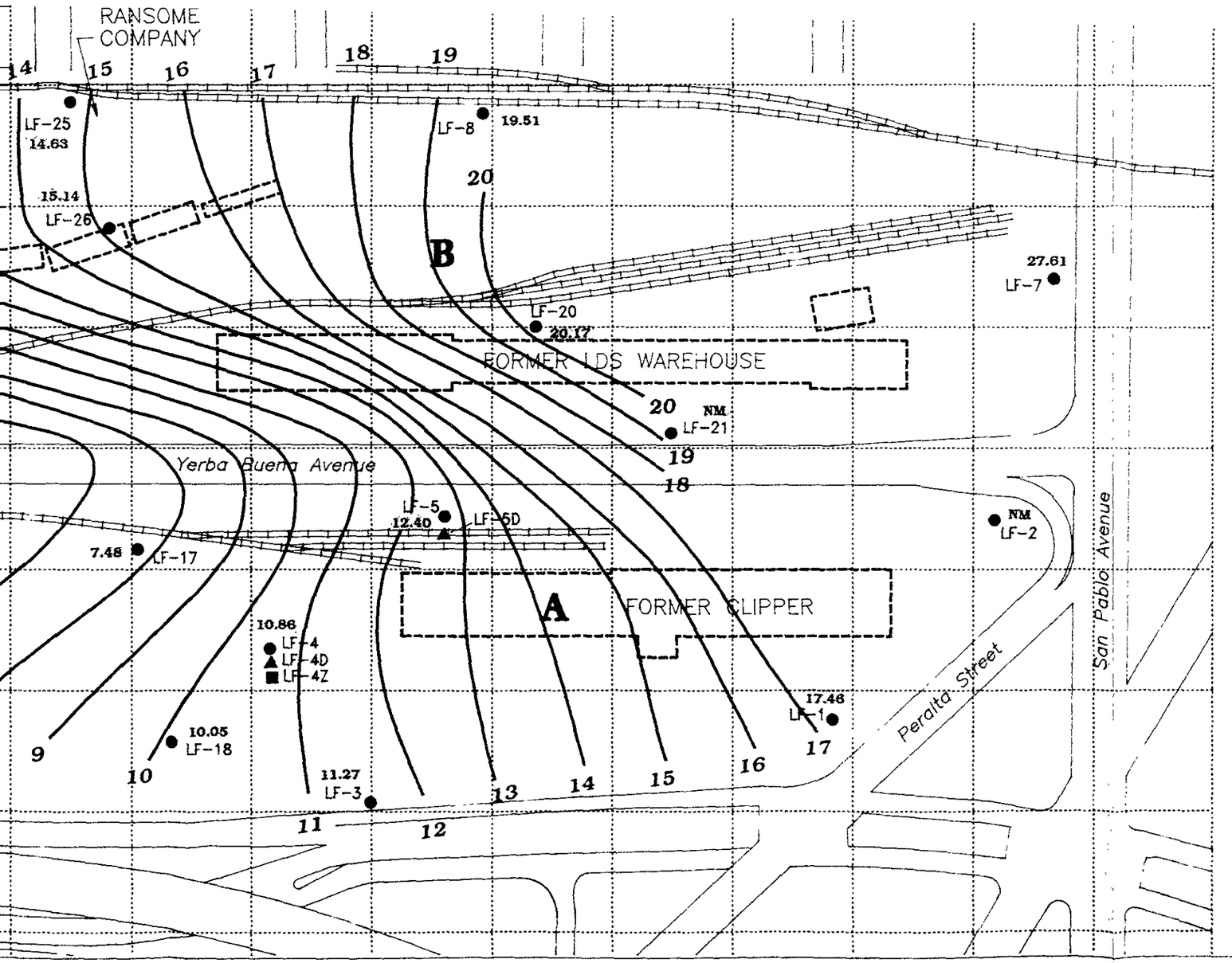
VOLATILE ORGANIC COMPOUNDS DETECTED IN SHALLOW GROUND-WATER SAMPLES (ppm) IN AREA A IN 1990

Project No. 1649

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

JJB 041392 DAT


Halleck Street
Hubbard Street
Horton Street
Holden Street
Haven Street
Harlen Street
Bay Street
FORMER M & N WAREHOUSE
FORMER BAY AREA WAREHOUSE
FORMER BASHLAND
FORMER RANSOME COMPANY
OAKLAND TERMINAL RAILWAYS
MARKSTEIN BEVERAGE COMPANY
Hollis Street
Yerba Buena A
LF-12 0.070
LF-11 4.42
LF-10 7.94
LF-9
LF-16 10.88
LF-25 14.63
11.84 LF-24
15.14 LF-26
11.14 LF-28
LF-27 9.22
LF-13 1.67
LF-6 4.82
7.48 LF-17
LF-23 5.09
6.74 LF-19
LF-19D
LF-22 5.66
10.05 LF-18
10.86
C
D
1 Street
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17



ABANDONED WELL

LOCATION OF FORMER BUSINESSES

7.48 GROUND-WATER ELEVATION (feet)

14 GROUND-WATER ELEVATION CONTOUR (feet), DASHED WHERE INFERRED

NM NOT MEASURED

Figure 2 :
SHALLOW GROUND-WATER ELEVATION
CONTOUR MAP
JULY 22, 1992
YERBA BUENA PROJECT SITE

Project No 1649.02 **LEVINE•FRICKE**
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS