

DEPARTMENT OF TRANSPORTATION

BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

ENVIRONMENTAL
PROTECTION

95 NOV 27 PM 3:36



November 21, 1995

Ms. Susan Hugo, Senior Hazardous Waste Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Quarterly Groundwater Monitoring Reports For Former Cal-East Foods Site

Dear Ms. Hugo:

Enclosed is the October 1995 quarterly report for the referenced site at 505 Cedar Street in Oakland. This is the first quarter of the second year of sampling at the site. The second quarter is scheduled to take place in January 1996. If you have any questions or comments, please give me a call at 286-5647.

Sincerely,

Christopher R. Wilson

Christopher R. Wilson, P.E.
Office of Environmental Engineering

Attachment

cc: file

**OCTOBER 1995
GROUNDWATER INVESTIGATION REPORT
CAL-EAST FOODS
505 CEDAR STREET
OAKLAND, CALIFORNIA 94607**

Submitted By:

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
OAKLAND, CALIFORNIA**

November 20, 1995

Prepared By:

Christopher R. Wilson

Christopher R. Wilson, P.E.



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I Introduction

This report is for the October 1995 quarterly groundwater monitoring of the former Cal-East Foods site located at 505 Cedar Street in Oakland. It is the fifth round of sampling that has been conducted at the site. The first four quarters of sampling were concluded in April 1995, but fluctuating hydrocarbon concentrations found in the groundwater warranted a continuation of the quarterly sampling to begin in October 1995, as requested by the Alameda County Health Care Services Agency (ACHCSA).

II Site History

The subject site at 505 Cedar Street in Oakland (see Figure 1 for the location map) was occupied by Cal-East Foods, a frozen seafood processing facility, from 1975 to 1993. The site was purchased by the State Department of Transportation as part of the right of way for the Cypress freeway replacement. Past Cal-East Foods vehicle operations utilized gasoline from an underground storage tank (UST) located at the site's northeast corner (see Figure 2 for detailed site map). Following the State's purchase of the site, the 2500-gallon UST was removed in November 1993. Soil samples collected from the tank excavation pit had elevated levels of total petroleum hydrocarbons as gasoline (TPH-g) and gasoline components benzene, toluene, ethyl benzene, and xylenes (BTEX). In an effort to remove the petroleum hydrocarbon-impacted soil, the tank pit was over-excavated five days after the UST had been removed, and more soil samples from the tank pit were taken. Analyses of these samples showed considerably lower concentrations of TPH-g and BTEX than the first series of samples, but TPH-g was still found at concentrations up to 45 mg/kg, benzene at 0.32 mg/kg, toluene at 0.62 mg/kg, ethyl benzene at 0.40 mg/kg, and xylenes at 2.3 mg/kg. In December 1993 the UST excavation was backfilled with sand.

In July 1994, the installation of three monitoring wells around the former tank location was completed, and the first round of quarterly groundwater sampling was conducted. The four quarters of sampling over the next year showed consistently declining concentrations of the volatile organic compounds detected in MW1 (benzene and 1,2-dichloroethane); no detectable contamination in MW2, which was shown to be upgradient of the former tank location; and fluctuating concentrations of BTEX in MW3 (see Table 1 for a summary of the analysis results). Because of the variability of the BTEX concentrations found in MW3, ACHCSA requested the quarterly sampling be continued for another year.

During the first year of quarterly sampling, construction activities at the site and in the area have impacted the physical characteristics of the site. The former warehouse building was demolished in late 1994, and the lot was paved during the 1995 Summer. The site is now being utilized as a parking lot for Southern Pacific Railroad employees. The monitoring wells have been maintained in good condition.

III Monitoring Well Sampling Procedures

The fifth round of sampling at the former Cal-East Foods site took place on October 25, 1995. The sampling was conducted by Caltrans' Office of Environmental Engineering. After the bolted well covers and the locking well caps were removed, the depth to water in each well was measured with an electric sounder and recorded. The wells were then purged of at least four well casing volumes, using dedicated, disposable bailers. During purging activities, the groundwater conductivity, pH, and temperature were measured and recorded after approximately every well casing volume removed. See Table 2 for a historical summary of the site results and Appendix B for the field data.

The groundwater samples were collected using the dedicated bailers and were decanted into sterile, laboratory-supplied containers through disposable volatile compound samplers. The samples were immediately placed in a cooler containing blue ice. They were refrigerated overnight before being delivered the following morning, in the cooler and under chain of custody, to American Environmental Network (AEN), a state-certified laboratory in Pleasant Hill, for analysis. The samples were delivered to AEN within 20 hours of sampling.

After the conclusion of the first year of sampling, ACHCSA eliminated the diesel fuel, oil and grease, and metals analyses from the site's analytical program. As a result, the October 1995 samples were submitted to AEN for the following tests:

Total Petroleum Hydrocarbons as Gasoline (TPH-g) by EPA Method 8015-m
Volatile Organic Compounds (VOCs) by EPA Method 8240
Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8020

MTBE is a relatively new additive to gasoline that has not been screened for at the Cal-East site before this sampling period. The analysis was requested for the next four quarters by ACHCSA.

IV Analytical Results

The water level measurements found the water table at the site to be approximately 7.5 feet below ground surface, about 2 feet deeper than the last sampling period in April. A summary of the water level measurements is shown in Table 3. The groundwater table gradient derived from this quarter's measurements is 0.0061, with a direction of flow towards the southeast. Figure 3 shows the groundwater table contour map for this sampling period. The magnitude of the water table gradient and the direction of groundwater flow measured this quarter are consistent with those measured in three of the four past sampling sessions. The one anomaly (January 1995) was during a period of unusually heavy rains that may have altered the normal groundwater table found in the area.

The laboratory analytical results were, for the most part, also consistent with what was anticipated. The benzene levels that have been detected in MW1 since the second round of

sampling in October 1994, and have been decaying at a consistent, relatively high first order rate, were found to be non-detect (ND) this quarter. Also in MW1, 1,2-Dichloroethane (1,2-DCA) has been detected every sampling round, including this quarter at 11 ug/L. As expected, the chlorinated solvent is decaying slower than the benzene contamination. The level of TPH-g found in the MW1 sample this quarter dropped to 0.08 mg/L from 0.18 mg/L in April 1995.

As has been the case in the past four sampling periods, the analyses of MW2 for VOCs and TPH-g were ND. The analysis of MW2 for MTBE was also ND, as it was for all the monitoring well samples.

TPH-g has been detected every quarter in MW3 at varying concentrations, but no individual gasoline constituents were found in MW3 until benzene, ethyl benzene, and xylenes were detected in the third round (January 1995). In the fourth sampling period (April 1995), benzene, toluene, ethyl benzene, and xylenes were all detected in the MW3 sample. This quarter, however, the BTEX constituents were all ND. As with all past sampling sessions, TPH-g was detected in MW3 and a gasoline odor was evident during the purging and sampling of the well. This quarter the TPH-g concentration was found to be 0.20 mg/L, the third straight decrease in the detected levels of TPH-g. A summary of the laboratory analysis results is presented in Table 1, and the laboratory data sheets, including the QA/QC results, are in Appendix A.

V Conclusions

The contaminants that have been consistently found in MW1 (benzene and 1,2-DCA) have demonstrated a regression in their concentration levels that is congruous with a first order decay rate. By assuming a first order decay in the contaminant concentration, the change in concentration, C, with time, t, is given by:

$$\frac{dC}{dt} = -kC$$

where k is the first order decay rate.

The solution to this differential equation is given by:

$$C(t) = C_0 e^{-kt}$$

where C(t) is the concentration at time t and C₀ is the contaminant concentration at t = 0.

If an equation of this form is plotted on semi-log paper with C(t) as the logarithmic ordinate value and time as the linear abscissa value, the plot will be a straight line with a slope equal to the decay rate, k.

This analysis was applied to the MW1 contaminants by plotting the laboratory analytical results against time in days, with $t = 0$ being July 1, 1994, and determining the line that best fits the linear regression. The results for 1,2-DCA and benzene in MW1 are shown in Figures 4 and 5, respectively. The correlation coefficients for both plots are very near to -1.0, showing a good fit to the theoretical relationship.

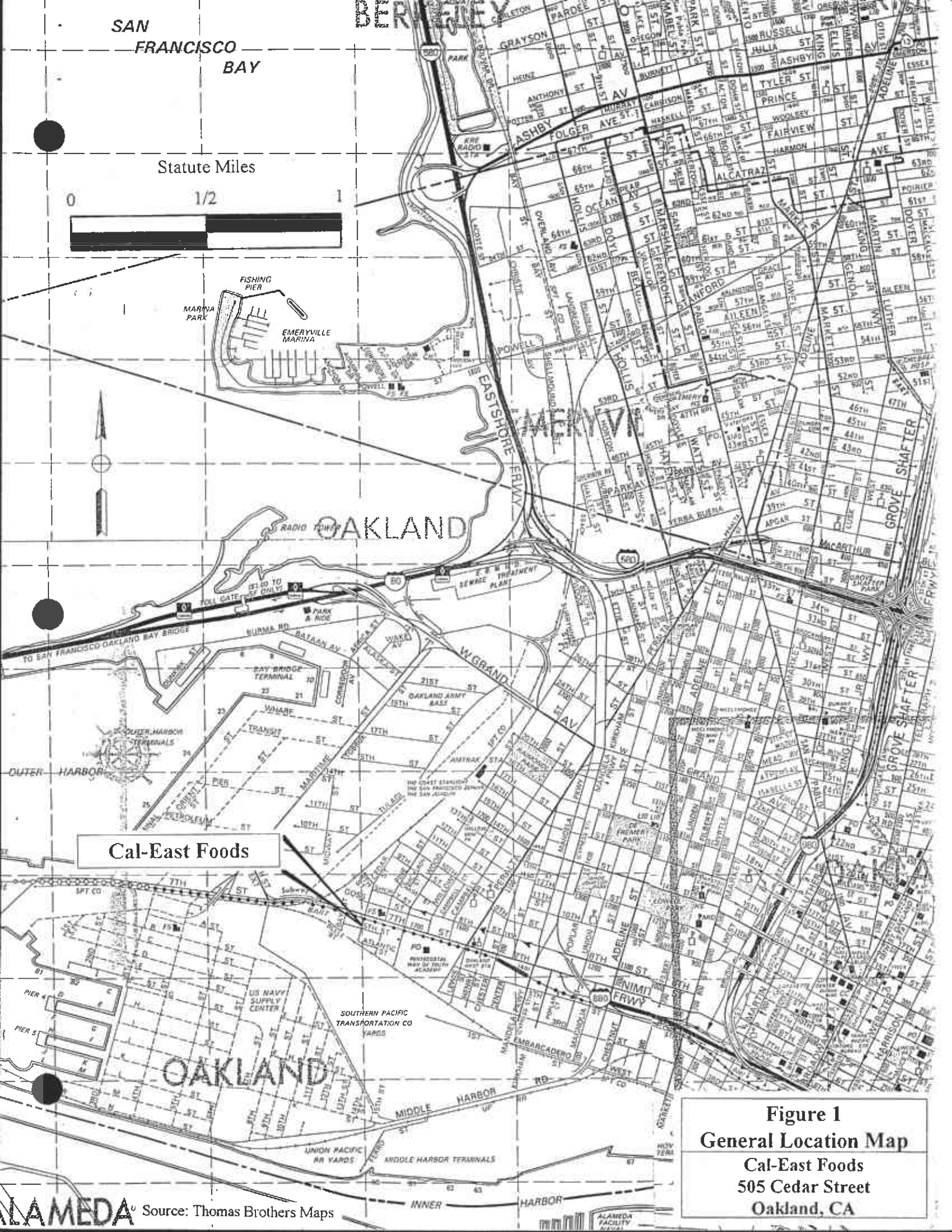
The benzene plot was made from data collected during the second, third, and fourth rounds of sampling. The derived decay rate of 1.40%/day predicted that the benzene concentration in MW1 would have fallen to non-detectable levels by the time of the October 25, 1995 sampling period ($t = 482$ days), which was shown to be accurate by the eventual laboratory analysis.

Chlorinated solvents tend to have slower natural degradation rates than hydrocarbons, and this is the case with the 1,2-DCA contamination found in MW1. The derived decay rate for 1,2-DCA is 0.32%/day. Using first order analysis to project forward to when the 1,2-DCA concentration in MW1 will have regressed to its maximum contaminant level (MCL) of 0.5 ug/L, the time value is found to be 1430 days from July 1, 1994, which is June 1998.

The results of the laboratory analyses of MW3 have not yet demonstrated any consistencies that make first order decay analysis appropriate. All BTEX analyses were ND this quarter after they first appeared in MW3 in January 1995. TPH-g levels have been declining in MW3 since the January 1995 sampling session. The screening for these analytes in MW3 and the other wells is scheduled to continue in January 1996.

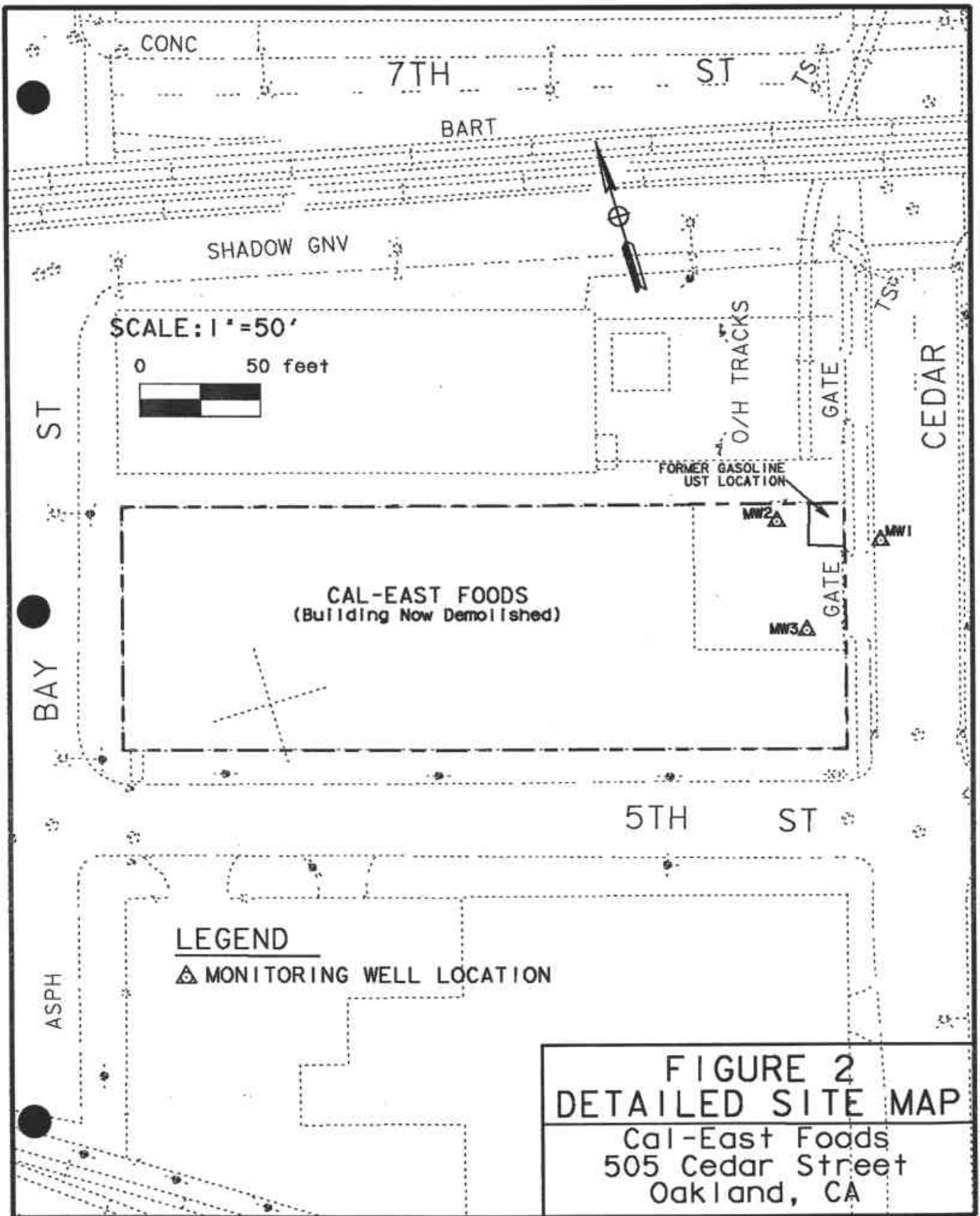
SAN FRANCISCO BAY

Statute Miles



Cal-East Foods

Figure 1
General Location Map
Cal-East Foods
505 Cedar Street
Oakland, CA



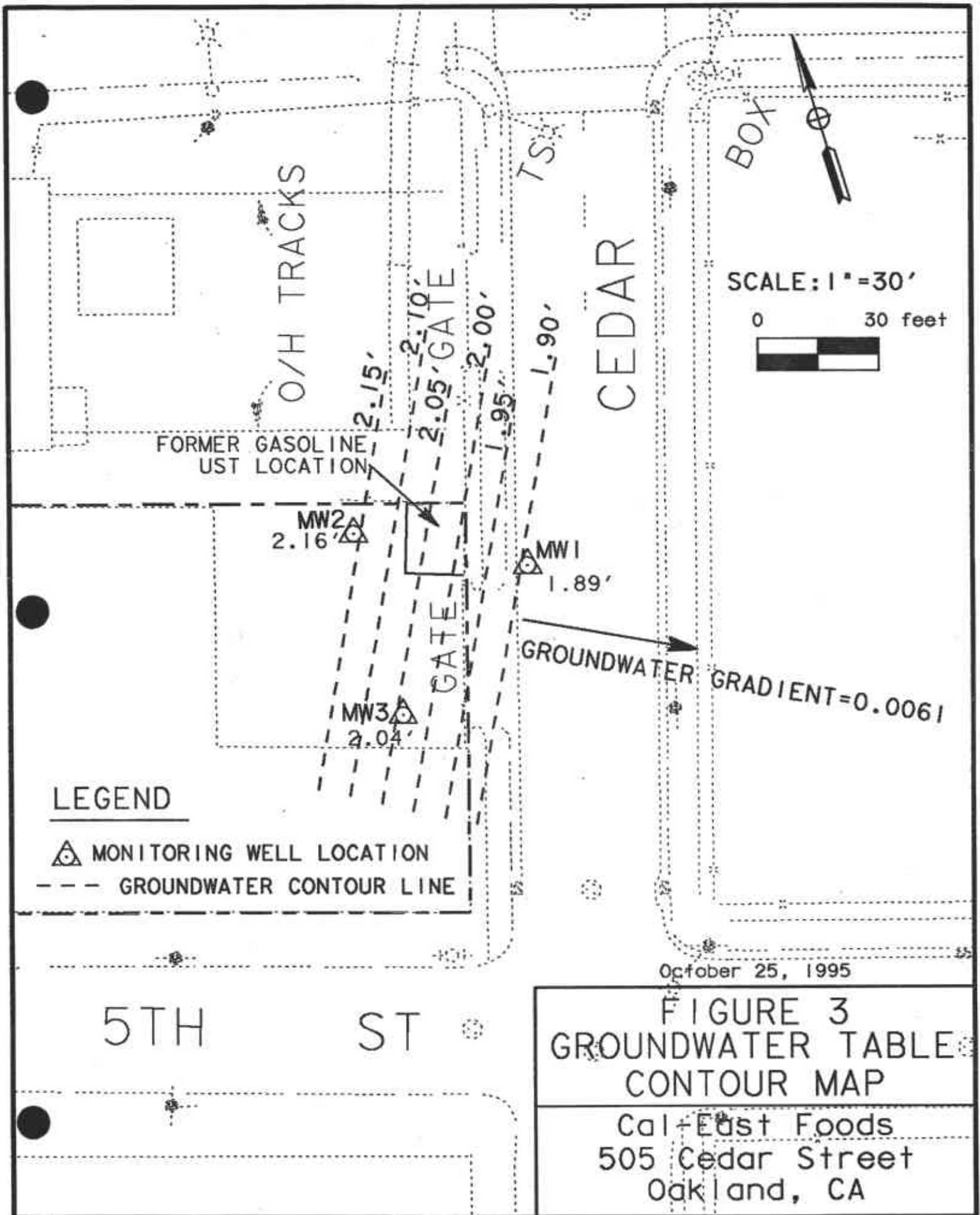


Figure 4
1,2-DCA Concentration Regression in MW1

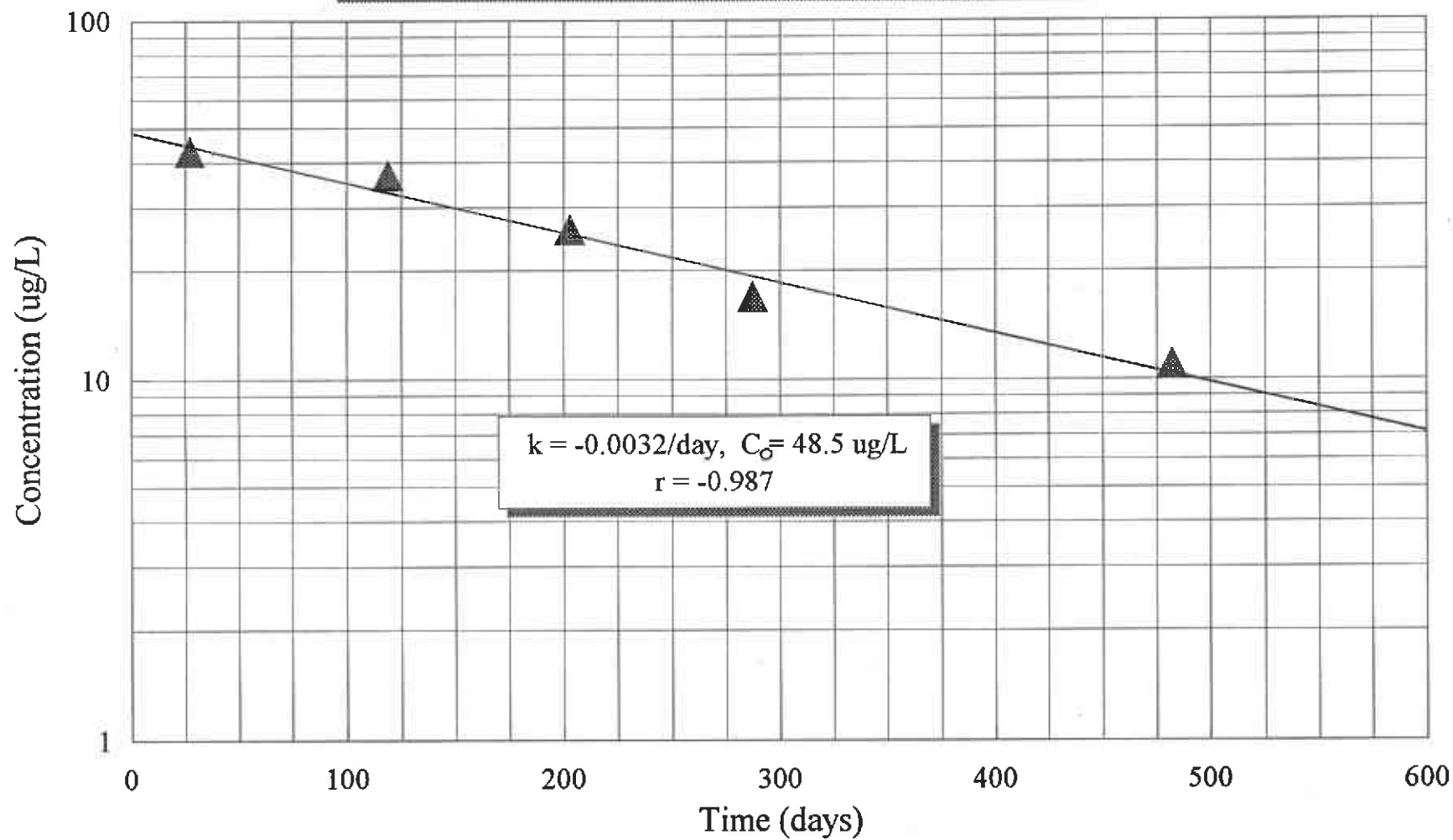


Figure 5
Benzene Concentration Regression in MW1

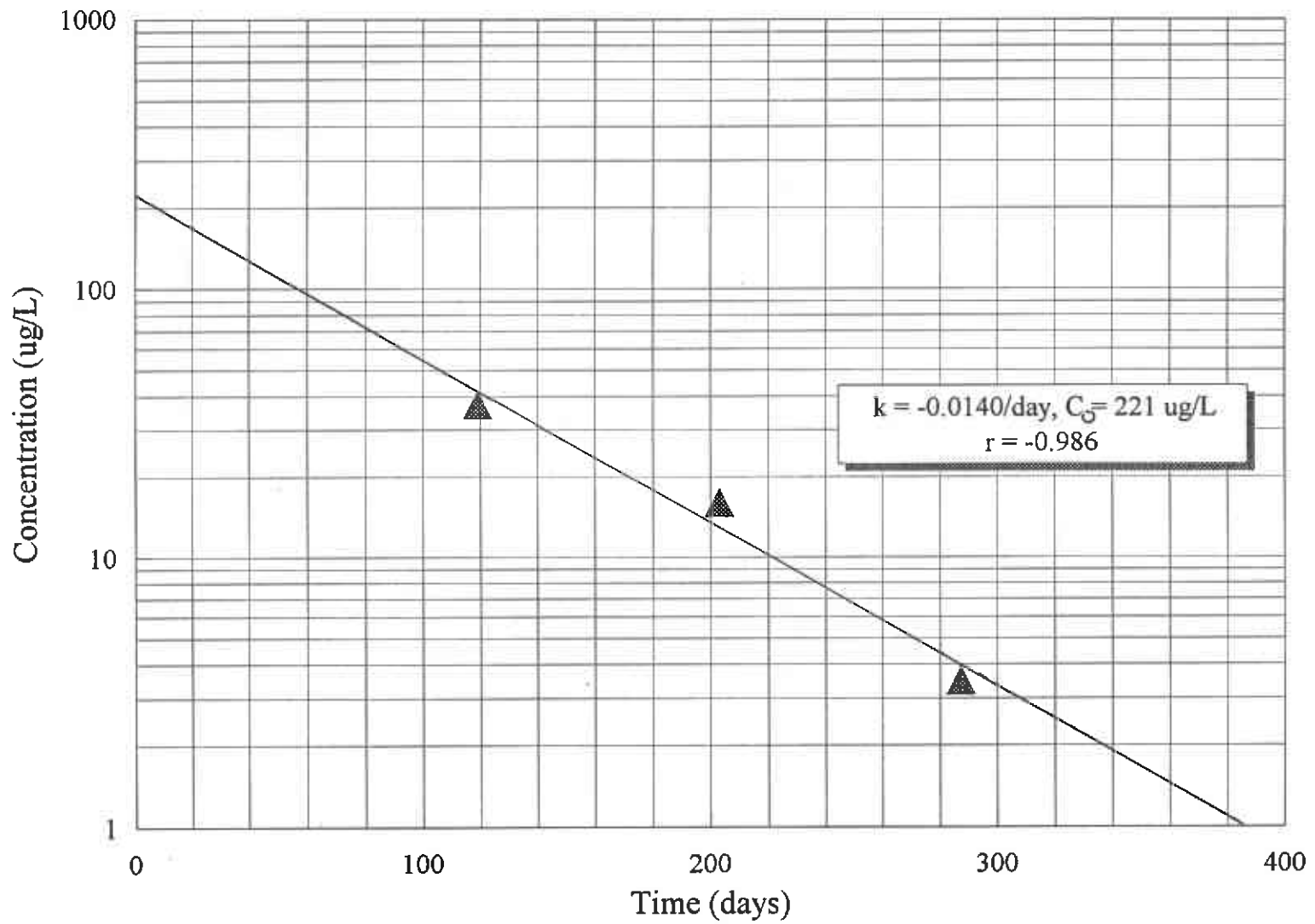


Table 1: Cal-East Foods Groundwater Analytical Results

MWell #	Date of Sampling	8240 VOCs (ug/L)	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Methyl Ethyl Ketone	Carbon Tetrachloride	Chlorobenzene	Chloroethane	2-Chloroethyl Vinyl Ether	Chloroform	Chloromethane	Dibromochloromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	1,2-Dichloropropane	Cis-1,3-Dichloropropene	Trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Methylene Chloride	Methyl Isobutyl Ketone	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	
MW1	07/27/94	ND	ND	ND	ND	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	10/27/94	ND	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	01/19/95	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	04/13/95	ND	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	10/25/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	07/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	01/19/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	04/13/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	10/25/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	07/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	01/19/95	ND	7.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	ND	ND
MW3	04/13/95	ND	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	ND
MW3	10/25/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND=Not Detected

Table 1: Cal-East Foods Groundwater Analytical Results

MWell #	Date of Sampling	8240 VOCs (ug/L) cont.	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	Vinyl Acetate	Vinyl Chloride	Total Xylenes	Methyl t-Butyl Ether (EPA 8020)	Hydrocarbons (mg/L)	8015m TPH-gasoline
MW1	07/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	0.12	
MW1	10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	0.45	
MW1	01/19/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	
MW1	04/13/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	0.18	
MW1	10/25/95	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.08	
MW2	07/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	
MW2	10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	
MW2	01/19/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	
MW2	04/13/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	
MW2	10/25/95	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND	
MW3	07/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	0.13	
MW3	10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	0.07	
MW3	01/19/95	ND	ND	ND	ND	ND	ND	ND	ND	7.7	-	2.90	
MW3	04/13/95	2.7	ND	ND	ND	ND	ND	ND	11.0	ND	-	1.30	
MW3	10/25/95	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	0.20	

ND=Not Detected

--=Not Analyzed

Table 2
Cal-East Foods Groundwater Investigation
505 Cedar Street
Groundwater Conductivity, pH, and Temperature Measurements

Well Number	Measuring Date	Conductivity (umhos/cm)	pH	Temperature (degrees fahrenheit)
MW1	07/27/94	1158	NA	67.0
	10/27/94	1103	7.0	70.0
	01/19/95	1410	6.6	66.0
	04/13/95	1110	7.1	62.8
	10/25/95	3650	6.6	64.8
MW2	07/27/94	1040	NA	65.4
	10/27/94	916	7.1	67.8
	01/19/95	740	7.0	63.0
	04/13/95	571	6.3	63.1
	10/25/95	810	6.8	65.3
MW3	07/27/94	1756	NA	66.6
	10/27/94	1374	6.8	68.4
	01/19/95	980	6.6	60.0
	04/13/95	532	6.6	61.7
	10/25/95	1050	6.8	66.0

NA=Not Available

Table 3
Cal-East Foods Groundwater Investigation
505 Cedar Street
Water Level Data

Well Number	Top of Casing Elevation*	Measuring Date	Depth To Water**	Water Level Elevation*
MW1	9.25	07/27/94	8.83	0.42
		10/27/94	8.32	0.94
		01/19/95	4.91	4.34
		04/13/95	5.28	3.97
		10/25/95	7.36	1.89
MW2	9.84	07/27/94	9.24	0.60
		10/27/94	8.82	1.02
		01/19/95	5.31	4.53
		04/13/95	5.74	4.10
		10/25/95	7.68	2.16
MW3	9.41	07/27/94	8.94	0.47
		10/27/94	8.41	1.00
		01/19/95	3.78	5.63
		04/13/95	5.36	4.05
		10/25/95	7.37	2.04

*=Measurement in feet above USGS Mean Sea Level

**=Measurement in feet from top of casing

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

CALTRANS
OFFICE OF ENV. ENG.
111 GRAND AVE., 14th FLOOR
OAKLAND, CA 94612

ATTN: CHRISTOPHER WILSON
CLIENT PROJ. ID: CAL-EAST FOOD

REPORT DATE: 11/04/95

DATE(S) SAMPLED: 10/25/95-10/26/95

DATE RECEIVED: 10/26/95

AEN WORK ORDER: 9510345

PROJECT SUMMARY:

On October 26, 1995, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.


Larry Klein
Laboratory Director

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-1
 AEN LAB NO: 9510345-01
 AEN WORK ORDER: 9510345
 CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
 DATE RECEIVED: 10/26/95
 REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Methyl t-Butyl Ether	EPA 8020	ND	50	ug/L	10/31/95
TPH as Gas in water	5030/GC-FID	0.08 *	0.05	mg/L	10/31/95
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/L	11/01/95
Benzene	71-43-2	ND	5	ug/L	11/01/95
Bromodichloromethane	75-27-4	ND	5	ug/L	11/01/95
Bromoform	75-25-2	ND	5	ug/L	11/01/95
Bromomethane	74-83-9	ND	10	ug/L	11/01/95
2-Butanone	78-93-3	ND	100	ug/L	11/01/95
Carbon Disulfide	75-15-0	ND	10	ug/L	11/01/95
Carbon Tetrachloride	56-23-5	ND	5	ug/L	11/01/95
Chlorobenzene	108-90-7	ND	5	ug/L	11/01/95
Chloroethane	75-00-3	ND	10	ug/L	11/01/95
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/L	11/01/95
Chloroform	67-66-3	ND	5	ug/L	11/01/95
Chloromethane	74-87-3	ND	10	ug/L	11/01/95
Dibromochloromethane	124-48-1	ND	5	ug/L	11/01/95
1,1-Dichloroethane	75-34-3	ND	5	ug/L	11/01/95
1,2-Dichloroethane	107-06-2	11 *	5	ug/L	11/01/95
1,1-Dichloroethene	75-35-4	ND	5	ug/L	11/01/95
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/L	11/01/95
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/L	11/01/95
1,2-Dichloropropane	78-87-5	ND	5	ug/L	11/01/95
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	11/01/95
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	11/01/95
Ethylbenzene	100-41-4	ND	5	ug/L	11/01/95
2-Hexanone	591-78-6	ND	50	ug/L	11/01/95
Methylene Chloride	75-09-2	ND	20	ug/L	11/01/95
4-Methyl-2-pentanone	108-10-1	ND	50	ug/L	11/01/95
Styrene	100-42-5	ND	5	ug/L	11/01/95
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	11/01/95
Tetrachloroethene	127-18-4	ND	5	ug/L	11/01/95
Toluene	108-88-3	ND	5	ug/L	11/01/95
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	11/01/95
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	11/01/95
Trichloroethene	79-01-6	ND	5	ug/L	11/01/95
Vinyl Acetate	108-05-4	ND	50	ug/L	11/01/95
Vinyl Chloride	75-01-4	ND	10	ug/L	11/01/95
Xylenes, Total	1330-20-7	ND	10	ug/L	11/01/95

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-1
AEN LAB NO: 9510345-01
AEN WORK ORDER: 9510345
CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
DATE RECEIVED: 10/26/95
REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
---------	-----------------	--------	--------------------	-------	------------------

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-2
 AEN LAB NO: 9510345-02
 AEN WORK ORDER: 9510345
 CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
 DATE RECEIVED: 10/26/95
 REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Methyl t-Butyl Ether	EPA 8020	ND	50	ug/L	10/31/95
TPH as Gas in water	5030/GC-FID	ND	0.05	mg/L	10/31/95
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/L	11/01/95
Benzene	71-43-2	ND	5	ug/L	11/01/95
Bromodichloromethane	75-27-4	ND	5	ug/L	11/01/95
Bromoform	75-25-2	ND	5	ug/L	11/01/95
Bromomethane	74-83-9	ND	10	ug/L	11/01/95
2-Butanone	78-93-3	ND	100	ug/L	11/01/95
Carbon Disulfide	75-15-0	ND	10	ug/L	11/01/95
Carbon Tetrachloride	56-23-5	ND	5	ug/L	11/01/95
Chlorobenzene	108-90-7	ND	5	ug/L	11/01/95
Chloroethane	75-00-3	ND	10	ug/L	11/01/95
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/L	11/01/95
Chloroform	67-66-3	ND	5	ug/L	11/01/95
Chloromethane	74-87-3	ND	10	ug/L	11/01/95
Dibromochloromethane	124-48-1	ND	5	ug/L	11/01/95
1,1-Dichloroethane	75-34-3	ND	5	ug/L	11/01/95
1,2-Dichloroethane	107-06-2	ND	5	ug/L	11/01/95
1,1-Dichloroethene	75-35-4	ND	5	ug/L	11/01/95
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/L	11/01/95
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/L	11/01/95
1,2-Dichloropropane	78-87-5	ND	5	ug/L	11/01/95
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	11/01/95
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	11/01/95
Ethylbenzene	100-41-4	ND	5	ug/L	11/01/95
2-Hexanone	591-78-6	ND	50	ug/L	11/01/95
Methylene Chloride	75-09-2	ND	20	ug/L	11/01/95
4-Methyl-2-pentanone	108-10-1	ND	50	ug/L	11/01/95
Styrene	100-42-5	ND	5	ug/L	11/01/95
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	11/01/95
Tetrachloroethene	127-18-4	ND	5	ug/L	11/01/95
Toluene	108-88-3	ND	5	ug/L	11/01/95
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	11/01/95
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	11/01/95
Trichloroethene	79-01-6	ND	5	ug/L	11/01/95
Vinyl Acetate	108-05-4	ND	50	ug/L	11/01/95
Vinyl Chloride	75-01-4	ND	10	ug/L	11/01/95
Xylenes, Total	1330-20-7	ND	10	ug/L	11/01/95

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-2
AEN LAB NO: 9510345-02
AEN WORK ORDER: 9510345
CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
DATE RECEIVED: 10/26/95
REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
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ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-3
 AEN LAB NO: 9510345-03
 AEN WORK ORDER: 9510345
 CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
 DATE RECEIVED: 10/26/95
 REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Methyl t-Butyl Ether	EPA 8020	ND	50	ug/L	10/31/95
TPH as Gas in water	5030/GC-FID	0.2 *	0.05	mg/L	10/31/95
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/L	10/31/95
Benzene	71-43-2	ND	5	ug/L	10/31/95
Bromodichloromethane	75-27-4	ND	5	ug/L	10/31/95
Bromoform	75-25-2	ND	5	ug/L	10/31/95
Bromomethane	74-83-9	ND	10	ug/L	10/31/95
2-Butanone	78-93-3	ND	100	ug/L	10/31/95
Carbon Disulfide	75-15-0	ND	10	ug/L	10/31/95
Carbon Tetrachloride	56-23-5	ND	5	ug/L	10/31/95
Chlorobenzene	108-90-7	ND	5	ug/L	10/31/95
Chloroethane	75-00-3	ND	10	ug/L	10/31/95
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/L	10/31/95
Chloroform	67-66-3	ND	5	ug/L	10/31/95
Chloromethane	74-87-3	ND	10	ug/L	10/31/95
Dibromochloromethane	124-48-1	ND	5	ug/L	10/31/95
1,1-Dichloroethane	75-34-3	ND	5	ug/L	10/31/95
1,2-Dichloroethane	107-06-2	ND	5	ug/L	10/31/95
1,1-Dichloroethene	75-35-4	ND	5	ug/L	10/31/95
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/L	10/31/95
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/L	10/31/95
1,2-Dichloropropane	78-87-5	ND	5	ug/L	10/31/95
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	10/31/95
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	10/31/95
Ethylbenzene	100-41-4	ND	5	ug/L	10/31/95
2-Hexanone	591-78-6	ND	50	ug/L	10/31/95
Methylene Chloride	75-09-2	ND	20	ug/L	10/31/95
4-Methyl-2-pentanone	108-10-1	ND	50	ug/L	10/31/95
Styrene	100-42-5	ND	5	ug/L	10/31/95
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	10/31/95
Tetrachloroethene	127-18-4	ND	5	ug/L	10/31/95
Toluene	108-88-3	ND	5	ug/L	10/31/95
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	10/31/95
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	10/31/95
Trichloroethene	79-01-6	ND	5	ug/L	10/31/95
Vinyl Acetate	108-05-4	ND	50	ug/L	10/31/95
Vinyl Chloride	75-01-4	ND	10	ug/L	10/31/95
Xylenes, Total	1330-20-7	ND	10	ug/L	10/31/95

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: MW-3
AEN LAB NO: 9510345-03
AEN WORK ORDER: 9510345
CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/25/95
DATE RECEIVED: 10/26/95
REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
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ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

CALTRANS OFFICE OF ENV. ENG.

SAMPLE ID: TB
 AEN LAB NO: 9510345-04
 AEN WORK ORDER: 9510345
 CLIENT PROJ. ID: CAL-EAST FOOD

DATE SAMPLED: 10/26/95
 DATE RECEIVED: 10/26/95
 REPORT DATE: 11/04/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Volatile Organic Compounds EPA 8240					
Acetone	67-64-1	ND	100	ug/L	10/31/95
Benzene	71-43-2	ND	5	ug/L	10/31/95
Bromodichloromethane	75-27-4	ND	5	ug/L	10/31/95
Bromoform	75-25-2	ND	5	ug/L	10/31/95
Bromomethane	74-83-9	ND	10	ug/L	10/31/95
2-Butanone	78-93-3	ND	100	ug/L	10/31/95
Carbon Disulfide	75-15-0	ND	10	ug/L	10/31/95
Carbon Tetrachloride	56-23-5	ND	5	ug/L	10/31/95
Chlorobenzene	108-90-7	ND	5	ug/L	10/31/95
Chloroethane	75-00-3	ND	10	ug/L	10/31/95
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/L	10/31/95
Chloroform	67-66-3	ND	5	ug/L	10/31/95
Chloromethane	74-87-3	ND	10	ug/L	10/31/95
Dibromochloromethane	124-48-1	ND	5	ug/L	10/31/95
1,1-Dichloroethane	75-34-3	ND	5	ug/L	10/31/95
1,2-Dichloroethane	107-06-2	ND	5	ug/L	10/31/95
1,1-Dichloroethene	75-35-4	ND	5	ug/L	10/31/95
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/L	10/31/95
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/L	10/31/95
1,2-Dichloropropane	78-87-5	ND	5	ug/L	10/31/95
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	10/31/95
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	10/31/95
Ethylbenzene	100-41-4	ND	5	ug/L	10/31/95
2-Hexanone	591-78-6	ND	50	ug/L	10/31/95
Methylene Chloride	75-09-2	ND	20	ug/L	10/31/95
4-Methyl-2-pentanone	108-10-1	ND	50	ug/L	10/31/95
Styrene	100-42-5	ND	5	ug/L	10/31/95
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	10/31/95
Tetrachloroethene	127-18-4	ND	5	ug/L	10/31/95
Toluene	108-88-3	ND	5	ug/L	10/31/95
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	10/31/95
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	10/31/95
Trichloroethene	79-01-6	ND	5	ug/L	10/31/95
Vinyl Acetate	108-05-4	ND	50	ug/L	10/31/95
Vinyl Chloride	75-01-4	ND	10	ug/L	10/31/95
Xylenes, Total	1330-20-7	ND	10	ug/L	10/31/95

ND = Not detected at or above the reporting limit

* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9510345

CLIENT PROJECT ID: CAL-EAST FOOD

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9510345
 INSTRUMENT: F
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery	
			Fluorobenzene	
10/31/95	MW-1	01	98	
10/31/95	MW-2	02	96	
10/31/95	MW-3	03	97	
QC Limits:			92-109	

DATE ANALYZED: 10/30/95
 SAMPLE SPIKED: 9510206-09
 INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	19.9	102	13	65-122	20
Toluene	57.6	106	12	68-124	20
Hydrocarbons as Gasoline	500	110	13	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8240

AEN JOB NO: 9510345
 INSTRUMENT: 12
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery		
			1,2-Dichloroethane-d ₄	Toluene-d ₈	p-Bromofluorobenzene
11/01/95	MW-1	01	113	100	98
11/01/95	MW-2	02	102	103	96
10/31/95	MW-3	03	107	105	99
10/31/95	TB	04	102	103	99
QC Limits:			76-114	88-110	86-115

DATE ANALYZED: 10/30/95
 SAMPLE SPIKED: 9510389-02
 INSTRUMENT: 12

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
1,1-Dichloroethene	50	126	12	59-155	25
Trichloroethene	50	100	16	71-157	25
Benzene	50	104	12	37-151	25
Toluene	50	103	12	47-150	25
Chlorobenzene	50	100	13	37-160	25

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

**CALTRANS DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
MONITORING WELL PURGE AND SAMPLE FORM**

Project Name: Cal-East Foods Date: 10/25/95

Well Number: MW-1 Tested By: Joel Howie & Chris Wilson

Measuring Datum Description: Top of Casing

Water Level Measurement Method: electric sounder Depth To Water: 7.36'

Purge Method: disposable bailer Sample Method: disposable bailer

Sampling Start Time: 4:55 Sampling Depth: _____

Comments: _____

Well Volume Calculation: (complete before purging)	Well Depth (ft)	Depth To Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in)			Casing Water Volume (gal)
				2"	4"	6"	
				0.16	0.65	1.47	
	20.0	7.36	12.64				8.72
Time	2:45	3:10	3:30	3:45	After Sampling 4:55		
Volume Purged (gal)	9	18	27	36	—		
Purge Rate (gpm)	3.6	0.36	0.45	0.60			
Conductivity (umhos/cm)	3620	4960	4710	4250	3650		
Temperature (deg F or C)	71.8	70.0	69.0	68.9	64.8		
pH	6.59	6.63	6.62	6.62	6.62		
Odor							
Turbidity/Color							
Number of Casing Volumes Purged	1.09	2.19	3.28	4.38	—		
Dewatered							

**CALTRANS DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
MONITORING WELL PURGE AND SAMPLE FORM**

Project Name: Cal-East Foods Date: 10/25/95

Well Number: MW-2 Tested By: Joel Howie and Chris Wilson

Measuring Datum Description: Top of Casing

Water Level Measurement Method: electric sounder Depth To Water: 7.68

Purge Method: disposable bailer Sample Method: disposable bailer

Sampling Start Time: 5:25 Sampling Depth: _____

Comments: _____

Well Volume Calculation: (complete before purging)	Well Depth (ft)	Depth To Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in)			Casing Water Volume (gal)
				2"	4"	6"	
	19	7.68	11.32	0.16	0.65	1.47	1.81
Time	3:55	4:05	4:35	4:45	After Sampling 5:25		
Volume Purged (gal)	2.5	5	7.5	9.5 10.0			
Purge Rate (gpm)		0.25	—	0.20			
Conductivity (umhos/cm)	841	828	823	742	810		
Temperature (deg F or C)	65.8	65.9	64.9	64.2	65.3		
pH	6.93	7.05	6.92	6.95	6.82		
Odor							
Turbidity/Color							
Number of Casing Volumes Purged	1.38	2.76	4.14	5.25 5.52			
Dewatered		Almost					

**CALTRANS DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
MONITORING WELL PURGE AND SAMPLE FORM**

Project Name: Cal-East Foods Date: 10/25/95

Well Number: MW-3 Tested By: Joel Howie and Chris Wilson

Measuring Datum Description: Top of Casing

Water Level Measurement Method: electric sounder Depth To Water: 7.37

Purge Method: disposable bailer Sample Method: disposable bailer

Sampling Start Time: 5:10 Sampling Depth: _____

Comments: _____

Well Volume Calculation: (complete before purging)	Well Depth (ft)	Depth To Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in)			Casing Water Volume (gal)
				2"	4"	6"	
	15	7.37	7.63	0.16	0.65	1.47	1.22
Time	4:10	4:15	4:21	4:25	After Sampling 5:10		
Volume Purged (gal)	2	4	6	8			
Purge Rate (gpm)	—	0.40	0.33	0.5			
Conductivity (umhos/cm)	1040	950	969	910	1050		
Temperature (deg For C)	67.7	68.1	68.4	67.9	66		
pH	6.69	6.72	6.68	6.66	6.75		
Odor	gasoline —————→						
Turbidity/Color							
Number of Casing Volumes Purged	1.64	3.28	4.92	6.56			
Dewatered							