



**Results of Third Round of
Ground-Water Sampling
Northwest Area, Marina Village
Alameda, California**

April 13, 1990
1245

Prepared for:

Vintage Properties / Alameda Commercial
1150 Marina Village Parkway
Alameda, California 94501



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CONSULTING ENGINEERS AND HYDROGEOLOGISTS

April 13, 1990

LF-1245

Mr. Steve Getty
Vintage Properties/Alameda Commercial
1150 Marina Village Parkway
Alameda, California 94501

Subject: Results of the Third Round of Ground-Water Sampling in
Northwest Area, Marina Village, Alameda, California

Dear Steve:

Enclosed is a summary report presenting results of the third round of ground-water sampling and chemical analysis in accordance with our January 11, 1989 Work Order Number 3. Once we have received your review comments, we can finalize the document and send copies to the Alameda County Health Agency and the Regional Water Quality Control Board.

If you have any questions, please call either me or Tom Johnson.

Sincerely,

Elizabeth Nixon
Senior Project Engineer

Enclosure

1900 Powell Street, 12th Floor
Emeryville, California 94608
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C O N T E N T S

LIST OF TABLES	ii
LIST OF FIGURES	iii
CERTIFICATION	iv
1.0 INTRODUCTION	1
2.0 GROUND-WATER MONITORING PROGRAM	1
3.0 FIELD ACTIVITIES	2
4.0 GROUND-WATER QUALITY	2
5.0 SHALLOW GROUND-WATER FLOW	3
6.0 SUMMARY AND CONCLUSIONS	3

TABLES

FIGURES

APPENDIX A: FIELD ACTIVITIES

APPENDIX B: LABORATORY CERTIFICATES

L I S T O F T A B L E S

- TABLE 1: Ground-Water Monitoring Well Construction and
 Ground-Water Elevation Data
- TABLE 2: Historical Ground-Water Chemical Analysis Data -
 Monitoring Wells, Northwest Study Area,
 Total Petroleum Hydrocarbons
- TABLE 3: Historical Ground-Water Chemical Analysis Data -
 Monitoring Wells, Northwest Study Area,
 Benzene, Toluene, Xylenes, Ethylbenzene

L I S T O F F I G U R E S

- FIGURE 1: Site Location Map
- FIGURE 2: Total Petroleum Hydrocarbons (TPH) Detected In
Shallow Ground-Water Monitoring Wells, January,
1990
- FIGURE 3: Ground-Water Elevation Contours, January 31, 1990

CERTIFICATION

All hydrogeologic and geologic information and conclusions in this report have been prepared and reviewed by a Levine-Fricke California Registered Geologist.

Thomas M. Johnson
Principal Hydrogeologist
Registered Geologist (4286)

April 13, 1990

LF-1245

RESULTS OF THIRD-ROUND GROUND-WATER SAMPLING AND CHEMICAL ANALYSIS OF SHALLOW MONITORING WELLS, NORTHWEST STUDY AREA, MARINA VILLAGE, ALAMEDA, CALIFORNIA**1.0 INTRODUCTION**

This report describes the results of a third round of ground-water sampling and chemical analyses, performed in conjunction with the ground-water quality monitoring program for the Northwest Study Area within the Marina Village Development in Alameda, California ("the Site," Figure 1). The ground-water monitoring program was implemented in March of 1989, and was reported to Vintage Properties/Alameda Commercial in the report "Continued Soil and Ground-Water Investigation of Parcel 5, Implementation of a Ground-Water Monitoring Program, and Proposed Remedial Measures in the Northwest Study Area, Marina Village, Alameda, California," dated June 26, 1989; that report was submitted to the Alameda County Health Agency (ACHA) and the Regional Water Quality Control Board (RWQCB). A second round of ground-water sampling and analyses was performed in August, 1989; results of that sampling round were presented to Vintage Properties in a report dated November 27, 1989. The current report was prepared for submittal to the ACHA and the RWQCB.

2.0 GROUND-WATER MONITORING PROGRAM

The ground-water monitoring activities described herein were conducted at the request of Vintage Properties in accordance with Levine·Fricke's Work Order Number 3, dated January 11, 1989.

The ground-water quality monitoring program includes the following activities:

- o collection and chemical analysis of ground-water samples from eight shallow monitoring wells (LF-7 through LF-13, and WC-3) on Parcels 1, 2, 5 and the Powerhouse Parcel (Figure 2)
- o measurement of ground-water levels
- o data evaluation and preparation of this report

The following describes the field methods used, data obtained, and conclusions reached during the course of this work.

3.0 FIELD ACTIVITIES

Locations of the ten existing monitoring wells (LF-6 through LF-13 and WC-3) are shown on Figure 2. Ground-water level measurements were recorded, and ground-water samples were collected from eight of these wells on January 31, 1990. Well LF-8 was not sampled due to presence of several inches of free-phase petroleum floating on the ground-water surface. A ground-water level was recorded in this well (at the interface with the product), but the presence and high viscosity of this product has probably influenced the accuracy of the measurement. Well LF-6 was not accessible at the time of sampling due to the recent placement of wood bark in this area by Vintage Properties. Sampling procedures are described in Appendix A.

4.0 GROUND-WATER QUALITY

Ground-water samples collected from the wells were analyzed for extractable total petroleum hydrocarbons (TPH) using EPA Modified Method 8015 and benzene, toluene, total xylenes and ethylbenzene using EPA Method 602. Analyses were performed by Med-Tox Associates of Pleasant Hill, a State-certified laboratory. Analytical results are summarized in Tables 2 and 3 and TPH concentrations are illustrated on Figure 2. Laboratory certificates are included in Appendix B.

Results indicate that ground water sampled from wells LF-7, LF-11, LF-12, LF-13 and WC-3 contained concentrations of TPH ranging from 1.2 to 6.1 mg/l. Ground water sampled from LF-10 contained 17.0 mg/l TPH. The TPH detected in these wells was characterized by the laboratory as waste oil, based on measured weight. Ground water sampled from LF-9 contained 32.0 mg/l TPH (a duplicate sample from this well contained 27.0 mg/l), characterized as a combination of diesel and waste oil petroleum hydrocarbons.

Increases of approximately 3 to 9.5 mg/l in TPH concentrations were noted in wells LF-7, LF-10, LF-13 and WC-3 over those previously reported for August, 1989; the TPH concentration in ground water from well LF-11 increased to 1.2 mg/l from 0.9 mg/l measured in August, 1989; the TPH concentration in well LF-9 decreased to 32 ppm from 146 ppm measured in August; and the TPH concentration decreased to 1.4 ppm from 2.0 ppm measured in August.

Benzene was detected in ground water from wells LF-9 and LF-13 at trace concentrations of 0.003 and 0.004 mg/l, respectively; toluene was detected in wells LF-7 and LF-13 at 0.007 and 0.001 mg/l, respectively; xylenes were detected in wells LF-7 and LF-9 at 0.007 and 0.014 mg/l, respectively; and ethylbenzene was detected in wells LF-7 and LF-9 at 0.001 and 0.007 mg/l respectively. Other than those wells noted, BTXE compounds were not detected in the ground-water samples. Prior sampling and analysis for BTXE compounds performed in March, 1988 and March, 1989 did not reveal the presence of BTXE in Site ground water.

Approximately seven inches of free-phase petroleum was measured in well LF-8 in January, 1990, compared to a two-inch thick layer measured in March of 1989, and a five-inch thick layer measured in August of 1989.

5.0 SHALLOW GROUND-WATER FLOW

Ground-water elevation measurement data from January 31, 1990 are plotted on Figure 3 and summarized in Table 1. The ground-water flow direction in the Northwest Study Area is generally toward the southeast, but varies locally from the southeast to southwest. The ground-water hydraulic gradient measured in August was approximately 0.001 ft/ft in the northern portion of the study area in the vicinity of wells LF-7, LF-9, LF-10 and LF-12. Localized mounding of the ground water was apparent in the vicinity of well LF-11 causing movement away (southwesterly) from the Alameda Inner Harbor in this area. This flow pattern is similar to that observed in previous water-level measurements.

6.0 SUMMARY AND CONCLUSIONS

Based on the data and information obtained during this work, the following conclusions have been reached:

- o TPH concentrations measured in ground-water samples collected in January, 1990 from four (LF-7, LF-10, LF-13 and WC-3) of the eight monitoring wells located in the Northwest Area of the Marina Village Development were higher (increases of 3 to 9.5 mg/l) than results of previous sampling and analysis events. TPH concentrations measured in two of the wells (LF-11 and LF-12) were similar to those previously recorded, and the TPH concentration in one well (LF-9) was lower (a decrease of 114 mg/l). TPH concentrations in wells located within 30 feet of the Alameda Inner Harbor range from 1.2 to 6.1 mg/l.

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- o Relatively low concentrations of one or more of BTXE (0.001 to 0.014 mg/l) were detected in three of the wells (LF-7, LF-13 and WC-3); previous sampling and analysis for these compounds in March, 1988 and March, 1989 did not reveal the presence of BTXE in these or other wells at the Site.
- o The thickness of the free-phase petroleum product measured in well LF-8 (approximately 7 inches) was greater than that measured in March (2 inches) and August (5 inches), 1989.
- o Water-level measurements and shallow ground-water flow directions across the Site were similar to those observed previously. Ground-water flow is generally toward the southeast, but varies locally toward the southeast to southwest, and local mounding in the vicinity of well LF-11 has caused flow away from the Alameda Inner Harbor in the southern portion of the Site.

TABLE 1

GROUND-WATER MONITORING WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
NORTHWEST STUDY AREA
MARINA VILLAGE, ALAMEDA, CALIFORNIA

Well No.	Well Depth (ft) *	Well Elevation # TOC (ft)	Ground Surface Elevation (ft)#	Perforated Interval (ft) *	Date Measured	Depth to Water (ft) **	Ground Water Elevation # (ft)	Petroleum Product Thickness (ft)
LF-6	15	3.58	3.6	5 - 15	29-Mar-88	6.50	-2.92	
					21-Apr-88	6.06	-2.48	
					28-Mar-89	9.45	-5.87	
					01-Jun-89	6.37	-2.79	
					03-Aug-89	6.78	-3.20	
					31-Jan-90	NM	NM	
LF-7	15	4.94	3.7	5 - 15	29-Mar-88	9.21	-4.27	
					21-Apr-88	9.16	-4.22	
					28-Mar-89	8.80	-4.15	
					01-Jun-89	7.05	-2.11	
					03-Aug-89	8.71	-3.77	
					31-Jan-90	8.55	-3.66	
LF-8	15	4.66	2.9	5 - 15	29-Mar-88	6.75	-2.09	<0.1 inch
					21-Apr-88	6.04	-1.38	<0.1 inch
					28-Mar-89	5.50	-0.84	approx. 2 inches
					01-Jun-89	6.97	-2.31	approx. 2 inches
					03-Aug-89	NM	--	approx. 5 inches
					31-Jan-90	6.63	-1.97	approx. 7 inches
LF-9	15	2.08	0.6	5 - 15	29-Mar-88	5.21	-3.13	
					21-Apr-88	5.06	-2.98	
					28-Mar-89	4.75	-2.67	
					01-Jun-89	5.50	-3.42	
					03-Aug-89	5.71	-3.63	
					31-Jan-90	5.30	-3.22	
LF-10	15	4.48	4.7	5 - 15	29-Mar-88	8.17	-3.69	
					21-Apr-88	7.28	-2.80	
					28-Mar-89	8.42	-3.94	
					01-Jun-89	8.73	-4.25	
					03-Aug-89	8.49	-4.01	
					31-Jan-90	8.50	-4.02	
LF-11	15	5.36	5.4	5 - 15	28-Mar-89	8.19	-2.83	
					01-Jun-89	8.49	-3.13	
					03-Aug-89	8.14	-2.78	
					31-Jan-90	7.76	-2.40	
LF-12	15	7.69	5.8	5 - 15	28-Mar-89	11.63	-3.49	
					01-Jun-89	11.81	-4.12	
					03-Aug-89	11.64	-3.95	
					31-Jan-90	11.24	-3.55	
LF-13	13	3.01	3.1	3 - 13	28-Mar-89	3.65	-0.64	
					01-Jun-89	5.02	-2.01	
					03-Aug-89	5.32	-2.31	
					31-Jan-90	4.29	-1.28	
WC-3 a	14	4.44	4.7	7 - 14	31-Mar-88	8.92	-4.48	
					21-Apr-88	7.81	-3.37	
					28-Mar-89	10.70	-6.26	
					01-Jun-89	10.70	-6.26	
					03-Aug-89	10.51	-6.07	
					31-Jan-90	10.74	-6.30	

TABLE 1

GROUND-WATER MONITORING WELL CONSTRUCTION AND GROUND-WATER ELEVATION DATA
NORTHWEST STUDY AREA
MARINA VILLAGE, ALAMEDA, CALIFORNIA

Well No.	Well Depth (ft) *	Well Elevation # TOC (ft)	Ground Surface Elevation (ft)#	Perforated Interval (ft) *	Date Measured	Depth to Water (ft) **	Ground Water Elevation # (ft)	Petroleum Product Thickness (ft)
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					28-Mar-89	8.80	-4.15	
					01-Jun-89	7.05	-2.11	
					03-Aug-89	8.71	-3.77	
					31-Jan-90	8.55	-3.66	
LF-8	15	4.66	2.9	5 - 15	29-Mar-88	6.75	-2.09	<0.1 inch
					21-Apr-88	6.04	-1.38	<0.1 inch
					28-Mar-89	5.50	-0.84	approx. 2 inches
					01-Jun-89	6.97	-2.31	approx. 2 inches
					03-Aug-89	NM	--	approx. 5 inches
					31-Jan-90	6.63	-1.97	approx. 7 inches
LF-9	15	2.08	0.6	5 - 15	29-Mar-88	5.21	-3.13	
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					31-Jan-90	5.30	-3.22	
LF-10	15	4.48	4.7	5 - 15	29-Mar-88	8.17	-3.69	
					21-Apr-88	7.28	-2.80	
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					01-Jun-89	8.73	-4.25	
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					03-Aug-89	11.64	-3.95	
					31-Jan-90	11.24	-3.55	
LF-13	13	3.01	3.1	3 - 13	28-Mar-89	3.65	-0.64	
					01-Jun-89	5.02	-2.01	
					03-Aug-89	5.32	-2.31	
					31-Jan-90	4.29	-1.28	
WC-3 @	14	4.44	4.7	7 - 14	31-Mar-88	8.92	-4.48	
					21-Apr-88	7.81	-3.37	
					28-Mar-89	10.70	-6.26	
					01-Jun-89	10.70	-6.26	
					03-Aug-89	10.51	-6.07	
				31-Jan-90	10.74	-6.30		

TABLE 1

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 NORTHWEST STUDY AREA
 MARINA VILLAGE, ALAMEDA, CALIFORNIA

Well No.	Well Depth (ft) *	Well Elevation # TOC (ft)	Ground Surface Elevation (ft)#	Perforated Interval (ft) *	Date Measured	Depth to Water (ft) **	Ground Water Elevation # (ft)	Petroleum Product Thickness (ft)
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Notes:

- * - Depth Below ground surface.
- ** - Below top of well casing.
- # - Elevations relative to City of Alameda Datum (6.4 feet above MSL).
- @ - Well drilled by Woodward-Clyde Consultants, 1987.
- TOC - Top of 2-inch PVC-casing.
- NM - Not Measured.

TABLE 2
 HISTORICAL GROUND-WATER CHEMICAL ANALYSIS DATA - MONITORING WELLS
 NORTHWEST STUDY AREA
 MARINA VILLAGE, ALAMEDA, CALIFORNIA
 TOTAL PETROLEUM HYDROCARBONS
 (Results expressed in mg/L)

TPH - EPA Method 8015						
Well No.	Date	Analytical Lab.	Diesel	Waste Oil	Petroleum Product Thickness	Characterization
LF-6	29-Mar-88	AN	<0.05	<0.05		
	28-Mar-89	M-T	<0.3	<0.5		
	03-Aug-89	M-T	<0.3	<0.5		
	01-Jan-90		--	--		
LF-7	29-Mar-88	AN	<0.05	<0.05		
	28-Mar-89	M-T	<0.3	1.8		
	03-Aug-89	M-T	<0.3	<0.5		
	31-Jan-90	M-T	<0.3	3.3		
LF-8	29-Mar-88	AN	62.0	NQ	<0.1 inch	Product Sample = crude oil
	29-Mar-89	FB	--	--	approx. 2 inches	
	03-Aug-89		--	--	approx. 5 inches	
	31-Jan-90		--	--	approx. 7 inches	
LF-9	29-Mar-88	AN	54.0	NQ		
	28-Mar-89	M-T	12.0	6.0		
	03-Aug-89	M-T	79.0	67.0		
	31-Jan-90	M-T	15.0	17.0		
	Duplicate	M-T	12.0	15.0		
LF-10	29-Mar-88	AN	43.0	NQ		
	28-Mar-89	M-T	<0.2	7.8		
	03-Aug-89	M-T	<0.3	8.3		
	Duplicate	M-T	<0.3	7.6		
	31-Jan-90	M-T	<0.3	17.0		
LF-11	28-Mar-89	M-T	<0.3	1.0		
	03-Aug-89	M-T	<0.3	0.9		
	31-Jan-90	M-T	<0.3	1.2		
LF-12	28-Mar-89	M-T	<0.3	1.1		
	03-Aug-89	M-T	<0.3	2.0		
	31-Jan-90	M-T	<0.3	1.4		
LF-13	28-Mar-89	M-T	<0.3	4.4		
	03-Aug-89	M-T	<0.3	3.0		
	31-Jan-90	M-T	<0.3	6.1		
WC-3 @	31-Mar-88	AN	<0.05	<0.05		
	28-Mar-89	M-T	<0.3	3.2		
	03-Aug-89	M-T	<0.3	1.0		
	31-Jan-90	M-T	<0.3	5.7		

Notes:

-- = Not Analyzed.

AN = Anatec Laboratories of Santa Rosa, California (current name is Net Pacific).

FB = Friedman & Bruya, Inc. of Seattle, Washington.

M-T = Med-Tox Associates of Pleasant Hill, California.

NQ = Extractable TPH detected in samples was not quantified against waste oil standard.

@ - Well drilled by Woodward Clyde Consultants, 1987.

TABLE 3

HISTORICAL GROUND-WATER CHEMICAL ANALYSIS DATA - MONITORING WELLS
 NORTHWEST STUDY AREA
 MARINA VILLAGE, ALAMEDA, CALIFORNIA
 BENZENE, TOLUENE, XYLENES, ETHYLBENZENE
 (Results expressed in mg/l)

Well No.	Date	Analytical Lab.	Benzene	Toluene	Xylenes	Ethylbenzene
LF-6	29-Mar-88	AN	<0.004	<0.006	NA	<0.007
	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90		NA	NA	NA	NA
LF-7	29-Mar-88	AN	<0.004	<0.006	NA	<0.007
	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	<0.0005	0.003	0.007	0.001
LF-8	29-Mar-88	AN	<0.004	<0.006	NA	<0.007
	29-Mar-89	FB	<0.003	<0.003	<0.010	<0.003
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90		NA	NA	NA	NA
LF-9	29-Mar-88	AN	<0.004	<0.006	NA	<0.007
	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	0.003	<0.0005	0.014	0.007
	Duplicate	M-T	0.003	<0.0005	0.012	0.006
LF-10	29-Mar-88	AN	<0.004	<0.006	NA	<0.007
	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	Duplicate		NA	NA	NA	NA
	31-Jan-90	M-T	<0.0005	<0.0005	<0.002	<0.0005
LF-11	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	<0.0005	<0.0005	<0.002	<0.0005
LF-12	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	<0.0005	<0.0005	<0.002	<0.0005
LF-13	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	0.004	0.001	<0.002	<0.0005
WC-3 a	31-Mar-88	AN	<0.004	<0.006	<NA	<0.007
	28-Mar-89	M-T	<0.0005	<0.0005	<0.002	<0.0005
	03-Aug-89		NA	NA	NA	NA
	31-Jan-90	M-T	<0.0005	<0.0005	<0.002	<0.0005

Notes:

NA = Not Analyzed.

AN = Anatec Laboratories of Santa Rosa, California (current name is Net Pacific).

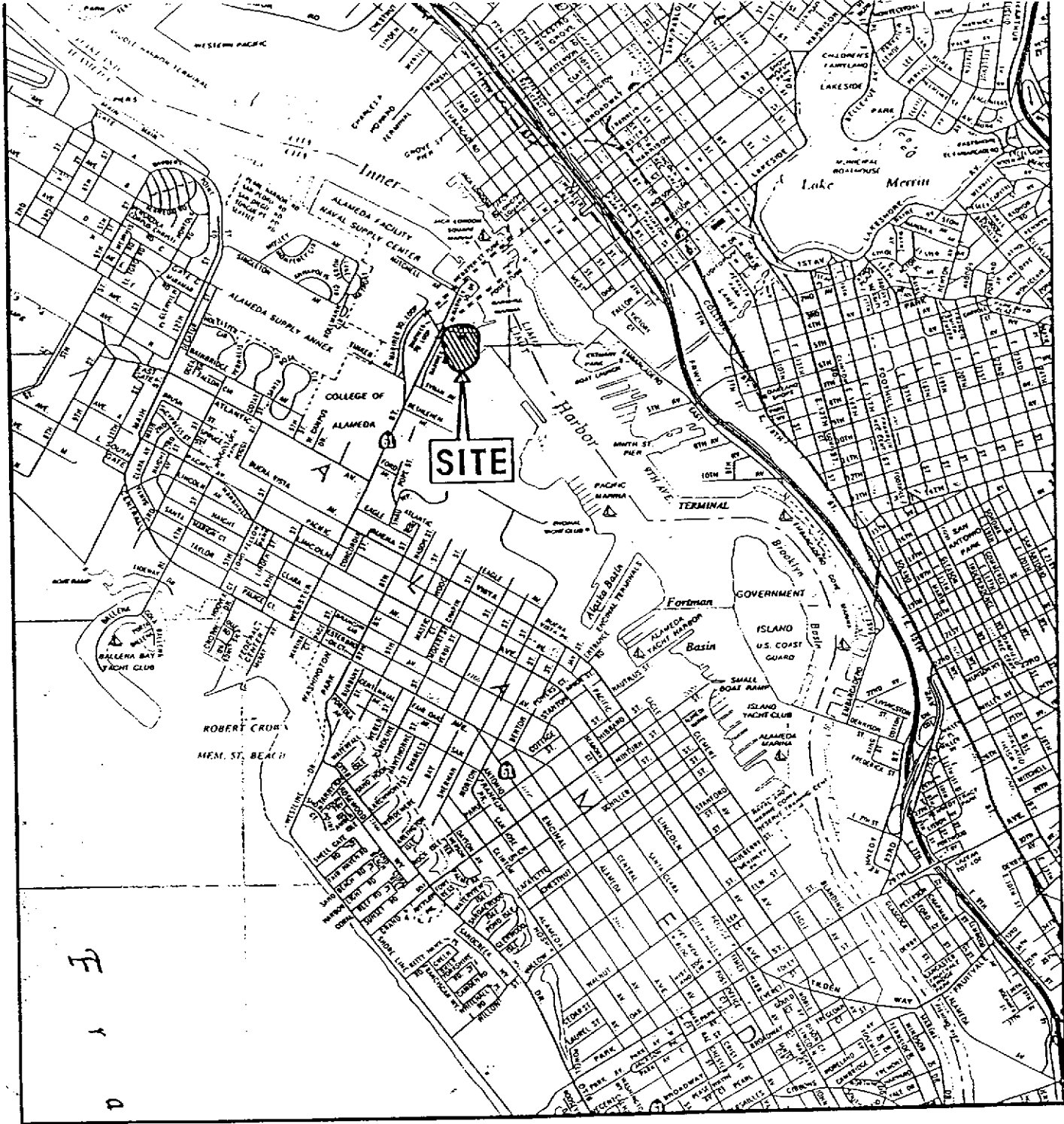
FB = Friedman & Bruya, Inc. of Seattle, Washington.

M-T = Med-Tox Associates of Pleasant Hill, California.

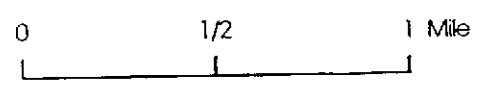
Samples analyzed by Anatec were analyzed using EPA Method 8240.

Samples analyzed by Med-Tox were analyzed using EPA Method 602.

a - Well drilled by Woodward Clyde Consultants, 1987.



D
A
E



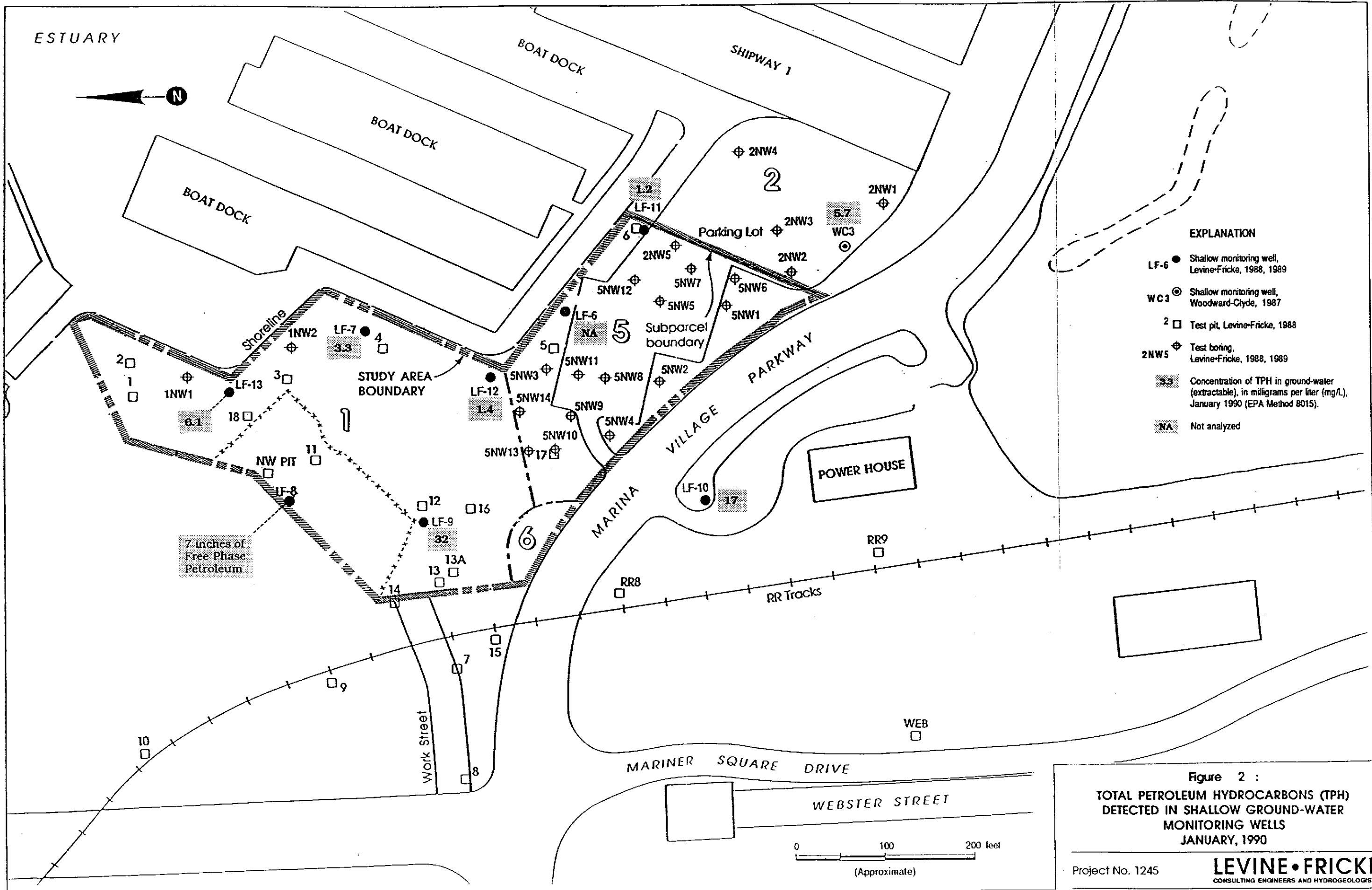
MAP SOURCE:
California State Automobile Association
Oakland/Berkeley/Alameda
June 1982

Figure 1 : SITE LOCATION MAP

Project No. 1245

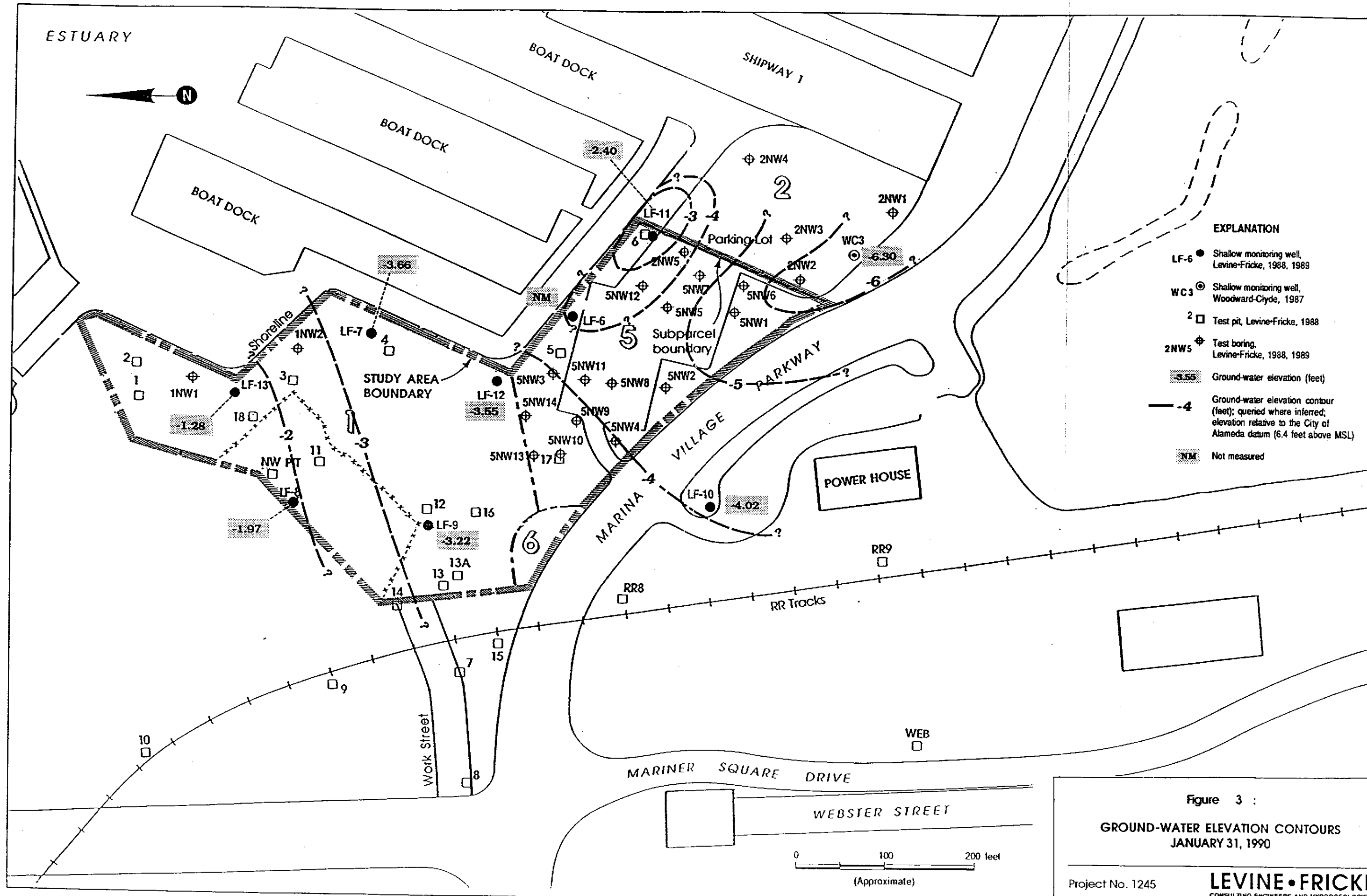
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CIVIL ENGINEERS AND ARCHITECTS

E AN 89 AUG 88 JM



- EXPLANATION**
- LF-6 ● Shallow monitoring well, Levine-Fricke, 1988, 1989
 - WC3 ⊙ Shallow monitoring well, Woodward-Clyde, 1987
 - 2 □ Test pit, Levine-Fricke, 1988
 - 2NW5 ⊕ Test boring, Levine-Fricke, 1988, 1989
 - 3.3 Concentration of TPH in ground-water (extractable), in milligrams per liter (mg/L), January 1990 (EPA Method 8015).
 - NA Not analyzed

Figure 2 :
TOTAL PETROLEUM HYDROCARBONS (TPH)
DETECTED IN SHALLOW GROUND-WATER
MONITORING WELLS
JANUARY, 1990



- EXPLANATION**
- LF-6 ● Shallow monitoring well, Levine-Fricke, 1988, 1989
 - WC3 ⊙ Shallow monitoring well, Woodward-Clyde, 1987
 - 2 □ Test pit, Levine-Fricke, 1988
 - 2NW5 ⊕ Test boring, Levine-Fricke, 1988, 1989
 - 3.55 Ground-water elevation (feet)
 - 4 Ground-water elevation contour (feet); queried where inferred; elevation relative to the City of Alameda datum (6.4 feet above MSL)
 - NM Not measured

Figure 3 :
GROUND-WATER ELEVATION CONTOURS
JANUARY 31, 1990

APPENDIX A

FIELD ACTIVITIES

APPENDIX A

DESCRIPTION OF GROUND-WATER SAMPLING PROCEDURES

Ground-Water Quality Sampling

Wells were sampled on January 31, 1990. Wells which were sampled (LF-7 through LF-13, with the exception of LF-8, and WC-3) were developed by purging approximately three to five well volumes using a Teflon bailer. Specific conductance, pH, and temperature were measured and water clarity was noted during this purging process to help assist when a sufficient quantity of water had been removed to obtain a sample of relatively fresh ground water. Ground-water sampling was conducted immediately following well purging.

Water samples collected from each well were placed in laboratory-supplied 1-liter amber glass jars and 40-ml volatile organic analysis bottles using a clean Teflon bailer. For quality control/assurance purposes, a duplicate sample was collected from well LF-9 and submitted for analysis. The samples were labeled and then immediately placed in a chilled cooler for transport to Med-Tox Associates, of Pleasant Hill, California. Transport was conducted under strict chain-of-custody protocol.

Prior to each use, the Teflon bailer was washed with Alconox (a laboratory-grade detergent) and steam-cleaned.

Water-level measurements were recorded on January 31, 1990 using an electric water-level probe graduated in five-foot increments, and an engineer's tape graduated in 0.01-foot increments. The water level in well LF-8 was measured at the approximate top of the free-phase petroleum in the well, and may not be accurate since the viscosity of the petroleum interfered with determining the bottom or top of the petroleum layer. Thickness of free-phase petroleum in well LF-8 was measured using a clear bailer lowered into the well.

APPENDIX B
LABORATORY CERTIFICATES

ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES

3440 Vincent Road Pleasant Hill, CA 94523 • (415) 930-9090 • FAX# (415) 930-0256

LABORATORY ANALYSIS REPORT

LEVINE-FRICKE
1900 POWELL ST., 12TH FL.
EMERYVILLE, CA 94608

ATTN: ELIZABETH NIXON

CLIENT PROJECT NO: 1245

REPORT DATE: 02/23/90

DATE SAMPLED: 01/31/90

DATE RECEIVED: 02/01/90

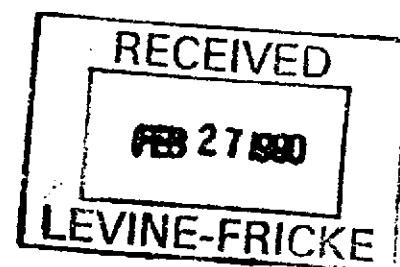
MED-TOX JOB NO: 9002007

ANALYSIS OF: WATER SAMPLES FOR BTXE AND EXTRACTABLE
HYDROCARBONS

See attached for results

Michael Lynch
Michael Lynch, Manager
Organic Laboratory

Results FAXed to Elizabeth Nixon 02/21/90



LEVINE-FRICKE

CLIENT ID: WC-3-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-01A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/15/90
DATE ANALYZED: 02/05-20/90
INSTRUMENT: 9,1,5

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	5.7 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-12-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-02A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/05-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	1.4 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-7-GW
 CLIENT JOB NO: 1245
 DATE SAMPLED: 01/31/90
 DATE RECEIVED: 02/01/90
 REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-03A
 MED-TOX JOB NO: 9002007
 DATE EXTRACTED: 02/14/90
 DATE ANALYZED: 02/05-16/90
 INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	3	0.5
Ethylbenzene.	1	0.5
Xylenes	7	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	3.3 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-10-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-04A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/05-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	17 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-10-FB
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-05A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/06-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	6	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	ND mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-11-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-06A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/06-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	1.2 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-9-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-07A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/06-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	3	0.5
Toluene	ND	0.5
Ethylbenzene.	7	0.5
Xylenes	14	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	15 mg/L	0.3 mg/L
Waste Oil	17 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-9D-GW
 CLIENT JOB NO: 1245
 DATE SAMPLED: 01/31/90
 DATE RECEIVED: 02/01/90
 REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-08A
 MED-TOX JOB NO: 9002007
 DATE EXTRACTED: 02/14/90
 DATE ANALYZED: 02/06-16/90
 INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	3	0.5
Toluene	ND	0.5
Ethylbenzene.	6	0.5
Xylenes	12	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	12 mg/L	0.3 mg/L
Waste Oil	15 mg/L	0.5 mg/L

ND = Not Detected

LEVINE-FRICKE

CLIENT ID: LF-13-GW
CLIENT JOB NO: 1245
DATE SAMPLED: 01/31/90
DATE RECEIVED: 02/01/90
REPORT DATE: 02/23/90

MED-TOX LAB NO: 9002007-09A
MED-TOX JOB NO: 9002007
DATE EXTRACTED: 02/14/90
DATE ANALYZED: 02/06-16/90
INSTRUMENT: 9, 1

BTXE AND HYDROCARBONS

METHOD: EPA 8020, 8015 (PURGE & TRAP AND EXTRACTION)

	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	4	0.5
Toluene	1	0.5
Ethylbenzene.	ND	0.5
Xylenes	ND	2
EXTRACTABLE HYDROCARBONS AS:		
Diesel	ND mg/L	0.3 mg/L
Waste Oil	6.1 mg/L	0.5 mg/L

ND = Not Detected

R-3, S-2

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9002007

Project No.: 1245	Field Logbook No.:	Date: 1/31/90	Serial No.: No 5807
Project Name: MARINA VILLAGE	Project Location: ALAMEDA		

Sampler (Signature): *Andrew M. Topi* ANALYSES
 Hold RUSH
 Samplers: **AML / RPT**

SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	ANALYSES				HOLD	RUSH	REMARKS
						EPA 601	EPA 624	EPA 8015	EPA 8020			
WC-3-GW	1/31/90	13:30	01A, B, C	2 vials 1.12 gals	GW							NORMAL TURN AROUND:
LF-12-GW		11:25	02A, B, C									
LF-7-GW		10:20	03A, B, C									EPA 8015 USING EXTRACTION
LF-10-GW		14:30	04A, B, C									FOR OIL THROUGH DIESEL
LF-10-FB		14:15	05A, B, C									
LF-11-GW		14:00	06A, B, C									
LF-9-GW		11:15	07A, B, C									RESULTS TO E. NIXON
LF-9D-GW		11:15	08A, B, C									
LF-13-GW		10:25	09A, B, C									TPH as dirt w/o 13TXE
												ATTN: SUZANNE

RELINQUISHED BY: (Signature) <i>Andrew M. Topi</i>	DATE 1/31/90	TIME 15:20	RECEIVED BY: (Signature) <i>L. J. Joh</i>	DATE 2/2/90	TIME 3:00
RELINQUISHED BY: (Signature) <i>L. J. Joh</i>	DATE 2/1/90	TIME 3:35	RECEIVED BY: (Signature) <i>Denise Harrington</i>	DATE 2/1/90	TIME 1535
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT: currier	DATE	TIME	LAB COMMENTS:		

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