10/13/89

Date: October 11, 1989

Re: 91924 Livermore

Dear Sirs:

Enclosed is the most recent quarterly monitoring report for the above referenced site.

If you have any questions, please call Gordon Davitt at (415) 842-9525.

4904 FRONT ST

Very truly yours,

D. Moller

By: _____

Gordon Davitt
C & M Representative

Enclosure
GJD/hh.

WESTERN GEOLOGIC RESOURCES, INC.

2169 E. FRANCISCO BOULEVARD, SUITE B
SAN RAFAEL, CALIFORNIA 94901
415 457-7595 FAX: 415 457-8521

QUARTERLY MONITORING REPORT

Chevron Service Station #91924
4904 South Front Street
Livermore, CA

Prepared For

Chevron USA
2410 Camino Ramon
San Ramon, CA

Prepared By

Western Geologic Resources, Inc.
2169 E. Francisco Blvd.
San Rafael, CA

August 1989

QUARTERLY MONITORING REPORT

Chevron Service Station #91924
4904 South Front Street
Livermore, CA

Prepared For

Chevron USA
2410 Camino Ramon
San Ramon, CA

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EXECUTIVE SUMMARY

The results of the quarterly groundwater sampling conducted by Western Geologic Resources, Inc. (WGR) in April 1989 at the Chevron Service Station #91924 located on Southfront Road, in Livermore, California indicate the highest concentrations of total purgeable petroleum hydrocarbons (TPPH) are in groundwater samples from the Mobil Service Station, located across the street from the Chevron Service Station, at 27,000 parts-per-billion (ppb). The highest concentration of benzene, up to 1,100 ppb, and TPPH, up to 6,000 ppb, were detected in groundwater collected from wells near the former underground storage tanks, at the Chevron Service Station. In general, concentrations of TPPH, and aromatic hydrocarbons have decreased since the previous sampling in January 1989. The estimated direction of groundwater flow is to the west with a gradient of 2% beneath the site, increasing to about 8% west of the site.

1 INTRODUCTION

This report presents the results of quarterly groundwater sampling, conducted by Western Geologic Resources Inc. (WGR), at Chevron Service Station #91924 located at 4904 Southfront Road in Livermore, California (Figure 1).

The scope of work for this project was to:

1. Measure depth-to-water, depth-to-liquid hydrocarbon, liquid hydrocarbon-thickness, and well-bore volumes in all groundwater monitor wells and produce a potentiometric surface contour map based on the liquid-level measurements;

2. Collect water samples from all the wells for analysis of total purgeable petroleum hydrocarbons (TPPH) and purgeable priority pollutants by EPA Method 8260, oil and grease by California Standard Method 503E, and cadmium (Cd), chromium (Cr), lead (Pb) and zinc (Zn) by EPA method 7131, 7191, 7421 and 7950, respectively;

3. Prepare distribution maps for benzene and TPPH, construct hydrographs on depth-to-water, and construct chemical concentration graphs of benzene over time for all monitor wells;

4. Build the database for water-level/liquid hydrocarbon-level/liquid hydrocarbon-thickness measurements and for groundwater chemistry; and,

5. Review results and prepare a report of the investigation.

2 BACKGROUND

Eight groundwater monitor wells are located on the Chevron site (C-1 through C-3, C-5 through C-7, C-13 and C-15), and 10 wells are located offsite. The offsite wells are along Southfront Road (C-8, C-9, C-14, and C-16), along First Street (C-18), and on the Mobil service station property south of the site (C-10 through C-12, C-17, and C-19). Well C-4 was destroyed when the underground tanks were excavated (Figure 2). Groundwater samples and water-level measurements have been collected in the past by Groundwater Technology, Inc. (GTI) of Concord, California and by WGR of San Rafael, California.

GTI collected groundwater measurements from all available wells in March 1986, March 1988, May 1988 and June 1988. The depth-to-water measurements indicated an average decrease in groundwater levels of approximately 1.62 ft between March 1986 and March 1988. Depth-to-liquid-hydrocarbon measurements indicated a thickness of 0.01 ft in monitor well C-6 in June 1988, and a trace of liquid-hydrocarbon was noted in well C-17 in March 1988.

WGR has collected quarterly groundwater-level measurements and collected groundwater samples since July 1988. In August 1988, WGR installed dedicated sampling equipment in all the wells with the exception of wells C-11 and C-14 which have relatively low well-bore volumes. Previous groundwater measurements and samples were collected by WGR in July 1988, October 1988, January 1989 and April 1989. None of these samplings indicated the presence of liquid hydrocarbons. Historic liquid-level data and analytic results are presented in Tables 1 and 2, respectively.

3 GROUNDWATER SAMPLING

All of the wells except well C-14 were sampled by WGR staff with the dedicated systems on 10 April 1989, according to WGR standard operating procedure included as Attachment A. Monitor well C-14 was not sampled, because it was bailed dry and showed no recovery within 24 hours. Historically well C-14 has not been sampled since October 1988. During this sampling period slight to moderate hydrocarbon odors were noted in wells C-2, C-5 and C-6. Travel blanks consisting of laboratory-supplied deionized water were transported from the laboratory to the site, and along with the field samples, back to the laboratory. All water, evacuated during the sampling process, was collected and temporarily stored onsite in 55-gallon drums pending analytic results.

4 ANALYTIC RESULTS

Central Coast Analytical Services (CCAS), of San Luis Obispo, California analyzed the groundwater samples for TPPH, aromatic hydrocarbons, halocarbons, oil and grease, and selected dissolved metals. The results are presented in Table 2. Chain-of-custody forms and the laboratory reports are included as Attachments B and C, respectively.

The concentration of TPPH in groundwater samples from onsite wells C-1, C-2, C-3, C-5, C-6, and C-7 were 4000 ppb, 600 ppb, 200 ppb, 180 ppb, 5,000 ppb and 6,000 ppb, respectively. The other remaining onsite monitor wells, C-13 and C-15, were below detection limits for TPPH. Three of the four offsite wells along Southfront Road, C-8, C-9, and C-16, contained TPPH concentrations in groundwater at 3,000 ppb, 6,000 ppb, and 1,500 ppb, respectively. Well C-18, located along First Street, was below the detection limit of 200 ppb for TPPH. Groundwater samples collected from all of the monitor wells located across Southfront Road on the Mobil service station site were below the detection limits, except for C-17 and C-19, which contained TPPH concentrations at 27,000 ppb, and 500 ppb, respectively. A distribution map of TPPH for the 10 April 1989 sampling is shown on Figure 2.

Laboratory analysis of groundwater for aromatic hydrocarbons and selected halocarbons indicated the presence of benzene, toluene, total xylenes, ethylbenzene, 1,2 dichloroethane (EDC), and 1,1,1 trichloroethane (TCA). Benzene was detected in groundwater from six of the eight onsite wells at concentrations ranging from 2.1 ppb in groundwater from well C-3 to 1100 ppb in groundwater from well C-7. Benzene was also detected offsite in groundwater from seven of the ten monitor wells ranging from 1.2 ppb in groundwater from well C-19 to 130 ppb in groundwater from well C-16. A distribution map of benzene concentrations for 10 April 1989 is included as Figure 3. Toluene was detected in groundwater from five wells, with concentrations ranging from 4 ppb in groundwater from well C-16 (offsite) to 190 ppb in groundwater from well C-6 (onsite). Total xylenes concentrations were detected in the groundwater ranging from 2.6 ppb in onsite well C-3 to 1000 ppb in offsite well C-17. Ethylbenzene was detected in the groundwater from eleven monitor wells with concentrations ranging from 0.8 ppb to 760 ppb from onsite wells C-13 and C-7, respectively. Concentrations of EDC were detected in groundwater from eight wells ranging from 1.4 ppb in wells C-3 and C-4 to 6.1 ppb in well C-10. Concentrations of 1,1,1-trichloroethane were contained in the groundwater in C-12 at 0.4 ppb. Concentrations of Cr, Pb, and Zn were detected in groundwater samples from several wells; however, the concentrations were all below the soluble threshold limit concentration (STLC). Groundwater collected from wells C-6, C-8 and C-17 contained concentrations of oil and grease at 4 ppm, 12 ppm and 6 ppm, respectively.

5 ANALYTICAL TRENDS

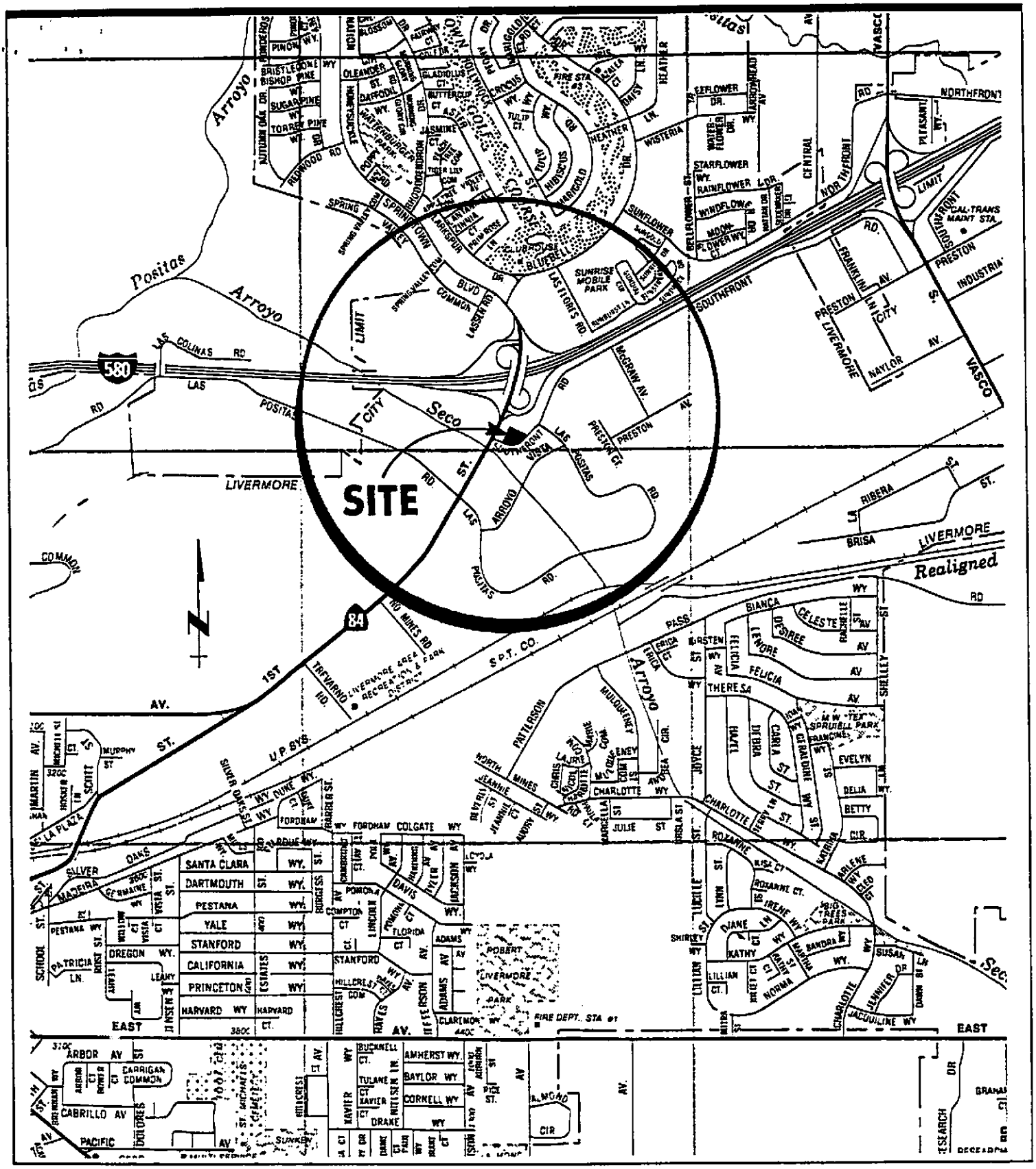
Groundwater samples from the monitor wells located on the Chevron site, showed a general decrease in aromatic hydrocarbons for April 1989, with the exception of monitor well C-7 which had slight increases in benzene and ethylbenzene and well C-6 which had a slight increase in toluene concentration. Concentrations of TPPH in groundwater from the eight onsite wells sampled, either showed a decrease or remained at the same levels as the previous analysis. Onsite monitor wells C-6 and C-7, which are located downgradient of the former underground storage tanks, have consistently had the highest concentrations of BTEX, however, these wells have shown a relative decrease in aromatic hydrocarbon concentrations since the 12 January 1989 sampling. Graphs depicting benzene concentrations over time for selected wells are included in Attachment D.

Groundwater from the four wells located on Southfront Road have shown a general decrease in concentrations of aromatic hydrocarbons, except for well C-9 where an increase in total xylenes were detected. Increases in TPPH over previous analyses were also seen in three of the four wells sampled on Southfront Road. Groundwater samples from well C-18, located along First Street, have consistently remained below the detection limits for both TPPH and BTEX.

Analysis of groundwater samples from the five wells located at the Mobil Station show decreases in toluene, total xylenes, and ethylbenzene, and an increase in benzene concentrations in three of the wells. A decrease was noted in total xylenes and ethylbenzene concentrations in groundwater from well C-17. The concentrations of total xylenes decreased from 6,700 ppb to 1,000 ppb and ethylbenzene decreased from 2,100 ppb to 320 ppb from the January 1989 to April 1989 sampling, in C-17. Also, TPPH concentrations of 27,000 ppb in groundwater from well C-17 was significantly lower than the 190,000 ppb TFH in January 1989.

6 GROUNDWATER FLOW

Figure 4 shows the potentiometric surface of the shallow water-bearing zone on 10 April 1989. Table 1 presents groundwater elevation data. Estimated groundwater flow direction is to the southwest with a gradient of about 2% at the site increasing to about 8% to the northeast. Hydrographs showing groundwater fluctuations over time are included in Attachment E.



NOT TO SCALE

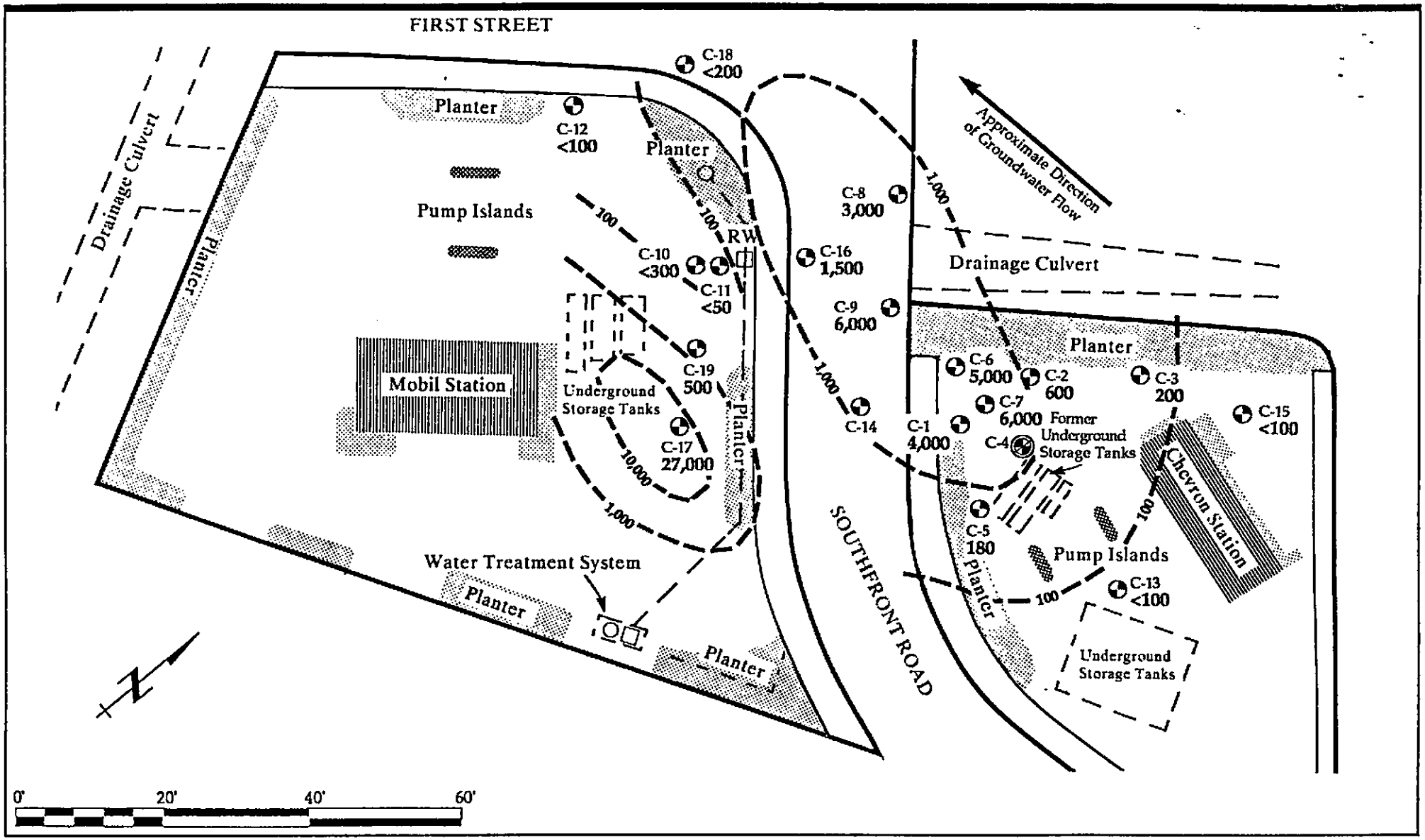
Site Location Map
Chevron SS #91924, Livermore, California

August 1989

FIGURE
1

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

C-1 4,000	Monitor Well Location and TPPH concentration in parts per billion (ppb)
100	Isoconcentration Contour for TPPH in ppb
C-4	Destroyed Monitor Well location

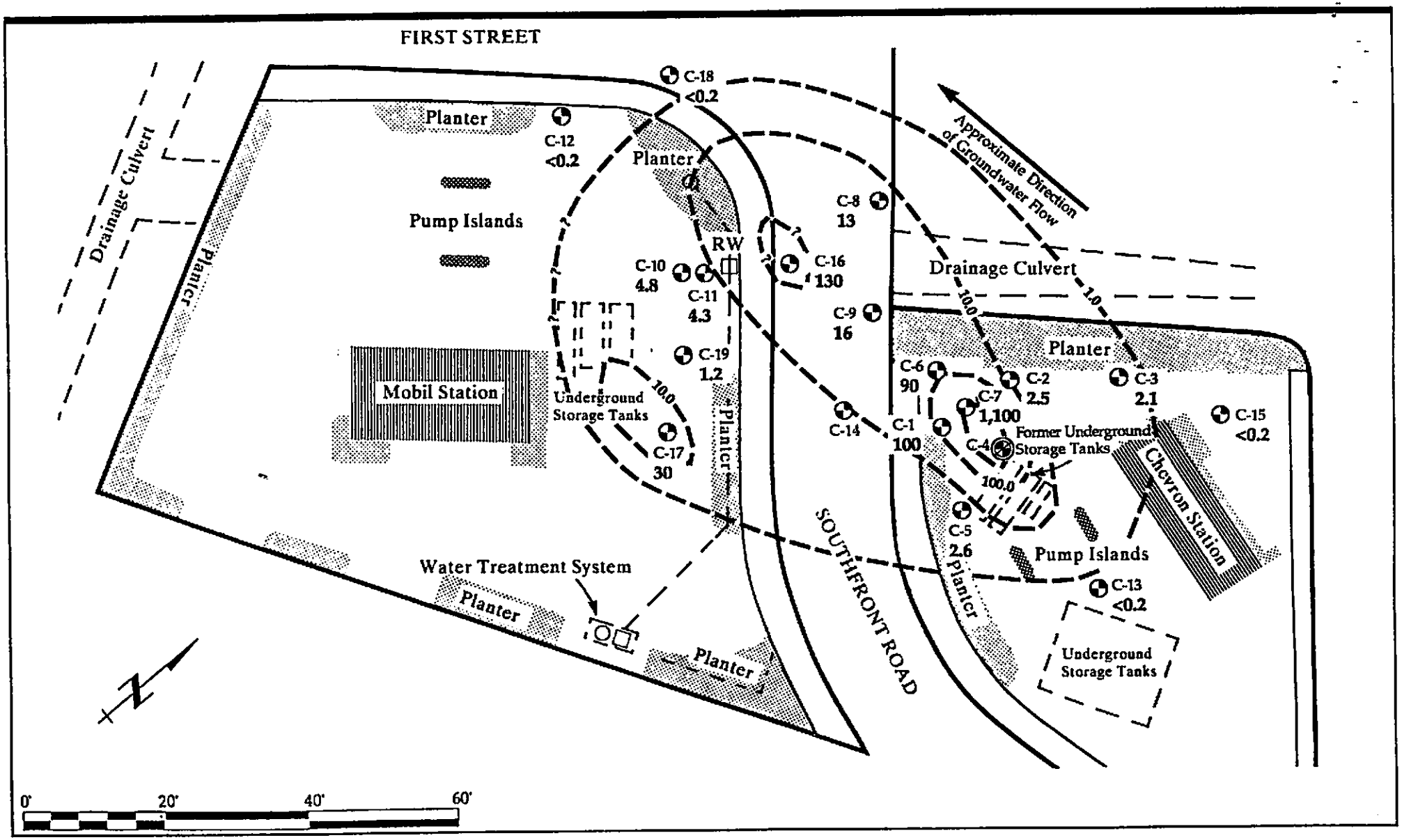
Distribution of Total Purgeable Petroleum Hydrocarbons (TPPH) in the Shallow Water-Bearing Zone, 10 April 1989
Chevron SS #91924, Livermore, California

August 1989

FIGURE 2

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

C-1 100	Monitor Well Location and TPPH concentration in parts per billion (ppb)
10.0	Isoconcentration Contour for TPPH in ppb
C-4	Destroyed Monitor Well location

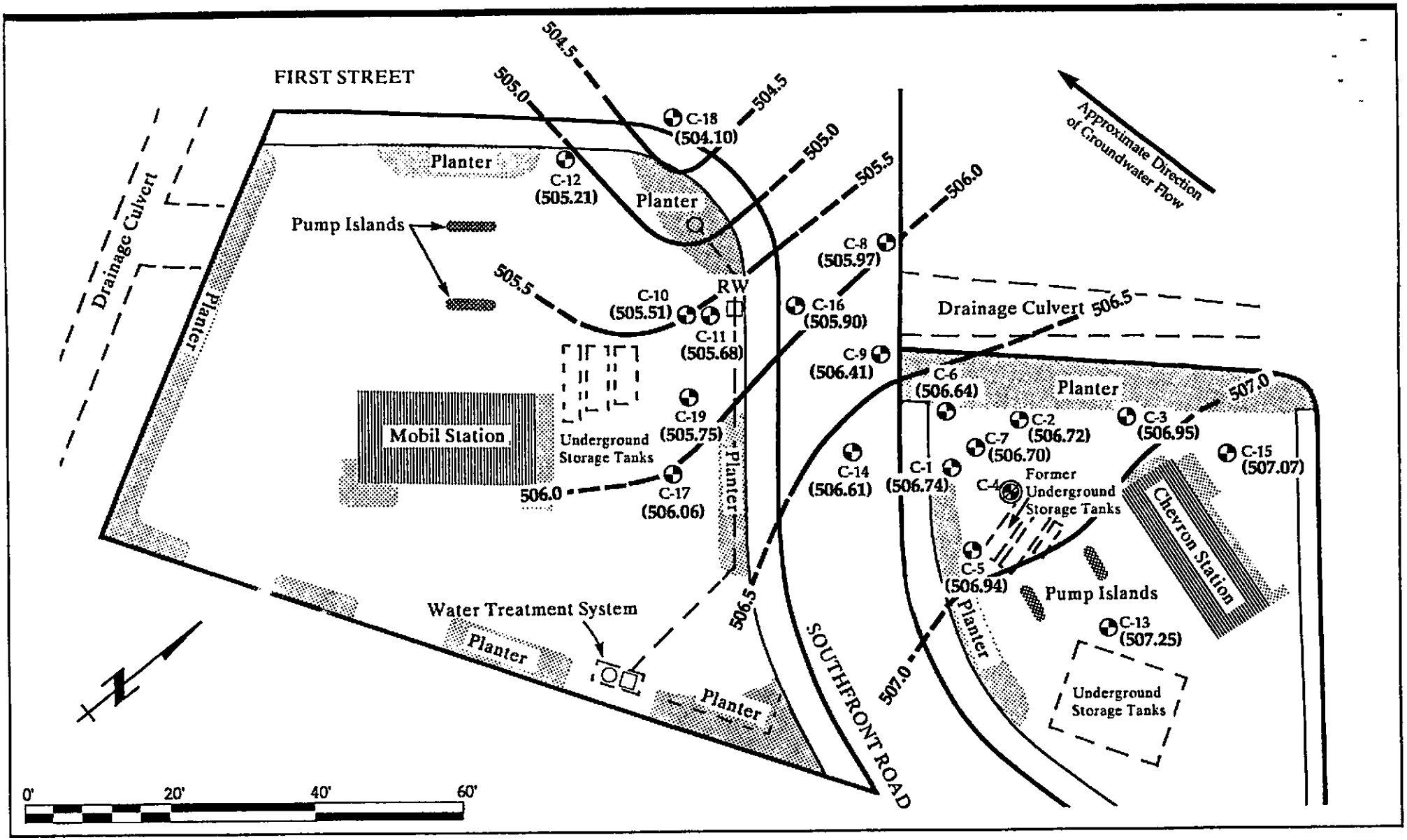
Distribution of Benzene in the Shallow Water-Bearing Zone
10 April 1989, Chevron SS #91924, Livermore, California

August 1989

FIGURE 3

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

C-1 (506.74) Monitoring Well Location and Groundwater Elevation, Feet Above Mean Sea Level

504.5 Groundwater Elevation Contour, Feet Above Mean Sea Level, Dashed Where Inferred

C-4 Destroyed Monitor Well location

Potentiometric Surface of the Shallow Water-Bearing Zone
10 April 1989, Chevron Service Station #91924
Livermore, California

June 1989

FIGURE 4

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924, Livermore, California
WGR Project #1-024.01

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<------	------	------feet------	------	------	------>
			ONSITE WELLS				
C - 1	28 Mar 86	520.39	---	11.75	---	---	508.64
C - 1	15 Mar 88	520.39	---	13.50	---	---	506.89
C - 1	10 May 88	520.39	---	13.65	---	---	506.74
C - 1	10 Jun 88	520.39	---	14.72	---	---	505.67
C - 1	25 Jul 88	520.39	---	13.50	---	---	506.89
C - 1	13 Oct 88	520.39	---	13.50	---	---	506.89
C - 1	1 Jan 89	520.39	---	12.89	---	---	507.50
C - 1	10 Apr 89	520.39	---	13.65	---	---	506.74
C - 2	28 Mar 86	520.76	---	11.98	---	---	508.78
C - 2	15 Mar 88	520.76	---	13.77	---	---	506.99
C - 2	10 May 88	520.76	---	14.03	---	---	506.73
C - 2	10 Jun 88	520.76	---	15.12	---	---	505.64
C - 2	25 Jul 88	520.76	---	13.86	---	---	506.90
C - 2	13 Oct 88	520.76	---	14.11	---	---	506.65
C - 2	1 Jan 89	520.76	---	12.83	---	---	507.93
C - 2	10 Apr 89	520.76	---	14.04	---	---	506.72
C - 3	28 Mar 86	521.31	---	12.24	---	---	509.07
C - 3	15 Mar 88	521.31	---	14.21	---	---	507.10
C - 3	10 May 88	521.31	---	14.43	---	---	506.88
C - 3	10 Jun 88	521.31	---	15.53	---	---	505.78
C - 3	25 Jul 88	521.31	---	14.22	---	---	507.09
C - 3	13 Oct 88	521.31	---	14.10	---	---	507.21
C - 3	1 Jan 89	521.31	---	12.70	---	---	508.61
C - 3	10 Apr 89	521.31	---	14.36	---	---	506.95
C - 5	28 Mar 86	520.82	---	12.00	---	---	508.82
C - 5	15 Mar 88	520.82	---	13.75	---	---	507.07
C - 5	10 May 88	520.82	---	13.92	---	---	506.90
C - 5	10 Jun 88	520.82	---	14.98	---	---	505.84
C - 5	25 Jul 88	520.82	---	13.72	---	---	507.10
C - 5	13 Oct 88	520.82	---	13.84	---	---	506.98
C - 5	1 Jan 89	520.82	---	13.41	---	---	507.41
C - 5	10 Apr 89	520.82	---	13.88	---	---	506.94
C - 6	28 Mar 86	519.62	---	11.12	---	---	508.50
C - 6	15 Mar 88	519.62	---	12.93	---	---	506.69
C - 6	10 May 88	519.62	---	13.03	---	---	506.59
C - 6	10 Jun 88	519.62	14.10	14.11	0.01	---	505.51
C - 6	25 Jul 88	519.62	---	12.95	---	---	506.67
C - 6	13 Oct 88	519.62	---	13.14	---	---	506.48
C - 6	1 Jan 89	519.62	---	12.14	---	---	507.48
C - 6	10 Apr 89	519.62	---	12.98	---	---	506.64

TABLE 1. Liquid Level and Top-of-Casing Elevations

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-----feet----->					
		ONSITE WELLS					
C - 7	28 Mar 86	520.30	---	11.67	---	---	508.63
C - 7	15 Mar 88	520.30	---	13.48	---	---	506.82
C - 7	10 May 88	520.30	---	13.60	---	---	506.70
C - 7	10 Jun 88	520.30	---	14.68	---	---	505.62
C - 7	25 Jul 88	520.30	---	13.43	---	---	506.87
C - 7	13 Oct 88	520.30	---	13.61	---	---	506.69
C - 7	1 Jan 89	520.30	---	12.66	---	---	507.64
C - 7	10 Apr 89	520.30	---	13.60	---	---	506.70
C -13	28 Mar 86	522.24	---	12.95	---	---	509.29
C -13	15 Mar 88	522.24	---	14.82	---	---	507.42
C -13	10 May 88	522.24	---	15.03	---	---	507.21
C -13	10 Jun 88	522.24	---	16.10	---	---	506.14
C -13	25 Jul 88	522.24	---	14.73	---	---	507.51
C -13	13 Oct 88	522.24	---	14.91	---	---	507.33
C -13	1 Jan 89	522.24	---	14.10	---	---	508.14
C -13	10 Apr 89	522.24	---	14.99	---	---	507.25
C -15	28 Mar 86	522.41	---	13.14	---	---	509.27
C -15	15 Mar 88	522.41	---	15.13	---	---	507.28
C -15	10 May 88	522.41	---	15.40	---	---	507.01
C -15	10 Jun 88	522.41	---	16.49	---	---	505.92
C -15	25 Jul 88	522.41	---	15.17	---	---	507.24
C -15	13 Oct 88	522.41	---	15.33	---	---	507.08
C -15	1 Jan 89	522.41	---	13.70	---	---	508.71
C -15	10 Apr 89	522.41	---	15.34	---	---	507.07
		FIRST STREET WELLS					
C -18	28 Mar 86	518.96	---	---	---	---	---
C -18	15 Mar 88	518.96	---	---	---	---	---
C -18	10 May 88	518.96	---	---	---	---	---
C -18	10 Jun 88	518.96	---	14.89	---	---	504.07
C -18	25 Jul 88	518.96	---	13.79	---	---	505.17
C -18	13 Oct 88	518.96	---	13.86	---	---	505.10
C -18	1 Jan 89	518.96	---	13.94	---	---	505.02
C -18	10 Apr 89	518.96	---	14.86	---	---	504.10

TABLE 1. Liquid Level and Top-of-Casing Elevations

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-----feet----->					
		SOUTHFRONT ROAD WELLS					
C - 8	28 Mar 86	519.74	---	11.78	---	---	507.96
C - 8	15 Mar 88	519.74	---	13.63	---	---	506.11
C - 8	10 May 88	519.74	---	13.74	---	---	506.00
C - 8	10 Jun 88	519.74	---	14.89	---	---	504.85
C - 8	25 Jul 88	519.74	---	13.65	---	---	506.09
C - 8	13 Oct 88	519.74	---	13.78	---	---	505.96
C - 8	1 Jan 89	519.74	---	12.68	---	---	507.06
C - 8	10 Apr 89	519.74	---	13.77	---	---	505.97
C - 9	28 Mar 86	519.52	---	11.24	---	---	508.28
C - 9	15 Mar 88	519.52	---	12.92	---	---	506.60
C - 9	10 May 88	519.52	---	13.12	---	---	506.40
C - 9	10 Jun 88	519.52	---	14.16	---	---	505.36
C - 9	25 Jul 88	519.52	---	13.00	---	---	506.52
C - 9	13 Oct 88	519.52	---	13.13	---	---	506.39
C - 9	1 Jan 89	519.52	---	12.19	---	---	507.33
C - 9	10 Apr 89	519.52	---	13.11	---	---	506.41
C -14	28 Mar 86	520.08	---	---	---	---	---
C -14	15 Mar 88	520.08	---	---	---	---	---
C -14	10 May 88	520.08	---	13.39	---	---	506.69
C -14	10 Jun 88	520.08	---	14.65	---	---	505.43
C -14	25 Jul 88	520.08	---	13.47	---	---	506.61
C -14	13 Oct 88	520.08	---	13.58	---	---	506.50
C -14	1 Jan 89	520.08	---	13.00	---	---	507.08
C -14	10 Apr 89	520.08	---	13.47	---	---	506.61
C -16	28 Mar 86	519.68	---	---	---	---	---
C -16	15 Mar 88	519.68	---	---	---	---	---
C -16	10 May 88	519.68	---	13.78	---	---	505.90
C -16	10 Jun 88	519.68	---	14.88	---	---	504.80
C -16	25 Jul 88	519.68	---	13.69	---	---	505.99
C -16	13 Oct 88	519.68	---	13.80	---	---	505.88
C -16	1 Jan 89	519.68	---	13.45	---	---	506.23
C -16	10 Apr 89	519.68	---	13.78	---	---	505.90
		MOBIL STATION WELLS					
C -10	28 Mar 86	520.41	---	Dry	---	---	---
C -10	15 Mar 88	520.41	---	14.86	---	---	505.55
C -10	10 May 88	520.41	---	14.90	---	---	505.51
C -10	10 Jun 88	520.41	---	15.94	---	---	504.47
C -10	25 Jul 88	520.41	---	14.85	---	---	505.56
C -10	13 Oct 88	520.41	---	14.90	---	---	505.51
C -10	1 Jan 89	520.41	---	14.83	---	---	505.58
C -10	10 Apr 89	520.41	---	14.90	---	---	505.51

TABLE 1. Liquid Level and Top-of-Casing Elevations

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-----feet----->					
C -11	28 Mar 86	520.04	---	13.82	---	---	506.22
C -11	15 Mar 88	520.04	---	14.49	---	---	505.55
C -11	10 May 88	520.04	---	14.31	---	---	505.73
C -11	10 Jun 88	520.04	---	15.47	---	---	504.57
C -11	25 Jul 88	520.04	---	13.60	---	---	506.44
C -11	13 Oct 88	520.04	---	14.53	---	---	505.51
C -11	1 Jan 89	520.04	---	14.10	---	---	505.94
C -11	10 Apr 89	520.04	---	14.36	---	---	505.68
C -12	28 Mar 86	519.82	---	13.61	---	---	506.21
C -12	15 Mar 88	519.82	---	14.55	---	---	505.27
C -12	10 May 88	519.82	---	14.57	---	---	505.25
C -12	10 Jun 88	519.82	---	15.63	---	---	504.19
C -12	25 Jul 88	519.82	---	14.51	---	---	505.31
C -12	13 Oct 88	519.82	---	14.60	---	---	505.22
C -12	13 Jan 89	519.82	---	14.62	---	---	505.20
C -12	10 Apr 89	519.82	---	14.61	---	---	505.21
C -17	28 Mar 86	520.82	---	13.48	---	---	507.34
C -17	15 Mar 88	520.82	---	14.76	Trace	---	506.06
C -17	10 May 88	520.82	---	14.77	---	---	506.05
C -17	10 Jun 88	520.82	---	15.84	---	---	504.98
C -17	25 Jul 88	520.82	---	14.63	---	---	506.19
C -17	13 Oct 88	520.82	---	14.83	---	---	505.99
C -17	1 Jan 89	520.82	---	14.78	---	---	506.04
C -17	10 Apr 89	520.82	---	14.83	---	---	506.06
C -19	28 Mar 86	520.99	---	---	---	---	---
C -19	15 Mar 88	520.99	---	---	---	---	---
C -19	10 May 88	520.99	---	15.23	---	---	505.76
C -19	10 Jun 88	520.99	---	16.58	---	---	504.41
C -19	25 Jul 88	520.99	---	15.19	---	---	505.80
C -19	13 Oct 88	520.99	---	15.27	---	---	505.72
C -19	1 Jan 89	520.99	---	15.20	---	---	505.79
C -19	10 Apr 89	520.99	---	15.24	---	---	505.75
RW	10 May 88	518.54	---	13.01	---	---	505.53
RW	10 Jun 88	518.54	---	14.01	---	---	504.53

Notes:
TOC = Top Of Casing Elevation
DTLH = Depth To Liquid Hydrocarbon
DTW = Depth To Water
LHT = Liquid Hydrocarbon Thickness
Elev.-LH = Elevation Of Liquid Hydrocarbon
Elev.-W = Elevation Of Water

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 South Front Street
Livermore, California
WGR # 1-024.01

Monitor Well	Date	FC	Benzene	Toluene	Xylenes	E-Benzene	TFH	TPH	TPPH	EDC	TCA	Pb	Zn	Cd	Cr	O & G
			<-----ppb----->									<-----ppm----->				
			Onsite Wells													
C - 1	15 Mar 88		770	87	2100	610	27000									
C - 1	13 Oct 88	Gas	220	11	130	62	3200									
C - 1	12 Jan 89	Gas	820	43	260	490		4000								
C - 1	10 Apr 89	Gas	100	<5	50	70			4000	<5	<5					<3.0
C - 1D	10 Apr 89	Gas	100	<5	50	60			4000	<5	<5	<0.005	0.285	<0.001	<0.005	
C - 2	15 Mar 88		3900	1900	1200	1200	22000									
C - 2	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C - 2	12 Jan 89		25	3	59	83		1000								
C - 2	10 Apr 89	Gas	2.5	<0.2	12	15			600	<0.2	<0.2					<3.0
C - 2D	10 Apr 89	---	<10	<10	11	11			<10000	<10	<10	<0.005	<0.005	<0.001	<0.005	
C - 3	15 Mar 88		86	8	36	30	2100									
C - 3	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C - 3	12 Jan 89		7	2	11	8		<1000.0								
C - 3	10 Apr 89	Gas	2.1	<0.2	2.6	4.4			200	1.4	<0.2	<0.005	<0.005	<0.001	<0.005	<3.0
C - 5	15 Mar 88		82	7	95	77	1600									
C - 5	13 Oct 88	Gas	<0.5	<0.5	<0.5	<0.5	2500									
C - 5	12 Jan 89	Gas	42	3	52	44		<1000.0								
C - 5	10 Apr 89	Gas	2.6	<0.2	5.5	6.2			180	1.4	<0.2	<0.005	0.014	<0.001	<0.005	<3.0
C - 6	15 Mar 88		870	4600	8200	1500	46000									
C - 6	10 May 88		1400	10000	19000	3000	86000									
C - 6	13 Oct 88	Gas	300	600	1600	260	5300									
C - 6	12 Jan 89	Gas	260	110	720	270		5000								
C - 6	12 Apr 89	Gas	90	190	680	190			5000	<20	<20	0.007	0.013	<0.001	<0.005	4.0
C - 7	15 Mar 88		98	69	120	120	8000									

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 South Front Street
Livermore, California
WGR # 1-024.01

Monitor Well	Date	FC	Benzene	Toluene	Xylenes	E-Benzene	TFH	TPH	TPPH	EDC	TCA	Pb	Zn	Cd	Cr	O & G
			<-----ppb----->									<-----ppm----->				
C - 7	13 Oct 88	Gas	4400	220	3000	1000	16000									
C - 7	12 Jan 89	Gas	950	47	640	670		8000								
C - 7	12 Apr 89	Gas	1100	30	370	760			6000	<20	<20	<0.005	0.008	<0.001	<0.005	<3.0
C -13	15 Mar 88		2	<0.5	3	9	250									
C -13	13 Oct 88		1.9	<0.5	<0.5	<0.5	<1000.0									
C -13	12 Jan 89	Gas	<0.3	0.6	<0.3	4		<1000								
C -13	10 Apr 89	Gas	<0.2	<0.2	<0.4	8			<100	<0.2	<0.2	<0.005	0.163	<0.001	<0.005	<3.0
C -15	15 Mar 88		<0.5	<0.5	<0.5	<0.5	<1.0									
C -15	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C -15	12 Jan 89	Gas	<0.3	<0.3	<0.3	<0.3		<1000								
C -15	10 Apr 89	Gas	<0.2	<0.2	<0.4	<0.2			<100	<0.2	<0.2	<0.005	0.190	<0.001	<0.005	<3.0
			Southfront Road Wells													
C - 8	15 Mar 88		360	25	<0.5	10	7500									
C - 8	13 Oct 88		6	5.3	<0.5	<0.5	<1000.0									
C - 8	12 Jan 89		37	4	5	1		<1000								
C - 8	12 Apr 89	Gas	13	<5	<5	<5			3000	5	<5	<0.005	<0.005	<0.001	0.078	12.0
C - 9	15 Mar 88		540	560	3900	580	29000									
C - 9	13 Oct 88	Gas	57	29	150	20	2200									
C - 9	12 Jan 89	Gas	39	12	46	51		2000								
C - 9	11 Apr 89	Gas	16	20	240	55			6000	2.1	<0.5					<3.0
C - 9D	11 Apr 89	Gas	14	25	290	45			6000	<5.0	<5.0	0.023	0.008	<0.001	<0.005	
C -14	10 May 88		13000	29000	18	2700	120000									
C -14	13 Oct 88		NS	NS	NS	NS	NS	NS								
C -14	12 Jan 89		NS	NS	NS	NS	NS	NS								
C -14	10-12 Apr 89	Gas	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 South Front Street
Livermore, California
WGR # 1-024.01

Monitor Well	Date	FC	Benzene	Toluene	Xylenes	E-Benzene	TFH	TPH	TPPH	EDC	TCA	Pb	Zn	Cd	Cr	O & G
			<-----ppb----->									<-----ppm----->				
C -16	10 May 88		1000	73	180	140	4500									
C -16	13 Oct 88	Gas	16	5.5	16	<1.0	1600									
C -16	12 Jan 89	Gas	360	11	51	78		1000								
C -16	11 Apr 89	Gas	130	4	19	21			1500	8	<1.0	<0.005	<0.005	<0.001	<0.005	<3.0
			First Street Wells													
C -18	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C -18	12 Jan 89	Gas	<0.3	<0.3	<0.3	<0.3		<1000.0								
C -18	11 Apr 89	---	<0.2	<0.2	<0.4	<0.2			<200	3.6	<0.2	<0.005	0.010	<0.001	0.250	<3.0
			Mobil Station Wells													
C -10	15 Mar 88		7	<0.5	<0.5	<0.5	90									
C -10	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C -10	12 Jan 89		<0.3	<0.3	<0.3	<0.3		<1000								
C -10	11 Apr 89	---	4.8	<0.5	<1	<0.5			<300	6.1	<0.5	<0.005	<0.005	<0.001	<0.005	<3.0
C -11	14 Oct 88	Gas	240	33	67	4.7	1.9									
C -11	12 Jan 89	Gas	<0.3	0.8	<0.3	<0.3		<1000.0								
C -11	12 Apr 89	Gas	4.3	<1	<1	<1			<50	<1	<1.0	<0.005	<0.005	<0.001	0.024	<3.0
C -12	15 Mar 88		<0.5	<0.5	<0.5	<0.5	<1.0									
C -12	13 Oct 88		<0.5	<0.5	<0.5	<0.5	<1000.0									
C -12	12 Jan 89		<0.3	<0.3	<0.3	<0.3		<1000.0								
C -12	11 Apr 89	---	<0.2	<0.2	<0.4	<0.2			<100	<0.2	0.4	<0.005	0.016	<0.001	0.013	<3.0
C -17	13 Oct 88	Gas	18	900	5500	760	270,000									
C -17	12 Jan 89	Gas	<15	490	6700	2100		190,000								
C -17	11 Apr 89	Gas	30	150	1000	320			27,000	<10	<10	<0.005	0.008	<0.001	<0.005	6.0

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 South Front Street
Livermore, California
WGR # 1-024.01

Monitor Well	Date	FC	Benzene	Toluene	Xylenes	E-Benzene	TFH	TPH	TPPH	EDC	TCA	Pb	Zn	Cd	Cr	O & G
			<-----ppb----->									<-----ppm----->				
C -19	10 May 88		1400	360	1300	350	18									
C -19	13 Oct 88		8.3	4.7	<0.5	4.4	<1000.0									
C -19	12 Jan 89	Gas	5	4	<0.3	<0.3		<1000								
C -19	11 Apr 89	---	1.8	<2	<4	<2			<1000	13	<2.0	0.023	0.008	<0.001	<0.005	<3.0
C -19D	11 Apr 89	Gas	1.2	<0.2	0.6	0.6			500	14	<0.2					
TB	12 Jan 89		<0.3	<0.3	<0.3	<0.3										
TB	10 Apr 89	---	<0.2	<0.2	<0.4	<0.2			<100	<1	<0.2					
TB	11 Apr 89	---	<0.1	<0.1	<0.2	<0.1			<50	<0.1	<0.1					
TB	12 Apr 89	---	<0.5	<1	<1	<1			<50	<1	<1					

Notes:

FC = Fuel characterization
E-Benzene - Ethyl benzene
TFH = Total Fuel Hydrocarbons
TPH = Total Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons
EDC = 1,2-Dichloroethane
TCA = 1,1,1-Trichloroethane
ppb = Parts per billion
ppm = Parts-per-million
NS = Not sampled because of poor recovery
TB = Travel Blank
D = Duplicate Analysis

STLC = Soluble Threshold Limit Concentrations

STLC Pb (Lead) = 1.0 ppm
STLC Zn (Zinc) = 5 ppm
STLC Cd (Cadmium) = 5 ppm
STLC Cr (Chromium) = 250 ppm

ATTACHMENT A

SOP-4: GROUNDWATER SAMPLING

STANDARD OPERATING PROCEDURES
RE: GROUNDWATER PURGING AND SAMPLING
SOP-4

Prior to water sampling, each well is purged by evacuating a minimum of three well-casing volumes of groundwater or until the discharge water temperature, conductivity, and pH stabilize. The groundwater sample should be taken when the water level in the well recovers to 80% of its static level.

The sampling equipment used consists of either a teflon bailer or a stainless steel bladder pump with a teflon bladder. If the sampling system is dedicated to the well, then the bailer is made of teflon, but the bladder pump is PVC with a polypropylene bladder. Forty milliliter (ml) glass volatile-organic-analysis (VOA) vials, with teflon septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top of the vial. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information should include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected for each well. This sample is held at the laboratory unless needed. A trip blank is prepared at the laboratory and placed in the transport cooler. It remains with the cooler and is analyzed by the laboratory along with the groundwater samples. A field blank is prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been steam-cleaned, prior to use in a second well, and is analyzed along with the other samples. The field blank demonstrates the quality of in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all the well-development and water-sampling equipment that is not dedicated to a well is steam-cleaned between each well. As a second precautionary measure, wells will be sampled in order of least to highest concentrations as established by previous analyses.

Central Coast Analytical Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

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Fax (805) 543-2565
(805) 543-2553

6483-D Calle Real
Goleta, CA 93117
Fax (805) 978-4356
(805) 964-7638

SAMPLE CHAIN OF CUSTODY

EMITTED BY:

COMPANY: Western Geologic Resources | CONTACT NAME: Lee Otis

ADDRESS: 2169 East Francisco Blvd. Suite B. San Rafael, Ca. 94901 | PHONE: (415) 457-7595

PROJECT #: 1-024.01 | PROJECT NAME: Livermore

SAMPLER (Print & Sign Name): Madeleine Stanger, Madeleine B. Stanger

LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	ANALYSIS REQUESTED: EPA 8260 full Scan + TPPH	ANALYSIS REQUESTED: Oil request by EPA 503E
4386	2409 A,B	4/11/89 14:00	2	$NaHSO_4$	X	
4387	2410 A,B	11:05	2			
4388	2412 A,B	11:35	2			
4389	2416 A,B	12:27	2			
4390	2417 A,B	9:55	2			
4391	2418 A,B	11:54	2			
4392	2419 A,B	10:31	2			
	2409 C	14:00	1			X
	2410 C	11:05				
	~~2411~~ 2412C	11:35				

REMARKS:

Samples #2409 and 2416 have TPPH ≥ 1000 ppb
Please include this analysis with the report for samples shipped on 4/10/89.

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Madeleine B Stanger	~~4~~ 4/11/89 15:52	

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5483-D Calle Real
Goleta, CA 93117
Fax (805) 978-4335
(805) 964-7833

SAMPLE CHAIN OF CUSTODY

SUBMITTED BY:

COMPANY: Western Geologic Resources | CONTACT NAME: Lee Otis

ADDRESS: 2169 East Francisco Blvd. Suite B. San Rafael, Ca. 94901 | PHONE: (415) 457-7595

PROJECT # -02401 | PROJECT NAME: Livermore

SAMPLER (Print & Sign Name): Madeleine Stanger — Madeleine B. Stanger

LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	ANALYSIS REQUESTED: Oil and grease by EPA 5520E	Soluble Cr, Cd, Pb by AA
	2416C	4/11/89 12:27	1	H_2SO_4	X	
	2417C	9:55		X		
	2418C	11:54				
	2419C	10:31				
	2409D	14:00				X
	2410D	11:05				
	2412D	11:35				
	2416D	12:27				
	2417D	9:55				
	2418D	11:54				

REMARKS: please include this analysis with the report for samples shipped on 4/10/89.

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Madeleine B Stanger	4/11/89 15:55	

COC1.WR1/8806

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Goleta, CA 93117
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(805) 964-7833

SAMPLE CHAIN OF CUSTODY

page 383

SUBMITTED BY:

COMPANY: Western Geologic Resources | CONTACT NAME: Lee Otis

ADDRESS: 2169 East Francisco Blvd Suite B. San Rafael, CA. 94901 | PHONE: (415) 457-7595

PROJECT # -024.01 | PROJECT NAME: Livermore

SAMPLER (Print & Sign Name): Madeleine Stanger Madeleine B Stanger

LAS LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	ANALYSIS REQUESTED: EPA 8260 Full Scan + TPH	Soluble Cr, Cd, Pb, Zn by AA
	2419D	4/11/89 10:31	1			X
1393	2ATB		1		X	

REMARKS:

please include this analysis with the report for samples shipped on 4/11/89.

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Madeleine B Stanger	4/11/89 15:55	

COC1.WR1/8805

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Goleta, CA 93117
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(805) 964-7833

SAMPLE CHAIN OF CUSTODY

SHEET 1 of 2

SUBMITTED BY:

COMPANY: WESTERN GEOLOGIC RESOURCES

CONTACT NAME: LEE OTIS

ADDRESS: 2169 E. FRANCISCO BLVD. #B SAN RAFAEL CA 94901

PHONE: 415-457-7595

PROJECT #: 1-0241

PROJECT NAME: LIVERMORE

SAMPLER (Print & Sign Name): MARK FRYE

CCAS LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	ANALYSIS REQUESTED: 5260 Full Scan + TPPH	SOSC Oil & Grease	Total Dissolved Metals by AA Al, Cd, Cr, Zn
F-4548	2406 A,B	4.12.89 9:47	2	N_4HSO_4	*		
4549	2407 A,B	9:20					
4550	2408 A,B	10:07					
4551	2411 A,B	8:44					
	2406 C	9:47	1	H_2SO_4		*	
	2407 C	9:20					
	2408 C	10:07					
	2411 C	8:44					
4548	2406 D	9:47		NONE			*
4549	2407 D	9:20					

REMARKS:

NOTE: 2406, 2407, HAVE TPPH ≥ 1000 ppb

PLEASE INCLUDE RESULTS IN REPORT ~~FROM~~ ALONG WITH SAMPLES SHIPPED 4.10.89 AND 4.11.89. Samples rec'd intact, sealed, cold

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Mark Frye	4.12.89 12:30	Greyhound
Greyhound	4-13-89	Bertha Krebsbach

COC1.WR1/8806

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Goleta, CA 93117
Fax (805) 976-4366
(805) 964-7838

SAMPLE CHAIN OF CUSTODY

SUBMITTED BY:

COMPANY: WESTERN GEOLOGIC RESOURCES

CONTACT NAME: LEE OTIS

ADDRESS: 2169 E. FRANCISCO BLVD #B SAN RAFAEL CA 94901

PHONE: 415-457-7595

PROJECT #: 1-024.01

PROJECT NAME: LIVERMORE

SAMPLER (Print & Sign Name): MARK FRITE

ANALYSIS REQUESTED: TOTAL DISSOLVED METALS BY AA; ALCO CL2N; 8260 FULLSCAN; TTPH

CCAS LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE		TOTAL DISSOLVED METALS BY AA	ALCO CL2N	8260 FULLSCAN TTPH				
F4550	2408 D	4.12.89 10:07	1	NONE		*						
F4551	2411 D	↓ 8:44	↓	↓		↓						
F4552	TRAVEL BLANK		↓	↓				*				

REMARKS:

PLEASE INCLUDE RESULTS IN REPORT ALONG WITH RESULTS FOR SAMPLES SHIPPED 4.10.89 AND 4.11.89

Samples rec'd intact, sealed, cold

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Mark Frite	4.12.89 12:30	Greyhound
Greyhound	4-13-89	Bertha Kreibsbach

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SAMPLE CHAIN OF CUSTODY

SUBMITTED BY:

COMPANY: Western Geologic Resources

CONTACT NAME: Lee Otis

ADDRESS: 2169 E. FRANCISCO BLVD. SUITE B, SAN RAFAEL, CA 94901

PHONE: 415-457-7595

PROJECT #: 1-024.01

PROJECT NAME: Livermore

SAMPLER (Print & Sign Name): Madeleine Stanger — Madeleine B. Stanger

ANALYSIS REQUESTED

CCAS LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	EPA 8260 full scan + TPPH	Oil & grease by EPA 503E							
F-4349	2402A, B	4/10/89 16:30	2	NaHSO4	X								
F-4350	2403 A, B	↓ 15:40	2	↓	↓								
F-4351	2405AB	↓ 16:10	2	↓	↓								
F-4352	~~2406A,B~~ 2401 changed as per client 4-12	↓ 16:30	2	↓	↓								
F-4353	2413 AB	↓ 15:35	2	↓	↓								
F-4354	2415A,B	↓ 14:00	2	↓	↓								
4349	2402C	↓ 16:30	1			X							
4350	2403C	↓ 15:40	↓			↓							
4351	2405C	↓ 16:10	↓			↓							
4352	2406C	↓ 16:30	↓			↓							

REMARKS:

NOTE: 2402, 2406, HAVE TPPH ≥ 1000 ppb.

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Madeleine Stanger	4/10/89 17:35	Greyhound
Greyhound	4/11-89 09:15	[illegible signature]

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Goleta, CA 93117
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SAMPLE CHAIN OF CUSTODY

SHEET 2 of 2

SUBMITTED BY:

COMPANY: WESTERN GEOLOGIC RESOURCES

CONTACT NAME: LEE OTIS

ADDRESS: 2164 E. FRANCISCO BLVD # B SAN RAFAEL CA 94901

PHONE: 415-457-7595

PROJECT #: -024.01

~~PROJECT NAME~~ SAMPLERS: MARK FREY, MADELINE STANGER

~~SAMPLER (Print & Sign Name)~~ PROJECT NAME: LIVERMORE

ANALYSIS REQUESTED

LAB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# of ITEMS	PRESERVE	EPA 5030	9[illegible] Dissolved [illegible]	BY AA	8260 Full Scan TPPH
	[illegible]		1	H_2SO_4	*			
F-4353	2413 C	4-10-89 15:35						
4354	2415 C	14:00						
4349	2402 D	16:30				*		
4350	2403 D	15:40						
4351	2405 D	16:10						
4352	2406 D	16:30						
4353	2413 D	15:35						
4354	2415 D	14:00						
F-4355	24 TB							*

REMARKS:

SAMPLE RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Madeline B Stanger	4/10/89 17:35	

ATTACHMENT C

LABORATORY REPORTS AND QUALITY ASSURANCE REPORTS

IR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4352
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2401 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	0.285	250.

**Practical Quantitation Limit

04/24/89
F4352ME.WR1/#39
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4349
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2402 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	<0.005	250.

**Practical Quantitotion Limit

04/24/89
F4349ME.WR1/#39
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

IR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4350
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2403 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	<0.005	250.

**Practical Quantitation Limit

04/24/89
F4350ME.WR1/#39
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4351
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2405 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	0.014	250.

**Practical Quantitation Limit

04/24/89
F4351ME.WR1/#39
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4548
Collected: 04/12/89
Received: 04/13/89
Tested: As Listed
Collected by: Mark Frye

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2406, Filtered Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/25/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/25/89 MM	0.005	<0.005	560.
LEAD	7421 04/25/89 MM	0.005	0.007	5.0
ZINC	7950 04/26/89 RJ	0.005	0.013	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATIONA as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4548ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4549
Collected: 04/12/89
Received: 04/13/89
Tested: As Listed
Collected by: Mark Frye

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2407, Filtered Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/25/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/25/89 MM	0.005	<0.005	560.
LEAD	7421 04/25/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	0.008	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATIONA as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4549ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4550
Collected: 04/12/89
Received: 04/13/89
Tested: As Listed
Collected by: Mark Frye

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2408, Filtered Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/25/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/25/89 MM	0.005	0.078	560.
LEAD	7421 04/25/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	<0.005	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATIONA as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4550ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

IR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4386
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 94906

Sample Description:

Project #1-024.01, Livermore
#2409 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

CONSTITUENT	EPA METHOD/DATE/ANALYST	REPORT DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	DUPLICATE mg/l	AT SPIKE mg/l	% Recovery	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	<0.001	0.01	97.	1.0
CHROMIUM	7191 04/27/89 MM	0.005	<0.005	<0.005	0.1	107.	560.
LEAD	7421 04/27/89 MM	0.005	0.023	<0.005	0.1	98.	5.0
ZINC	7950 04/26/89 RJ	0.005	0.008	<0.005	1.0	96.	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4386ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

DR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

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Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4387
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2410 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/27/89 MM	0.005	<0.005	560.
LEAD	7421 04/27/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	<0.005	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4387ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4551
Collected: 04/12/89
Received: 04/13/89
Tested: As Listed
Collected by: Mark Frye

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2411, Filtered Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/25/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/25/89 MM	0.005	0.024	560.
LEAD	7421 04/25/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	<0.005	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATIONA as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4551ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

IR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4388
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2412 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/27/89 MM	0.005	0.013	560.
LEAD	7421 04/27/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	0.016	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4388ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4353
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2413 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	0.163	250.

**Practical Quantitation Limit

04/24/89
F4353ME.WR1/#39
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4354
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
2415 D, Monitoring Water, Filtered

DIGESTED BY EPA METHOD 3005
ON 04/13/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/20/89 KRW	0.001	<0.001	1.0
CHROMIUM	7191 04/20/89 KRW	0.005	<0.005	560.
LEAD	7421 04/20/89 KRW	0.005	<0.005	5.0
ZINC	7950 04/21/89 RJ	0.005	0.19	250.

**Practical Quantitation Limit

04/25/89
F4354ME.WR1/#39
MH/ke/ah

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4389
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2416 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/27/89 MM	0.005	<0.005	560.
LEAD	7421 04/27/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	<0.005	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4389ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4390
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2417 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/27/89 MM	0.005	<0.005	560.
LEAD	7421 04/27/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	0.008	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4390ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4391
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 94906

Sample Description:

Project #1-024.01, Livermore
#2418 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 05/03/89 MM	0.005	0.25	560.
LEAD	7421 04/27/89 MM	0.005	<0.005	5.0
ZINC	7950 04/26/89 RJ	0.005	0.010	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/05/89
F4391ME.WR1/#44
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: F-4392
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
#2419 D, Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005
ON 04/21/89 BY EPM.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 04/27/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 04/27/89 MM	0.005	<0.005	560.
LEAD	7421 04/27/89 MM	0.005	0.023	5.0
ZINC	7950 04/26/89 RJ	0.005	0.008	250.

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

05/03/89
F4392ME.WR1/#43
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 04/10/89
Received: 04/11/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
Monitoring Water Samples As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND
		OIL & GREASE mg/l
EPA METHOD----------		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST----------		04/22/89/LAP
F-4349	#2402 C @ 1630	<3.
F-4350	#2403 C @ 1540	<3.
F-4351	#2405 C @ 1610	<3.
F-4352	#2401 C @ 1630	<3.
F-4353	#2413 C @ 1535	<3.
F-4354	#2415 C @ 1400	<3.

**Practical Quantitation Limit

04/28/89
F43490G.WR1/#41
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 04/12/89
Received: 04/13/89
Tested: As Listed
Collected by: Mark Frye

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

Sample Description:

Proj.#1-024.01, Livermore, Water Samples As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND
		OIL & GREASE (mg/l)
EPA METHOD----------		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST----------		04/27/89 LAP
F-04548	2406 C	4.
F-04549	2407 C	<3.
F-04550	2408 C	12.
F-04551	2411 C	<3.

**Practical Quantitation Limit

05-06-89
F04548WG.WR1/#44
MH/kc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central
Coast
Analytical
Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 04/11/89
Received: 04/12/89
Tested: As Listed
Collected by: Madeleine Stanger

ATTN: Lee Otis
Western Geologic
2169 E. Francisco Blvd., Suite B
San Rafael, CA 91406

Sample Description:

Project #1-024.01, Livermore
Samples As Listed, Water

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND
		OIL & GREASE mg/l
EPA METHOD----------		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST----------		04/25/89/MAP
F-4386	#2409 C @ 1400	<3.
F-4387	#2410 C @ 1105	<3.
F-4388	#2412 C @ 1135	<3.
F-4389	#2416 C @ 1227	<3.
F-4390	#2417 C @ 0955	6.
F-4391	#2418 C @ 1154	<3.
F-4392	#2419 C @ 1031	<3.

**Practical Quantitation Limit

05/02/89
F43860G.WR1/#42
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04352
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2401, A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	5.	100.
Bromodichloromethane	5.	not found
Bromoform	10.	not found
Carbon Tetrachloride	5.	not found
Chlorobenzene	5.	not found
2-Chloroethyl Vinyl Ether	50.	not found
Chloroform	20.	not found
Dibromochloromethane	5.	not found
1,2-Dichlorobenzene	5.	not found
1,3-Dichlorobenzene	5.	not found
1,4-Dichlorobenzene	5.	not found
1,1-Dichloroethane	5.	not found
1,2-Dichloroethane (EDC)	5.	not found
1,1-Dichloroethene	5.	not found
c-1,2-Dichloroethene	5.	not found
t-1,2-Dichloroethene	5.	not found
1,2-Dichloropropane	5.	not found
c-1,3-Dichloropropene	5.	not found
t-1,3-Dichloropropene	5.	not found
Ethylbenzene	5.	70.
Ethyl Chloride	5.	not found
Ethylene Dibromide	5.	not found
Methyl Bromide	5.	not found
Methyl Chloride	5.	not found
Methylene Chloride	50.	not found
1,1,2,2-Tetrachloroethane	20.	not found
Tetrachloroethylene (PCE)	5.	not found
Toluene	5.	not found
1,1,1-Trichloroethane (TCA)	5.	not found
1,1,2-Trichloroethane	5.	not found
Trichloroethene (TCE)	5.	not found
Trichlorotrifluoroethane (f113)	20.	not found
Trichlorofluoromethane(F-11)	20.	not found
Vinyl Chloride	5.	not found
Xylenes	10.	50.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	2000.	4000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 101/86/85.

04/27/89/MSD#7
F04352v.wr1/39
MH/jg/jc/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04352dup
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2401, A & B,
Livermore, Water, Duplicate Analysis

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	5.	100.
Bromodichloromethane	5.	not found
Bromoform	10.	not found
Carbon Tetrachloride	5.	not found
Chlorobenzene	5.	not found
2-Chloroethyl Vinyl Ether	50.	not found
Chloroform	20.	not found
Dibromochloromethane	5.	not found
1,2-Dichlorobenzene	5.	not found
1,3-Dichlorobenzene	5.	not found
1,4-Dichlorobenzene	5.	not found
1,1-Dichloroethane	5.	not found
1,2-Dichloroethane (EDC)	5.	not found
1,1-Dichloroethene	5.	not found
c-1,2-Dichloroethene	5.	not found
t-1,2-Dichloroethene	5.	not found
1,2-Dichloropropane	5.	not found
c-1,3-Dichloropropene	5.	not found
t-1,3-Dichloropropene	5.	not found
Ethylbenzene	5.	60.
Ethyl Chloride	5.	not found
Ethylene Dibromide	5.	not found
Methyl Bromide	5.	not found
Methyl Chloride	5.	not found
Methylene Chloride	50.	not found
1,1,2,2-Tetrachloroethane	20.	not found
Tetrachloroethylene (PCE)	5.	not found
Toluene	5.	not found
1,1,1-Trichloroethane (TCA)	5.	not found
1,1,2-Trichloroethane	5.	not found
Trichloroethene (TCE)	5.	not found
Trichlorotrifluoroethane (f113)	20.	not found
Trichlorofluoromethane(F-11)	20.	not found
Vinyl Chloride	5.	not found
Xylenes	10.	50.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	2000.	4000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 104/94/90.

04/27/89/MSD#7
F04352vd.wr1/39
MH/jg/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04349
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2402, A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	2.5
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	15.
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	12.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	600.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 104/80/93.

04/27/89/MSD#7
F04349v.wr1/38
MH/gb/jc/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04349dup
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2402, A & B,
Livermore, Water, Duplicate Analysis

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	10.	not found
Bromodichloromethane	10.	not found
Bromoform	20.	not found
Carbon Tetrachloride	10.	not found
Chlorobenzene	10.	not found
2-Chloroethyl Vinyl Ether	100.	not found
Chloroform	50.	not found
Dibromochloromethane	10.	not found
1,2-Dichlorobenzene	10.	not found
1,3-Dichlorobenzene	10.	not found
1,4-Dichlorobenzene	10.	not found
1,1-Dichloroethane	10.	not found
1,2-Dichloroethane (EDC)	10.	not found
1,1-Dichloroethene	10.	not found
c-1,2-Dichloroethene	10.	not found
t-1,2-Dichloroethene	10.	not found
1,2-Dichloropropane	10.	not found
c-1,3-Dichloropropene	10.	not found
t-1,3-Dichloropropene	10.	not found
Ethylbenzene	10.	11.
Ethyl Chloride	10.	not found
Ethylene Dibromide	10.	not found
Methyl Bromide	10.	not found
Methyl Chloride	10.	not found
Methylene Chloride	100.	not found
1,1,2,2-Tetrachloroethane	50.	not found
Tetrachloroethylene (PCE)	10.	not found
Toluene	10.	not found
1,1,1-Trichloroethane (TCA)	10.	not found
1,1,2-Trichloroethane	10.	not found
Trichloroethene (TCE)	10.	not found
Trichlorotrifluoroethane (f113)	50.	not found
Trichlorofluoromethane(F-11)	50.	not found
Vinyl Chloride	10.	not found
Xylenes	20.	11.
Total Purgeable Petroleum Hydrocorbons (Gasoline)	10000.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/87/73.

04/27/89/MSD#7
F04349vd.wr1/38
MH/gb/gb/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04350
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2403, A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	2.1
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	1.4
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	4.4
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrochloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	2.6
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	200.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 114/76/70.

04/27/89/MSD#7
F04350v.wr1/38
MH/jg/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04351
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 2405, A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	2.6
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	1.4
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	6.2
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	5.5
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	180.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are:- 109/74/80.

04/27/89/MSD#7
F04351v.wr1/38
MH/jg/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4548
Collected : 04/12/89
Received : 04/13/89
Tested : 04/24/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01 Livermore
2406 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	1000.	ND	1,2-Dichloroethene	20.	ND
Benzene	10.	90.	1,2-Dichloropropane	20.	ND
Bromodichloromethane	20.	ND	c-1,3-Dichloropropene	20.	ND
Bromoform	20.	ND	t-1,3-Dichloropropene	20.	ND
Bromomethane	20.	ND	Ethylbenzene	20.	190.
2-Butanone	200.	ND	2-Hexanone	100.	ND
Carbon Disulfide	20.	ND	Methyl Isobutyl Ketone	100.	ND
Carbon Tetrachloride	20.	ND	Methylene Chloride	100.	ND
Chlorobenzene	20.	ND	Styrene	20.	ND
Chloroethane	20.	ND	1,1,2,2-Tetrachloroethane	20.	ND
2-Chloroethylvinylether	40.	ND	Tetrachloroethene	20.	ND
Chloroform	20.	ND	Toluene	20.	190.
Chloromethane	20.	ND	1,1,1-Trichloroethane	20.	ND
Dibromochloromethane	20.	ND	1,1,2-Trichloroethane	20.	ND
1,2-Dichlorobenzene	20.	ND	Trichloroethene	20.	ND
1,3-Dichlorobenzene	20.	ND	Trichlorofluoromethane	20.	ND
1,4-Dichlorobenzene	20.	ND	Trichlorotrifluoroethane	20.	ND
1,1-Dichloroethane	20.	ND	Vinyl Acetate	100.	ND
1,2-Dichloroethane	20.	ND	Vinyl Chloride	20.	ND
1,1-Dichloroethene	20.	ND	Xylenes	20.	680.
Total Purgeable Petroleum Hydrocarbons (Gasoline)				1000.	5000.

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 107/109/126
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/04/28/89
f4548v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Kilpatrick for

Mary D. Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4549
Collected : 04/12/89
Received : 04/13/89
Tested : 04/24/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01 Livermore
2407 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	1000.	ND	1,2-Dichloroethene	20.	ND
Benzene	10.	1100.	1,2-Dichloropropane	20.	ND
Bromodichloromethane	20.	ND	c-1,3-Dichloropropene	20.	ND
Bromoform	20.	ND	t-1,3-Dichloropropene	20.	ND
Bromomethane	20.	ND	Ethylbenzene	20.	760.
2-Butanone	200.	ND	2-Hexanone	100.	ND
Carbon Disulfide	20.	ND	Methyl Isobutyl Ketone	100.	ND
Carbon Tetrachloride	20.	ND	Methylene Chloride	100.	ND
Chlorobenzene	20.	ND	Styrene	20.	ND
Chloroethane	20.	ND	1,1,2,2-Tetrachloroethane	20.	ND
2-Chloroethylvinylether	40.	ND	Tetrachloroethene	20.	ND
Chloroform	20.	ND	Toluene	20.	30.
Chloromethane	20.	ND	1,1,1-Trichloroethane	20.	ND
Dibromochloromethane	20.	ND	1,1,2-Trichloroethane	20.	ND
1,2-Dichlorobenzene	20.	ND	Trichloroethene	20.	ND
1,3-Dichlorobenzene	20.	ND	Trichlorofluoromethane	20.	ND
1,4-Dichlorobenzene	20.	ND	Trichlorotrifluoroethane	20.	ND
1,1-Dichloroethane	20.	ND	Vinyl Acetate	100.	ND
1,2-Dichloroethane	20.	ND	Vinyl Chloride	20.	ND
1,1-Dichloroethene	20.	ND	Xylenes	20.	370.

Total Purgeable Petroleum Hydrocarbons (Gasoline) 1000. 6000.

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 99/102/118
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/04/28/89
f4549v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Hilpert for

Mary D. Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4550
Collected : 04/12/89
Received : 04/13/89
Tested : 04/21/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01, Livermore
2408 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	100.	ND	1,2-Dichloroethene	5.	ND
Benzene	2.	13.	1,2-Dichloropropane	5.	ND
Bromodichloromethane	5.	ND	c-1,3-Dichloropropene	5.	ND
Bromoform	5.	ND	t-1,3-Dichloropropene	5.	ND
Bromomethane	5.	ND	Ethylbenzene	5.	ND
2-Butanone	50.	ND	2-Hexanone	20.	ND
Carbon Disulfide	10.	ND	Methyl Isobutyl Ketone	20.	ND
Carbon Tetrachloride	5.	ND	Methylene Chloride	20.	ND
Chlorobenzene	5.	ND	Styrene	5.	ND
Chloroethane	5.	ND	1,1,2,2-Tetrachloroethane	5.	ND
2-Chloroethylvinylether	10.	ND	Tetrachloroethene	5.	ND
Chloroform	10.	ND	Toluene	5.	ND
Chloromethane	5.	ND	1,1,1-Trichloroethane	5.	ND
Dibromochloromethane	5.	ND	1,1,2-Trichloroethane	5.	ND
1,2-Dichlorobenzene	5.	ND	Trichloroethene	5.	ND
1,3-Dichlorobenzene	5.	ND	Trichlorofluoromethane	5.	ND
1,4-Dichlorobenzene	5.	ND	Trichlorotrifluoroethane	5.	ND
1,1-Dichloroethane	5.	ND	Vinyl Acetate	20.	ND
1,2-Dichloroethane	5.	5.	Vinyl Chloride	5.	ND
1,1-Dichloroethene	5.	ND	Xylenes	5.	ND

Total Purgeable Petroleum Hydrocarbons (Gasoline) 200. 3000.

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 96/93/107
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/04/25/89
f4550v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R. Hilpert for

Mary D. Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04386
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2409 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.5	16.
Bromodichloromethane	0.5	not found
Bromoform	1.	not found
Carbon Tetrachloride	0.5	not found
Chlorobenzene	0.5	not found
2-Chloroethyl Vinyl Ether	5.	not found
Chloroform	2.	not found
Dibromochloromethane	0.5	not found
1,2-Dichlorobenzene	0.5	not found
1,3-Dichlorobenzene	0.5	not found
1,4-Dichlorobenzene	0.5	not found
1,1-Dichloroethane	0.5	not found
1,2-Dichloroethane (EDC)	0.5	2.1
1,1-Dichloroethene	0.5	not found
c-1,2-Dichloroethene	0.5	not found
t-1,2-Dichloroethene	0.5	not found
1,2-Dichloropropane	0.5	not found
c-1,3-Dichloropropene	0.5	not found
t-1,3-Dichloropropene	0.5	not found
Ethylbenzene	0.5	55.
Ethyl Chloride	0.5	not found
Ethylene Dibromide	0.5	not found
Methyl Bromide	0.5	not found
Methyl Chloride	0.5	not found
Methylene Chloride	5.	not found
1,1,2,2-Tetrachloroethane	2.	not found
Tetrachloroethylene (PCE)	0.5	not found
Toluene	0.5	20.
1,1,1-Trichloroethane (TCA)	0.5	not found
1,1,2-Trichloroethane	0.5	not found
Trichloroethene (TCE)	0.5	not found
Trichlorotrifluoroethane (f113)	2.	not found
Trichlorofluoromethane(F-11)	2.	not found
Vinyl Chloride	0.5	not found
Xylenes	1.	240.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	6000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 106/80/96.

04/27/89/MSD#7
F04386v.wr1/39
MH/jg/re/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
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(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04386dup
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2409 A & B,
Livermore, Water
Duplicate Analysis

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	5.	14.
Bromodichloromethane	5.	not found
Bromoform	10.	not found
Carbon Tetrachloride	5.	not found
Chlorobenzene	5.	not found
2-Chloroethyl Vinyl Ether	50.	not found
Chloroform	20.	not found
Dibromochloromethane	5.	not found
1,2-Dichlorobenzene	5.	not found
1,3-Dichlorobenzene	5.	not found
1,4-Dichlorobenzene	5.	not found
1,1-Dichloroethane	5.	not found
1,2-Dichloroethane (EDC)	5.	not found
1,1-Dichloroethene	5.	not found
c-1,2-Dichloroethene	5.	not found
t-1,2-Dichloroethene	5.	not found
1,2-Dichloropropane	5.	not found
c-1,3-Dichloropropene	5.	not found
t-1,3-Dichloropropene	5.	not found
Ethylbenzene	5.	45.
Ethyl Chloride	5.	not found
Ethylene Dibromide	5.	not found
Methyl Bromide	5.	not found
Methyl Chloride	5.	not found
Methylene Chloride	50.	not found
1,1,2,2-Tetrachloroethane	20.	not found
Tetrachloroethylene (PCE)	5.	not found
Toluene	5.	25.
1,1,1-Trichloroethane (TCA)	5.	not found
1,1,2-Trichloroethane	5.	not found
Trichloroethene (TCE)	5.	not found
Trichlorotrifluoroethane (f113)	20.	not found
Trichlorofluoromethane(F-11)	20.	not found
Vinyl Chloride	5.	not found
Xylenes	10.	290.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	500.	6000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 107/85/79.

04/27/89/MSD#7
F04386vd.wr1/39
MH/jg/re/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04387
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2410 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.5	4.8
Bromodichloromethane	0.5	not found
Bromoform	1.	not found
Carbon Tetrachloride	0.5	not found
Chlorobenzene	0.5	not found
2-Chloroethyl Vinyl Ether	5.	not found
Chloroform	2.	not found
Dibromochloromethane	0.5	not found
1,2-Dichlorobenzene	0.5	not found
1,3-Dichlorobenzene	0.5	not found
1,4-Dichlorobenzene	0.5	not found
1,1-Dichloroethane	0.5	not found
1,2-Dichloroethane (EDC)	0.5	6.1
1,1-Dichloroethene	0.5	not found
c-1,2-Dichloroethene	0.5	not found
t-1,2-Dichloroethene	0.5	not found
1,2-Dichloropropane	0.5	not found
c-1,3-Dichloropropene	0.5	not found
t-1,3-Dichloropropene	0.5	not found
Ethylbenzene	0.5	not found
Ethyl Chloride	0.5	not found
Ethylene Dibromide	0.5	not found
Methyl Bromide	0.5	not found
Methyl Chloride	0.5	not found
Methylene Chloride	5.	not found
1,1,2,2-Tetrachloroethane	2.	not found
Tetrachloroethylene (PCE)	0.5	not found
Toluene	0.5	not found
1,1,1-Trichloroethane (TCA)	0.5	not found
1,1,2-Trichloroethane	0.5	not found
Trichloroethene (TCE)	0.5	not found
Trichlorotrifluoroethane (f113)	2.	not found
Trichlorofluoromethane(F-11)	2.	not found
Vinyl Chloride	0.5	not found
Xylenes	1.	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	300.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 115/88/71.

04/27/89/MSD#7
F04387v.wr1/39
MH/jg/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
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(805) 543-2553

Lab Number : F-4551
Collected : 04/12/89
Received : 04/13/89
Tested : 04/21/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01, Livermore
2411 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	4.3	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND

Total Purgeable Petroleum Hydrocarbons (Gasoline) 50. ND

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 101/103/117
Constituents reported as ND would have been reported if presen. at or above the detection limit.

finn/04/25/89
f4551v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Hilpert for

Mary D. Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
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(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04388
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2412 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	0.4
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 128/81/73.

04/27/89/MSD#7
F04388v.wr1/39
MH/jg/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04389
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2416 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	1.	130.
Bromodichloromethane	1.	not found
Bromoform	2.	not found
Carbon Tetrachloride	1.	not found
Chlorobenzene	1.	not found
2-Chloroethyl Vinyl Ether	10.	not found
Chloroform	5.	not found
Dibromochloromethane	1.	not found
1,2-Dichlorobenzene	1.	not found
1,3-Dichlorobenzene	1.	not found
1,4-Dichlorobenzene	1.	not found
1,1-Dichloroethane	1.	not found
1,2-Dichloroethane (EDC)	1.	8.
1,1-Dichloroethene	1.	not found
c-1,2-Dichloroethene	1.	not found
t-1,2-Dichloroethene	1.	not found
1,2-Dichloropropane	1.	not found
c-1,3-Dichloropropene	1.	not found
t-1,3-Dichloropropene	1.	not found
Ethylbenzene	1.	21.
Ethyl Chloride	1.	not found
Ethylene Dibromide	1.	not found
Methyl Bromide	1.	not found
Methyl Chloride	1.	not found
Methylene Chloride	10.	not found
1,1,2,2-Tetrachloroethane	5.	not found
Tetrachloroethylene (PCE)	1.	not found
Toluene	1.	4.
1,1,1-Trichloroethane (TCA)	1.	not found
1,1,2-Trichloroethane	1.	not found
Trichloroethene (TCE)	1.	not found
Trichlorotrifluoroethane (f113)	5.	not found
Trichlorofluoromethane(F-11)	5.	not found
Vinyl Chloride	1.	not found
Xylenes	2.	19.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	1500.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 98/83/71.

04/27/89/MSD#7
F04389v.wr1/39
MH/jg/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast
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(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04390
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2417 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	10.	30.
Bromodichloromethane	10.	not found
Bromoform	20.	not found
Carbon Tetrachloride	10.	not found
Chlorobenzene	10.	not found
2-Chloroethyl Vinyl Ether	100.	not found
Chloroform	50.	not found
Dibromochloromethane	10.	not found
1,2-Dichlorobenzene	10.	not found
1,3-Dichlorobenzene	10.	not found
1,4-Dichlorobenzene	10.	not found
1,1-Dichloroethane	10.	not found
1,2-Dichloroethane (EDC)	10.	not found
1,1-Dichloroethene	10.	not found
c-1,2-Dichloroethene	10.	not found
t-1,2-Dichloroethene	10.	not found
1,2-Dichloropropane	10.	not found
c-1,3-Dichloropropene	10.	not found
t-1,3-Dichloropropene	10.	not found
Ethylbenzene	10.	320.
Ethyl Chloride	10.	not found
Ethylene Dibromide	10.	not found
Methyl Bromide	10.	not found
Methyl Chloride	10.	not found
Methylene Chloride	100.	not found
1,1,2,2-Tetrachloroethane	50.	not found
Tetrachloroethylene (PCE)	10.	not found
Toluene	10.	150.
1,1,1-Trichloroethane (TCA)	10.	not found
1,1,2-Trichloroethane	10.	not found
Trichloroethene (TCE)	10.	not found
Trichlorotrifluoroethane (f113)	50.	not found
Trichlorofluoromethane(F-11)	50.	not found
Vinyl Chloride	10.	not found
Xylenes	20.	1000.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	5000.	27000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/90/84.

04/27/89/MSD#7
F04390v.wr1/40
MH/jg/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
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San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04391
Collected : 04/11/89
Received : 04/12/89
Tested : 04/21/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2418 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	3.6
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	200.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/90.

04/28/89/MSD#7
F04391v.wr1/40
MH/ec/gb/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04392
Collected : 04/11/89
Received : 04/12/89
Tested : 04/21/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2419 A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.5	1.8
Bromodichloromethane	2.	not found
Bromoform	4.	not found
Carbon Tetrachloride	2.	not found
Chlorobenzene	2.	not found
2-Chloroethyl Vinyl Ether	20.	not found
Chloroform	10.	not found
Dibromochloromethane	2.	not found
1,2-Dichlorobenzene	2.	not found
1,3-Dichlorobenzene	2.	not found
1,4-Dichlorobenzene	2.	not found
1,1-Dichloroethane	2.	not found
1,2-Dichloroethane (EDC)	2.	13.
1,1-Dichloroethene	2.	not found
c-1,2-Dichloroethene	2.	not found
t-1,2-Dichloroethene	2.	not found
1,2-Dichloropropane	2.	not found
c-1,3-Dichloropropene	2.	not found
t-1,3-Dichloropropene	2.	not found
Ethylbenzene	2.	not found
Ethyl Chloride	2.	not found
Ethylene Dibromide	2.	not found
Methyl Bromide	2.	not found
Methyl Chloride	2.	not found
Methylene Chloride	20.	not found
1,1,2,2-Tetrachloroethane	10.	not found
Tetrachloroethylene (PCE)	2.	not found
Toluene	2.	not found
1,1,1-Trichloroethane (TCA)	2.	not found
1,1,2-Trichloroethane	2.	not found
Trichloroethene (TCE)	2.	not found
Trichlorotrifluoroethane (f113)	10.	not found
Trichlorofluoromethane(F-11)	10.	not found
Vinyl Chloride	2.	not found
Xylenes	4.	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	1000.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 100/94/86.

04/28/89/MSD#7
F04392v.wr1/40
MH/ec/gb/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : F-04392dup
Collected : 04/11/89
Received : 04/12/89
Tested : 04/21/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 2419 A & B,
Livermore, Water, Duplicate Analysis

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	1.2
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	14.
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	0.6
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	0.6
Total Purgeable Petroleum Hydrocarbons (Gasoline)	200.	500.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/86.

04/28/89/MSD#7
F04392vd.wr1/40
MH/ec/gb/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
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(805) 543-2553

Lab Number : F-04355
Collected : 04/10/89
Received : 04/11/89
Tested : 04/18/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
Project #1-024.01, 24TB, A & B,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 100/97/99.

04/27/89/MSD#7
F04355v.wr1/39
MH/ec/gb/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-04393
Collected : 04/11/89
Received : 04/12/89
Tested : 04/20/89
Collected by: M. Stanger

ATTN: Lee Otis
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-024.01, 24TB,
Livermore, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.1	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	50.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 102/104/97.

04/27/89/MSD#7
F04393v.wr1/40
MH/ec/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4552
Collected : 04/12/89
Received : 04/13/89
Tested : 04/21/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01, Livermore
Travel Blank, TB032889-DM04

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND

Total Purgeable Petroleum Hydrocarbons (Gasoline) 50. ND

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 90/92/106
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/04/25/89
f4552v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

Mary D. Hovlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : B042189
Collected :
Received :
Tested : 04/21/89
Collected by:
EPA METHOD 8260
Sample Description:
Instrument Blank

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND

Total Purgeable Petroleum Hydrocarbons (Gasoline) 50. ND

*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 98/100/112
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/04/25/89
b042189v.wr1
MH/brp/mc

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Hilpert for

Mary D. Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : QS-0420 9
Collected :
Received :
Tested : 04/20/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260

CCAS

Sample Description:
BOILED WATER SPIKE
Spiked with 2 ug/L VOA Stock

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.1	2.0	99.
Bromodichloromethane	0.1	2.1	104.
Bromoform	0.2	2.1	101.
Carbon Tetrachloride	0.1	2.1	104.
Chlorobenzene	0.1	2.0	99.
2-Chloroethyl Vinyl Ether	1.	not spiked	----
Chloroform	0.5	2.1	103.
Dibromochloromethane	0.1	2.3	113.
1,2-Dichlorobenzene	0.1	1.8	92.
1,3-Dichlorobenzene	0.1	2.0	102.
1,4-Dichlorobenzene	0.1	2.2	110.
1,1-Dichloroethane	0.1	1.9	96.
1,2-Dichloroethane (EDC)	0.1	2.0	101.
1,1-Dichloroethene	0.1	1.9	94.
c-1,2-Dichloroethene	0.1	2.0	98.
t-1,2-Dichloroethene	0.1	1.9	95.
1,2-Dichloropropane	0.1	2.1	103.
c-1,3-Dichloropropene	0.1	2.2	112.
t-1,3-Dichloropropene	0.1	2.0	102.
Ethylbenzene	0.1	1.9	94.
Ethyl Chloride	0.1	2.0	99.
Ethylene Dibromide	0.1	2.2	112.
Methyl Bromide	0.1	not spiked	----
Methyl Chloride	0.1	1.3	67.
Methylene Chloride	1.	2.1	106.
1,1,2,2-Tetrachloroethane	0.5	2.3	116.
Tetrachloroethylene (PCE)	0.1	2.2	109.
Toluene	0.1	2.4	120.
1,1,1-Trichloroethane (TCA)	0 1	2.1	106.
1,1,2-Trichloroethane	0.1	2.1	107.
Trichloroethene (TCE)	0.1	2.0	101.
Trichlorotrifluoroethane	0.5	2.0	100.
Trichlorofluoromethane	0.5	1.9	97.
Vinyl Chloride	0.1	1.3	65.
Xylenes	0.2	5.8	96.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 98/98/95.

04/28/89/MSD#7
QS0420 9v.wr1/40
MH/ec/tl/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : QS-4209-2
Collected :
Received :
Tested : 04/20/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
BOILED WATER SPIKE
Spiked with 2 ug/L VOA Stock

CCAS

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.1	1.6	81.
Bromodichloromethane	0.1	2.3	114.
Bromoform	0.2	2.3	115.
Carbon Tetrachloride	0.1	1.7	83.
Chlorobenzene	0.1	2.0	100.
2-Chloroethyl Vinyl Ether	1.	not spiked	----
Chloroform	0.5	1.8	90.
Dibromochloromethane	0.1	not spiked	----
1,2-Dichlorobenzene	0.1	1.4	68.
1,3-Dichlorobenzene	0.1	1.4	72.
1,4-Dichlorobenzene	0.1	1.4	71.
1,1-Dichloroethane	0.1	1.8	88.
1,2-Dichloroethane (EDC)	0.1	2.4	120.
1,1-Dichloroethene	0.1	1.6	82.
c-1,2-Dichloroethene	0.1	1.7	85.
t-1,2-Dichloroethene	0.1	1.6	81.
1,2-Dichloropropane	0.1	2.0	101.
c-1,3-Dichloropropene	0.1	1.6	82.
t-1,3-Dichloropropene	0.1	2.0	101.
Ethylbenzene	0.1	1.5	75.
Ethyl Chloride	0.1	1.7	85.
Ethylene Dibromide	0.1	2.8	142.
Methyl Bromide	0.1	not spiked	----
Methyl Chloride	0.1	not spiked	----
Methylene Chloride	1.	2.0	99.
1,1,2,2-Tetrachloroethane	0.5	2.9	144.
Tetrachloroethylene (PCE)	0.1	2.0	98.
Toluene	0.1	1.9	94.
1,1,1-Trichloroethane (TCA)	0.1	1.8	89.
1,1,2-Trichloroethane	0.1	not spiked	----
Trichloroethene (TCE)	0.1	1.7	84.
Trichlorotrifluoroethane	0.5	2.0	99.
Trichlorofluoromethane	0.5	1.7	87.
Vinyl Chloride	0.1	not spiked	----
Xylenes	0.2	4.5	75.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 108/80/70.

04/28/89/MSD#7
QS4209v2.wr1/40
MH/jg/tl/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : QS-4189-2
Collected :
Received :
Tested : 04/18/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
BOILED WATER SPIKE
Spiked with 2 ug/L VOA Stock

CCAS

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.1	2.6	131.
Bromodichloromethane	0.1	2.2	109.
Bromoform	0.2	2.7	135.
Carbon Tetrachloride	0.1	2.1	104.
Chlorobenzene	0.1	2.2	108.
2-Chloroethyl Vinyl Ether	1.	not spiked	----
Chloroform	0.5	2.1	103.
Dibromochloromethane	0.1	1.9	96.
1,2-Dichlorobenzene	0.1	2.6	131.
1,3-Dichlorobenzene	0.1	2.8	140.
1,4-Dichlorobenzene	0.1	2.5	126.
1,1-Dichloroethane	0.1	2.1	107.
1,2-Dichloroethane (EDC)	0.1	2.0	98.
1,1-Dichloroethene	0.1	1.9	95.
c-1,2-Dichloroethene	0.1	2.1	107.
t-1,2-Dichloroethene	0.1	2.1	107.
1,2-Dichloropropane	0.1	1.9	93.
c-1,3-Dichloropropene	0.1	2.1	105.
t-1,3-Dichloropropene	0.1	2.1	105.
Ethylbenzene	0.1	2.9	145.
Ethyl Chloride	0.1	2.2	108.
Ethylene Dibromide	0.1	2.1	105.
Methyl Bromide	0.1	1.7	86.
Methyl Chloride	0.1	2.6	131.
Methylene Chloride	1.	2.1	105.
1,1,2,2-Tetrachloroethane	0.5	2.5	124.
Tetrachloroethylene (PCE)	0.1	2.6	129.
Toluene	0.1	2.5	125.
1,1,1-Trichloroethane (TCA)	0.1	2.1	106.
1,1,2-Trichloroethane	0.1	2.3	113.
Trichloroethene (TCE)	0.1	2.5	125.
Trichlorotrifluoroethane	0.5	2.5	125.
Trichlorofluoromethane	0.5	2.6	130.
Vinyl Chloride	0.1	2.1	103.
Xylenes	0.2	9.1	152.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 94/100/120.

04/25/89/MSD#7
QS4189v2.wr1/38
MH/ec/tl/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4551dupspike
Collected : 04/12/89
Received : 04/13/89
Tested : 04/21/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 94901

Sample Description:
Project # 1-024.01, Livermore
2411 - A water
(spiked w/ 50 ug/l VOA Spike Soln.)

Compound Analyzed	Detection Limit (ug/l)	Conc. (ug/l)	Percent Recovery	Compound Analyzed	Detection Limit (ug/l)	Conc. (ug/l)	Percent Recovery
Acetone	50.	not spiked		1,2-Dichloroethene	1.	not spiked	
Benzene	0.5	56.	103.	1,2-Dichloropropane	1.	not spiked	
Bromodichloromethane	1.	not spiked		c-1,3-Dichloropropene	1.	not spiked	
Bromoform	1.	not spiked		t-1,3-Dichloropropene	1.	not spiked	
Bromomethane	1.	not spiked		Ethylbenzene	1.	not spiked	
2-Butanone	10.	not spiked		2-Hexanone	5.	not spiked	
Carbon Disulfide	1.	not spiked		Methyl Isobutyl Ketone	5.	not spiked	
Carbon Tetrachloride	1.	not spiked		Methylene Chloride	5.	not spiked	
Chlorobenzene	1.	55.	110.	Styrene	1.	not spiked	
Chloroethane	1.	not spiked		1,1,2,2-Tetrachloroethane	3.	not spiked	
2-Chloroethylvinyl-ether	2.	not spiked		Tetrachloroethene	1.	not spiked	
Chloroform	1.	not spiked		Toluene	1.	53.	106.
Chloromethane	1.	not spiked		1,1,1-Trichloroethane	1.	not spiked	
Dibromochloromethane	1.	not spiked		1,1,2-Trichloroethane	1.	not spiked	
1,2-Dichlorobenzene	1.	not spiked		Trichloroethene	1.	54.	108.
1,3-Dichlorobenzene	1.	not spiked		Trichlorotrifluoromethane	1.	not spiked	
1,4-Dichlorobenzene	1.	not spiked		Trichlorotrifluoroethane	1.	not spiked	
1,1-Dichloroethane	1.	not spiked		Vinyl Acetate	5.	not spiked	
1,2-Dichloroethane	1.	not spiked		Vinyl Chloride	1.	not spiked	
1,1-Dichloroethene	1.	42.	84.	Xylenes	1.	not spiked	

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 103/98/104
Constituents reported as ND would have been reported if present at or above the detection limit.

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Hilpert for
Mary D. Havlicek, Ph.D.
President

finn/04/25/89
f4551vt.wr1
MH/brp/mc

AIR, WATER and HAZARDOUS WASTE LABORATORY CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C
San Luis Obispo, CA 93401
(805) 543-2553

Lab Number : F-4551spike
Collected : 04/12/89
Received : 04/13/89
Tested : 04/21/89
Collected by: Mark Frye

EPA METHOD 8260

Western Geologic Resources
2169 E. Francisco Blvd., Suite B
San Rafael, CA 93108

Sample Description:
Project # 1-024.01, Livermore
2411 - A water
(spiked w/ 50 ug/l VOA Spike Soln.)

Compound Analyzed	Detection Limit (ug/l)	Conc. (ug/l)	Percent Recovery	Compound Analyzed	Detection Limit (ug/l)	Conc. (ug/l)	Percent Recovery
Acetone	50.	not spiked		1,2-Dichloroethene	1.	not spiked	
Benzene	0.5	59.	109.	1,2-Dichloropropone	1.	not spiked	
Bromodichloromethane	1.	not spiked		c-1,3-Dichloropropene	1.	not spiked	
Bromoform	1.	not spiked		t-1,3-Dichloropropene	1.	not spiked	
Bromomethane	1.	not spiked		Ethylbenzene	1.	not spiked	
2-Butanone	10.	not spiked		2-Hexanone	5.	not spiked	
Carbon Disulfide	1.	not spiked		Methyl Isobutyl Ketone	5.	not spiked	
Carbon Tetrachloride	1.	not spiked		Methylene Chloride	5.	not spiked	
Chlorobenzene	1.	62.	124.	Styrene	1.	not spiked	
Chloroethane	1.	not spiked		1,1,2,2-Tetrachloroethane	3.	not spiked	
2-Chloroethylvinyl-ether	2.	not spiked		Tetrachloroethene	1.	not spiked	
Chloroform	1.	not spiked		Toluene	1.	60.	120.
Chloromethane	1.	not spiked		1,1,1-Trichloroethane	1.	not spiked	
Dibromochloromethane	1.	not spiked		1,1,2-Trichloroethane	1.	not spiked	
1,2-Dichlorobenzene	1.	not spiked		Trichloroethene	1.	60.	120.
1,3-Dichlorobenzene	1.	not spiked		Trichlorotrifluoromethane	1.	not spiked	
1,4-Dichlorobenzene	1.	not spiked		Trichlorotrifluoroethane	1.	not spiked	
1,1-Dichloroethane	1.	not spiked		Vinyl Acetate	5.	not spiked	
1,2-Dichloroethane	1.	not spiked		Vinyl Chloride	1.	not spiked	
1,1-Dichloroethene	1.	45.	90.	Xylenes	1.	not spiked	

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 102/106/113
Constituents reported as ND would have been reported if present at or above the detection limit.

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES

R Hilpert for
Mary D. Havlicek, Ph.D.
President

finn/04/25/89
f4551vs.wr1
MH/brp/mc

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : B-04209
Collected :
Received :
Tested : 04/20/89
Collected by:

CCAS

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
INSTRUMENT BLANK

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.1	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 101/102/91.

04/27/89/MSD#7
B04209v.wr1/39
MH/ec/re/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : B-0420 9-2
Collected :
Received :
Tested : 04/20/89
Collected by:

CCAS

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
INSTRUMENT BLANK

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.1	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 114/79/89.

04/27/89/MSD#7
B04209v2.wr1/39
MH/jg/re/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

AIR, WATER and HAZARDOUS WASTE LABORATORY (No.131) CERTIFIED by CALIFORNIA DEPT of PUBLIC HEALTH

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : B-04189
Collected :
Received :
Tested : 04/18/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 524.2/8260
Sample Description:
INSTRUMENT BLANK

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 100/92/90.

04/27/89/MSD#7
B04189v.wr1/38
MH/ec/gb/tl

Respectfully submitted,

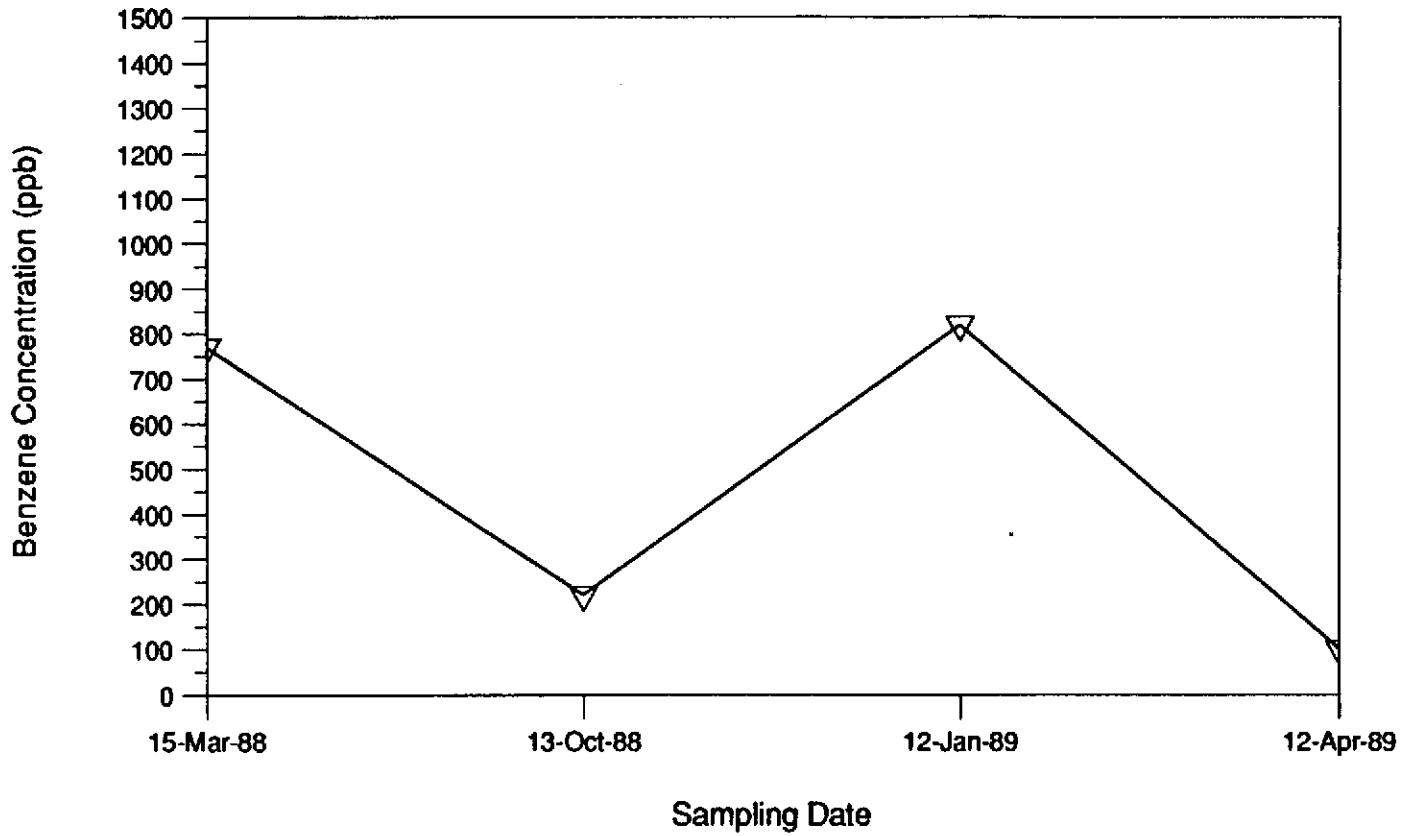
Mary Havlicek, Ph.D., President

ATTACHMENT D

GRAPHS SHOWING BENZENE CONCENTRATIONS OVER TIME IN SELECTED MONITOR WELLS

GROUNDWATER MONITOR WELL C1

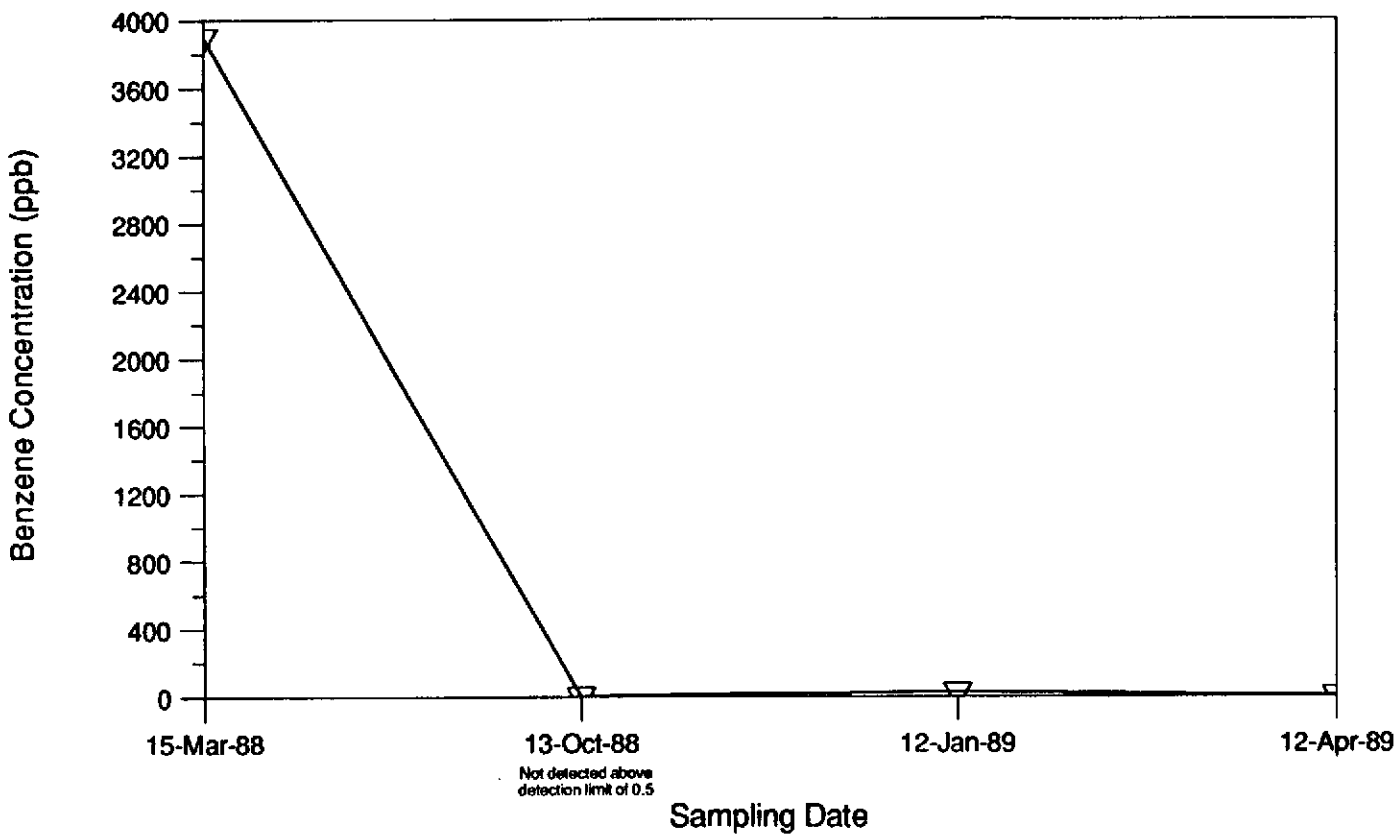
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C2

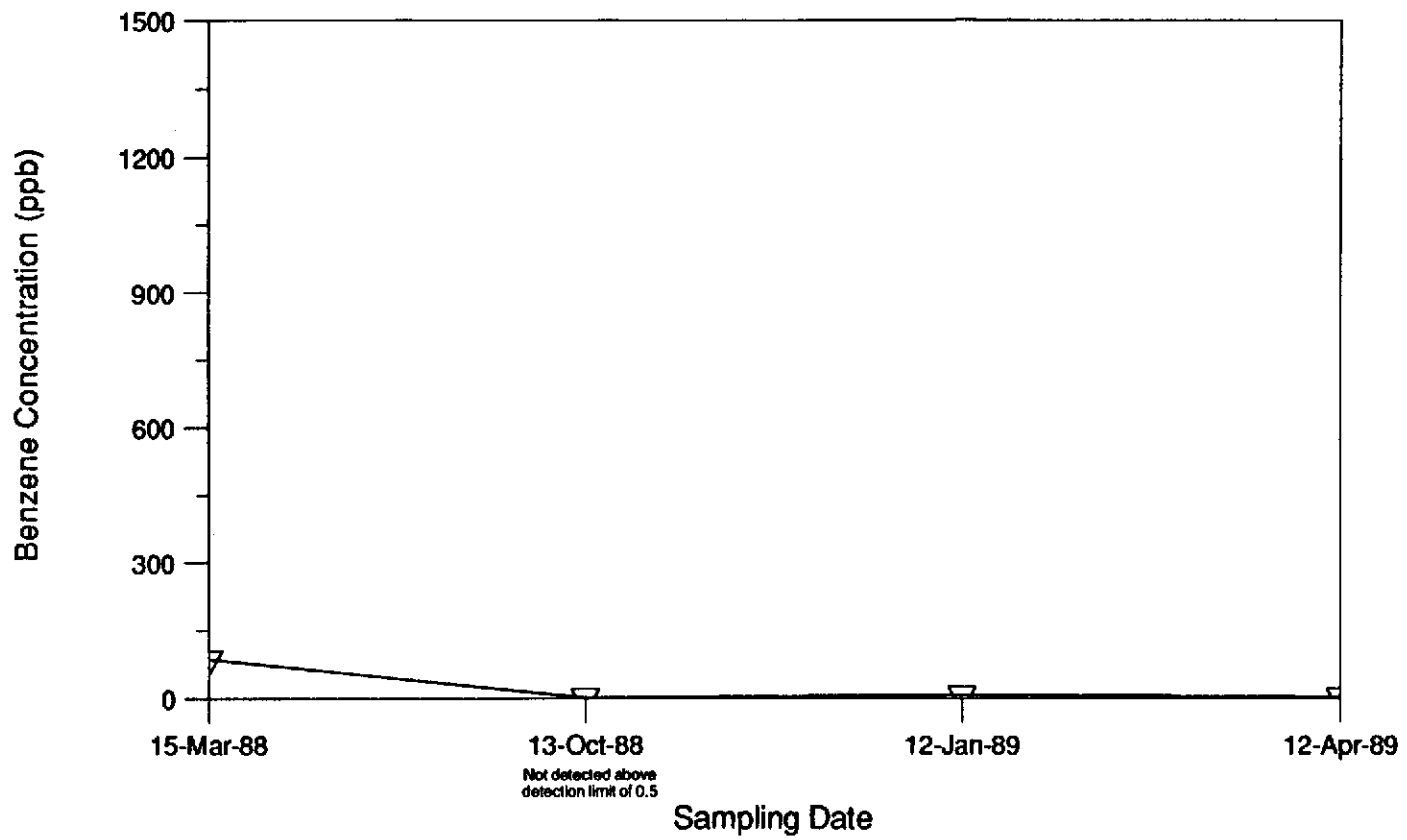
Livermore, California



▽ Benzene Concentration vs. Time

GROUNDWATER MONITOR WELL C3

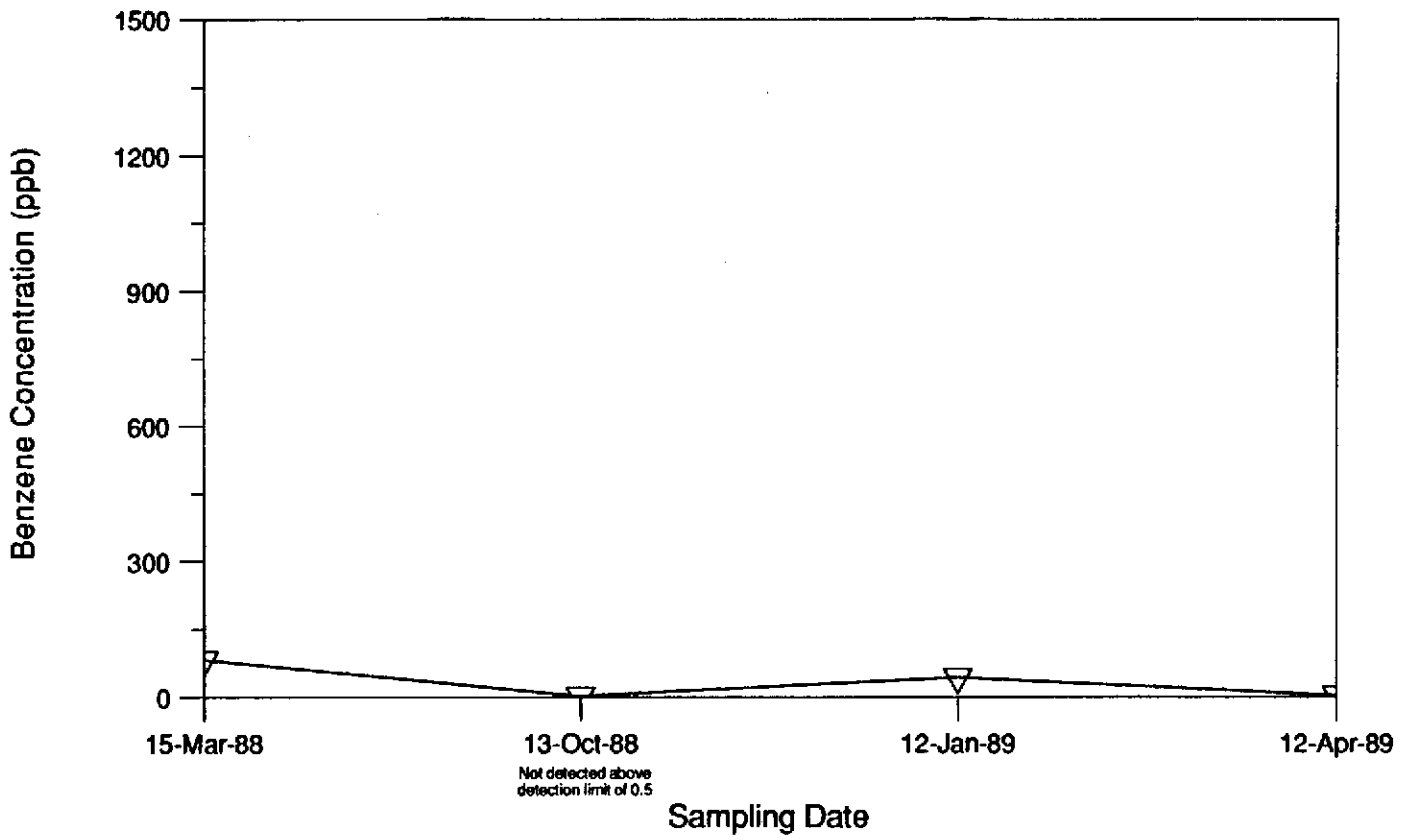
Livermore, California



▽ Benzene Concentration vs. Time

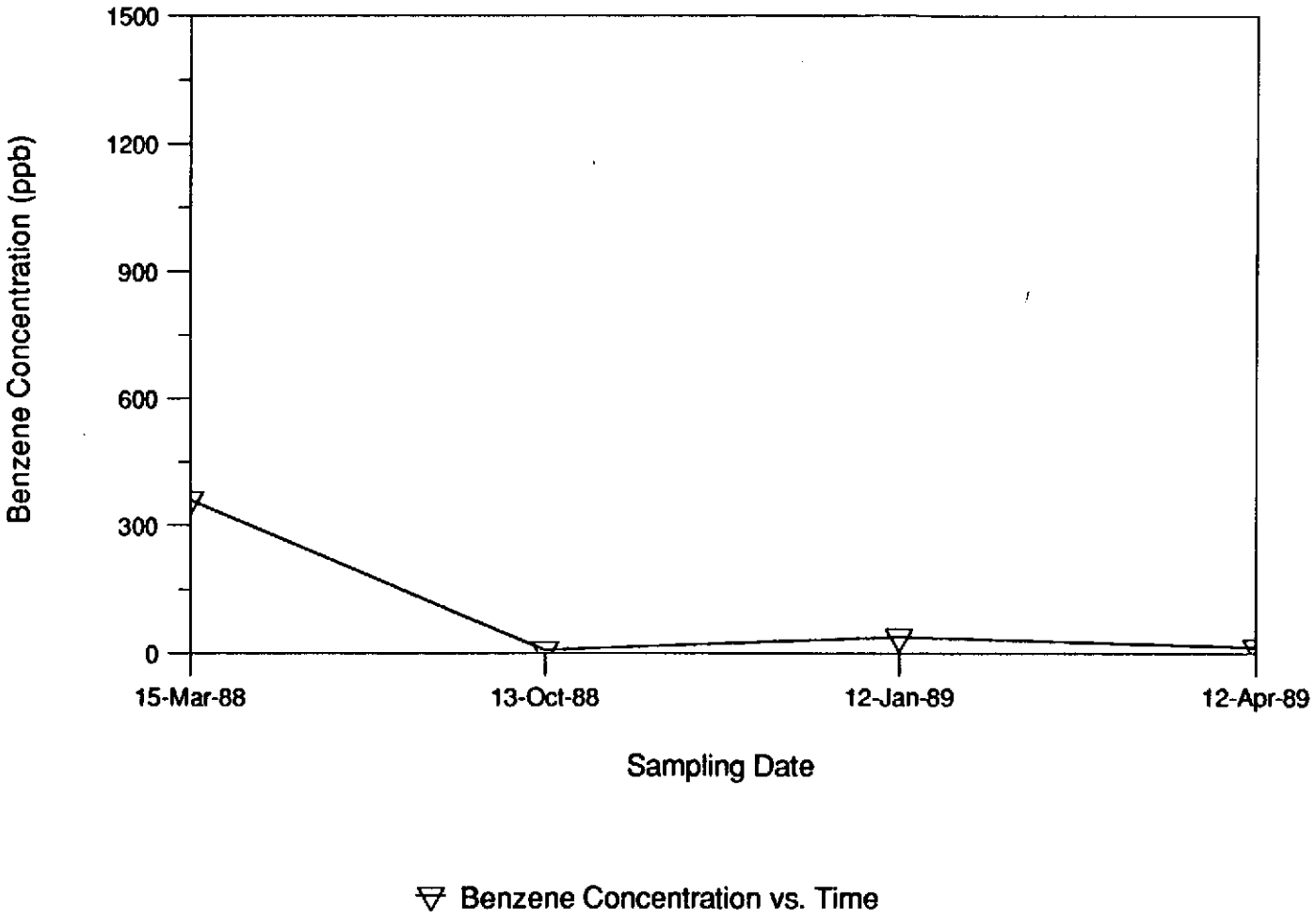
GROUNDWATER MONITOR WELL C5

Livermore, California



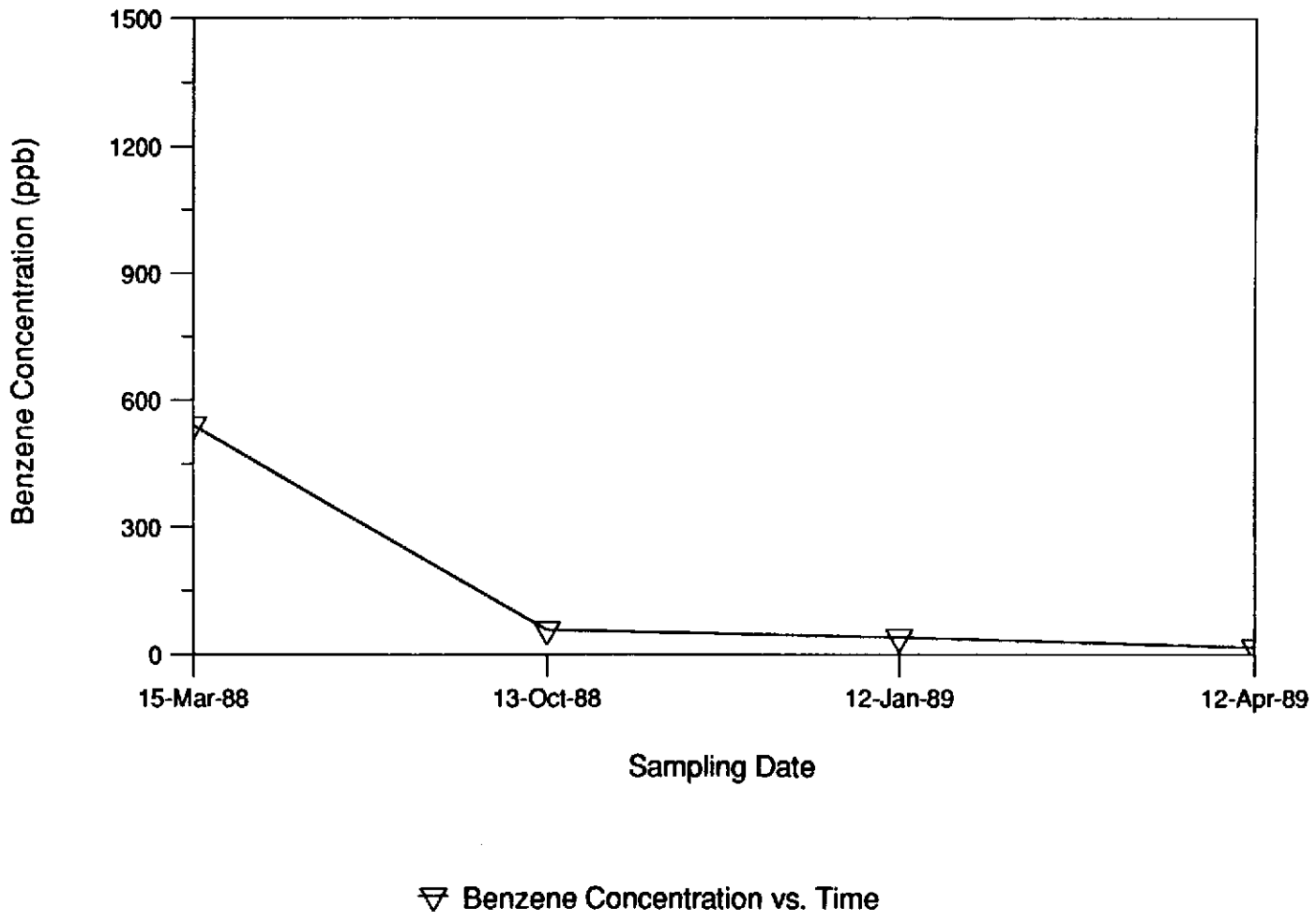
GROUNDWATER MONITOR WELL C8

Livermore, California



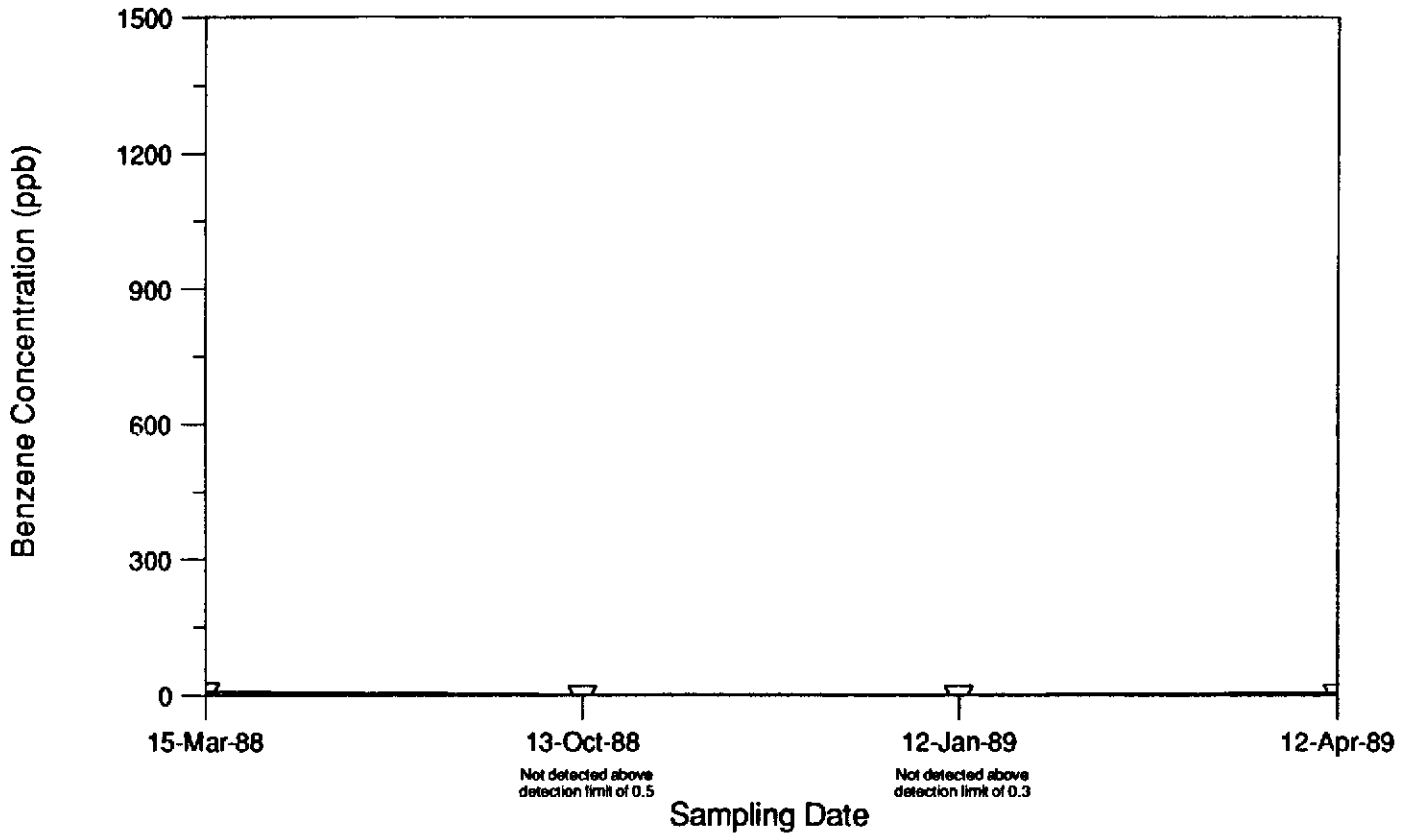
GROUNDWATER MONITOR WELL C9

Livermore, California



GROUNDWATER MONITOR WELL C10

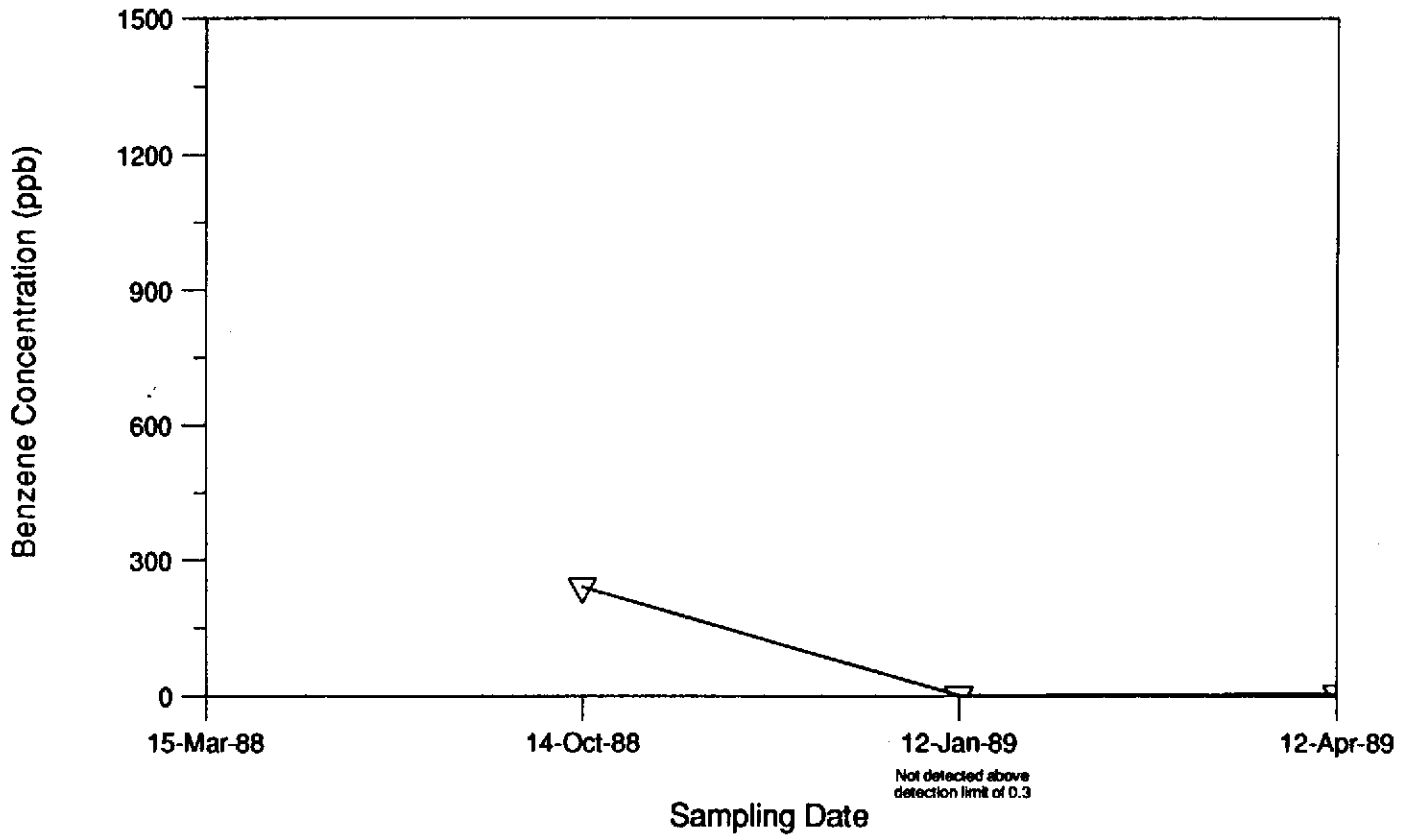
Livermore, California



▽ Benzene Concentration vs. Time

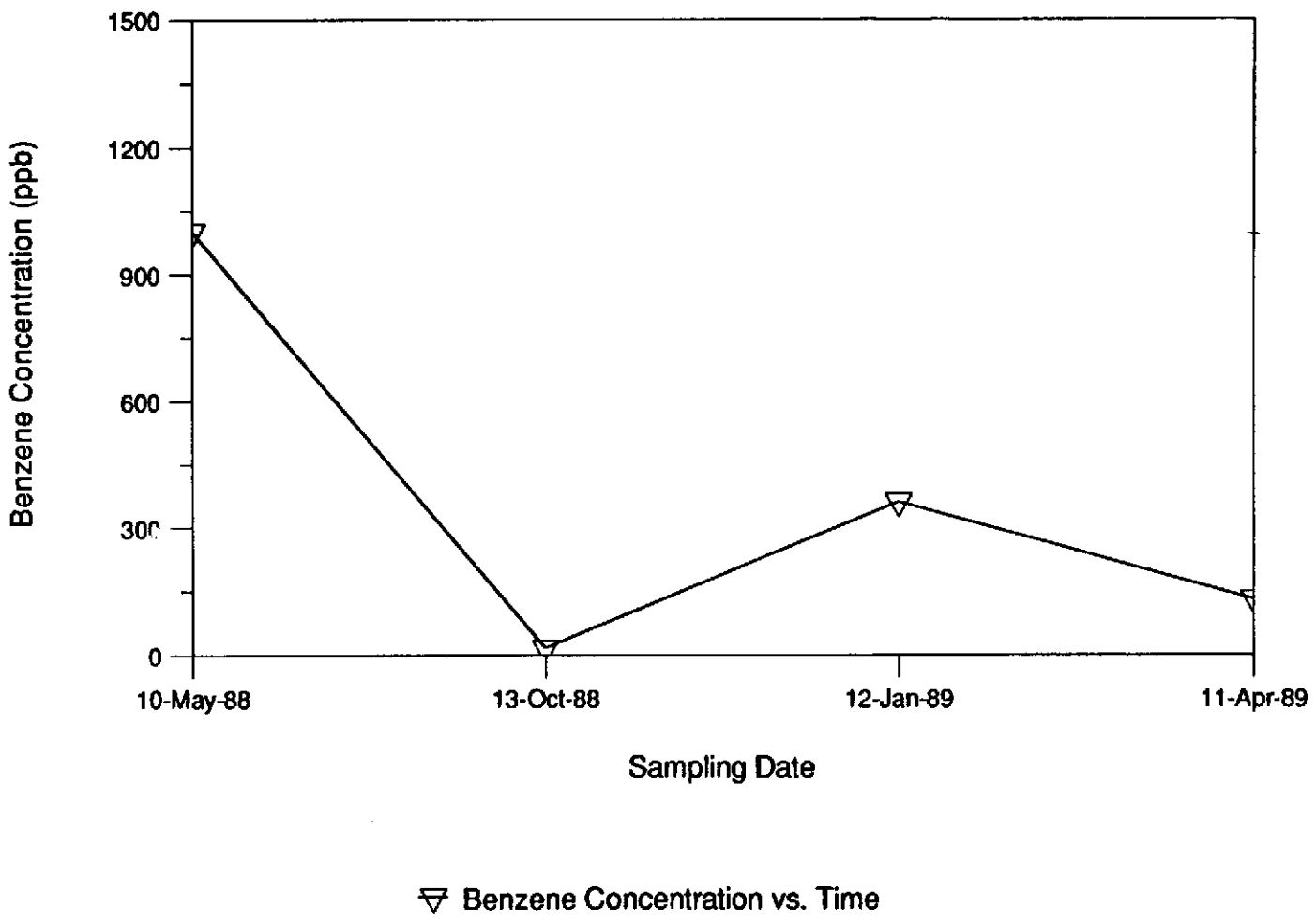
GROUNDWATER MONITOR WELL C11

Livermore, California



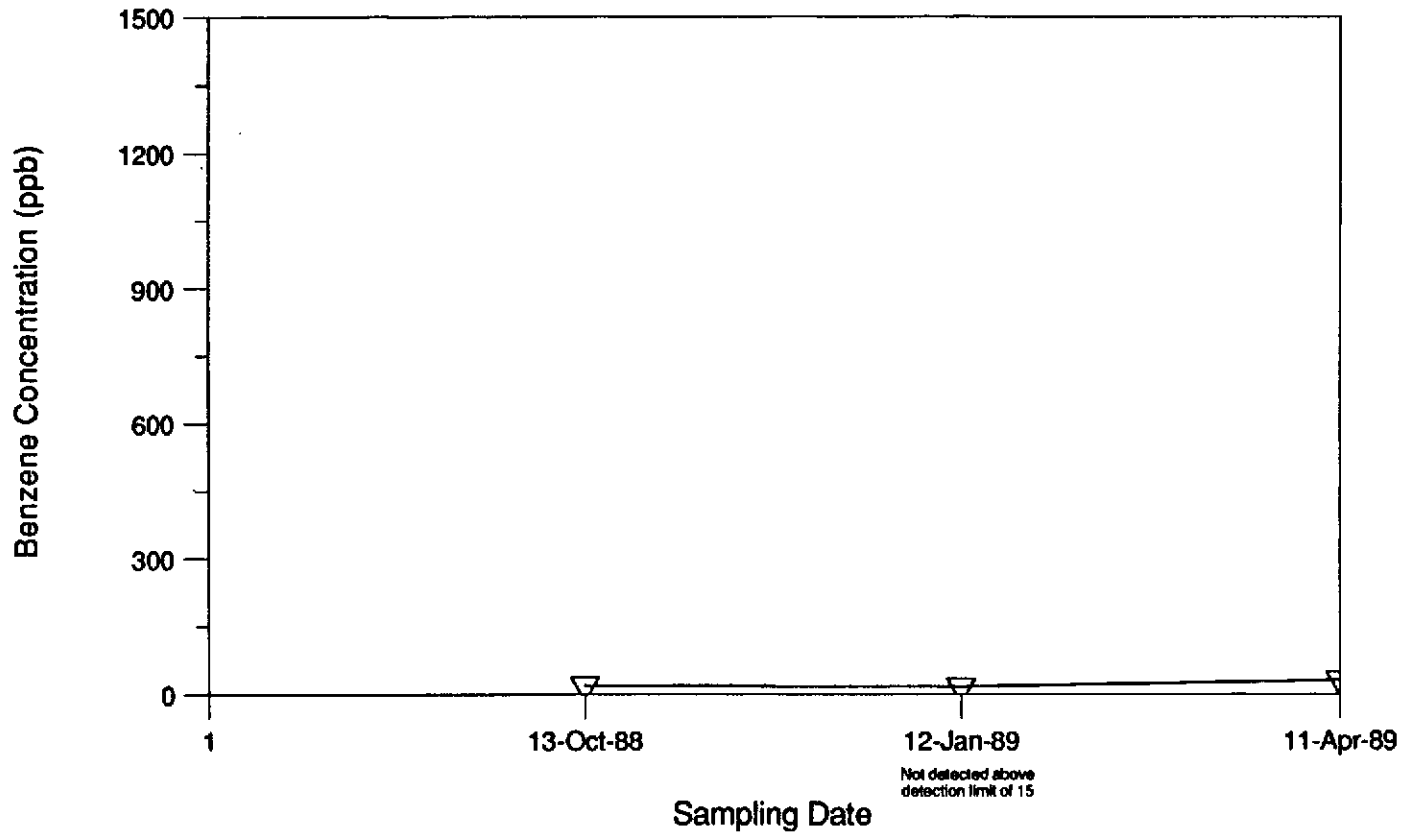
GROUNDWATER MONITOR WELL C16

Livermore, California



GROUNDWATER MONITOR WELL C17

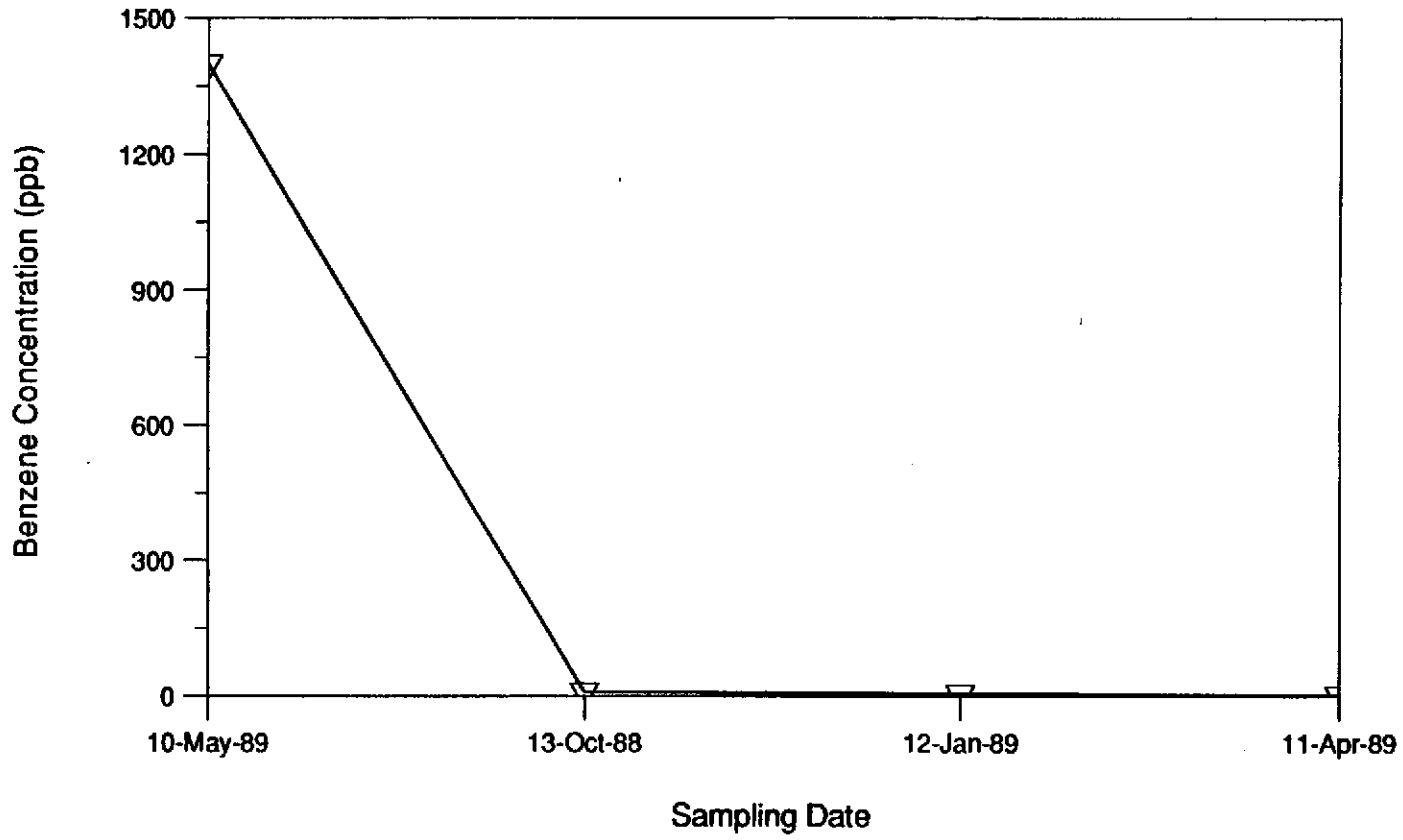
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C19

Livermore, California

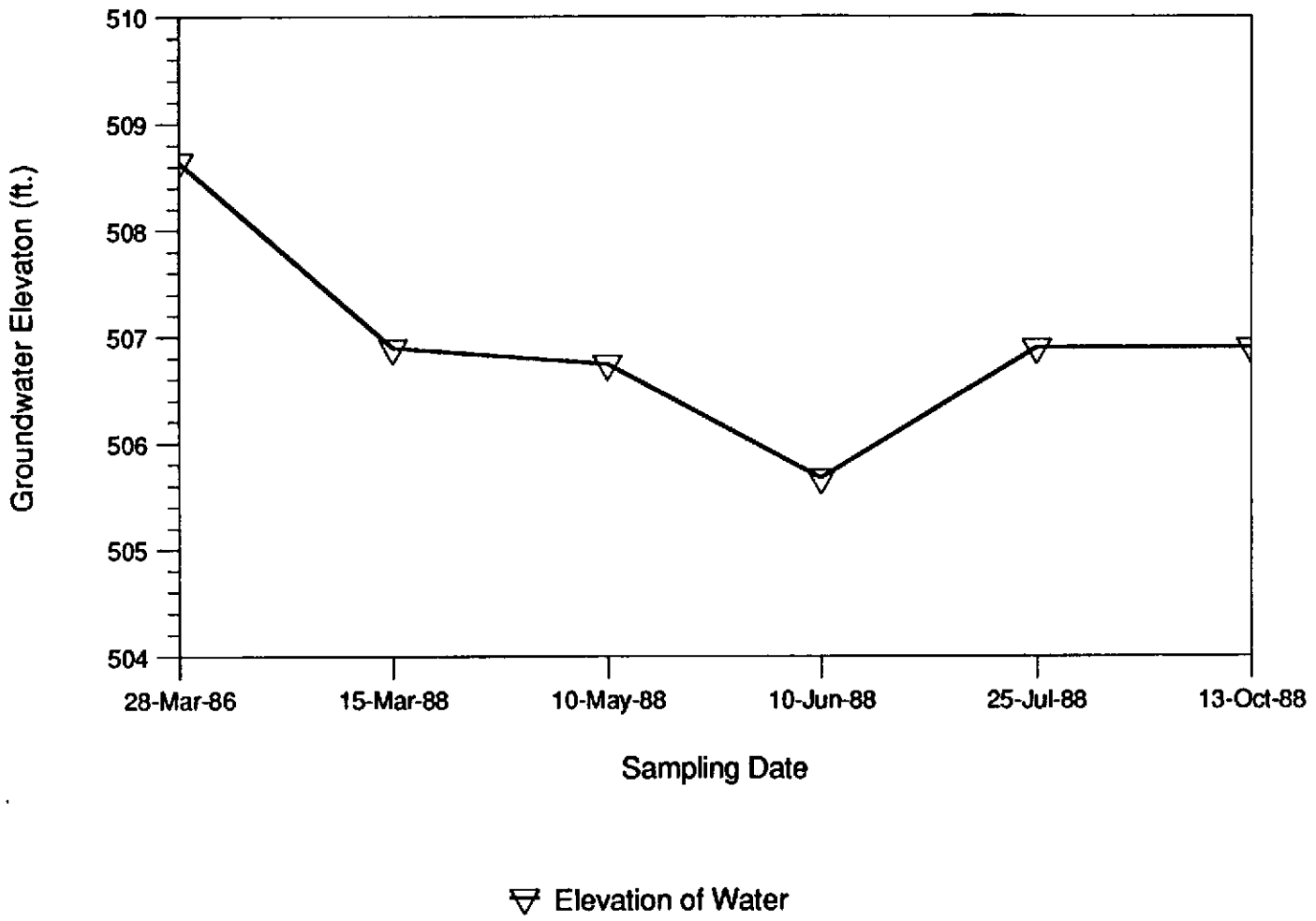


ATTACHMENT E

HYDROGRAPHS SHOWING GROUNDWATER ELEVATIONS IN ALL THE MONITOR WELLS

GROUNDWATER MONITOR WELL C1

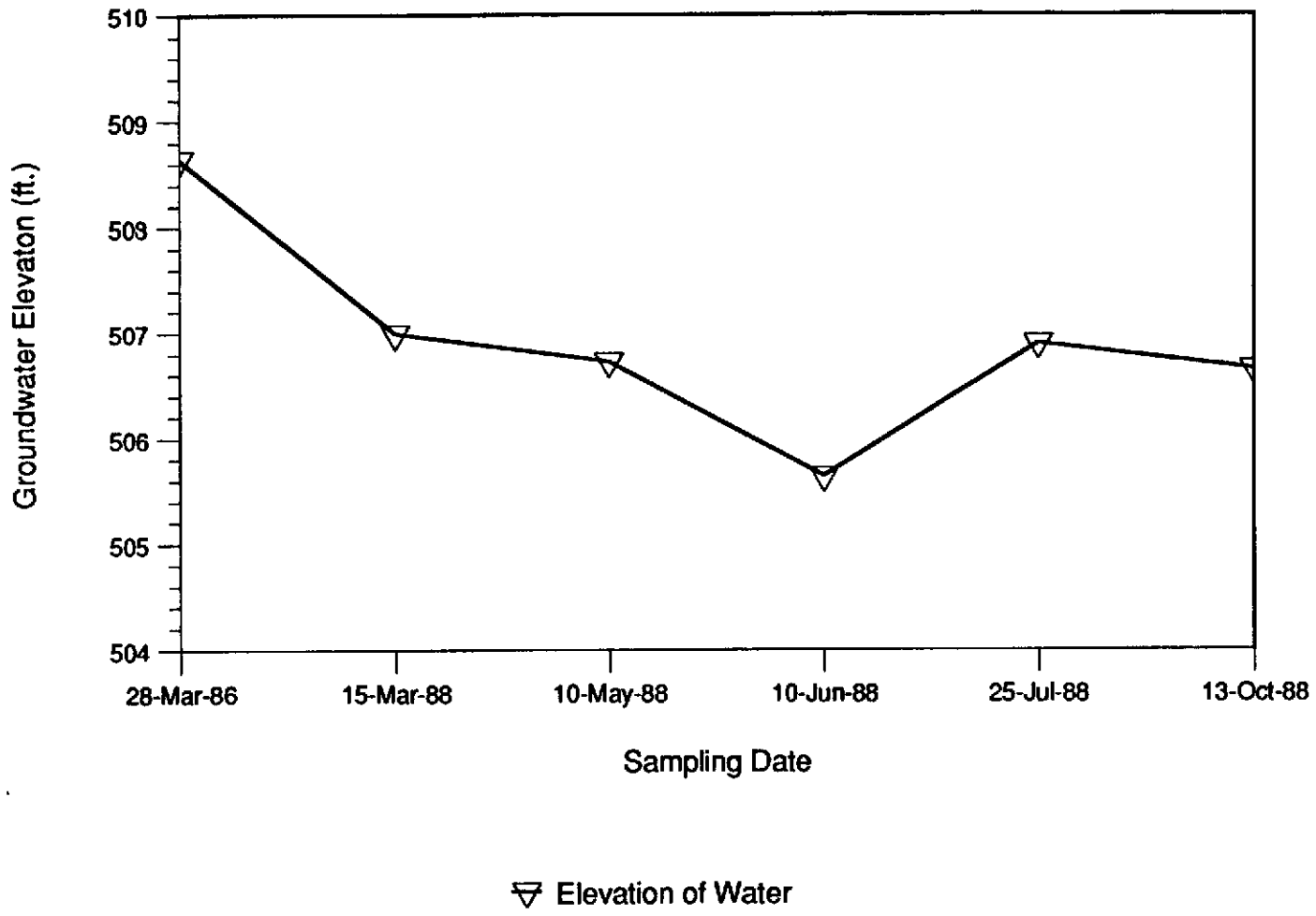
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C2

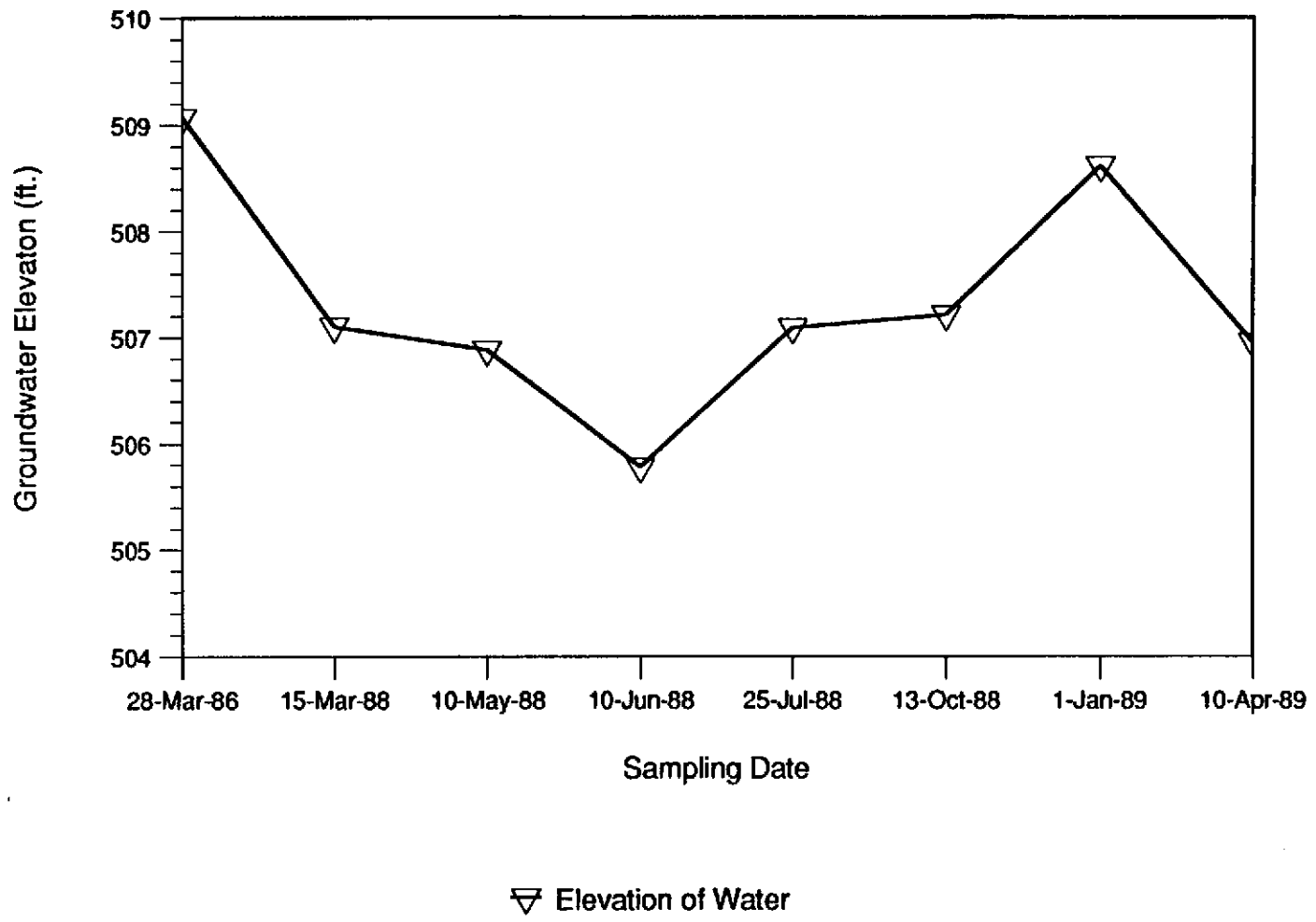
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C3

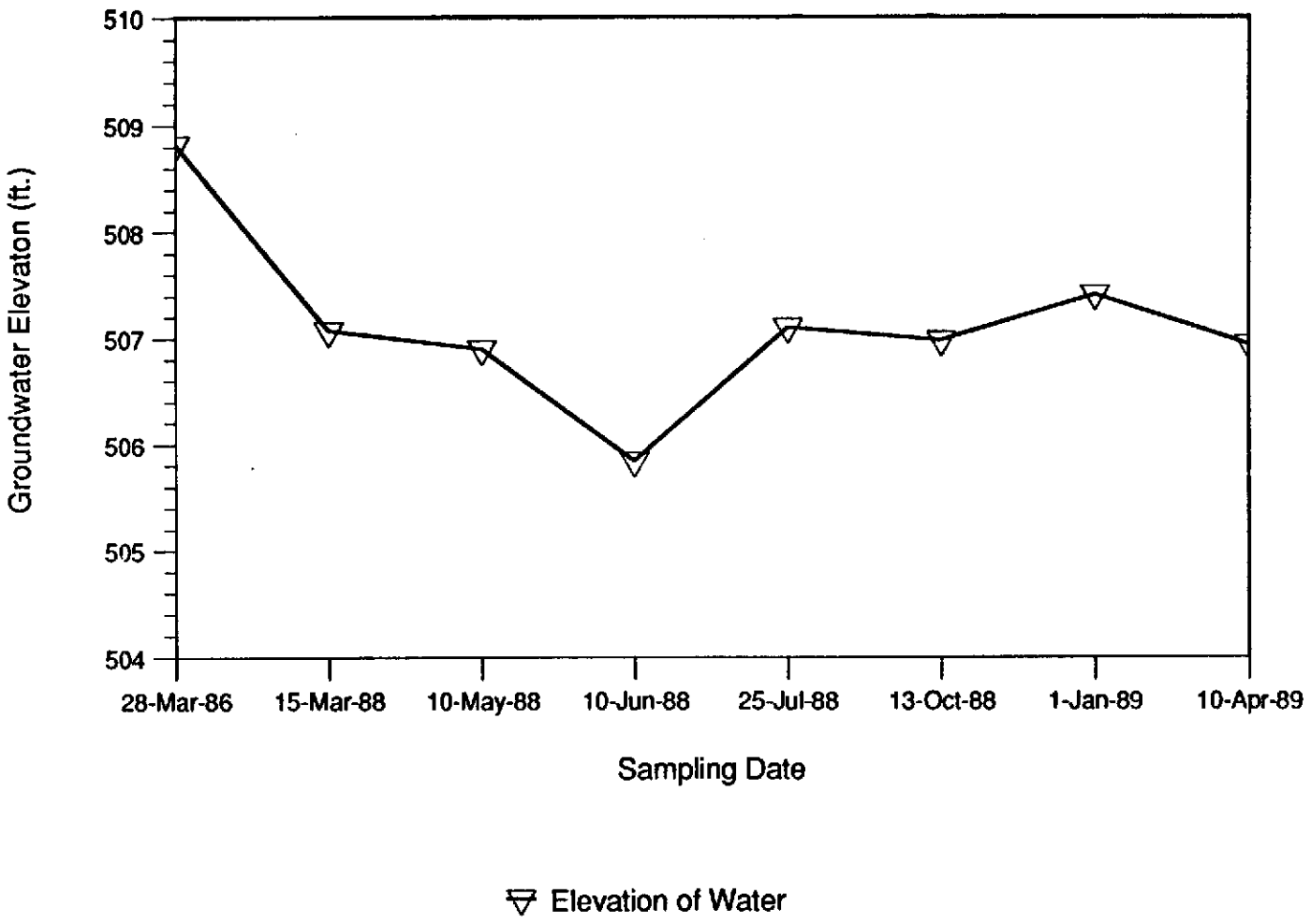
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C5

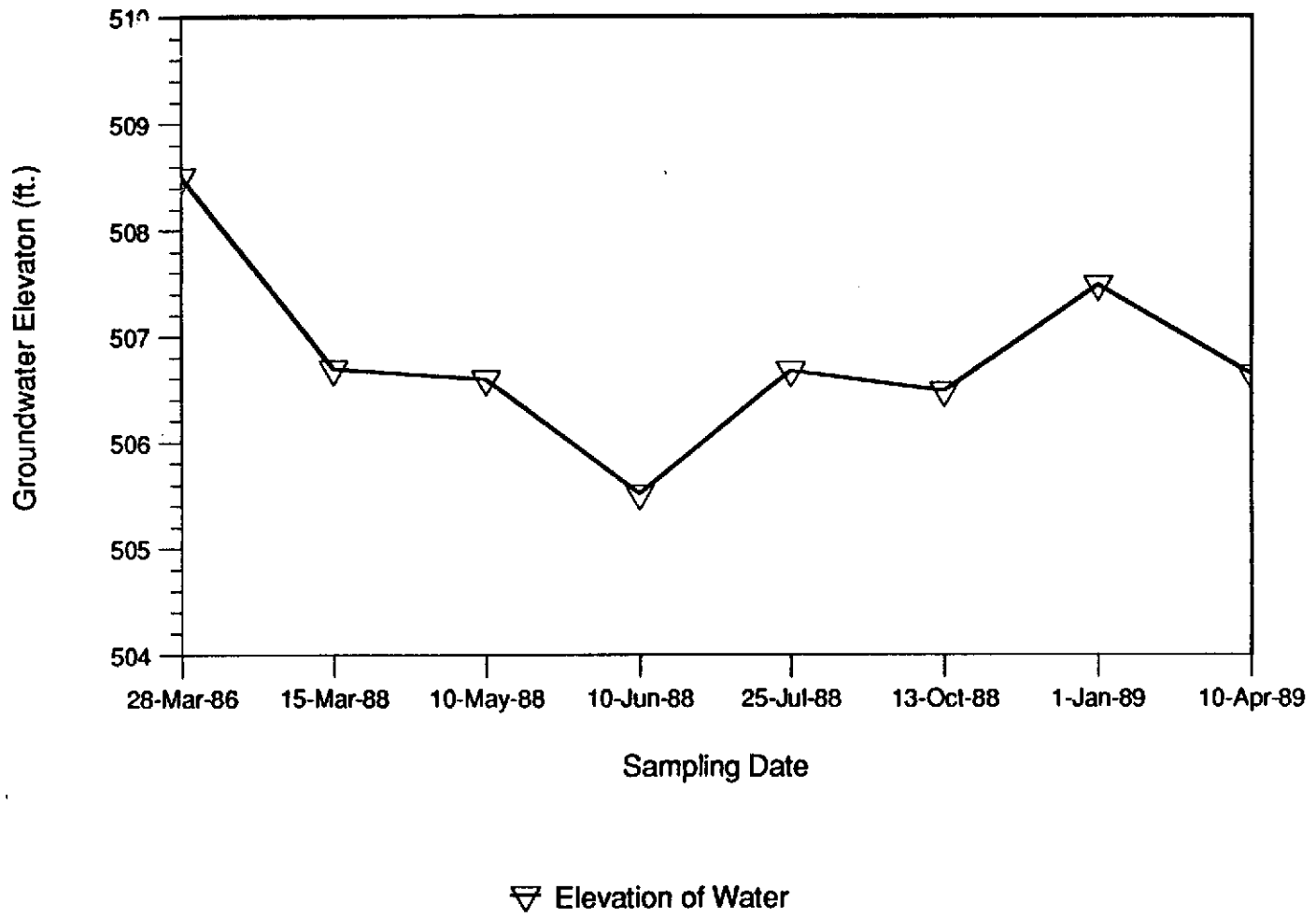
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C6

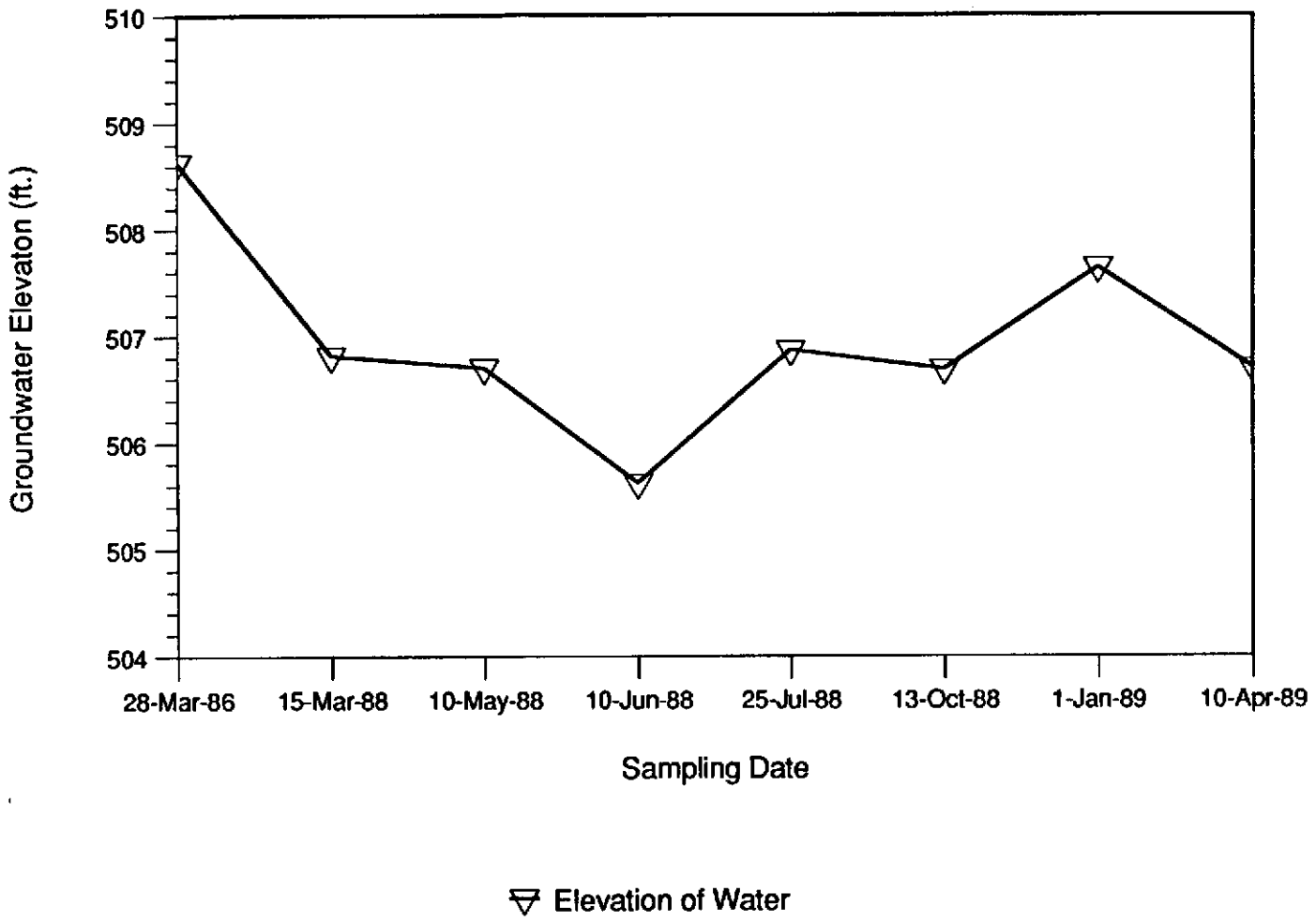
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C7

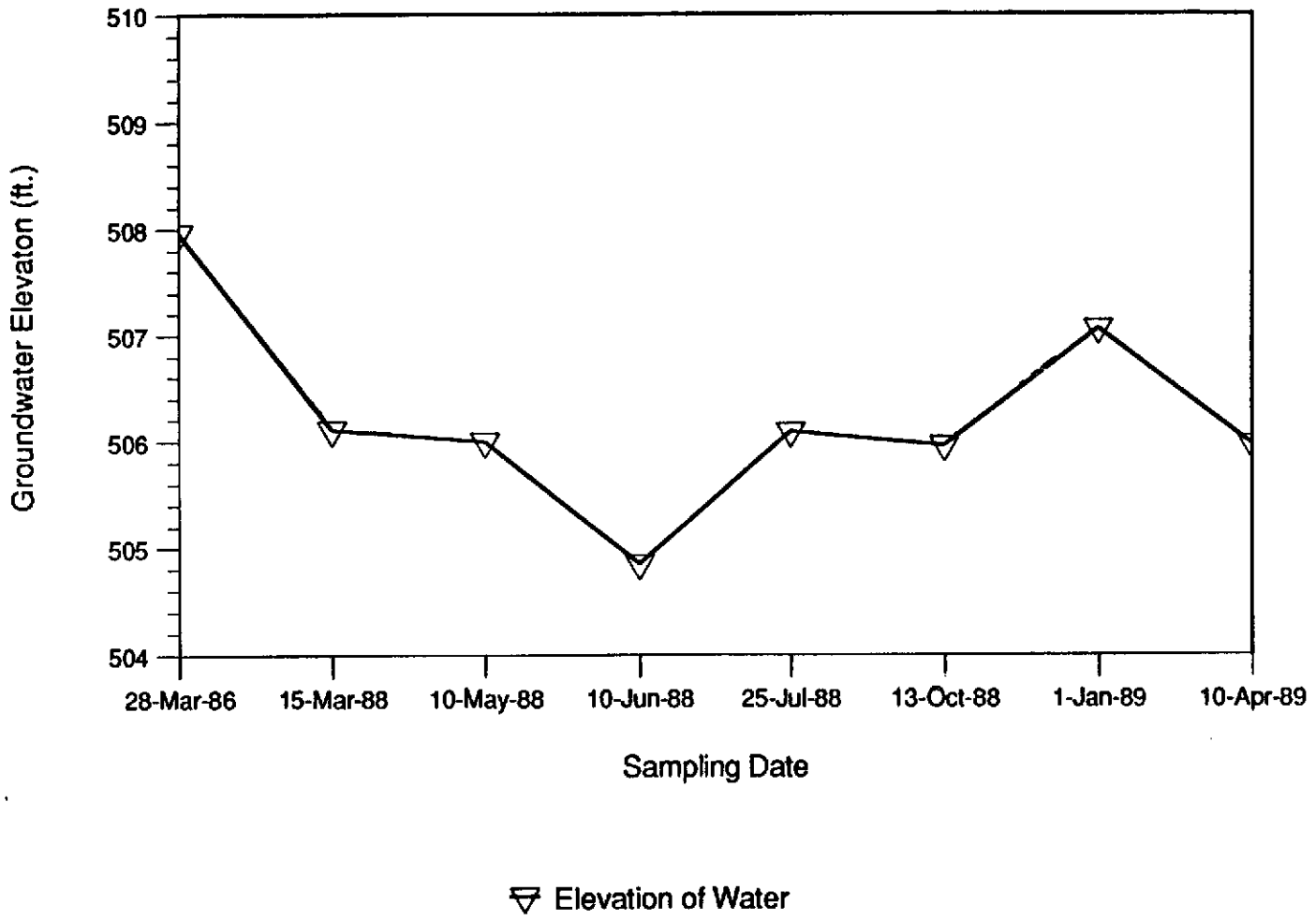
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C8

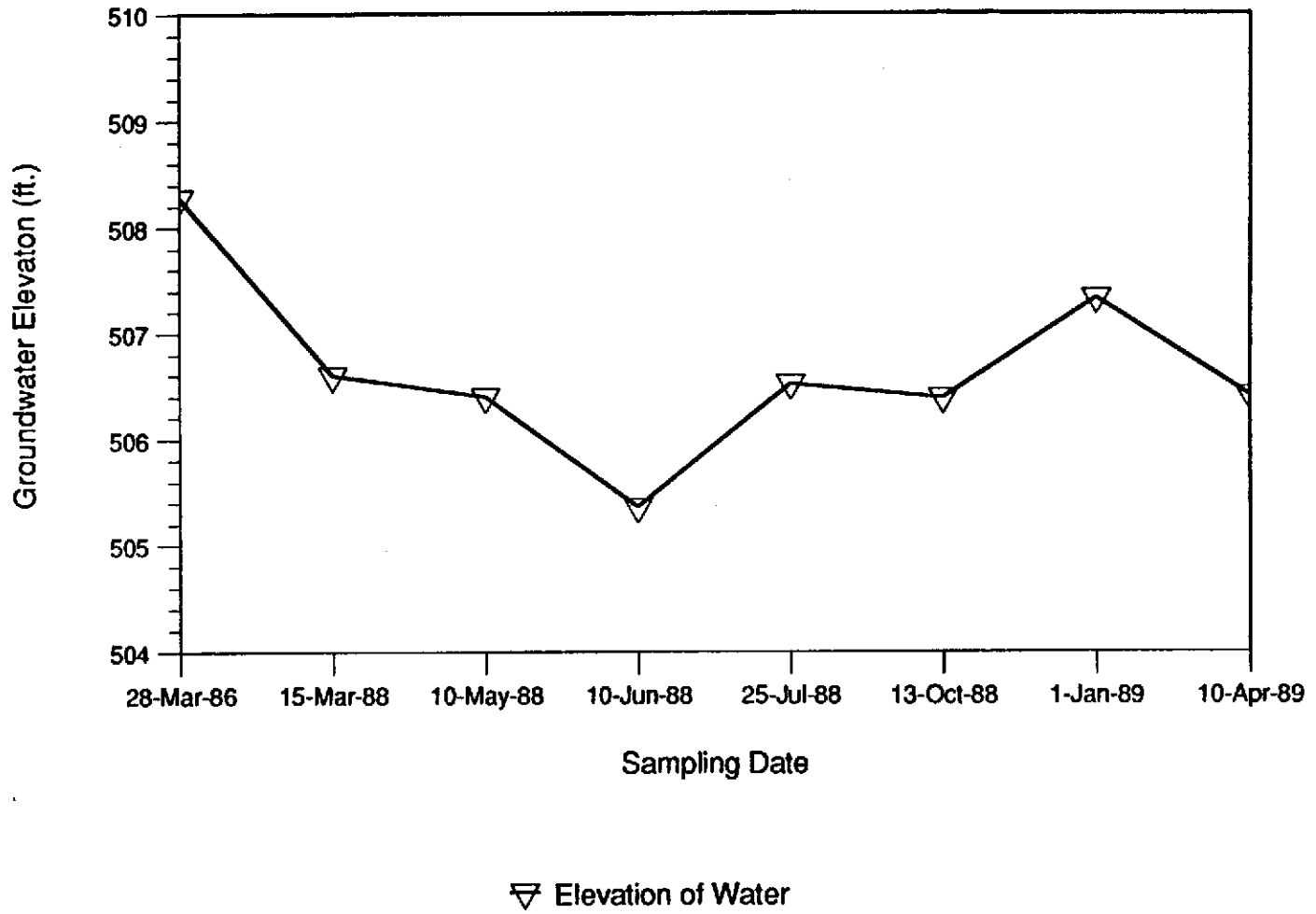
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

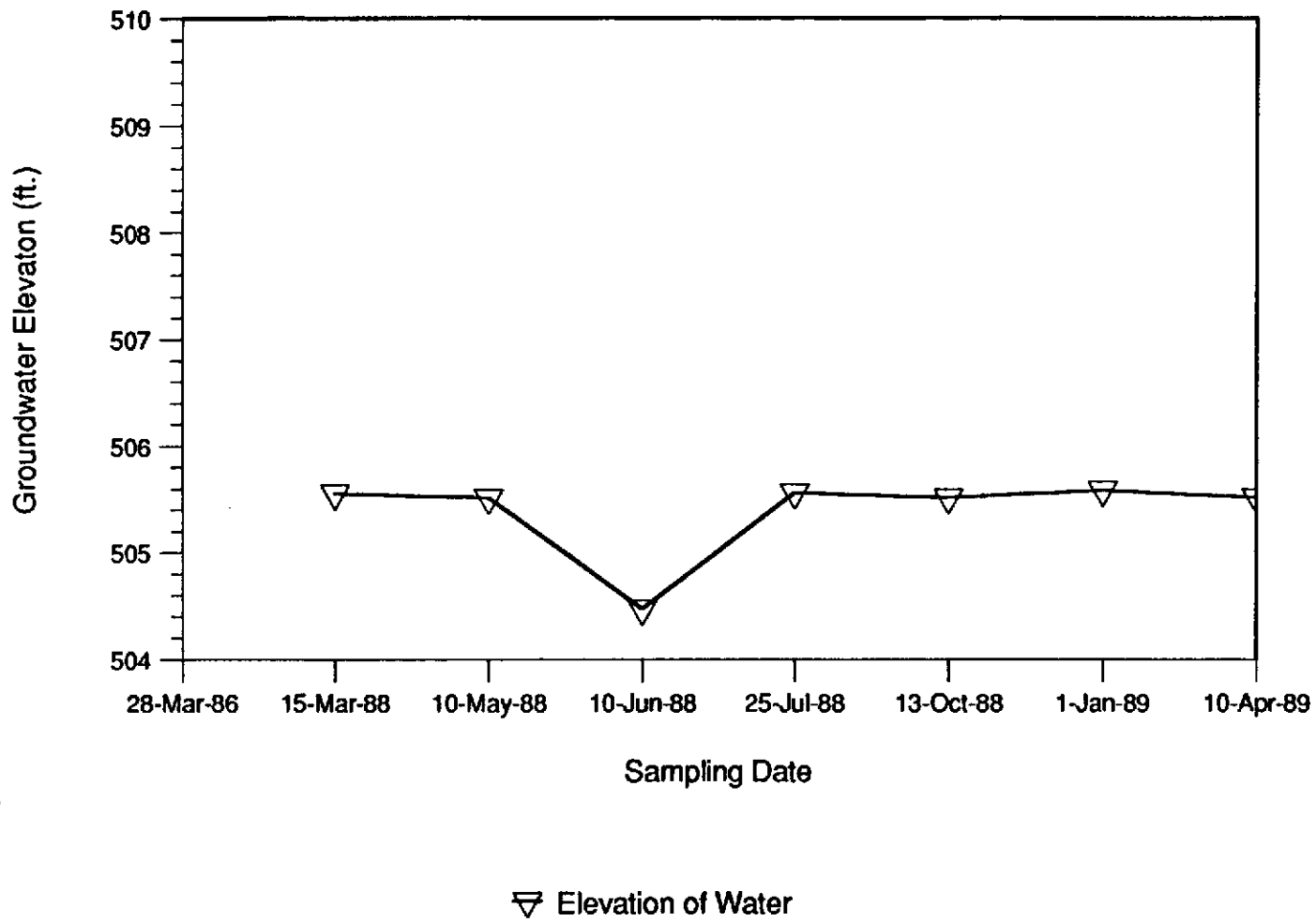
GROUNDWATER MONITOR WELL C9

Livermore, California



GROUNDWATER MONITOR WELL C10

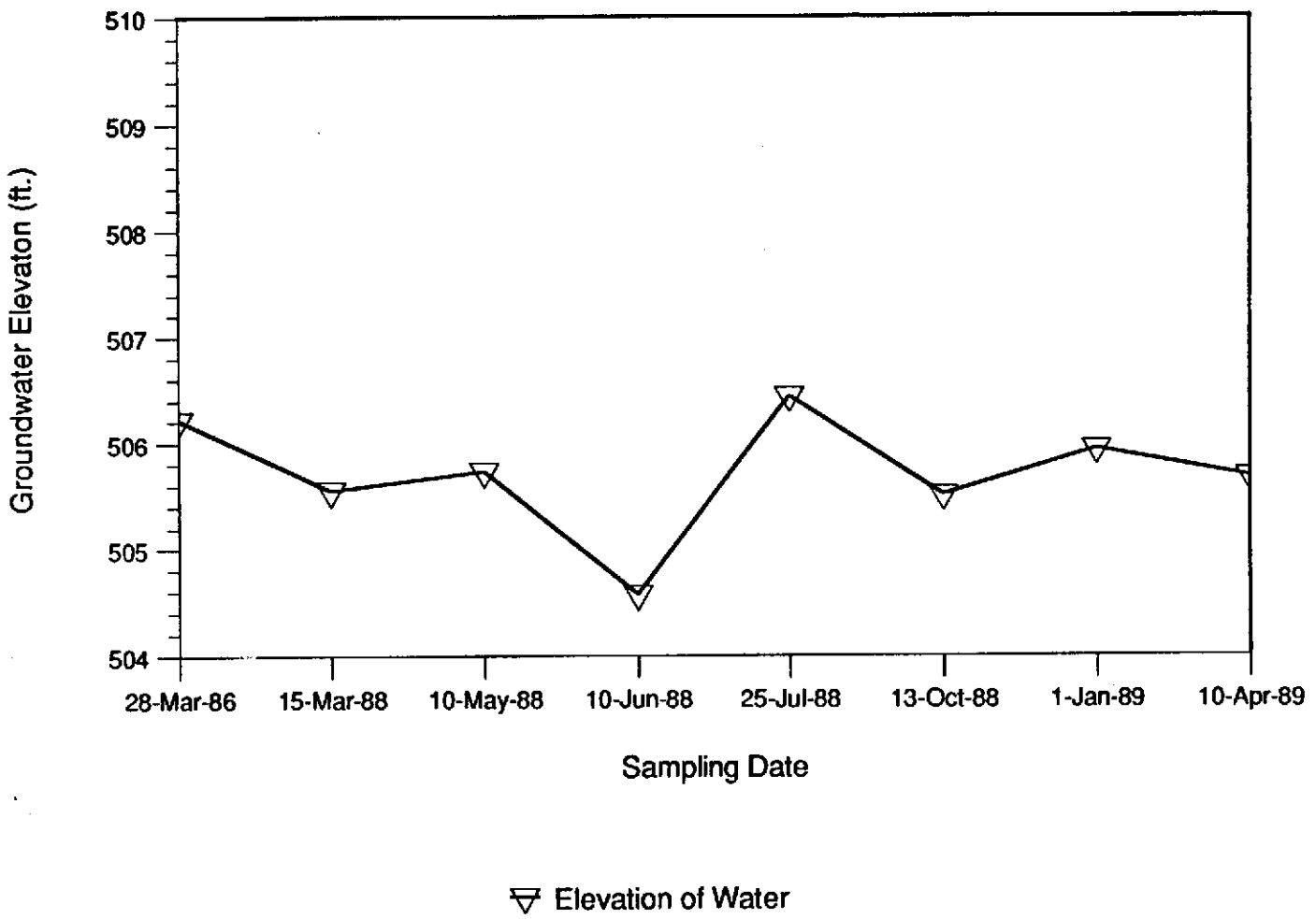
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C11

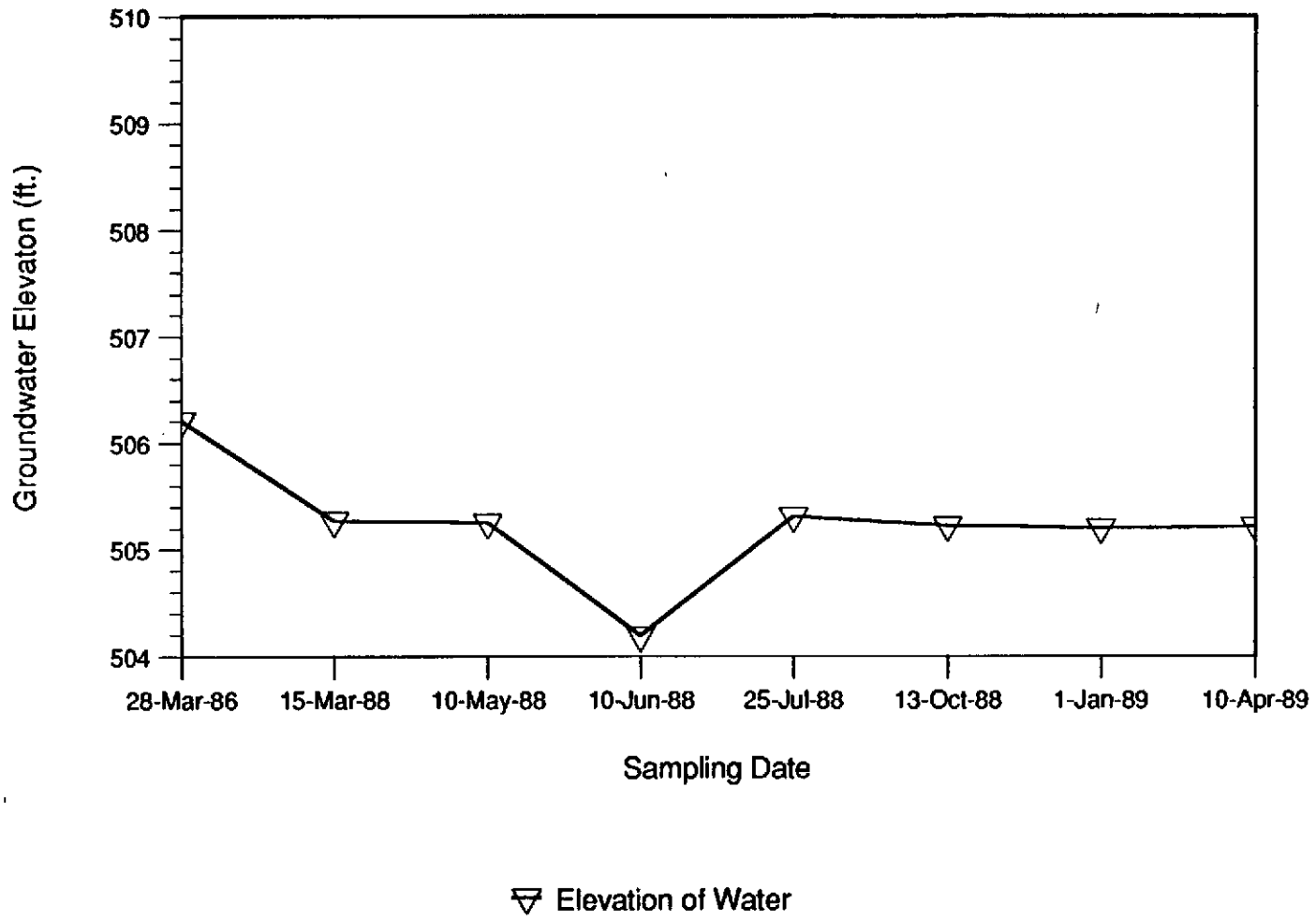
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C12

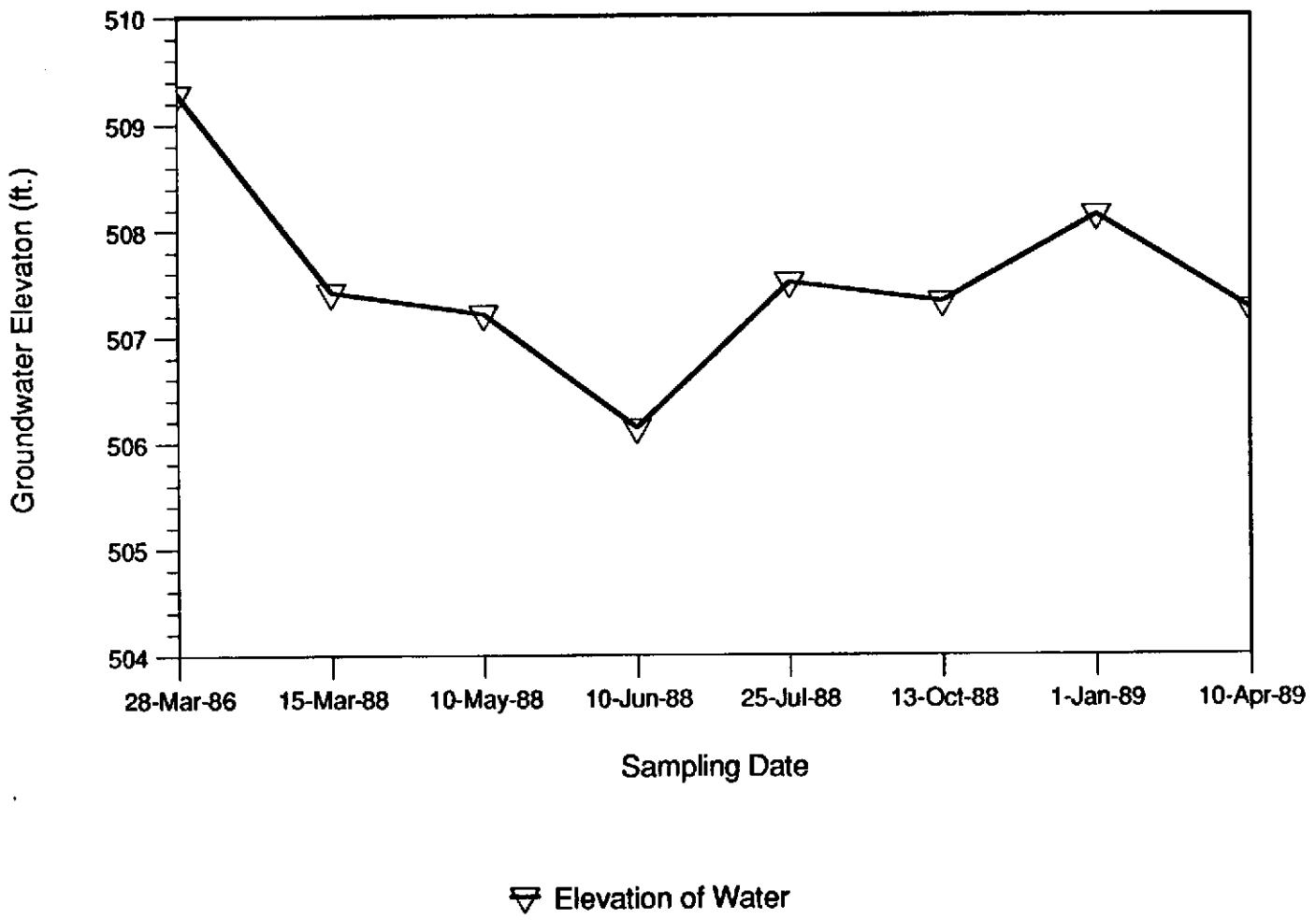
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C13

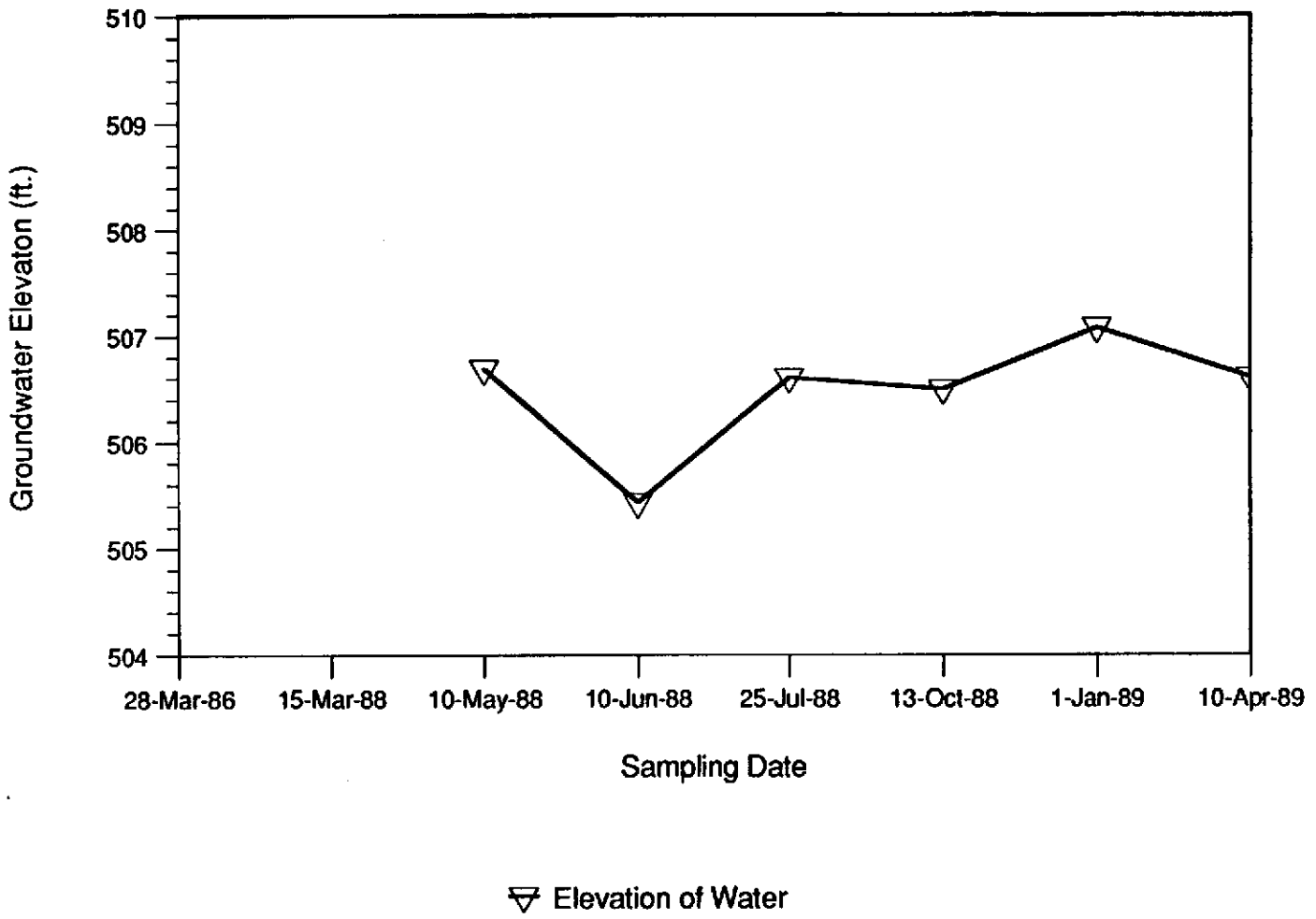
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C14

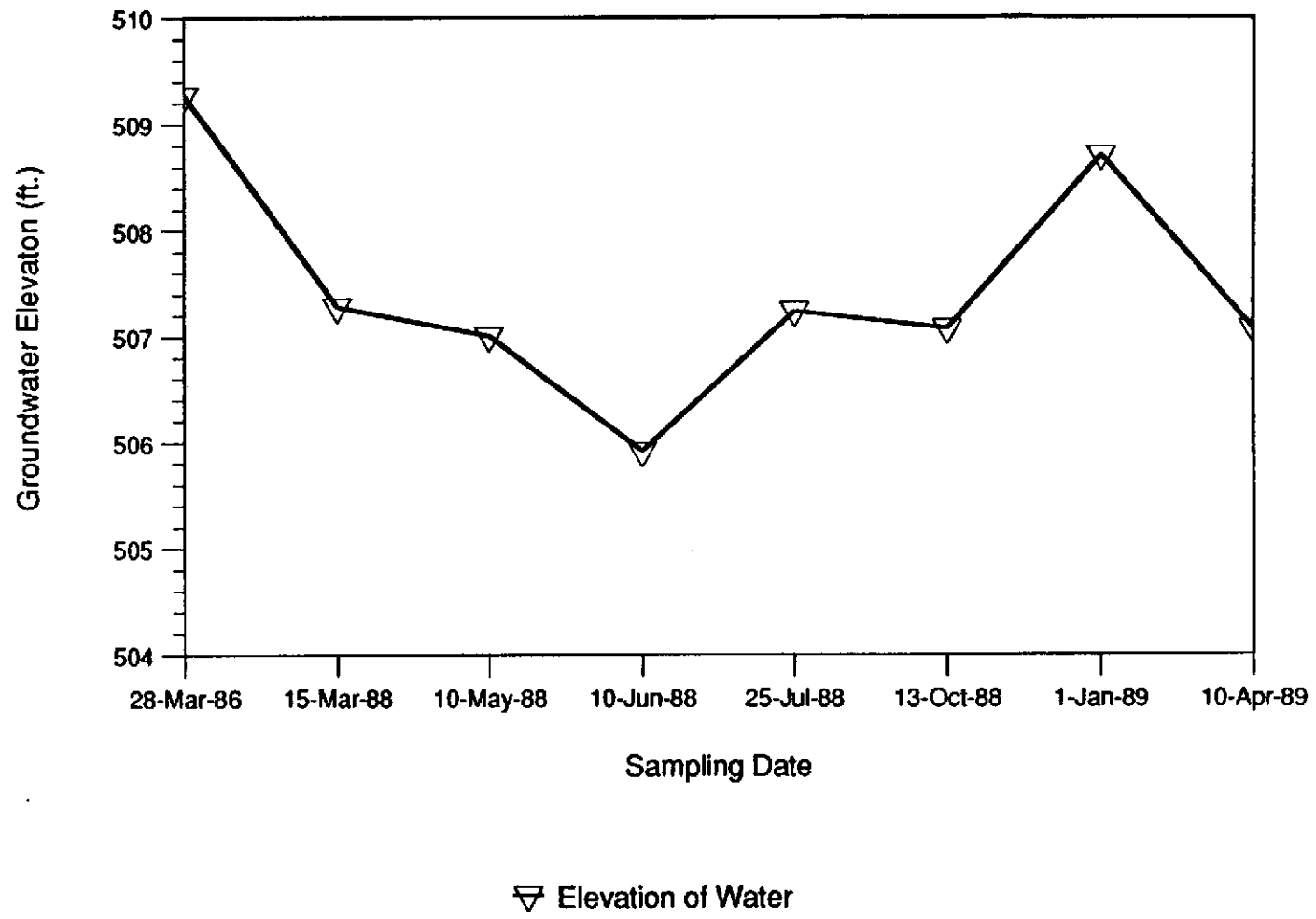
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL C15

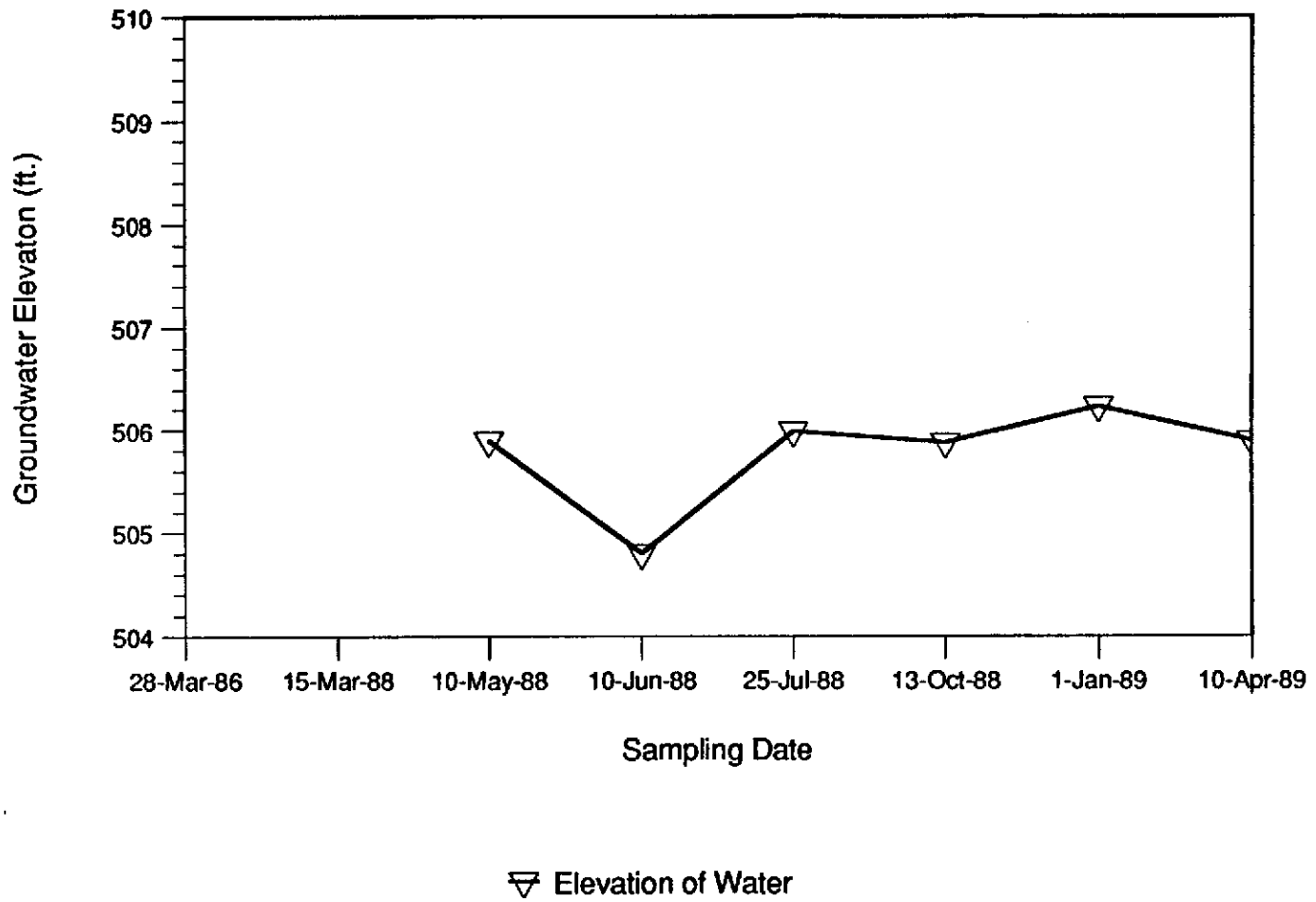
Livermore, California



WESTERN GEOLOGIC RESOURCES, INC.

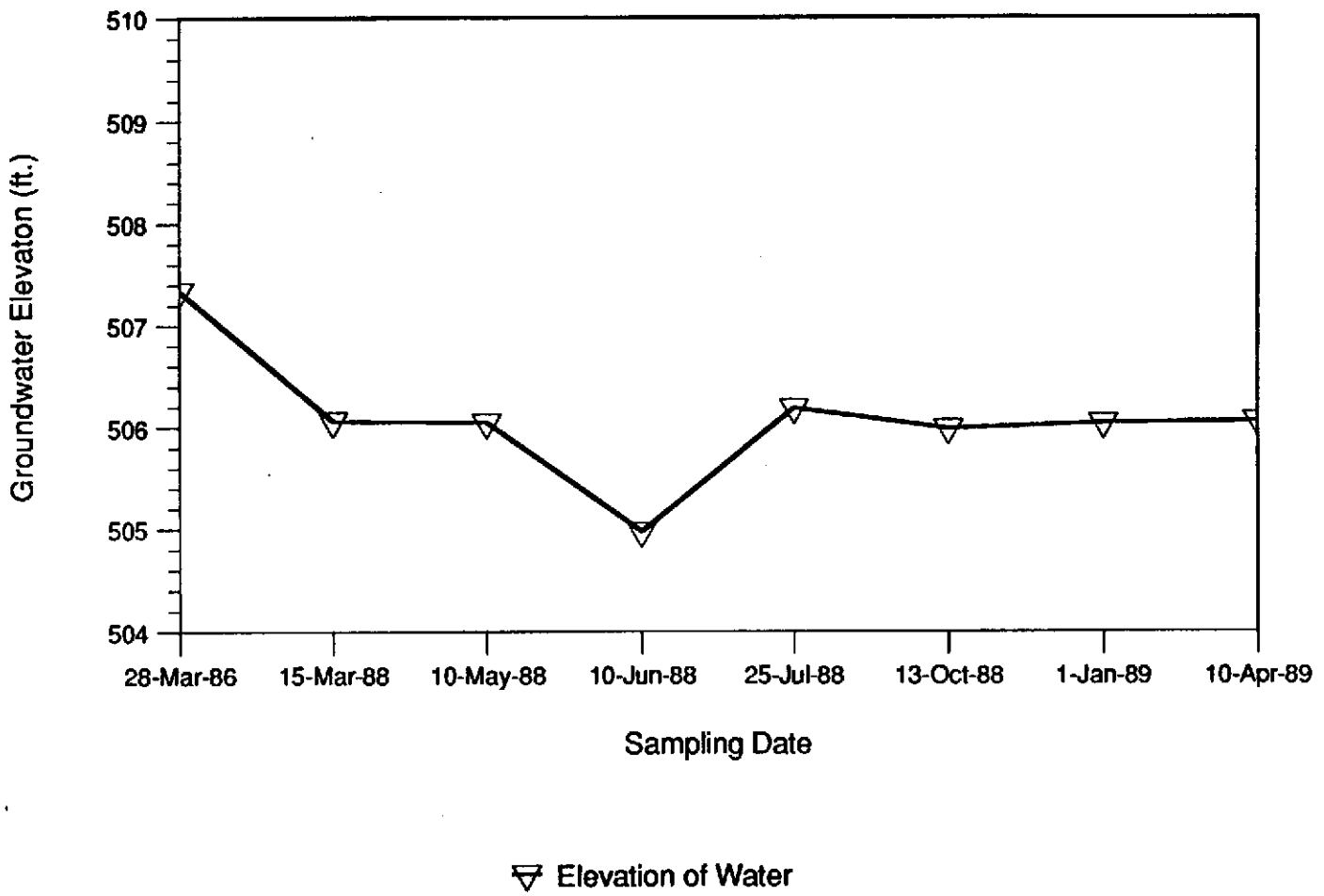
GROUNDWATER MONITOR WELL C16

Livermore, California



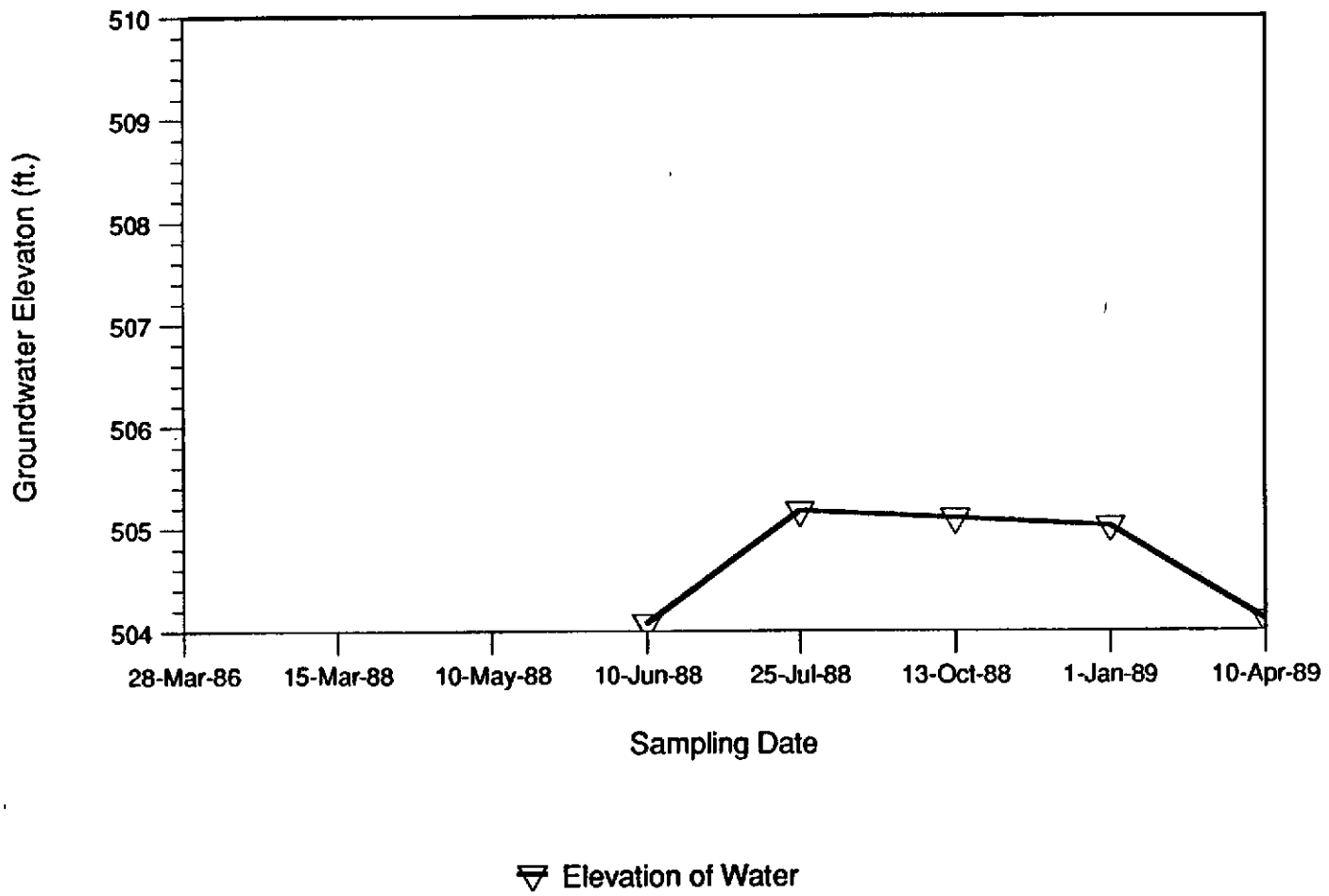
GROUNDWATER MONITOR WELL C17

Livermore, California



GROUNDWATER MONITOR WELL C18

Livermore, California



GROUNDWATER MONITOR WELL C19

Livermore, California