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

July 31, 1992
1649.02

Prepared for:

Catellus Development Corporation
201 Mission Street
San Francisco, California 94105

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

July 31, 1992

LF 1649.02

Mr. Dennis Byrne
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

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

Dear Mr. Byrne:

The enclosed quarterly monitoring report presents results of ground-water monitoring conducted during the period April 1 through June 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 or Cynthia Barclay.

Sincerely,

James D. Levine, P.E.
President

Jenifer Beatty
Senior Staff Hydrogeologist

Enclosure

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1649/1649L92.QMR/NAS/SLM

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**QUARTERLY GROUND-WATER MONITORING REPORT
FOR THE PERIOD APRIL 1 THROUGH JUNE 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 April 1 through June 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 there, 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, and 1992). 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 (i.e., french drain) was installed in January 1992 along the western property boundary (i.e., 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 designed and 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. Recent depth-to-water measurements were collected on April 15 and May 14, 1992. Depth to ground water ranged from 4.71 feet below ground surface (bgs) (LF-11) to 16.87 feet bgs (LF-19D) in April 1992 and from 4.94 feet bgs (LF-11) to 17.40 feet bgs (LF-19D) in May 1992. Ground-water elevations in shallow sediments are presented in Figures 2 and 3. These data indicate that the general direction of shallow ground-water flow beneath the Site at the time of water-level measurement was generally toward the southwest in the northern portion of the Site (north of Yerba Buena Avenue) and varied from toward the southwest to northwest in the southern portion of the Site (south of Yerba Buena Avenue). The average hydraulic gradient

for the Site in April and May 1992 was approximately 0.008 to 0.01 ft/ft, as measured between wells LF-8 and LF-12 and wells LF-1 and LF-6.

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, March, and April 1992 indicate that water levels have increased between December 1991 and January 1992, but have remained relatively consistent through April 1992.

Ground-water elevation data collected during the second quarter 1992 are consistent with first quarter data, which indicated a shift of ground-water flow direction in Area A from westerly to northwesterly. Prior to EBMUD's dewatering activities along Yerba Buena Avenue, the flow direction previously reported for this area was westerly. The potential impact 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 April 15 and 16, 1992, from on-site monitoring wells LF-4, LF-4D, 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 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). All ground-water samples, including the field blank and duplicate sample, were analyzed for VOCs using EPA Method 8010. Laboratory certificates are included in Appendix B.

4.2 Ground-Water Quality Results

Analytical results for ground-water samples collected in April 1992 are presented on Figure 4. Historical ground-water quality data collected at the Site are summarized in Table 2.

Shallow Monitoring Wells

No VOCs were detected in ground-water samples from 2 (LF-20 and LF-21) of the 10 shallow wells (less than 25 feet deep) sampled. 1,1-DCE was detected most frequently, with concentrations ranging from 0.0017 ppm (LF-18) to 0.44 ppm (LF-5) in 8 of the shallow wells sampled. 1,1,1-TCA was detected in ground-water samples collected from 7 shallow wells at concentrations ranging from approximately 0.0007 ppm (LF-23) to 0.1 ppm (well LF-5), and 1,1-DCA was detected in 4 wells at concentrations ranging from 0.0021 ppm (LF-22) to 0.0044 ppm (well LF-23).

Tetrachloroethene (PCE), trichloroethene (TCE), and 1,2-dichloroethene (1,2-DCE) were detected in on-site well LF-6 at concentrations of 0.0065 ppm, 0.0026 ppm, and 0.0025 ppm, respectively, and in off-site well LF-23 at 0.020 ppm, 0.0036 ppm, and 0.0011 ppm, respectively. PCE also was detected in off-site well LF-22 at 0.0018 ppm. Well LF-6 is located near the western boundary of Area A and wells LF-22 and LF-23 are located west of Area A.

The presence of PCE, TCE, and 1,2-DCE in ground-water samples collected from these wells may indicate an off-site source for these compounds downgradient from Area A. 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).

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. Results of recent sampling and analyses were similar to previous sampling results from these wells. No VOCs were detected in intermediate-depth wells LF-5D and 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 0.16 ppm and 0.020 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 the 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 off-site wells LF-22 and LF-23 (as discussed in previous paragraphs), analytical results for ground-water samples collected in April 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 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 5). January and April 1992 results indicate 1,1-DCE at a concentration of 0.490 ppm and 0.360 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 and April 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 STATUS OF GROUND-WATER REMEDIATION ACTIVITIES

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. Therefore, recent dewatering activities should not significantly influence the effectiveness of the ground-water collection trench, which was installed along the western property boundary of Area A to inhibit off-site migration of shallow VOC-affected ground water (Figure 4). Levine·Fricke conducted hydraulic testing of the trench on May 15, 1992, to establish a design system flow rate and to evaluate the capture zone for VOC-affected ground water. Treatment options for extracted ground water currently are being evaluated and the most applicable and cost-effective option will be selected.

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.

———. 1992. 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.

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)	23-Apr-90		12-Jul-91		07-Aug-91		17-Dec-91		06-Jan-92		15-Apr-92		14-May-92		28-May-92	
				Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation	Depth to Water	Ground-Water Elevation
LF-1	29.74	21	11-21	9.57	20.17	NM	NM	NM	NM	NM	NM	9.56	20.18	8.74	21.00	10.71	19.03	NM	NM
LF-2	30.36	22	11.5-21.5	4.52	25.84	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LF-3	25.29	25	14.5-24.5	11.50	13.79	NM	NM	NM	NM	NM	NM	13.03	12.26	10.71	14.58	12.51	12.78	NM	NM
LF-4	26.09	20	9.5-19.5	12.20	13.89	13.04	13.05	14.48	11.61	16.01	10.08	12.50	13.59	11.64	14.45	13.50	12.59	NM	NM
LF-4D	26.20	39	29-39	12.38	13.82	NM	NM	14.87	11.33	NM	NM	12.80	13.40	12.25	13.95	13.89	12.31	NM	NM
LF-4Z	NS	62	52-62	NI	NI	NM	NM	13.48	---	NM	NM	13.02	---	11.42		12.48	---	NM	NM
LF-5	27.01	25	10-25	12.32	14.69	NM	NM	14.20	12.81	15.02	11.99	13.32	13.69	10.68	16.33	12.74	14.27	NM	NM
LF-5D	27.09	44	34-44	10.61	16.48	NM	NM	11.42	15.67	NM	NM	10.66	16.43	8.63	18.46	10.09	17.00	NM	NM
LF-6	18.12	19.5	9.5-19.5	8.66	9.46	9.90	8.22	12.85	5.27	14.60	3.52	9.71	8.41	12.24	5.88	12.15	5.97	NM	NM
LF-7	37.94	22	8-18	8.22	29.72	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LF-8	29.70	18	7.5-17.5	NM	NM	NM	NM	NM	NM	NM	NM	5.04	24.66	6.51	23.19	8.54	21.16	NM	NM
LF-9	14.59	15.5	5.5-15.5	3.10	11.49	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	WA	NM	NM
LF-10	14.09	22.5	7.5-22.5	NM	NM	NM	NM	NM	NM	NM	NM	4.04	10.05	5.55	8.54	5.81	8.28	NM	NM
LF-11	10.06	20.5	10.5-20.5	2.50	7.56	NM	NM	NM	NM	NM	NM	2.30	7.76	4.71	5.35	4.94	5.12	NM	NM
LF-12	8.18	16	5.5-15.5	6.63	1.55	NM	NM	NM	NM	NM	NM	6.70	1.48	7.41	0.77	7.13	1.05	NM	NM
LF-13	9.19	20	5-20	6.20	2.99	NM	NM	NM	NM	NM	NM	4.54	4.65	7.25	1.94	6.81	2.38	NM	NM
LF-14	14.56	18	5.5-15.5	7.40	7.16	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LF-16	17.56	20	5-20	NM	NM	NM	NM	NM	NM	NM	NM	6.04	11.52	6.40	11.16	6.46	11.10	6.52	11.04
LF-17	25.60	20.5	10-20	13.71	11.89	14.62	10.98	17.72	7.88	18.90	6.70	16.67	8.93	16.03	9.57	16.82	8.78	NM	NM
LF-18	28.48	20.5	10-20	15.63	12.85	16.40	12.08	17.73	10.75	19.24	9.24	16.28	12.20	15.50	12.98	16.86	11.62	NM	NM
LF-19	20.88	20.5	10-20	11.18	9.70	11.86	9.02	14.06	6.82	16.19	4.69	11.86	9.02	12.69	8.19	12.82	8.06	NM	NM
LF-19D	23.87	43	33-43	NI	NI	NI	NI	17.53	6.34	NM	NM	16.94	6.93	16.87	7.00	17.40	6.47	NM	NM
LF-20	33.24	20.5	7-22	11.18	22.06	NM	NM	12.67	20.57	NM	NM	8.91	24.33	8.86	24.38	11.05	22.19	NM	NM
LF-21	NS	23.5	8-23	NI	NI	NM	NM	12.57	---	NM	NM	11.18	---	8.92	---	11.30	---	NM	NM
LF-22	18.02	20	10-20	NI	NI	9.64	8.38	11.49	6.53	13.62	4.40	10.76	7.26	11.07	6.95	10.90	7.12	NM	NM
LF-23	18.05	20	10-20	NI	NI	9.70	8.35	11.97	6.08	14.35	3.70	10.58	7.47	1.80	6.25	11.71	6.34	NM	NM
LF-24	21.97			NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	9.75	12.22	9.86	12.11
LF-25	23.01			NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	7.02	15.99	7.34	15.67
LF-26	26.84			NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	10.55	16.29	10.87	15.97
LF-27	22.77			NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	12.87	9.90	13.10	9.67
LF-28	20.55			NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	9.00	11.55	9.02	11.53

Notes:
-- - Well not accessible at time of water-level measurement
NI - Well not installed at time of water-level measurement
NM - Not measured
NS - Not surveyed
WA - Well abandoned

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)

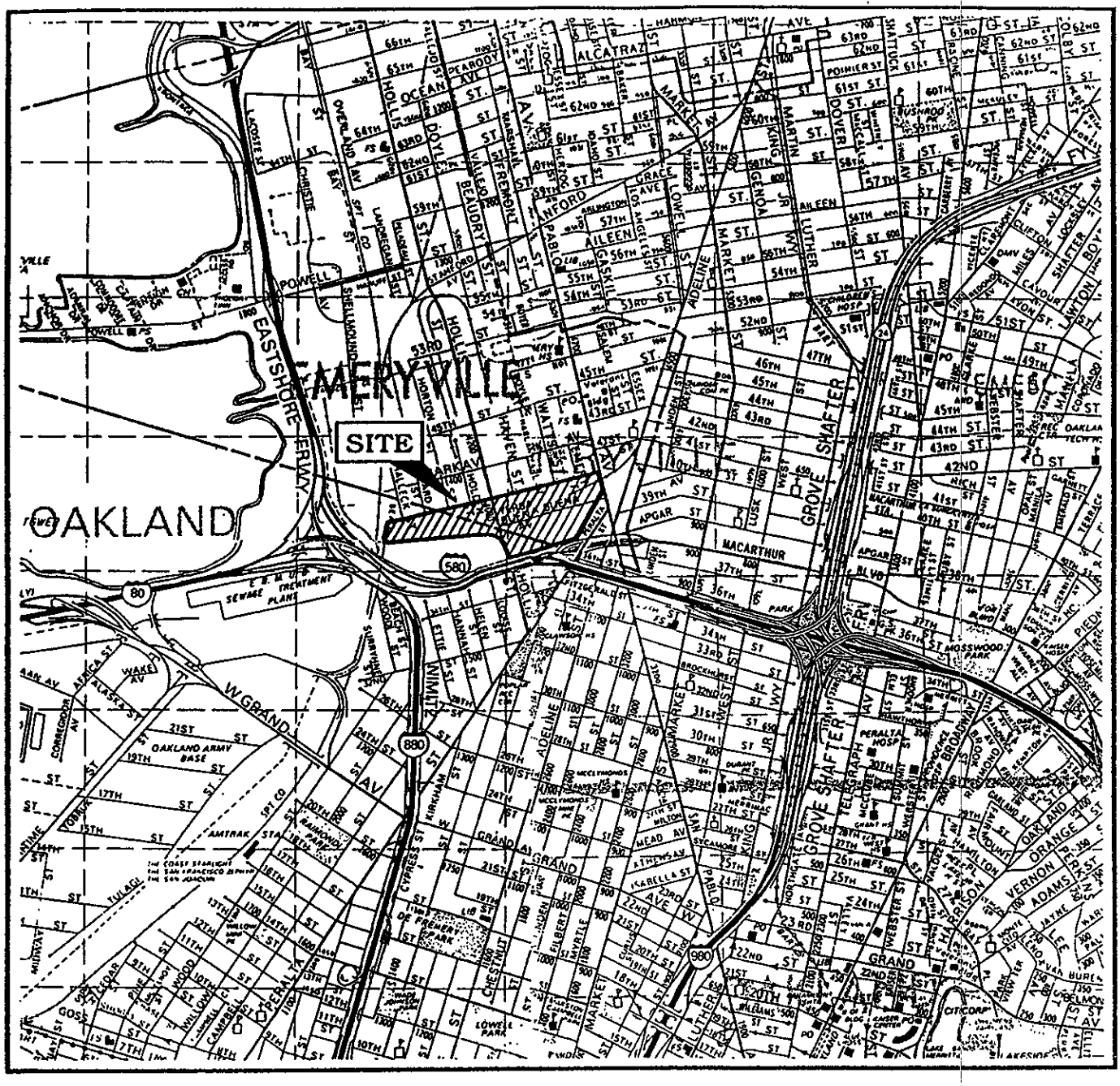
Sample Location	Date Sampled	1,1-DCE	1,1-DCA	1,2-DCE	TCE	1,1,1-TCA	PCE	Waste Oil	Diesel
LF-3	06-Feb-90	ND	ND	ND	ND	ND	ND	NA	NA
	07-Jan-92	ND	ND	ND	ND	ND	ND	ND	ND
LF-4	07-Feb-90	0.49	0.008	ND	ND	0.082	ND	NA	NA
	06-Jan-92	0.43	0.006	ND (1)	ND (1)	0.078	ND (1)	ND	ND
	duplicate	0.41	0.004	ND (1)	ND (1)	0.075	ND (1)	ND	ND
	15-Apr-92	0.25	ND	ND	ND	0.025	ND	NA	NA
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
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
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
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
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
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
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
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
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

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	Waste Oil	Diesel
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
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
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
LF-23	12-Feb-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
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
Detection Limit:		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.5	0.05

Notes:
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.

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•5FEB91•nyz

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 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-19 (labeled LF-17FB and LF-19FB, 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.

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WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 4/15/92 — Sample No.: LF-4

Samplers Name: WEM, SCH

Sampling Location: LF-4

Sampling Method: cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA vials - preserved w/ HCl

Method of Shipment: Courier w/ cooler

GROUND WATER		SURFACE WATER	
Well No.	LF-4	Stream Width	
Well Diameter (in.)	4	Stream Depth	
Depth to Water, Static (ft)	11.64	Stream Velocity	
Water in Well Box	yes	Rained recently?	
Well Depth (ft)	20.71	Other	
Height of Water Column in Well	9.07	2-inch casing = 0.16 gal/ft	
Water Volume in Well	5.89 ×6	4-inch casing = 0.65 gal/ft	
		5-inch casing = 1.02 gal/ft	
		6-inch casing = 1.47 gal/ft	

20.71
-11.64
9.07

9.07
×.65
4535
5442
5.8955

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1744 17:03								Start
950 17:04		6	18.8	6.81	843			Clear
956 17:05		12	18.8	6.82	858			Clear
962 17:05		18	18.9	6.72	844			sl. turbid
17:06		24	19.3	6.74	856			Clear - stop
17:15								Sample
17:17	12.25							

Suggested Method for Purging Well

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WATER-QUALITY SAMPLING INFORMATION

Project Name Yerba Buena Project No. 1649.02

Date 4/16/92 Sample No. LF-4D

Samplers Name WEM SCH

Sampling Location

Sampling Method

Analyses Requested

Number and Types of Sample Bottles used

Method of Shipment

GROUND WATER

Well No. LF-4D

Well Diameter (in.) 4

Depth to Water, Static (ft) 12.38

Water in Well Box no

Well Depth (ft) 39.74

Height of Water Column in Well 27.36

Water Volume in Well 17.8
~18

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

39.74
-12.38
27.36

27.36
× .65
13680
16416
17.7840

LOCATION MAP

151
169
187
~~195~~
~~195~~
205

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
13:30								Start
13:32		18	20.1	6.85	949			Sl. turbid
13:35		36	20.0	6.80	938			Sl. turbid
13:38		54	19.9	6.80	938			very Sl. turbid
13:39		58						pump off
13:45								Sample
13:52	13.02							

Suggested Method for Purging Well

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WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena   Project No.: 1649.02

Date: 4/16/92   Sample No.: LF-4Z

Samplers Name: WEM SCH

Sampling Location: LF-4Z

Sampling Method: Sub. pump w/ bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA vials - Preserved w/ HCL

Method of Shipment: cooler w/ ice via courier

GROUND WATER		SURFACE WATER	
Well No.	LF-4Z	Stream Width	/
Well Diameter (in.)	4	Stream Depth	/
Depth to Water, Static (ft)	11.43	Stream Velocity	/
Water in Well Box		Rained recently ?	/
Well Depth (ft)	62.99	Other	/
Height of Water Column in Well	51.56		
Water Volume in Well	33.51 ≈ 34		

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
- 11.43
51.56

51.56
x .65
25780
30936
33.5140

LOCATION MAP

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
220	14:29								Start
254	14:33		34	19.9	7.06	690			Very sl. turbid
288	14:37		68	19.7	6.97	661			Slightly turbid
~~302~~ 322	14:43		102	19.9	6.95	651			Clear
	14:44		107						pump off
	14:55								Sample - LF-4Z
	15:00	22.85							

Suggested Method for Purging Well

[illegible] 288 + 34 = 322   68 + 34 = 102

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WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 4/16/92 — Sample No.: LF-5

Samplers Name: WEM, SCH

Sampling Location: LF-5

Sampling Method: cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA vials - preserved

Method of Shipment: cooler w/ ice - courier w/ HCL

24.74
10.78
13.96
2 54 33
13.96
x 65
6980
8376
9.0740

LOCATION MAP

GROUND WATER

Well No.: LF-5

Well Diameter (in.): 4

Depth to Water, Static (ft): 10.78

Water in Well Box: no

Well Depth (ft): 24.74

Height of Water Column in Well: 13.96

Water Volume in Well: 9.07
29.5

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

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
12:31								Start
12:34		9.5	21.3	6.88	1004			Clear
12:36		19	20.8	6.82	942			Sl. turbid
12:37		20.5						pump off - dry
	Recovery 1.7 ft/minute							
12:40		26.5						Start
12:43		[illegible]						pump off - dry
12:45								pump on
12:47		29.5	22.1	6.97	965			slightly turbid - off
12:54								pump on
12:57		37	21.0	6.82	974			Sl. turbid - off
13:05								Sample - LF-5

1 1 1
120.5
130
139.5
140

* 13.04 19.95

Suggested Method for Purging Well

* after sample was collected

10-30-89
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WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No. 1649.02

Date: 4/16/92 — Sample No. LF-5D

Samplers Name: WERA, SCH

Sampling Location: LF-5D

Sampling Method: Submersible pump w/ bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA Vials - preserved w/ HCL

Method of Shipment: cooler w/ ice - courier

44.57
− 8.70
35.87
35.87
× .65
17935
21522
23.3155
80% recovery W.L. =
.2 × 35.87 + 8.70 = 15.88

LOCATION MAP

GROUND WATER

Well No.: LF-5D

Well Diameter (in.): 4

Depth to Water, Static (ft): 8.70

Water in Well Box: no

Well Depth (ft): 44.57

Height of Water Column in Well: 35.87

Water Volume in Well: 23.32 ≈ 23.5

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

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
12:12								Start
12:16		29						pump off
12:24								start
12:21		29	21.7	7.15	696			turbid
12:22		32						stop-pump off -dry
13:08	31.60							
14:17	21.51							
14:20								Sample - LF-5D

089
~~079~~
112.5
136
159.5

Suggested Method for Purging Well

99
23
112

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WATER-QUALITY SAMPLING INFORMATION

Project Name: YerbaBuena — Project No.: 1649.02

Date: 4/15/92 — Sample No.: LF-6

Samplers Name: WEM, SCH

Sampling Location: LF-6

Sampling Method: Cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 Preserved (HCL) VOAs

Method of Shipment: cooler w/ courier

GROUND WATER		SURFACE WATER	
Well No.	LF-6	Stream Width	
Well Diameter (in.)	4	Stream Depth	
Depth to Water, Static (ft)	12.24	Stream Velocity	
Water in Well Box	yes	Rained recently ?	
Well Depth (ft)	19.98	Other	
Height of Water Column in Well	7.74		
Water Volume in Well	5.03 × 5 = 25.5		

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
-12.24
7.74
3 volumes
7.74
0.65
3870
4644
50310

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
926	16.40							Start
931.5	16.42	5.5	17.6	6.88	754			slightly turbid
937	16.43	pump inlet 11	17.1	6.87	777			Clear
942.5	16.45	pump inlet 16.5	19.1	6.86	796			turbid - Stop
	16.50							Sample
	1653	13.27						

Suggested Method for Purging Well: _____

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WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No.: 1649.02

Date: 4/16/92 — Sample No.: LF-17, LF-17-FB, LF-117

Samplers Name: WEM, SCH

Sampling Location: LF-17

Sampling Method: cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 9 VOA vials - preserved w/ HCl

Method of Shipment: cooler w/ ice - courier

21.54
-16.05
5.49
2 2 4 5
5.49
x .65
2745
3294
3.5685

GROUND WATER		SURFACE WATER	
Well No.	LF-17	Stream Width	
Well Diameter (in.)	4	Stream Depth	
Depth to Water, Static (ft)	16.05	Stream Velocity	
Water in Well Box	NS	Rained recently ?	
Well Depth (ft)	21.54	Other	
Height of Water Column in Well	5.49		
Water Volume in Well	3.57 / 24		

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
9:32								Start
9:34		4	18.7	6.85	941			clear
9:35		8	18.5	6.84	949			clear
9:36		12	18.5	6.85	946			clear
9:37		13						dry - stop
9:40								Field Blank - LF-17-FB
9:45								Sample - LF-17
10:45								duplicate - LF-117
9:50		16.21						

039
043
047
051

Suggested Method for Purging Well

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WATER-QUALITY SAMPLING INFORMATION

Project Name: Verba Buena — Project No.: 1649.02

Date: 4/16/92 — Sample No.: LF-18

Samplers Name: WEM, SCH

Sampling Location: LF-18

Sampling Method: Cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA vials preserved w/ HCl

Method of Shipment: Cooler w/ courier

GROUND WATER

Well No.: LF-18

Well Diameter (in.): 4

Depth to Water, Static (ft): 15.54

Water in Well Box: no

Well Depth (ft): ~~22.16~~ 22.16

Height of Water Column in Well: 6.62

Water Volume in Well: 4.30 ≈ 4.5

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

22.16
- 15.54
6.62

3 1 1
3 6.62
× .65
3310
3972
4.3030

80% recovery W.L. =
.2 × 6.62 + 15.54
= 16.86

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
9:17								Start
9:19		4.5	19.1	6.83	887			clear
9:21		9	19.1	6.82	925			clear
9:22		10						pump off - well dry
	Recovery rate is 0.3 ft/minute							
1108	15.74							
1115								sample LF-18

0928
1032.5
1037
1041.5

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No. ~~EF~~ 1649.02

Date: 4/15/92 — Sample No. LF-19

Samplers Name: WEM, SCH

Sampling Location: LF-19

Sampling Method: Cont. pump w/ bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 Preserved VOA's (HCL)

Method of Shipment: cooler w/courier

GROUND WATER

Well No.: LF-19

Well Diameter (in.): 4

Depth to Water, Static (ft): 12.69

Water in Well Box: yes

Well Depth (ft): 20.5

Height of Water Column in Well: 7.81

Water Volume in Well: 5.08
x5.5

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

20.50
-12.69
7.81

12.69
8.81
21.50

*7.81
x.65
.3905
.4686
5.0765

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
899	16:04								Start
904.5	16:06		5.5	18.5	6.71	850			Clear
910	16:07								off-dry
915.5	16:16								Start
	16:17		11	20.9	6.63	880			slightly turbid
	16:19		16.5	19.1	6.66	873			clear - stop
	16:25								Field Blank
	16:30								Sample
	1630	16.85							

Suggested Method for Purging Well ______

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena
Project No.: 1649.02
Date: 4/15/92
Sample No.: LF-19D
Samplers Name: SCH, WEM
Sampling Location: LF-19D
Sampling Method: cont. pump w/ bailer
Analyses Requested: EPA 8010
Number and Types of Sample Bottles used: 3 Preserved VOA's
Method of Shipment: Cooler - courier

45.30
-16.87
28.43

28.43
x.65
14215
17058
18.4795

LOCATION MAP

GROUND WATER

Well No.: LF-19D
Well Diameter (in.): 4
Depth to Water, Static (ft): 16.87
Water in Well Box: NO
Well Depth (ft): 45.30
Height of Water Column in Well: 28.43
Water Volume in Well: 18.48
x19

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
834	15:44								Start
	15:46		19	19.4	6.85	846			clear
872	15:48		38	19.3	6.82	856			clear
	15:50		57	19.2	6.83	859			clear - Stop
	15:55								sample
	16:00	17.43							

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena

Project No.: 1649.02

Date: 4/16/92

Sample No.: LF-20

Samplers Name: WEAR, SCH

Sampling Location: LF-20

Sampling Method: cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA vials preserved w/ HCL

Method of Shipment: cooler w/ courier

GROUND WATER

Well No.: LF-20

Well Diameter (in.): 4

Depth to Water, Static (ft): 8.94

Water in Well Box: no

Well Depth (ft): 24.85

Height of Water Column in Well: 15.91

Water Volume in Well: 10.34

≈11

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

24.85
-8.94
15.91

15.91
x .65
7955
9546
10.3415

LOCATION MAP

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
981	8:43								Start
992	8:45		11	18.7	6.81	740			Clear
1003	8:47		22	19.0	6.75	728			Slightly turbid
~~1014~~ 014	8:48		22.5						dry - pump off
		recharge is 1.3 ft/minute							
	8:52								Start
	8:56		33	18.9	6.75	730			Slightly turbid - off
	9:05								Sample - LF-20
	9:03	17.06							

Suggested Method for Purging Well ______

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena — Project No. 1649.07

Date: 4/16/92 — Sample No. LF-21

Samplers Name: WEM, SCH

Sampling Location: LF-21

Sampling Method: cent. pump w/ teflon bailer

Analyses Requested: EPA 8010

Number and Types of Sample Bottles used: 3 VOA preserved w/ HCL vials

Method of Shipment: cooler w/ courier

25.32
- 8.94
1638

16.38
* .65
8190
9828
10.6470

80% recovery level = .2 × 16.38 + 8.94 = 12.22

LOCATION MAP

GROUND WATER

Well No. LF-21

Well Diameter (in.) 4

Depth to Water, Static (ft) 8.94

Water in Well Box yes

Well Depth (ft) 25.32

Height of Water Column in Well 16.38

Water Volume in Well 10.64
×3 = 31 [?]

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

8.94
3.28
12.22

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
962	8:26								Start
973	8:29		11	18.1	6.80	845			Clear
984	8:32		19						pump off - well dry
995.	recovery rate is 0.28 ft/minute								
	10:52	14.30							
	10:55								Sample

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena
Project No. 1649.02
Date: 4/16/92
Sample No. LF-22
Samplers Name: WEM, SCH
Sampling Location: LF-22 · E'ville
Sampling Method: cent. pump + teflon bailer
Analyses Requested: EPA 8010
Number and Types of Sample Bottles used: 3 VOA vials, preserved w/HCL
Method of Shipment: cooler w/ ice - Courier

GROUND WATER

Well No.: LF-22
Well Diameter (in.): 4
Depth to Water, Static (ft): 11.08
Water in Well Box: no
Well Depth (ft): 19.50
Height of Water Column in Well: 8.42
Water Volume in Well: 5.47
≈5.5

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

19.50
- 11.08
8.42

8.42
× .65
4210
5052
5.4730

LOCATION MAP

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
069	10:25								Start
074.5	10:27		5.5	18.2	6.97	956			Clear
080	10:28		11	18.0	7.02	986			Sl. turbid
085.5	10:29		13.5						pump off · dry
		Recovery rate is 0.38 ft/minute							
	10:36								Start
	10:37		16.5	18.6	7.12	1005			turbid - pump off
	10:40								sample
	10:46	17.28							

Suggested Method for Purging Well

LEVINE•FRICKE

WATER-QUALITY SAMPLING INFORMATION

Project Name: Yerba Buena
Project No. 1649.02
Date: 4 . .92
Sample No. LF-23
Samplers Name: SCH WEM
Sampling Location: E'ville
Sampling Method: Cent. pump/Teflon bail
Analyses Requested: EPA 8010
Number and Types of Sample Bottles used: 3 VOA vials
Method of Shipment: Courier

GROUND WATER

Well No.: LF-23
Well Diameter (in.): 4
Depth to Water, Static (ft): 11.78
Water in Well Box:
Well Depth (ft): 18.36
Height of Water Column in Well: 6.58
Water Volume in Well: 4.28 ≈ 4.5

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

18.36
-11.78
6.58

6.58
x.65
3290
3948
42770

LOCATION MAP

	TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
.054 .058.5	10:02								Start
.063	10:04		4.5	17.8	6.97	859			Slightly turbid
.067.5	10:05		9	17.4	6.91	848			Clear
	10:07		13.5	17.2	6.91	841			Clear - Stop
	10:10								Sample
	10:14	14.61							

Suggested Method for Purging Well

APPENDIX B

LABORATORY CERTIFICATES

File
1649.02

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 # : 9204264
Date Received : 04/17/92
Project ID : 1649.02
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9204264- 1	LF19D
9204264- 2	LF19FB
9204264- 3	LF19
9204264- 4	LF6
9204264- 5	LF4
9204264- 6	LF20
9204264- 7	LF17FB
9204264- 8	LF17
9204264- 9	LF117
9204264-10	LF23
9204264-11	LF22
9204264-12	LF21
9204264-13	LF18
9204264-14	LF5
9204264-15	LF4D
9204264-16	LF5D
9204264-17	LF4Z

This report consists of 25 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

Sarah Schoen, Ph.D.
Laboratory Director

4-30-92
Date

ANAMETRIX REPORT DESCRIPTION
GC

Organic Analysis Data Sheets (OADS)

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

Surrogate Recovery Summary (SRS)

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

Matrix Spike Recovery Form (MSR)

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

Qualifiers

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

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

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

REPORTING CONVENTIONS

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

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

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

Workorder # : 9204264
Date Received : 04/17/92
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
9204264- 1	LF19D	WATER	04/15/92	8010
9204264- 3	LF19	WATER	04/15/92	8010
9204264- 4	LF6	WATER	04/15/92	8010
9204264- 5	LF4	WATER	04/15/92	8010
9204264- 6	LF20	WATER	04/16/92	8010
9204264- 7	LF17FB	WATER	04/16/92	8010
9204264- 8	LF17	WATER	04/16/92	8010
9204264- 9	LF117	WATER	04/16/92	8010
9204264-10	LF23	WATER	04/16/92	8010
9204264-11	LF22	WATER	04/16/92	8010
9204264-12	LF21	WATER	04/16/92	8010
9204264-13	LF18	WATER	04/16/92	8010
9204264-14	LF5	WATER	04/16/92	8010
9204264-15	LF4D	WATER	04/16/92	8010
9204264-16	LF5D	WATER	04/16/92	8010
9204264-17	LF4Z	WATER	04/16/92	8010

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

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

Workorder # : 9204264
Date Received : 04/17/92
Project ID : 1649.02
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- The amount of methylene chloride reported in sample LF17FB is within normal laboratory background levels.

C Cunningham 4/30/92
Department Supervisor Date

Michelle Young 4/30/92
Chemist Date

DESCRIPTIONS FOR SPECIFIC COMPOUNDS ANALYZED
EPA METHOD 601/8010

CAS #	COMPOUND NAME	ABBREVIATED NAME
74-87-3	Chloromethane	Chloromethane
74-83-9	Bromomethane	Bromoethane
75-71-8	Dichlorodifluoromethane	Freon 12
75-01-4	Vinyl Chloride	Vinyl Chloride
75-00-3	Chloroethane	Chloroethane
75-09-2	Methylene Chloride	Methylene Chlor
75-69-4	Trichlrofluoromethane	Freon 11
75-35-4	1,1-Dichloroethene	1,1-DCE
75-34-3	1,1-Dichloroethane	1,1-DCA
156-59-2	Cis-1,2-Dichloroethene	Cis-1,2-DCE
156-60-5	Trans-1,2-Dichloroethene	Trans-1,2-DCE
67-66-3	Chloroform	Chloroform
76-13-1	Trichlorotrifluoroethane	Freon 113
107-06-2	1,2-Dichloroethane	1,2-DCA
71-55-6	1,1,1-Trichloroethane	1,1,1-TCA
56-23-5	Carbon Tetrachloride	Carbon Tet
75-27-4	Bromodichloromethane	BromodichloroMe
78-87-5	1,2-Dichloropropane	1,2-DCPA
10061-02-6	Trans-1,3-Dichloropropene	Trans-1,3-DCPE
79-01-6	Trichloroethene	TCE
124-48-1	Dibromochloromethane	DibromochloroMe
79-00-5	1,1,2-Trichloroethane	1,1,2-TCA
10061-01-5	Cis-1,3-Dichloropropene	Cis-1,3-DCPE
110-75-8	2-Chloroethylvinylether	Chloroethylvinl
75-25-2	Bromoform	Bromoform
127-18-4	Tetrachloroethene	PCE
79-34-5	1,1,2,2-Tetrachloroethane	PCA
108-90-7	Chlorobenzene	Chlorobenzene
95-50-1	1,2-Dichlorobenzene	1,2-DCB
541-73-1	1,3-Dichlorobenzene	1,3-DCB
106-46-7	1,4-Dichlorobenzene	1,4-DCB

mh/3428 - 10MH

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.02	Anametrix ID	: 9204264-05
ample ID	: LF4	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/15/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 20.00
Instrument ID	: HP15	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.	250.	
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.	25.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID : 1649.02
ample ID : LF4D
Matrix : WATER
Date Sampled : 4/16/92
Date Analyzed : 4/28/92
Instrument ID : HP15

Anametrix ID : 9204264-15
Analyst : mf
Supervisor : CP

Dilution Factor : 10.00
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	160.	
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	20.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-17
Sample ID	: LF4Z	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/28/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-14
Sample ID	: LF5	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/28/92	Dilution Factor	: 20.00
Instrument ID	: HP15	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.	440.	
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.	100.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.02	Anametrix ID	: 9204264-16
ample ID	: LF5D	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/28/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID : 1649.02
ample ID : LF6
Matrix : WATER
Date Sampled : 4/15/92
Date Analyzed : 4/27/92
Instrument ID : HP15

Anametrix ID : 9204264-04
Analyst : MP
Supervisor : CM

Dilution Factor : 1.00
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	4.0	
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	3.2	
156-59-2	Cis-1,2-DCE	.50	2.5	
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	1.0	
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	2.6	
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	6.5	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-08
Sample ID	: LF17	Analyst	: MF
Matrix	: WATER	Supervisor	: CP
Date Sampled	: 4/16/92		
Date Analyzed	: 4/28/92	Dilution Factor	: 20.00
Instrument ID	: HP15	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.	350.	
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.	47.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-09
Sample ID	: LF117	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/28/92	Dilution Factor	: 20.00
Instrument ID	: HP15	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.	360.	
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.	49.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.02
Sample ID : LF17FB
Matrix : WATER
Date Sampled : 4/16/92
Date Analyzed : 4/27/92
Instrument ID : HP15

Anametrix ID : 9204264-07
Analyst : mf
Supervisor : CP

Dilution Factor : 1.00
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	1.1	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-13
Sample ID	: LF18	Analyst	: mj
Matrix	: WATER	Supervisor	: CP
Date Sampled	: 4/16/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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	1.7	
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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID : 1649.02
ample ID : LF19
Matrix : WATER
Date Sampled : 4/15/92
Date Analyzed : 4/27/92
Instrument ID : HP15

Anametrix ID : 9204264-03
Analyst : mf
Supervisor : GP

Dilution Factor : 5.00
Conc. Units : UG/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	5.0	ND	U
74-87-3	Chloromethane	5.0	ND	U
75-01-4	Vinyl Chloride	2.5	ND	U
74-83-9	Bromomethane	2.5	ND	U
75-00-3	Chloroethane	2.5	ND	U
75-69-4	Freon 11	2.5	ND	U
76-13-1	Freon 113	2.5	ND	U
75-35-4	1,1-DCE	2.5	64.	
75-09-2	Methylene Chlor	5.0	ND	U
156-60-5	Trans-1,2-DCE	2.5	ND	U
75-34-3	1,1-DCA	2.5	2.8	
156-59-2	Cis-1,2-DCE	2.5	ND	U
67-66-3	Chloroform	2.5	ND	U
71-55-6	1,1,1-TCA	2.5	8.0	
56-23-5	Carbon Tet	2.5	ND	U
107-06-2	1,2-DCA	2.5	ND	U
79-01-6	Trichloroethene	2.5	ND	U
78-87-5	1,2-DCPA	2.5	ND	U
75-27-4	Bromodichlorome	2.5	ND	U
110-75-8	Chloroethylvinl	5.0	ND	U
10061-01-5	Cis-1,3-DCPE	2.5	ND	U
10061-02-6	Trans-1,3-DCPE	2.5	ND	U
79-00-5	1,1,2-TCA	2.5	ND	U
127-18-4	PCE	2.5	ND	U
124-48-1	Dibromochlorome	2.5	ND	U
108-90-7	Chlorobenzene	2.5	ND	U
75-25-2	Bromoform	2.5	ND	U
79-34-5	1,1,2,2-PCA	2.5	ND	U
541-73-1	1,3-DCB	5.0	ND	U
106-46-7	1,4-DCB	5.0	ND	U
95-50-1	1,2-DCB	5.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-01
Sample ID	: LF19D	Analyst	: mf
Matrix	: WATER	Supervisor	: gp
Date Sampled	: 4/15/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.02	Anametrix ID	: 9204264-06
ample ID	: LF20	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID : 1649.02
ample ID : LF21
Matrix : WATER
Date Sampled : 4/16/92
Date Analyzed : 4/27/92
Instrument ID : HP15

Anametrix ID : 9204264-12
Analyst : MF
Supervisor : CP

Dilution Factor : 1.00
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.02	Anametrix ID	: 9204264-11
Sample ID	: LF22	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 4/16/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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	15.	
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	2.1	
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	2.6	
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	1.8	
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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.02	Anametrix ID	: 9204264-10
mple ID	: LF23	Analyst	: mf
Matrix	: WATER	Supervisor	: CP
Date Sampled	: 4/16/92		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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	4.4	
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	1.1	
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	.68	
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	3.6	
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	20.	
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 1649.0	Anametrix ID	: 15B0427H01
Sample ID	: VBLANK	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 0/ 0/ 0		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.0	Anametrix ID	: 15B0427H02
mple ID	: VBLANK	Analyst	:
Matrix	: WATER	Supervisor	:
Date Sampled	: 0/ 0/ 0		
Date Analyzed	: 4/27/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

oject ID	: 1649.0	Anametrix ID	: 15B0428H01
mple ID	: VBLANK	Analyst	: mf
Matrix	: WATER	Supervisor	: cp
Date Sampled	: 0/ 0/ 0		
Date Analyzed	: 4/28/92	Dilution Factor	: 1.00
Instrument ID	: HP15	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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.02
Matrix : LIQUID

Anametrix ID : 9204264
Analyst :
Supervisor :

	SAMPLE ID	SU1	TOTAL OUT
1	VBLANK	108	0
2	LF21	110	0
3	LF18	110	0
4	LF19D	107	0
5	LF19	107	0
6	LF6	95	0
7	LF4	110	0
8	LF20	112	0
9	LF17FB	95	0
10	LF23	112	0
11	LF22	107	0
12	VBLANK	110	0
13	LF5D	110	0
14	VBLANK	97	0
15	LF17	77	0
16	LF117	78	0
17	LF5	88	0
18	LF4D	80	0
19	LF4Z	82	0
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 601/8010
ANAMETRIX, INC. (408)432-8192

Project ID : 1649.02
Sample ID : LF21
Matrix : WATER
Date Sampled : 4/16/92
Date Analyzed : 4/27/92

Anametrix ID : 9204264-12
Analyst :
Supervisor :
Instrument ID : HP15

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	MS CONCENTRATION (UG/L)	MS % REC	%REC LIMITS
Freon 113	10.0	.0	5.9	59	50-150
1,1-DCE	10.0	.0	9.6	96	41-110
1,1-DCA	10.0	.0	8.5	85	67-124
Cis-1,2-DCE	10.0	.0	14.1	141	50-150
1,1,1-TCA	10.0	.0	9.5	95	50-125
Trichloroethene	10.0	.0	8.8	88	51-131
PCE	10.0	.0	8.2	82	70-136
Chlorobenzene	10.0	.0	8.8	88	71-119
1,3-DCB	10.0	.0	9.0	90	67-120
1,4-DCB	10.0	.0	8.7	87	61-109
1,2-DCB	10.0	.0	7.5	75	70-119

COMPOUND	SPIKE ADDED (UG/L)	MSD CONCENTRATION (UG/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
Freon 113	10.0	5.4	54	9	25	50-150
1,1-DCE	10.0	9.3	93	3	25	41-110
1,1-DCA	10.0	7.7	77	10	25	67-124
Cis-1,2-DCE	10.0	12.7	127	11	25	50-150
1,1,1-TCA	10.0	9.4	94	1	25	50-125
Trichloroethene	10.0	9.1	91	3	25	51-131
PCE	10.0	8.3	83	1	25	70-136
Chlorobenzene	10.0	10.9	109	21	25	71-119
1,3-DCB	10.0	9.6	96	7	25	67-120
1,4-DCB	10.0	8.0	80	10	25	61-109
1,2-DCB	10.0	9.6	96	24	25	70-119

* Value is outside of Anametrix QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

9204264 (16) 1214 AG

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Sheet 2/2

Project No.: 1649.02	Field Logbook No.:	Date: 4.16.92	Serial No.: 10764
Project Name: Yerba Buena	Project Location: Emeryville		
Sampler (Signature): Prescott C. Heald			Samplers: SCH WEM

SAMPLES						ANALYSES								
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	EPA 8010				HOLD	RUSH	REMARKS
(17) LF-4Z	4.16.92	1455		3	H2O			X						Normal turnaround
														Contact Jenifer Beatty
														Arametrix Ref. # 062

RELINQUISHED BY: (Signature) Prescott C. Heald	DATE 4.17.92	TIME 0900	RECEIVED BY: (Signature) Taylor Hemmett	DATE 4/17/92	TIME 900
RELINQUISHED BY: (Signature) Taylor Hemmett	DATE 4/17/92	TIME 1040	RECEIVED BY: (Signature) [illegible]	DATE 4/17/92	TIME 1040
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:
Arametrix, San Jose

Shipping (White) Lab Copy (Green) File Copy (Yellow) Id Copy (Pink) FORM 86/COC/ARF

9204264 (16) 1214 A.C.

Sheet 1/2

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 1649.02	Field Logbook No.:	Date: 4.16.92	Serial No.: No 6292
Project Name: Yerba Buena	Project Location: Emeryville		
Sampler (Signature): Prescott C-Hold			Samplers: SCH ~~EG~~ WEM

SAMPLES / ANALYSES

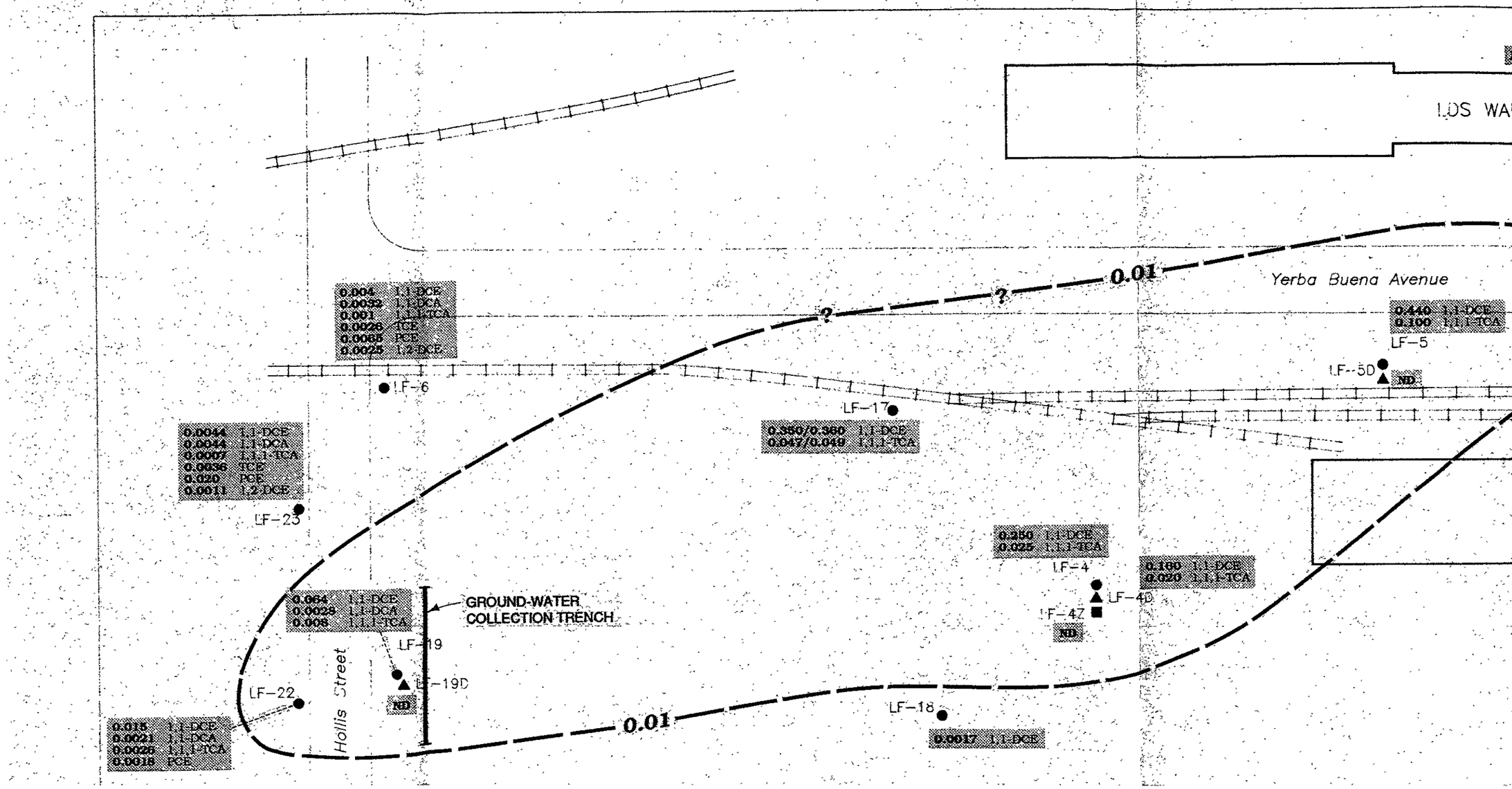
	SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	EPA 8040			HOLD	RUSH	REMARKS
1	LF·19D	4·15·92	1555		3	H_2O			X					Normal turnaround
2	LF·19·FB	↓	1625		3	↓			X			X		
3	LF·19		1630		3				X					Contact Jenifer Beatty
4	LF·6		1650		3				X					
5	LF·4	↓	1715		3				X					
6	LF·20	4·16·92	0905		3				X					Aramexrix Ref. # 062
7	LF·17·FB	↓	0940		3				X					
8	LF·17		0945		3				X					
9	LF·117		1045		3				X					
10	LF·23		1010		3				X					
11	LF·22		1040		3				X					
12	LF·21		1055		3				X					
13	LF·18		1115		3				X					
14	LF·5		1305		3				X					
15	LF·40		1345		3				X					
16	LF·50	↓	1420		3	↓			X					

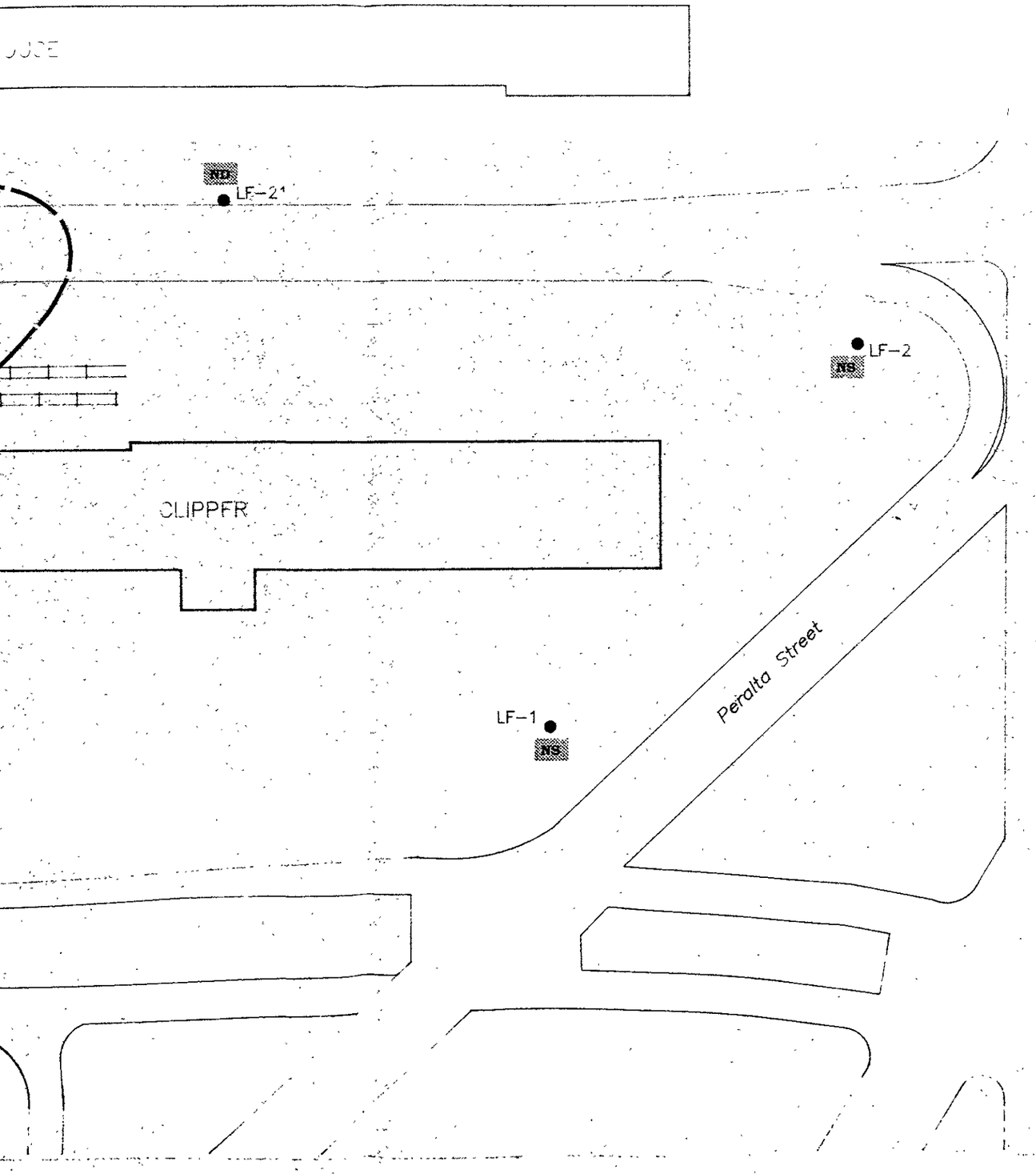
RELINQUISHED BY: (Signature) Prescott C-Hold	DATE 4.17.92	TIME 0900	RECEIVED BY: (Signature) Jayhi Mennyk	DATE 4/17/92	TIME 900
RELINQUISHED BY: (Signature) Jayhi Mennyk	DATE 4/17/92	TIME 10.40	RECEIVED BY: (Signature) Aramexrix	DATE 4-17-92	TIME 1040
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (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: Aramexrix, San Jose

Shipping Cc White) Lab Copy (Green) File Copy (Yellow) F Copy (Pink) FORM NO /COC/ARF


LDS WA
Yerba Buena Avenue
0.01
?
?
0.004 1,1-DCE
0.0052 1,1-DCA
0.001 1,1,1-TCA
0.0026 TCE
0.0065 PCE
0.0025 1,2-DCE
LF-6
0.440 1,1-DCE
0.100 1,1,1-TCA
LF-5
LF-5D
ND
LF-17
0.350/0.360 1,1-DCE
0.047/0.049 1,1,1-TCA
0.0044 1,1-DCE
0.0044 1,1-DCA
0.0007 1,1,1-TCA
0.0036 TCE
0.020 PCE
0.0011 1,2-DCE
LF-23
0.250 1,1-DCE
0.025 1,1,1-TCA
LF-4
0.100 1,1-DCE
0.020 1,1,1-TCA
LF-4D
LF-4Z
ND
0.064 1,1-DCE
0.0029 1,1-DCA
0.008 1,1,1-TCA
GROUND-WATER
COLLECTION TRENCH
LF-19
LF-19D
ND
Hollis Street
LF-22
0.015 1,1-DCE
0.0021 1,1-DCA
0.0025 1,1,1-TCA
0.0016 PCE
LF-18
0.0017 1,1-DCE
NS
F-3



EXPLANATION

- SHALLOW (LESS THAN 25 FEET) MONITORING WELL LOCATION
- INTERMEDIATE (35 TO 45 FEET) MONITORING WELL LOCATION
- DEEPER (62 FEET) MONITORING WELL LOCATION

0.350/0.360 1,1-DCE
0.047/0.043 1,1,1-TCA

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

ND NOT DETECTED

NS NOT SAMPLED

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

KEY TO ABBREVIATIONS

1,1,-DCE	1,1-DICHLOROETHENE
1,1-DCA	1,1-DICHLOROETHANE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
1,2-DCE	1,2-DICHLOROETHENE

NOTE: MONITORING WELL SAMPLES WERE SUBMITTED TO BC ANALYTICAL FOR VOLATILE ORGANIC COMPOUNDS ANALYSIS USING EPA METHOD 8010.

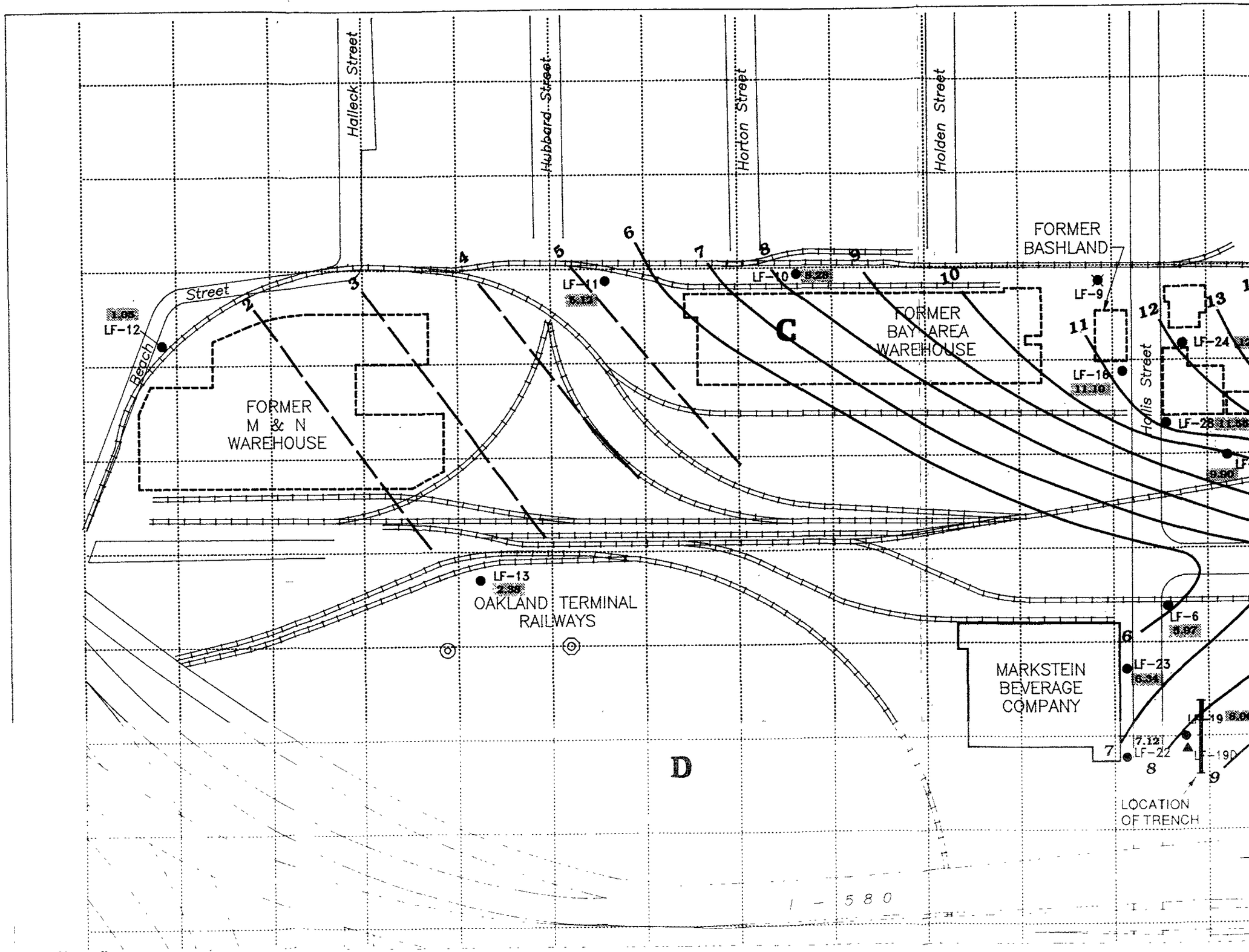
0 40 80 120 160 FEET

Figure 4 :
VOLATILE ORGANIC COMPOUNDS DETECTED IN SHALLOW GROUND-WATER SAMPLES (ppm)
APRIL 15 AND 16, 1992
AREAS A AND B - YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

ALS14JUL92em



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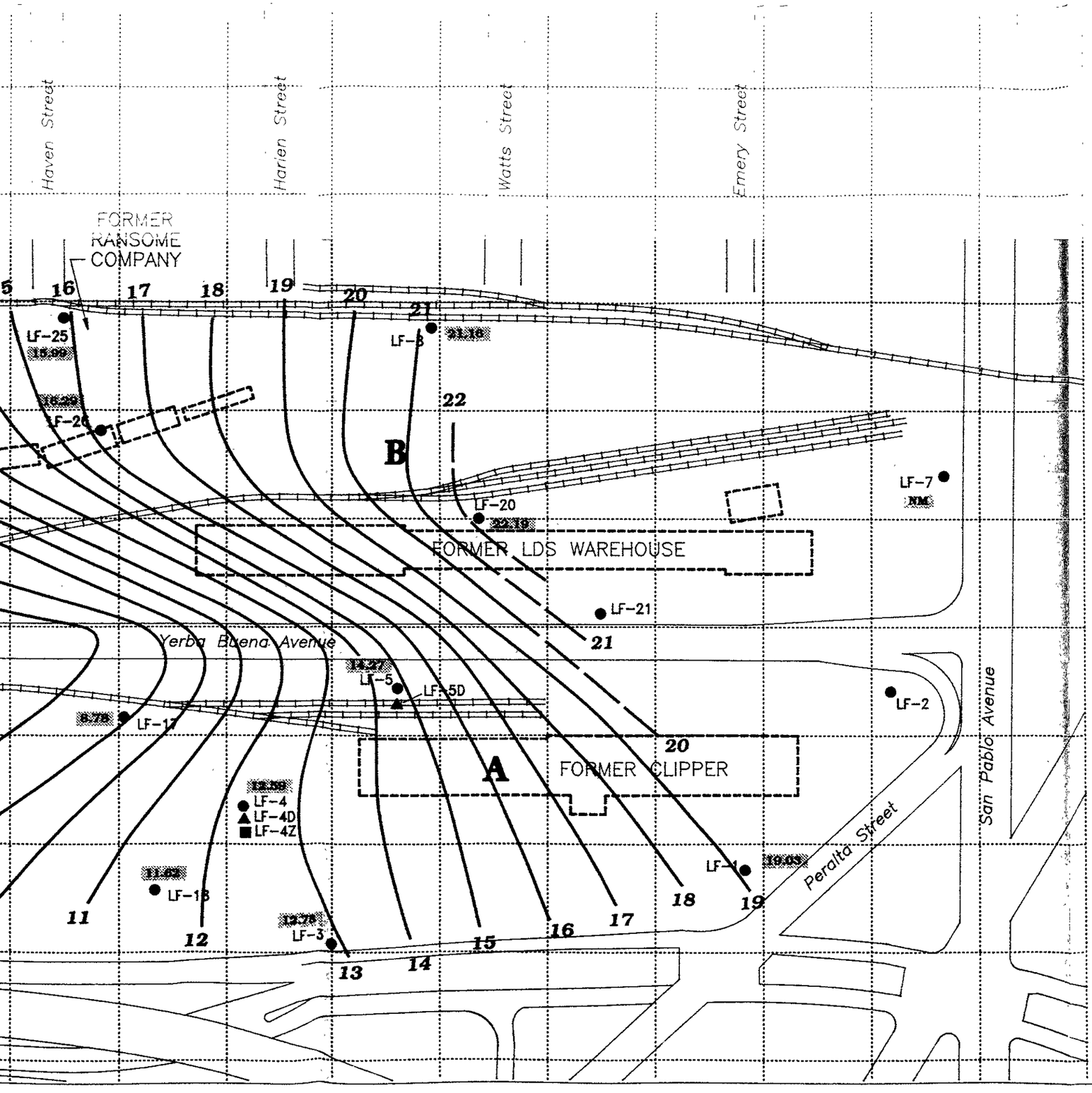


EXPLANATION

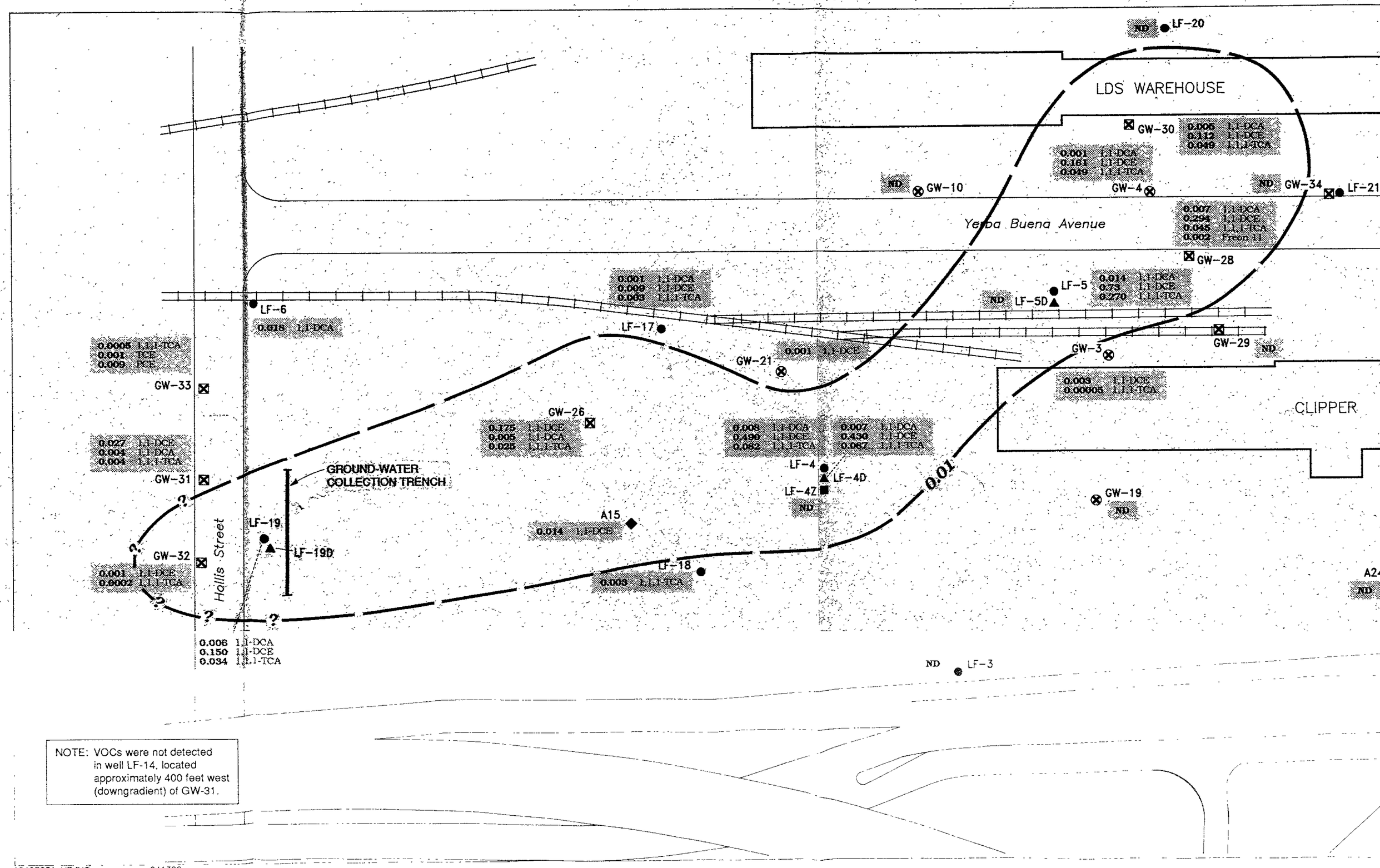
- SHALLOW (LESS THAN 25 FEET) MONITORING WELL LOCATION
- INTERMEDIATE (35 TO 45 FEET) MONITORING WELL LOCATION
- DEEPER (62 FEET) MONITORING WELL LOCATION
- ABANDONED WELL
- LOCATION OF FORMER BUSINESSES
- 12.78 GROUND-WATER ELEVATION (FEET)
- 21 GROUND-WATER ELEVATION CONTOUR (FEET), DASHED WHERE INFERRED
- NM NOT MEASURED

0 150 300 FEET

Figure 3 :
SHALLOW GROUND-WATER ELEVATION CONTOUR MAP
MAY 14, 1992
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE•FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS



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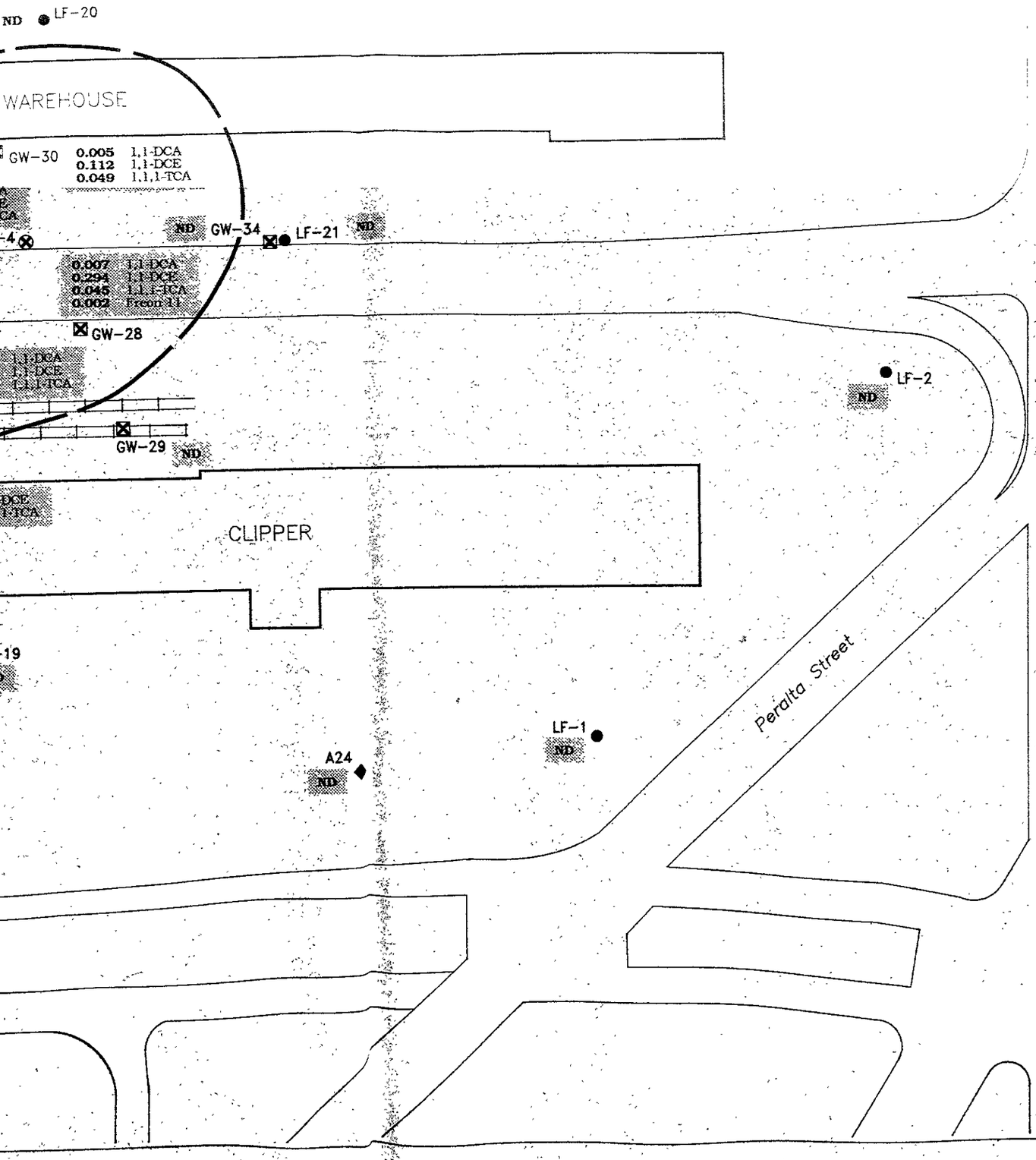


EXPLANATION

- 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-40, LF-50, 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-190, LF-22 and LF-23 were not installed at the time this figure was prepared.

0 40 80 120 160 FEET

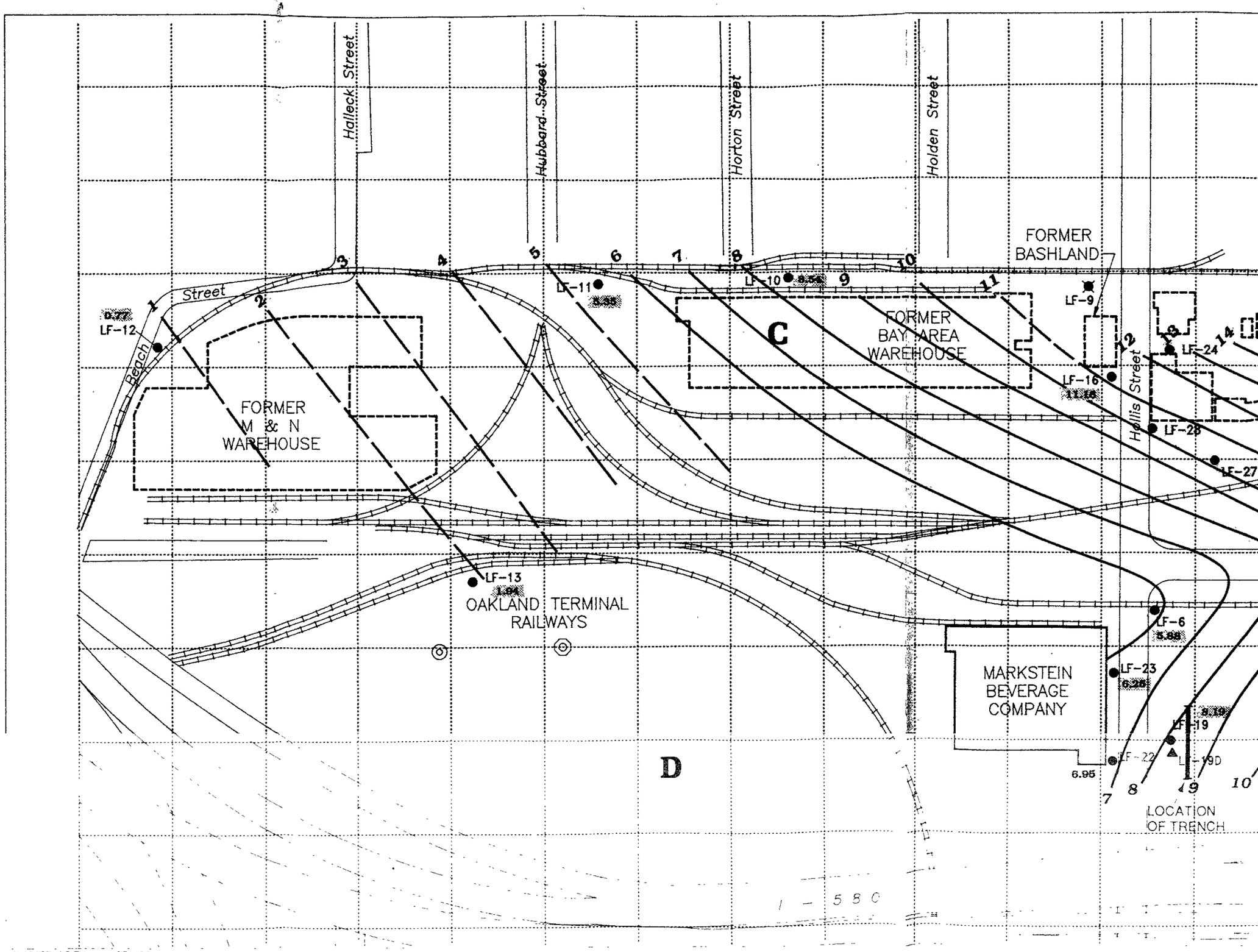
Figure 5:

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



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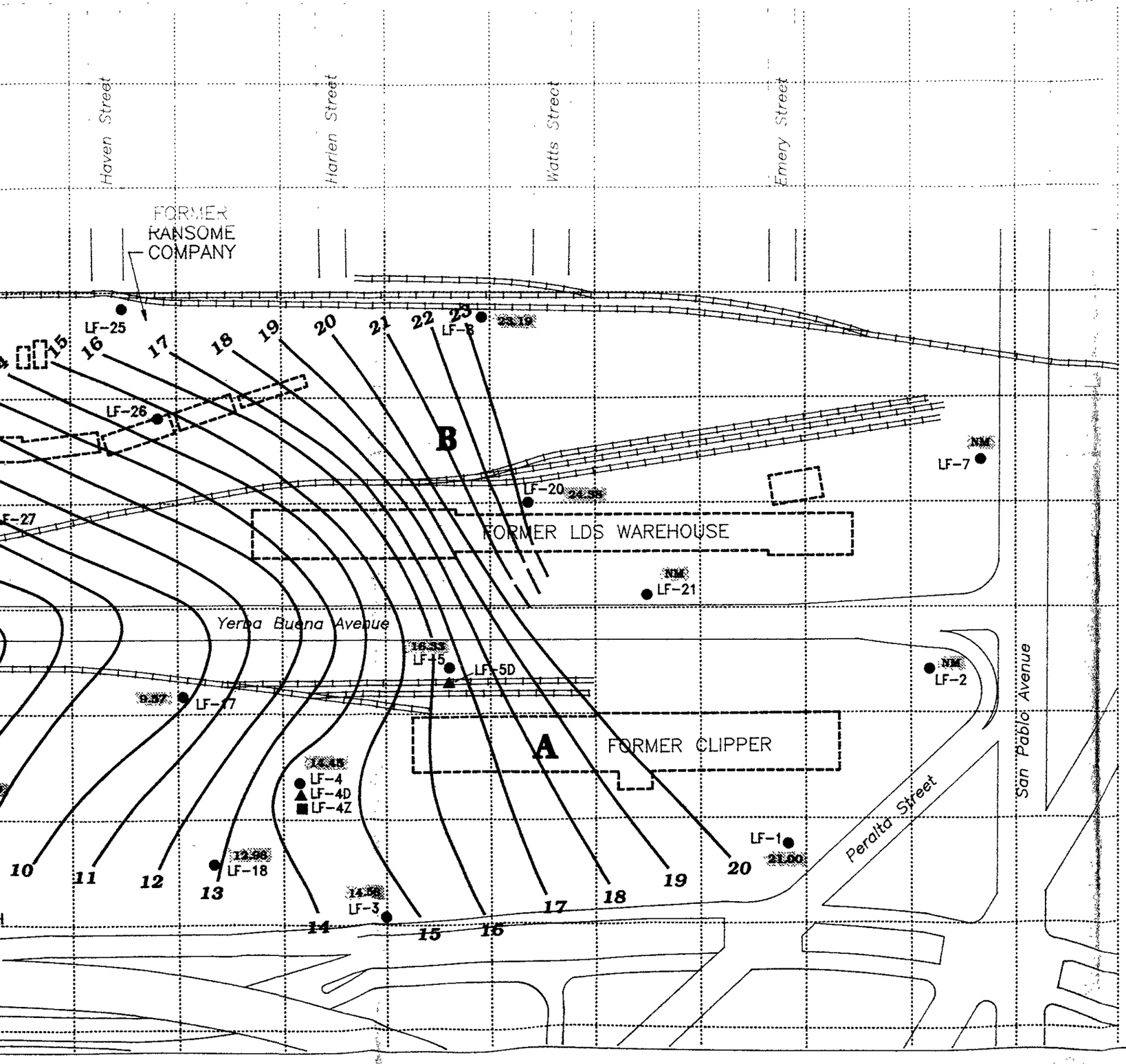

EXPLANATION

- SHALLOW (LESS THAN 25 FEET) MONITORING WELL LOCATION
- INTERMEDIATE (25 TO 45 FEET) MONITORING WELL LOCATION
- DEEPER (62 FEET) MONITORING WELL LOCATION
- ABANDONED WELL
- LOCATION OF FORMER BUSINESSES
- 14.58 GROUND-WATER ELEVATION (FEET)
- 21 GROUND-WATER ELEVATION CONTOUR (FEET), DASHED WHERE INFERRED
- NM NOT MEASURED

0 150 300 FEET

Figure 2 :
SHALLOW GROUND-WATER ELEVATION CONTOUR MAP
APRIL 15, 1992
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE•FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS