



PACIFIC
ENVIRONMENTAL
GROUP, INC.

Case Closure Summary

**ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California**

Alameda County Health Care Services Agency

Prepared for

Mr. Paul Supple
ARCO Products Company

November 20, 1996

Prepared by

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Project 330-106.6A

PROFESSIONAL CERTIFICATION

Case Closure Summary

ARCO Service Station 2112

1260 Park Street at Encinal Avenue


Alameda, California

Alameda County Health Care Services Agency


November 20, 1996

Pacific Environmental Group, Inc. (PACIFIC) has performed investigative and remedial activities for ARCO Products Company (ARCO) at the ARCO Service Station 2112 located at 1260 Park Street in Alameda, California.

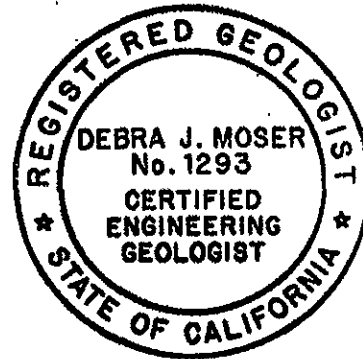
This Case Closure Summary has been prepared by PACIFIC staff under the professional supervision of the Senior Geologist whose seal and signature appear hereon.



Kelly C. Brown
Project Manager



Debra J. Moser
Senior Geologist
CEG 1293



cc: Mr. Paul Supple, ARCO Products Company
Mr. Kevin Graves, Regional Water Quality Control Board, S.F. Bay Region

Case Closure Summary

Leaking Underground Fuel Storage Tank Program

I. Agency Information

Date: November 14, 1996

Agency Name: Alameda County Health Care Services Agency	Address: 1131 Harbor Bay Pkwy.
City/State/Zip: Alameda, CA 94502	Phone: (510) 567-6700
Responsible Staff Person: Ms. Susan Hugo	Title:

II. Case Information

Site Facility Name: ARCO Service Station 2112		
Site Facility Address: 1260 Park Street, Alameda, California		
RB LUSTIS Case No: N/A	Local Case No: N/A	LOP Case No: N/A
URF Filing Date: Initial Report: Unknown	SWEEPS No: N/A	
Responsible Parties	Addresses	Phone Numbers
ARCO Products Company	P.O. Box 6549	(510) 299-8891
Attn.: Mr. Paul Supple	Moraga, CA 94570	

III. Tank Information

Tank I.D. No.	Size in Gallons	Contents	Closed in place/ Removed?	Date
1	4,000	Gasoline	Replaced	7/90
2	4,000	Gasoline	Replaced	7/90
3	6,000	Gasoline	Replaced	7/90
4	6,000	Gasoline	Replaced	7/90
5	10,000	Gasoline	Replaced	7/90
6	unknown	Used Oil	Removed	7/90

Former gasoline USTs were replaced with four double-walled 10,000-gallon USTs in a new complex in 7/90.
Used oil UST was removed in 7/90. Product lines were also replaced in 7/90 and 8/90.

IV. Release and Site Characterization Information

Cause and type of release: Release from former underground USTs and lines.		
Site characterization complete? Yes	Date approved by oversight agency: N/A	
Monitoring wells installed? Yes	Number: 5	Proper screened interval? Yes
Highest GW depth below ground surface: 6.76 ft	Lowest: 18.43 ft	Flow direction: West
Most sensitive current use: Unknown		

Are drinking water wells affected? No	Aquifer name: Unknown
Is surface water affected? No	Nearest affected SW name: Unknown
Off-site beneficial use impacts: Unknown.	

V. Treatment/disposal Methods (attach any additional info.)

Treatment and Disposal of Affected Material									
Material	Amount (Include Units)				Action (Treatment or Disposal Method)	Date			
Tanks	two-4,000, two-6,000, and one-10,000 gl Gas, one used oil				Excavation and Replacement	7/90 & 8/90			
Piping/Islands	160 feet/2 islands				Excavation and Replacement	7/90			
Free Product	NA				NA	NA			
Soil	1,200 cubic yards				Over Excavation	7/90 & 8/90			
Soil	54.9 g gas/0.09 g benzene				Soil Vapor Extraction	11/94 to 8/95			
Groundwater	945,200 g water				Groundwater Extraction	6/94 to 8/95			
	0.13 g gas/0.02 g benzene								
Maximum Documented Contaminant Concentrations -- Before and After Cleanup									
Optional: See Tables in Attachment A and B on contaminant locations and concentrations.									
Contaminant	Soil (ppm)		Water (ppm)		Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After		Before	After	Before	After
TPPH-g	23,000	NA	6,700	ND	1,2-DCA	NA	NA	NA	NA
TEPH-d	NA	NA	NA	NA	Oil & Grease	NA	NA	NA	NA
Benzene	210	NA	1,900	ND	Lead	NA	NA	NA	NA
Toluene	1,100	NA	1,700	ND	MTBE	NA	NA	ND	ND
Ethylbenzene	940	NA	240	ND	Motor Oil	NA	NA	NA	NA
Xylenes	2,700	NA	1,300	ND					
Comments: NA = Not analyzed. ND = Not detected. See attached tables									

VI. Closure

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Yes		
Site management requirements: None		
Should corrective action be reviewed if land use changes? No		
Monitoring wells decommissioned: No	Decommissioned: 0	Retained: 5
List enforcement actions taken: None		
SVE Wells AV-1 through AV-7 were installed and used as part of the SVE remedial system.		
GWE Wells AR-1 and AR-2 were installed and used as part of the GWE remedial system. The remedial systems were operated from June 94 through August 95. The systems were shut down due to reaching asymptotic mass removal rates and low to non-detect influent concentrations		
Impacted soils were excavated and removed during UST replacement activities in 7/90 and 8/90.		
List enforcement actions rescinded: None		

VII. Additional Comments, Data, etc.

Remediation and site assessment are complete. Groundwater levels have reached the depth of highest soil impact, with hydrocarbon concentrations remaining non-detect for at least three sampling events and at just above the detection limits prior to the past three quarters. Therefore, the hydrocarbon sources in soil and groundwater at the site have been removed.

Soils from the former and present UST complexes were transported and disposed of at State licensed landfills. Clean fill material was imported and used to backfill the former UST excavation.

Site closure was requested and tentatively approved by Ms. Susan Hugo with the ACHCSA during a meeting with PACIFIC and ARCO.

Conclusion:

Concentrations for TPH-g and benzene are non-detect for groundwater in all wells for the past four quarters of sampling, except Well A-1 which contained very low concentrations of benzene between 1.2 and 4.9 ppb, between February and November 1995. TPH-g has been non-detect in Well A-1. The soil source was removed by over excavation during UST replacement and during operation of the SVE remedial system. The groundwater source has been removed by operation of the GWE remedial system and the natural biodegradation process.

VIII. Local Agency Representative Data

Agency:	Address:
City/State/Zip:	Phone:
Responsible Staff Person:	Title:

IX. Consultant Report Summary

Report	Consulting Firm	Title	Date
Final Closure	See the attached document list in Table 1		
Final RAP			
Initial RAP			
Site Assessment			
Other Reports (list in reverse chronological order)			

Attachments:

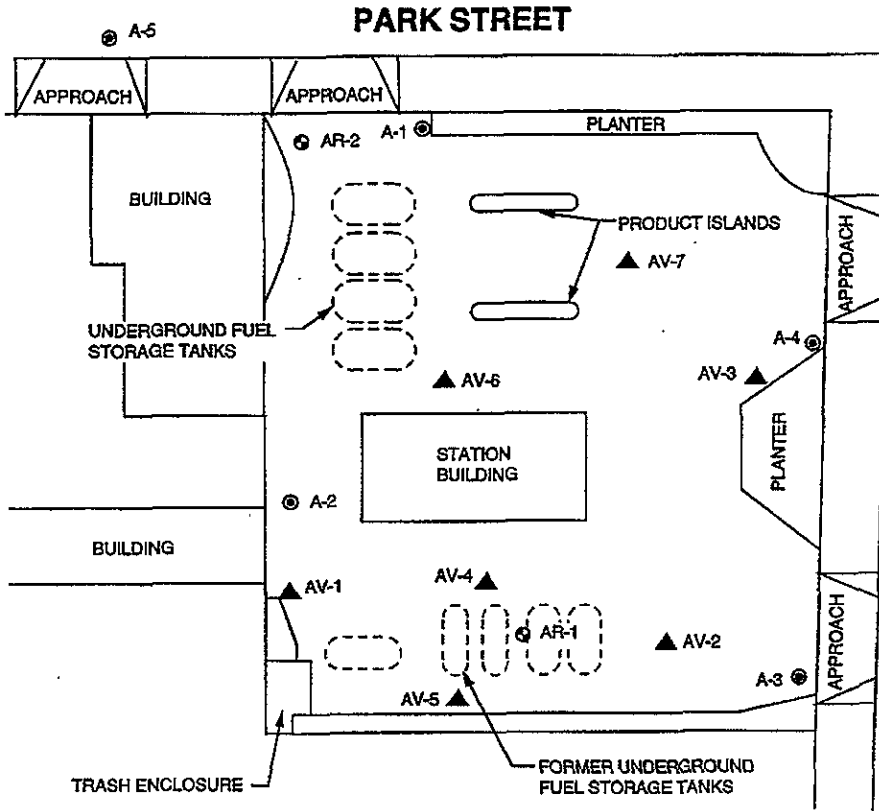
Table 1 - Site Document List

Figure 1 - Site Map

Attachment A - Historical Soil Analytical Data Tables and Figures (copy)

Attachment B - Historical Groundwater Elevation and Groundwater Analytical Data Tables (copy)

Attachment C - Historical Remedial System Operation Performance Tables and Figures(copy)



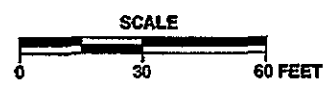
ENCINAL AVENUE

LEGEND

- A-4 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- AR-1 ● GROUNDWATER EXTRACTION WELL LOCATION AND DESIGNATION
- AV-2 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION



PACIFIC ENVIRONMENTAL GROUP, INC.



ARCO SERVICE STATION 2112
1260 Park Street at Encinal Avenue
Alameda, California

SITE MAP

FIGURE:
1
PROJECT:
330-106.6A

ATTACHMENT A
HISTORICAL SOIL ANALYTICAL DATA TABLES
AND FIGURES (COPY)

TABLE 1
 RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
 ARCO Station 2112
 1260 Park Street
 Alameda, California

Sample Number	TPHg	B	T	E	X
S-6-B1	12	0.16	0.34	0.14	1.3
S-10-B1	1,700	15	72	22	180
S-6-B2	<2.0	<0.050	<0.050	<0.050	<0.050
S-11-B2	570	3.9	13	11	82
S-6-B3	<2.0	0.097	<0.050	<0.050	0.20
S-11-B3	10,000	47	350	120	940
S-6-B4	<2.0	0.063	0.096	<0.050	0.20
S-11-B4	21,000	210	1,100	320	2,600
S-6-B5	3.7	<0.050	0.081	<0.050	0.18
S-11-B5	5,400	8.8	27	66	160
S-5.5-B6	<2.0	<0.050	<0.050	<0.050	<0.050
S-10-B6	<2.0	<0.050	<0.050	<0.050	<0.050

Results in milligrams per kilogram or parts per million

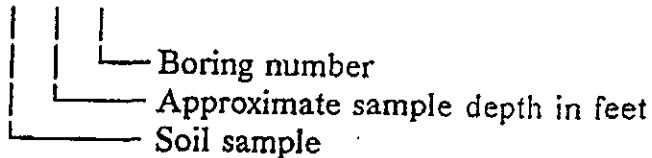
TPHg = Total petroleum hydrocarbons as gasoline

B = benzene E = ethylbenzene T = toluene X = total xylene isomers

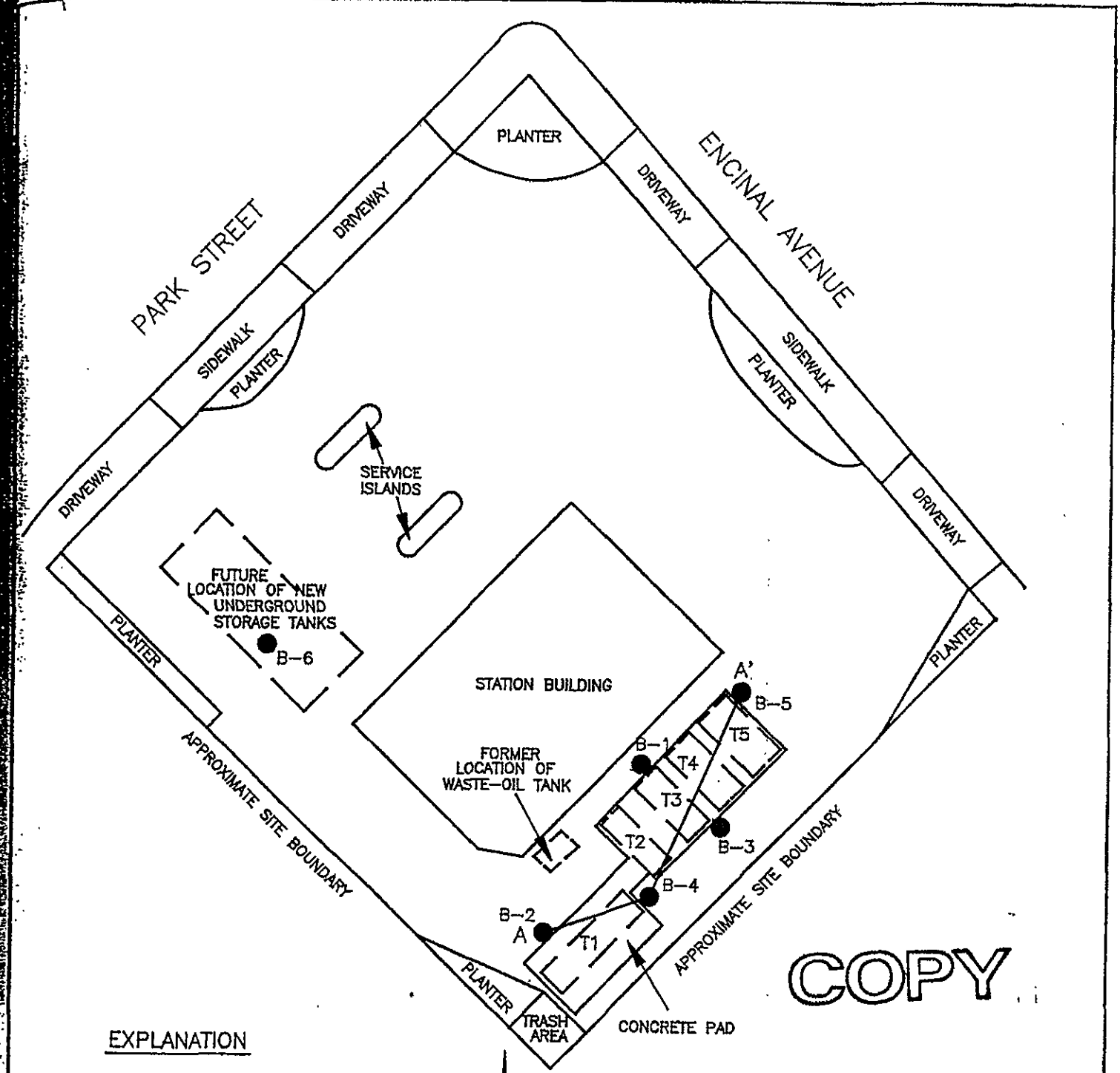
< = indicates less than the reported limit

Sample identification:

S-10-B6



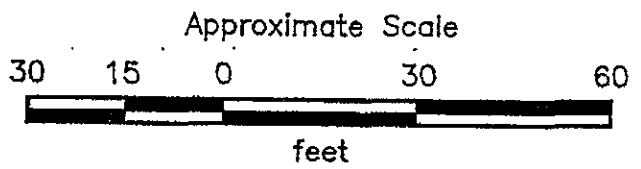
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COPY

EXPLANATION

- B-6 ● = Soil boring
(Applied GeoSystems,
January 23, 1990)
- T5 = Existing underground
storage tanks
- A' = Cross Section



Source: Modified from plan supplied by ARCO.



PROJECT 69048-1

**GENERALIZED SITE PLAN
ARCO Station 2112
1260 Park Street
Alameda, California**

**PLATE
2**

TABLE 1

SOIL ANALYTICAL DATA (EXCAVATIONS)							
SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AX1-1-6	26-Jul-90	26-Jul-90	14	<0.005	<0.005	<0.005	1
AX1-1-10	10-Aug-90	21-Aug-90	27.	0.12	1.1	0.7	4.4
AX1-2-6	26-Jul-90	26-Jul-90	1700	<0.005	16	4.8	76
AX1-2*-10	10-Aug-90	19-Aug-90	7700.	60.	360.	150.	930.
AX1-3-6	26-Jul-90	26-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX1-3-10	09-Aug-90	21-Aug-90	15000.	130.	850.	330.	1900.
AX1-3-12	26-Jul-90	26-Jul-90	23000	150	490	940	2700
AX1-4-6	26-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX1-4-12	26-Jul-90	26-Jul-90	1.2	<0.005	0.011	0.018	0.062
AX1-5-6	26-Jul-90	26-Jul-90	<1	0.019	<0.005	<0.005	0.032
AX1-6-6	26-Jul-90	26-Jul-90	<1	0.067	0.011	0.042	0.055
AX1-6-10	10-Aug-90	18-Aug-90	1000.	2.0	24.	18.	110.
AX1-7-6	26-Jul-90	27-Jul-90	50	<0.005	<0.005	<0.005	<0.005
AX1-7*-10	10-Aug-90	21-Aug-90	9400.	96.	570.	200.	1200.

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline

PPM = Parts Per Million

- Notes: 1. All data shown as <x are reported as ND (NONE DETECTED).
 2. BTEX data analyzed on July 26, 27 and 31, 1990 by NET are reported in micrograms per kilogram.
 3. The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected.
 4. For sample locations, see Plate 3.
 5. TPH-G concentration for AX1-8-10' appear to be the more volatile constituents of diesel.

COPY

TABLE 1

SOIL ANALYTICAL DATA (EXCAVATIONS)							
SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AX1-8-10	27-Jul-90	27-Jul-90	7,300	20	130	98	650
AX1-8*-10	10-Aug-90	18-Aug-90	320.	<0.4	<0.4	3.8	12.
AX1-9-10	27-Jul-90	27-Jul-90	<1	0.014	<0.005	0.020	0.017
AX1-9*-10	10-Aug-90	18-Aug-90	1.6	0.037	0.057	0.01	0.051
AX1-10-10	27-Jul-90	27-Jul-90	2,700	36	51	180	320
AX1-10*-10	10-Aug-90	18-Aug-90	120.	0.56	4.3	2.5	15.
AX1-11-10	27-Jul-90	27-Jul-90	<1	12	6	14	35
AX2-1-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	0.007	0.007
AX2-1-12	31-Jul-90	31-Jul-90	2.0	0.024	0.073	0.048	0.110
AX2-2-11	31-Jul-90	31-Jul-90	2.0	0.470	0.180	0.005	0.013
AX2-3-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-3-11.5	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-4-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-4-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-5-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-5-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
AX2-6-11	31-Jul-90	31-Jul-90	<1	0.013	0.011	<0.005	<0.005
AX2-7-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005

COPY

TABLE 2

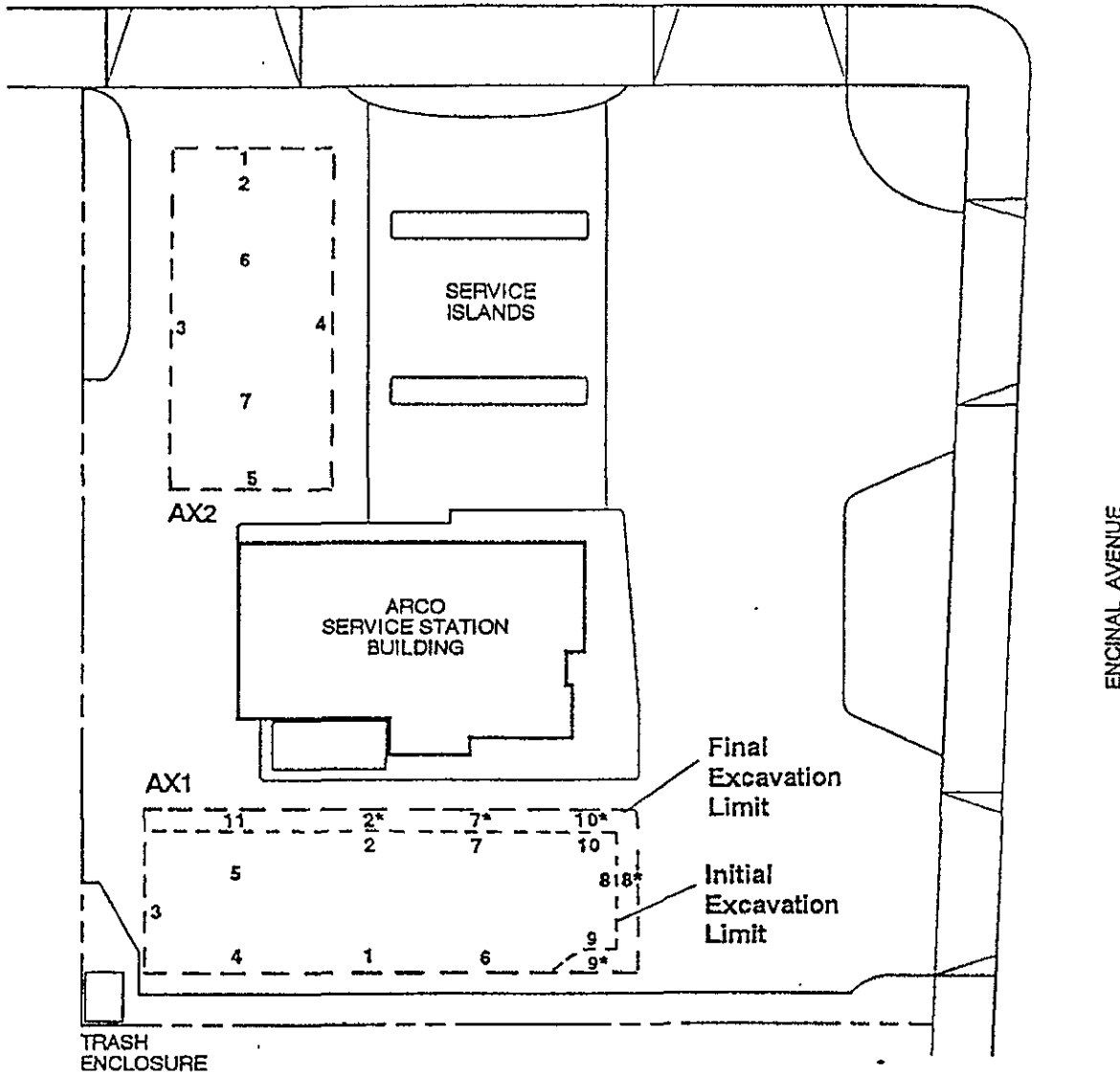
SOIL ANALYTICAL DATA (TRENCHING)							
SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPH)	ETHYLBENZENE (PPM)	XYLENES (PPH)
AT-1	17-Aug-90	20-Aug-90	2000.	<0.8	23.	28.	210.
AT-2	17-Aug-90	20-Aug-90	6.7	0.023	0.088	0.11	0.84
AT-3	17-Aug-90	20-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-4	17-Aug-90	20-Aug-90	5.8	0.034	0.12	0.057	0.52
AT-7-2	08-Aug-90	16-Aug-90	2.0	0.008	0.017	0.008	0.061
AT-8-2.5	08-Aug-90	16-Aug-90	14.	0.11	0.15	0.28	1.6
AT-9-9.5	20-Aug-90	29-Aug-90	<1.	<0.01	<0.01	<0.01	<0.01
AT-10-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-10-9.5	20-Aug-90	28-Aug-90	<1.	<0.005	<0.005	0.008	0.014
AT-11-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-12-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million



- Notes: 1. All data shown as <x are reported as ND (none detected).
2. BTEX data analyzed on August 17, 1990 by Superior are reported in micrograms per kilograms.
3. The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected.
AT-1 and AT-3 were collected at 3.5 feet below existing grade. AT-2 and AT-4 were collected at 2.5 feet below existing grade.
4. For sample locations, see Plate 4.

COPY

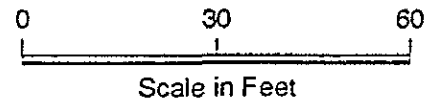
PARK STREET



EXPLANATION

-  AX1 Excavated area and designation
-  1 Sample location and designation

COPY



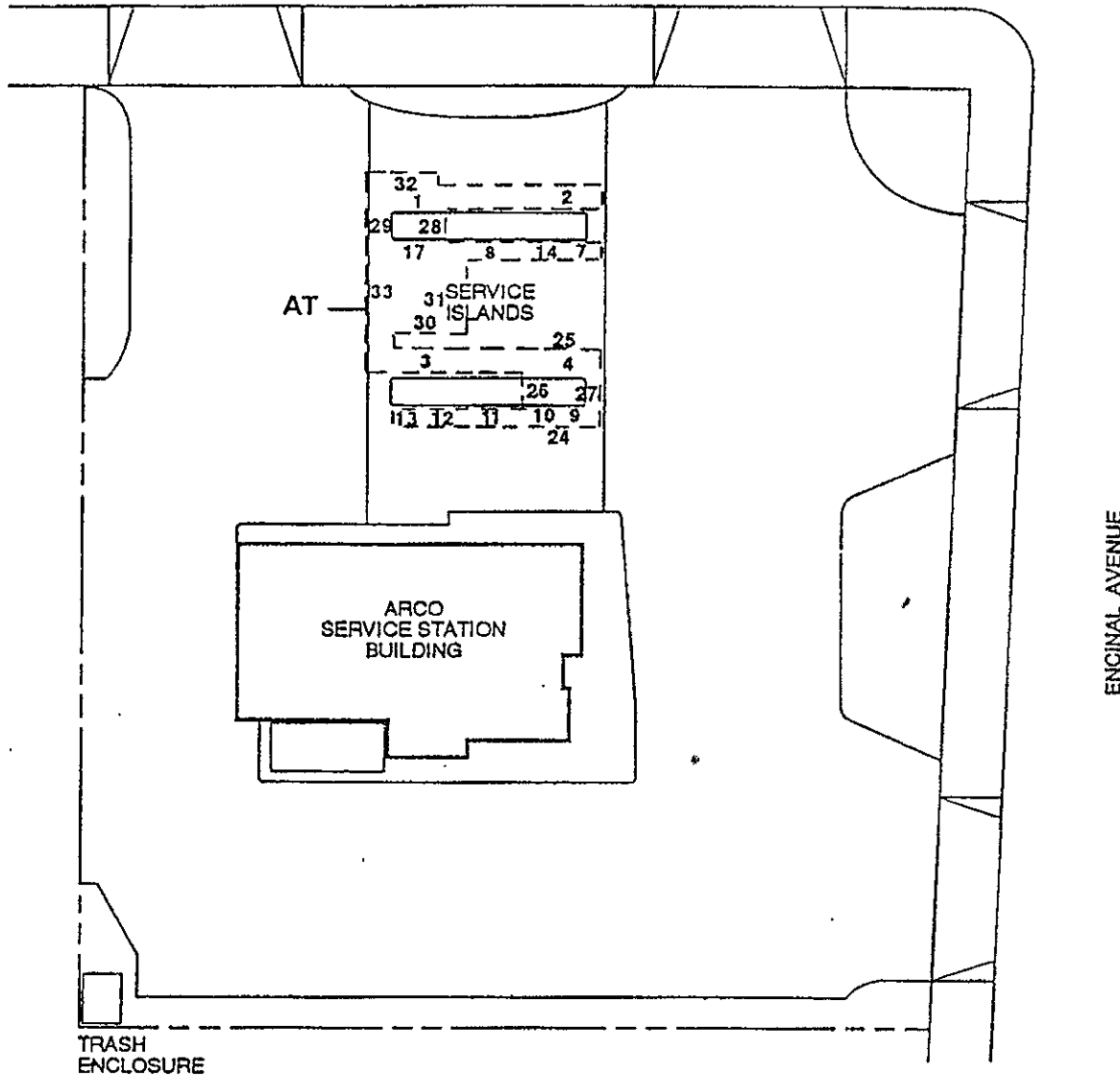
GeoStrategies Inc.

Excavation Soil Sample Map
 ARCO Service Station #2112
 1260 Park Street
 Alameda, California

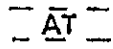

PLATE

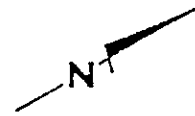
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PARK STREET

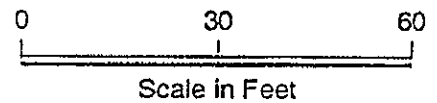


EXPLANATION

-  Trench excavation and designation
-  Sample location and designation



COPY



GeoStrategies Inc.

Trench Soil Sample Map
 ARCO Service Station #2112
 1260 Park Street
 Alameda, California

PLATE
4

TABLE 1

=====

SOIL ANALYTICAL DATA
(Trench Samples)

SAMPLE NO	DEPTH (FT)	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPH)	BENZENE (PPH)	TOLUENE (PPH)	ETHYLBENZENE (PPH)	XYLENES (PPH)
AT-34	3.0	25-Oct-90	25-Oct-90	<1.0	<0.003	<0.003	<0.003	<0.003
AT-35	3.0	25-Oct-90	25-Oct-90	<1.0	<0.003	<0.003	<0.003	<0.003
AT-36	3.0	25-Oct-90	25-Oct-90	15000	71	710	200	1300
UT-37	4.0	05-Mar-91	08-Mar-91	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
UT-38	4.0	05-Mar-91	08-Mar-91	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
UT-39	4.0	05-Mar-91	08-Mar-91	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
UT-40	3.5	05-Mar-91	08-Mar-91	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
UT-41	3.5	05-Mar-91	08-Mar-91	<1.0	<0.0050	<0.0050	<0.0050	<0.0050

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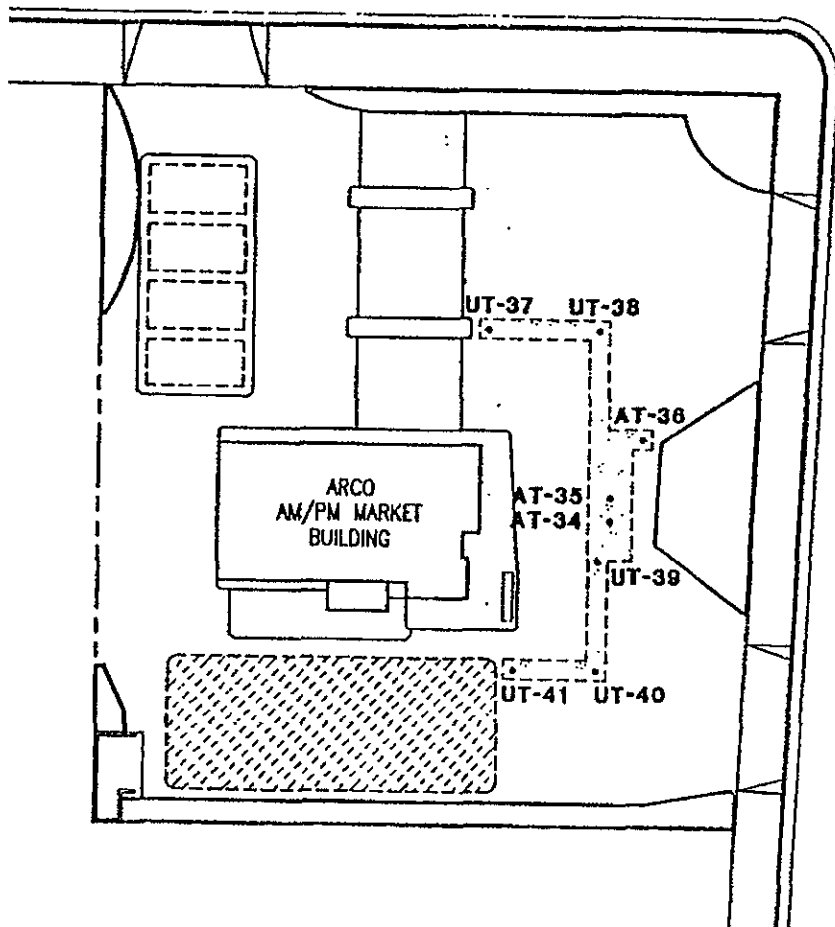
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPH = Parts Per Million

Notes: 1. BTEX for samples AT-34 through AT-36 were reported in parts per billion (ppb).
2. All data shown as <x are reported as ND (none detected).

PARK STREET
(STATE HIGHWAY 61)

EXPLANATION

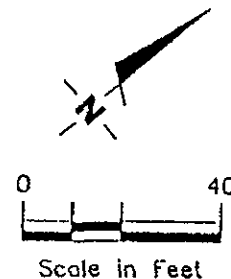
- Trench Samples
- Approximate location of trench
- ▨ Soil Stockpile



ENCINAL AVENUE
(STATE HIGHWAY 61)

COPY

Base Map: ARCO Site Plans dated 3-19-86 and
2-21-90



GeoStrategies Inc.

SOIL SAMPLING MAP
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE

3

JOB NUMBER
792001-3

REVIEWED BY
DHP

DATE
3/91

REVISED DATE

TABLE 1

SOIL ANALYSES DATA

SAMPLE NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AV-1-5.5	23-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
AV-1-11	23-Sep-91	05-Oct-91	2,900	<5.0	12	6.0	34
AV-2-6	24-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
AV-2-11	24-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
AV-3-6.5	25-Sep-91	05-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
AV-3-11.5	25-Sep-91	05-Oct-91	540	5.3	12	7.6	35
A-1-5	25-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
A-1-11	25-Sep-91	05-Oct-91	730	6.4	24	11	56
A-2-12	24-Sep-91	04-Oct-91	<1.0	0.038	0.038	0.038	0.038
A-3-11.5	24-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005
A-4-11	25-Sep-91	04-Oct-91	<1.0	<0.005	<0.005	<0.005	<0.005

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
 PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).

COPY

TABLE 2

SOIL ANALYSES DATA

SAMPLE NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AV-4-10.5	02-Jan-92	06-Jan-92	21,000	190	860	290	1,700
AV-5-10.5	02-Jan-92	06-Jan-92	<1	0.0070	0.018	0.0060	0.031
AV-6-10.5	02-Jan-92	06-Jan-92	<1	<0.0050	<0.0050	<0.0050	<0.0050
AV-7-10.5	02-Jan-92	06-Jan-92	<1	<0.0050	<0.0050	<0.0050	<0.0050

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
 PPM = Parts Per Million

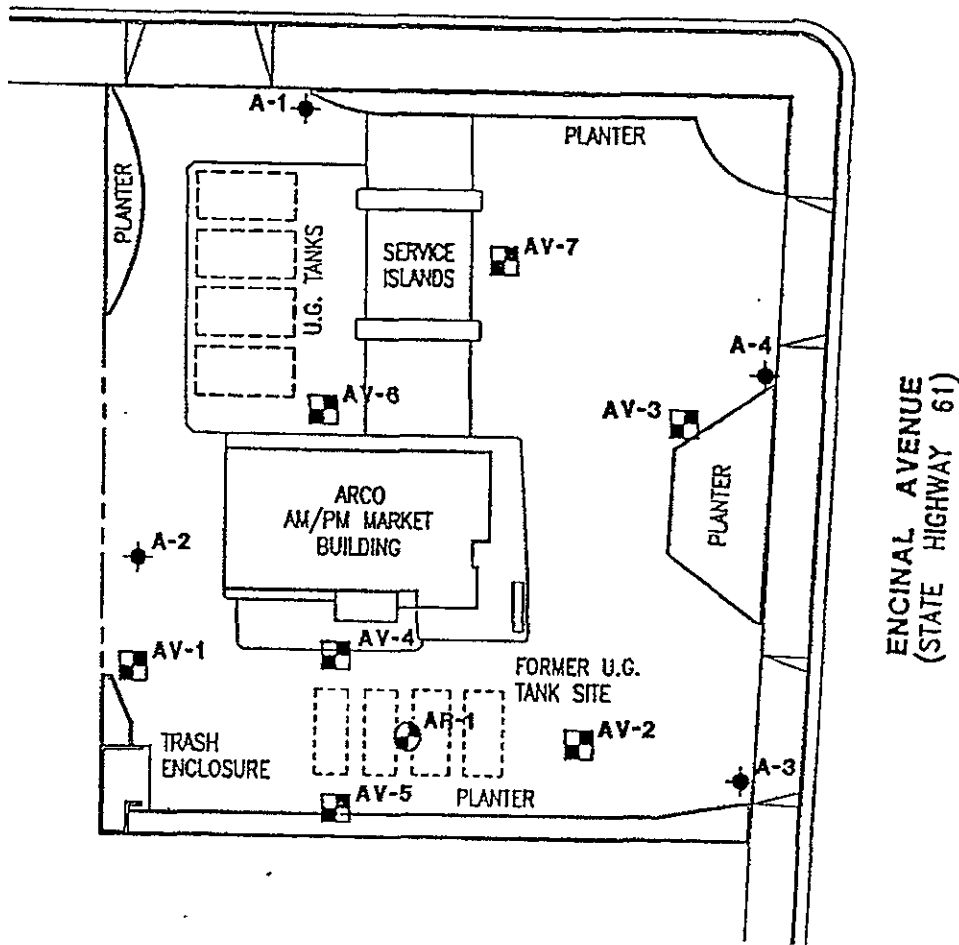
Note: 1. All data shown as <x are reported as ND (not detected).

COPY

PARK STREET
(STATE HIGHWAY 61)

EXPLANATION

- ◆ Ground-water monitoring well
- ⊙ Ground-water recovery well
- ▣ Vapor extraction well



COPY



Base Map: ARCO Site Plans dated 3-19-86 and 2-21-90



GeoStrategies Inc.

SITE PLAN
ARCO Service Station #2112
1260 Park Street
Alameda, California

PLATE

2

WB NUMBER
92005-5

REVIEWED BY

DATE

REVISED DATE

ATTACHMENT B

**HISTORICAL GROUNDWATER ELEVATION AND
GROUNDWATER ANALYTICAL DATA TABLES (COPY)**

Table 2
Groundwater Elevation and Analytical Data
 Total Purgeable Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, and MtBE)

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)	MtBE (ppb)
A-1	01/15/96	28.39	11.18	17.21	<50	<0.50	<0.50	<0.50	<0.50	NA
	04/08/96		10.61	17.78	<50	<0.50	<0.50	<0.50	<0.50	NA
	07/02/96		11.28	17.11	<50	<0.50	<0.50	<0.50	<0.50	<2.5
A-2	01/15/96	29.28	11.17	18.11	<50	<0.50	<0.50	<0.50	<0.50	NA
	04/08/96		10.45	18.83	<50	<0.50	<0.50	<0.50	<0.50	NA
	07/02/96		11.40	17.88	<50	<0.50	<0.50	<0.50	<0.50	<2.5
A-3	01/15/96	27.87	8.66	19.21	----- Well Sampled Annually -----					
	04/08/96		7.86	20.01	----- Well Sampled Annually -----					
	07/02/96		9.03	18.84	<50	<0.50	<0.50	<0.50	<0.50	<2.5
A-4	01/15/96	28.54	10.00	18.54	----- Well Sampled Annually -----					
	04/08/96		9.34	19.20	----- Well Sampled Annually -----					
	07/02/96		10.22	18.32	<50	<0.50	<0.50	<0.50	<0.50	<2.5
A-5	01/15/96	27.29	10.61	16.68	<50	<0.50	<0.50	<0.50	<0.50	NA
	04/08/96		10.59	16.70	<50	<0.50	<0.50	<0.50	<0.50	NA
	07/02/96		10.73	16.56	<50	<0.50	<0.50	<0.50	<0.50	<2.5
AR-1	01/15/96	29.08	10.44	18.64	<50	<0.50	<0.50	<0.50	<0.50	NA
	04/08/96		9.56	19.52	<50	<0.50	<0.50	<0.50	<0.50	NA
	07/02/96		10.67	18.41	<50	<0.50	<0.50	<0.50	<0.50	<2.5
AR-2	01/15/96	28.20	11.00	17.20	<50	<0.50	<0.50	<0.50	<0.50	NA
	04/08/96		9.71	18.49	<50	<0.50	<0.50	<0.50	<0.50	NA
	07/02/96		11.15	17.05	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MtBE = Methyl tert-butyl ether										
MSL = Mean sea level										
TOB = Top of box										
ppb = Parts per billion										
NA = Not analyzed										

Table A-1
Historical Groundwater Elevation Data

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)
A-1	10/07/91	28.39	16.47	11.92
	02/18/92		17.16	11.23
	05/22/92		17.14	11.25
	08/14/92		16.63	11.76
	10/23/92		16.28	12.11
	01/28/93		17.34	11.05
	02/24/93		18.43	9.96
	04/28/93		17.71	10.68
	05/28/93		17.18	11.21
	06/16/93		16.63	11.76
	07/27/93		16.60	11.79
	08/24/93		16.44	11.95
	09/28/93		16.66	11.73
	10/22/93		16.67	11.72
	11/16/93		16.56	11.83
	12/16/93		16.96	11.43
	02/07/94		17.62	10.77
	05/02/94		17.17	11.22
	08/05/94		11.40	16.99
	11/30/94		9.43	18.96
02/22/95	10.76	17.63		
05/23/95	9.25	19.14		
08/09/95	11.33	17.06		
11/16/95	12.11	16.28		
A-2	10/07/91	29.28	12.74	16.54
	02/18/92		11.55	17.73
	05/22/92		11.71	17.57
	08/14/92		12.54	16.74
	10/23/92		12.64	16.64
	01/28/93		10.29	18.99
	02/24/93		11.05	18.23
	04/28/93		10.91	18.37
	05/28/93		11.27	18.01
	06/16/93		12.20	17.08
	07/27/93		11.27	18.01
	08/24/93		12.25	17.03
	09/28/93		12.36	16.92
	10/22/93		12.18	17.10
	11/16/93		12.34	16.94
	12/16/93		11.74	17.54
	02/07/94		10.56	18.72
	05/02/94		11.48	17.80
	08/05/94		12.26	17.02
	11/30/94		10.93	18.35
02/22/95	10.55	18.73		
05/23/95	11.05	18.23		
08/09/95	11.70	17.58		
11/16/95	12.64	16.64		
A-3	10/07/91	27.87	10.55	17.32
	02/18/92		9.12	18.75
	05/22/92		9.41	18.46
	08/14/92		10.31	17.56
	10/23/92		10.57	17.30
	01/28/93		7.66	20.21
	02/24/93		8.28	19.59
	04/28/93		6.76	21.11

Table A-1 (continued)
 Historical Groundwater Elevation Data

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)
A-3 (cont.)	05/28/93		8.98	18.89
	06/16/93		9.69	18.18
	07/27/93		9.66	18.21
	08/24/93		9.85	18.02
	09/28/93		10.21	17.66
	10/22/93		10.05	17.82
	11/16/93		11.20	16.67
	11/16/93		9.42	18.45
	02/07/94		8.29	19.58
	05/02/94		9.08	18.79
	08/05/94		10.02	17.85
	11/30/94		8.53	19.34
	02/22/95		7.90	19.97
	05/23/95		8.60	19.27
	08/09/95		9.30	18.57
	11/16/95		NM	--
A-4	10/07/91	28.54	11.40	17.14
	02/18/92		10.52	18.02
	05/22/92		10.45	18.09
	08/14/92		11.22	17.32
	10/23/92		11.44	17.10
	01/28/93		9.12	19.42
	02/24/93		9.91	18.63
	04/28/93		8.29	20.25
	05/28/93		9.92	18.62
	06/16/93		10.64	17.90
	07/27/93		10.81	17.73
	08/24/93		10.98	17.56
	09/28/93		11.08	17.46
	10/22/93		11.06	17.48
	11/16/93		10.27	18.27
	12/16/93		10.64	17.90
	02/07/94		9.42	19.12
	05/02/94		10.33	18.21
	08/05/94		10.94	17.60
11/30/94		9.89	18.65	
02/22/95		9.44	19.10	
05/23/95		9.80	18.74	
08/09/95		10.39	18.15	
11/16/95		NM	--	
A-5	06/26/92	27.29	10.77	16.52
	08/14/92		11.04	16.25
	10/23/92		11.12	16.17
	01/28/93		9.94	17.35
	02/24/93		10.63	16.66
	04/28/93		10.70	16.59
	05/28/93		10.35	16.94
	06/16/93		10.76	16.53
	07/27/93		10.78	16.51
	08/24/93		10.97	16.32
	09/28/93		10.90	16.39
	10/22/93		10.82	16.47
	11/16/93		10.98	16.31
	12/16/93		10.70	16.59
02/07/94		9.96	17.33	
05/02/94		10.59	16.70	

Table A-1 (continued)
Historical Groundwater Elevation Data

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)
A-5 (cont.)	08/05/94		10.91	16.38
	11/30/94		10.69	16.60
	02/22/95		10.71	16.58
	05/23/95		10.75	18.33
	08/09/95		10.78	18.30
	11/16/95		11.33	15.96
AR-1	10/07/91	29.08	12.09	16.99
	02/18/92		11.11	17.97
	05/22/92		10.10	18.98
	08/14/92		11.86	17.22
	10/23/92		12.12	16.96
	01/28/93		9.85	19.23
	02/24/93		14.80	14.28
	04/28/93		9.74	19.34
	05/28/93		13.52	15.56
	06/16/93		15.12	13.96
	06/27/93		13.48	15.60
	08/24/93		13.52	15.56
	09/28/93		13.90	15.18
	10/22/93		13.19	15.89
	11/16/93		12.72	16.36
	12/16/93		12.13	16.95
	02/07/94		10.03	19.05
	05/02/94		10.82	18.26
	08/05/94		12.63	16.45
	11/30/94		10.23	18.85
02/22/95		9.90	19.18	
05/23/95		10.40	18.68	
08/09/95		11.00	18.08	
11/16/95		11.94	17.14	
AR-2	06/26/92	28.20	11.54	16.66
	08/14/92		11.76	16.44
	10/23/92		11.85	16.35
	01/28/93		19.70	8.50
	02/24/93		19.58	8.62
	04/28/93		12.27	15.93
	05/28/93		14.93	13.27
	06/16/93		16.45	11.75
	07/27/93		11.65	16.55
	08/24/93		17.02	11.18
	09/28/93		11.65	16.55
	10/22/93		10.61	17.59
	11/16/93		11.63	16.57
	12/16/93		14.33	13.87
	02/07/94		10.51	17.69
	05/02/94		11.16	17.04
	05/03/94		12.03	16.17
	08/05/94		11.59	16.61
	11/30/94		9.56	18.64
	02/22/95		10.60	17.60
05/23/95		10.95	17.25	
08/09/95		11.84	16.36	
11/16/95		11.30	16.90	
MSL	= Mean sea level			
TOB	= Top of box			
NM	= Not measured			

Table A-2
Historical Groundwater Analytical Data
 Total Purgeable Petroleum Hydrocarbons
 (TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-1	10/07/91	470	48	34	7.5	82
	02/18/92	<30	5.4	0.82	<0.3	<0.3
	05/22/92	38	15	0.92	1.3	0.51
	08/14/92	<50	14	<0.5	1.5	<0.5
	10/23/92	66	22	4.6	2	4.3
	01/28/93	750	120	120	16	96
	04/28/93	6,700	1,900	1,700	240	1,300
	08/24/93	1,800	230	88	34	160
	10/22/93	2,500	79	<10	<10	160
	02/07/94	61	24	<0.5	2.1	0.8
	05/02/94	58	17	0.7	2.2	4.2
	08/05/94	<50	5.1	1.4	0.6	2.5
	11/30/94	130	16	8.4	0.6	27
	02/22/95	<50	1.2	<0.50	<0.50	<0.50
	05/23/95	<50	4.9	0.95	0.61	3.9
	08/09/95	<50	2.3	<0.50	<0.50	0.53
11/16/95	<50	3.3	1.5	<0.50	1.9	
A-2	10/07/91	31	7.4	0.39	<0.3	0.93
	02/18/92	490	120	< 1.5	< 1.5	17
	05/22/92	100	2.4	<0.3	<0.3	0.89
	08/14/92	110	5	<0.5	<0.5	<0.5
	10/23/92	<50	<0.5	<0.5	<0.5	<0.5
	01/28/93	280	130	<2.5	<2.5	<2.5
	04/28/93	210	32	0.89	5.2	2.3
	08/24/93	<50	<0.5	<0.5	<0.5	<0.5
	10/22/93	<50	<0.5	<0.5	<0.5	<0.5
	02/07/94	<50	<0.5	<0.5	<0.5	<0.5
	05/02/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/30/94	<50	<0.5	<0.5	<0.5	<0.5
	02/22/95	<50	0.68	1.3	<0.50	0.52
	05/23/95	<50	<0.50	<0.50	<0.50	<0.50
	08/09/95	<50	<0.50	<0.50	<0.50	<0.50
11/16/95	<50	<0.50	<0.50	<0.50	<0.50	
A-3	10/07/91	<30	<0.3	<0.3	<0.3	<0.3
	02/18/92	<30	<0.3	<0.3	<0.3	<0.3
	05/22/92	<30	<0.3	<0.3	<0.3	<0.3
	08/14/92	<50	<0.5	<0.5	<0.5	<0.5
	10/23/92	<50	<0.5	<0.5	<0.5	<0.5
	01/28/93	<50	<0.5	<0.5	<0.5	<0.5
	04/28/93	<50	<0.5	<0.5	<0.5	<0.5
	08/24/93	<50	<0.5	<0.5	<0.5	<0.5
	10/22/93	<50	<0.5	<0.5	<0.5	<0.5
	02/07/94	<50	<0.5	<0.5	<0.5	<0.5
	05/02/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/30/94	<50	<0.5	<0.5	<0.5	<0.5
	02/22/95	<50	<0.50	<0.50	<0.50	<0.50
	05/23/95	<50	<0.50	<0.50	<0.50	<0.50
	08/09/95	<50	<0.50	<0.50	<0.50	<0.50
11/16/95						

-----Well Sampled Annually-----

Table A-2 (continued)
 Historical Groundwater Analytical Data
 Total Purgeable Petroleum Hydrocarbons
 (TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-4	10/07/91	<30	0.32	0.69	<0.3	1.1
	02/18/92	<30	<0.3	<0.3	<0.3	<0.3
	05/22/92	<30	<0.3	<0.3	<0.3	<0.3
	08/14/92	<50	<0.5	<0.5	<0.5	<0.5
	10/23/92	<50	<0.5	<0.5	<0.5	<0.5
	01/28/93	<50	<0.5	<0.5	<0.5	<0.5
	04/28/93	<50	<0.5	<0.5	<0.5	<0.5
	08/24/93	<50	<0.5	<0.5	<0.5	<0.5
	10/22/93	<50	<0.5	<0.5	<0.5	<0.5
	02/07/94	<50	<0.5	<0.5	<0.5	<0.5
	05/02/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/30/94	<50	<0.5	<0.5	<0.5	<0.5
	02/22/95	<50	<0.50	<0.50	<0.50	<0.50
	05/23/95	<50	<0.50	0.59	<0.50	<0.50
	08/09/95	<50	<0.50	<0.50	<0.50	<0.50
11/16/95						
-----Well Sampled Annually-----						
A-5	06/26/92	<50	<0.5	<0.5	<0.5	<0.5
	08/14/92	<50	<0.5	<0.5	<0.5	<0.5
	10/23/92	<50	<0.5	<0.5	<0.5	<0.5
	01/28/93	<50	<0.5	<0.5	<0.5	<0.5
	04/28/93	<50	<0.5	<0.5	<0.5	<0.5
	08/24/93	<50	<0.5	<0.5	<0.5	<0.5
	10/22/93	<50	<0.5	<0.5	<0.5	<0.5
	02/07/94	<50	<0.5	0.9	<0.5	0.7
	05/02/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/30/94	<50	<0.5	<0.5	<0.5	<0.5
	02/22/95	<50	<0.50	<0.50	<0.50	<0.50
	05/23/95	<50	<0.50	<0.50	<0.50	<0.50
	08/09/95	<50	<0.50	<0.50	<0.50	<0.50
11/16/95	<50	<0.50	<0.50	<0.50	<0.50	
AR-1	10/07/91	<30	<0.3	<0.3	<0.3	<0.3
	02/18/92	<30	<0.3	<0.3	<0.3	<0.3
	05/22/92	<30	<0.3	<0.3	<0.3	<0.3
	08/14/92	<50	<0.5	<0.5	<0.5	<0.5
	10/23/92	<50	<0.5	<0.5	<0.5	<0.5
	10/22/93	150	29	2.3	7.9	7.4
	02/07/94	<50	1.3	<0.5	1	<0.5
	05/02/94	120	24	<0.5	1.9	2.7
	08/05/94	980	200	<2.5 a	55	21
	11/30/94	60	7.7	<0.5	1.2	<0.5
	02/22/95	<50	<0.50	<0.50	<0.50	<0.50
	05/23/95	310	47	1.3	11	4.4
	08/09/95	<50	8.3	<0.50	0.97	<0.50
11/16/95	<50	<0.50	<0.50	<0.50	<0.50	
AR-2	06/26/92	<50	<0.5	<0.5	<0.5	<0.5
	08/14/92	<50	<0.5	<0.5	<0.5	<0.5
	10/23/92	110	0.15	0.27	<0.5	0.56
	02/07/94	<50	<0.5	<0.5	<0.5	<0.5
	05/02/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/30/94	<50	<0.5	<0.5	<0.5	<0.5

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
 (TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

Well Number	Date Sampled	TPPH as			Ethyl-benzene (ppb)	Xylenes (ppb)
		Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)		
AR-2 (cont.)	02/22/95	<50	<0.50	<0.50	<0.50	<0.50
	05/23/95	<50	4.2	<0.50	<0.50	<0.50
	08/09/95	<50	<0.50	<0.50	<0.50	<0.50
	11/16/95	<50	<0.50	<0.50	<0.50	<0.50
ppb	= Parts per billion					
a.	Laboratory raised MRL due to high analyte concentration requiring sample dilution.					
Prior to June 1995, TPPH as gasoline was reported as TPH as gasoline.						

Table A-3
Historical Groundwater Analytical Data
Total Methyl t-Butyl Ether

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

Well Number	Date Sampled	Methyl t-Butyl Ether (ppb)
A-1	08/09/95	<2.5
A-2	08/09/95	<2.5
A-3	08/09/95	<2.5
A-4	08/09/95	<2.5
A-5	08/09/95	<2.5
A-6	08/09/95	<2.5
AR-1	08/09/95	<2.5
AR-2	08/09/95	<2.5

ppb = Parts per billion

Table D-1
Groundwater Extraction System Performance Data

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

Sample I.D.	Date Sampled	Totalizer Reading (gallons)	Net Volume (gallons)	Average Flow Rate (gpm)	TPPH as Gasoline			Benzene			Primary Carbon Loading (percent)	
					Influent Concentration (µg/L)	Net Removed (lbs)	Removed to Date (lbs)	Influent Concentration (µg/L)	Net Remove (lbs)	Removed to Date (lbs)		
INFL	06/28/94	741,520	N/A	1.3	ND	0.00	0.80	ND	0.000	0.133	1.0	
INFL	11/04/94 a	782,881	41,361	N/A	ND	0.00	0.80	ND	0.000	0.133	1.0	
INFL	03/07/95 b	804,954	22,073	N/A	NS	0.00	0.80	NS	0.000	0.133	1.0	
INFL	04/20/95	826,131	21,177	0.3	ND	0.00	0.80	ND	0.000	0.133	1.0	
INFL	05/03/95	836,000	9,869	0.5	NS	0.00	0.80	NS	0.000	0.133	1.0	
INFL	06/06/95	858,000	22,000	1.3	NS	0.00	0.80	NS	0.000	0.133	1.0	
INFL	07/06/95 c	945,200	47,200	1.1	74	0.01	0.81	13	0.003	0.135	1.0	
INFL	08/03/95 d	945,200	0	0.0	ND	0.00	0.81	3.5	0.000	0.135	1.0	
REPORTING PERIOD: 01/01/96 - 03/31/96												
TOTAL POUNDS REMOVED:							0.91		0.135			
TOTAL GALLONS REMOVED:								0.13			0.018	
PERIOD POUNDS REMOVED:							0.00		0.000			
PERIOD GALLONS REMOVED:								0.00			0.000	
TOTAL GALLONS EXTRACTED:							845,200					
PERIOD GALLONS EXTRACTED:							0					
PERIOD AVERAGE FLOW RATE (gpm):							N/A					
<p>TPPH = Total purgeable petroleum hydrocarbons gpm = Gallons per minute µg/L = Micrograms per liter lbs = Pounds N/A = Not available or not applicable ND = Not detected above the detection limit NS = Not sampled (system influent sampled quarterly in January, April, July, and August) a. System shut down for repair by Pacific Environmental Group, Inc. on November 4, 1994. b. System restarted March 7, 1995; continuous operation began on this date. c. GWE system shut down for pulsing. d. GWE system re-started for sampling, then temporarily shut down August 3, 1995.</p> <p>Mass removed is an approximation calculated using averaged concentrations. Pounds of hydrocarbons removed to date provided by prior consultant, GeoStrategies Incorporated. Prior to June 1995, TPPH as gasoline was reported as TPH as gasoline. See certified analytical reports for detection limits.</p>												

Table D-2
Soil Vapor Extraction System Performance Data

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

Sample I.D.	Date Sampled	Hourmeter Reading (hours)	Hours of Operation (hours)	Vacuum (" H2O)	Flow Rate (scfm)	TPPH as Gasoline			Benzene		
						Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed to Date (lbs)	Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed to Date (lbs)
INFL	11/04/94 a	N/A	N/A	N/A	210	N/A	N/A	276.7	N/A	N/A	0.18
INFL	11/14/94 a	N/A	16	68	210	36	3.0	278.6	0.72	0.05	0.22
INFL	11/16/94	N/A	38	42	210	54	4.3	284.4	0.89	0.06	0.30
INFL	11/17/94	N/A	12	42	290	43	4.7	286.7	0.46	0.04	0.32
INFL	11/30/94	N/A	39	40	240	28	2.6	292.6	0.37	0.03	0.38
INFL	12/02/94 b	N/A	36	50	240	28	2.6	296.4	ND	0.00	0.40
INFL	01/11/95 c	N/A	0	27	100	11	0.4	296.4	ND	0.00	0.40
INFL	02/02/95 d	N/A	528	38.5	170	20	0.3	304.2	ND	0.00	0.40
INFL	04/12/95 e	N/A	0	3.5 f	190	26	1.9	304.2	0.22	0.01	0.40
INFL	04/20/95	N/A	192	3.0 f	200	33	0.3	312.7	ND	0.00	0.45
INFL	05/03/95	0.0 g	312	4.0 f	200	ND	0.0	314.3	ND	0.00	0.45
INFL	06/06/95	764.0	764	44	210	5.9	0.5	321.8	0.092	0.01	0.55
INFL	07/06/95 h	1,201.7	438	45	210	12	0.9	334.6	0.092	0.01	0.66
INFL	08/03/95	1,283.9	2	43	210	11	0.9	334.6	0.18	0.01	0.66
REPORTING PERIOD: 01/01/86 - 03/31/96											
TOTAL POUNDS REMOVED:									334.6	0.66	
TOTAL GALLONS REMOVED:									54.9	0.09	
PERIOD POUNDS REMOVED:									0.0	0.00	
PERIOD GALLONS REMOVED:									0.0	0.00	
PERIOD AVERAGE FLOW RATE:									N/A		
TOTAL HOURS OF OPERATION:									2,375		
TPPH = Total purgeable petroleum hydrocarbons " H2O = Inches of water scfm = Standard cubic feet per minute ppmv = Parts per million by volume lbs = Pounds N/A = Not available or not applicable ND = Not detected						a. System started, run approx. 7 hours 11/4/94 by PACIFIC; restarted on 11/14/94. b. System shut down pending the BAAQMDs approval of a monthly monitoring schedule. c. System restarted with BAAQMD's approval to monitor the system on a monthly basis. d. System down; performance values estimated by averaging two previous values. e. System restarted on 4/12/95. f. Vacuum measured in inches of mercury rather than inches of water. g. Hourmeter installed 5/3/95 (initial reading = 0.0 hours). h. SVE system shut down for pulsing. i. SVE system restarted for sampling, then temporarily shut down 8/3/95.					
Mass removed is an approximation calculated using averaged instantaneous mass removal rates. Pounds of hydrocarbons removed to date provided by prior consultant, GeoStrategies Incorporated. Timer disconnected on November 15, 1994; continuous operation during week initiated, shutdown weekends. Prior to June 1995, TPPH as gasoline was reported as TPH calculated as gasoline. See certified analytical reports for detection limits.											

Table D-3
Soil Vapor Extraction Well Data

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

Date System Monitored	Well Number																			
	A-1					AV-1					AV-2					AV-3				
	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)
		M	W				M	W				M	W				M	W		
11/15/94	O	68	68	180 *	N/A *	O	68	68	20 *	N/A *	O	68	66	ND *	N/A *	O	64	60	4.0 *	N/A *
11/16/94	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
11/17/94	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
12/01/95	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
12/02/95	O	40	N/A	200 *	N/A *	O	40	N/A	70 *	N/A *	O	40	N/A	15 *	N/A *	O	40	N/A	10 *	N/A *
01/11/95	O	37	N/A	6.1 +	0.06 +	O	37	N/A	ND +	ND +	O	36	N/A	ND +	ND +	O	36	N/A	ND +	ND +
04/20/95	O	48	48	14 +	0.15 +	O	48	48	ND +	ND +	O	48	48	ND +	ND +	O	48	48	ND +	ND +
05/03/95	O	55	48	35 *	N/A *	O	55	50	ND *	N/A *	O	55	50	ND *	N/A *	O	55	50	ND	N/A *
06/06/95	O	43	40	55 *	N/A *	O	43	42	65 *	N/A *	O	43	42	6 *	N/A *	O	43	42	5.5 *	N/A *
07/06/95	O	45	41	50 +	ND +	O	45	43	6 +	0.03 +	O	45	43	ND +	ND +	O	45	45	16 +	0.2 +
08/03/95 a	O	43	39	11 *	N/A *	O	43	42	12 *	N/A *	O	43	42	10 *	N/A *	O	43	41	6 *	N/A *

Date System Monitored	Well Number																			
	AV-4					AV-5					AV-6					AV-7				
	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)	Status (O/C)	Vacuum (" H2O)		TPPH as Gasoline (ppmv)	Benzene (ppmv)
		M	W				M	W				M	W				M	W		
11/15/94	O	64	62	300 *	N/A *	O	68	68	150 *	N/A *	O	64	64	60 *	N/A *	O	64	60	50 *	N/A *
11/16/94	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
11/17/94	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
12/01/95	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A	O	40	N/A	N/A	N/A
12/02/95	O	40	N/A	175 *	N/A *	O	40	N/A	10 *	N/A *	O	40	N/A	15 *	N/A *	O	40	N/A	30 *	N/A *
01/11/95	O	33	N/A	3.7 +	0.22 +	O	36	N/A	0.03 +	ND +	O	35	N/A	3.0 +	0.31 +	O	35	N/A	165.5 +	ND +
04/20/95	O	48	N/A	26 +	0.04 +	O	48	48	ND +	ND +	O	48	46	ND +	ND +	O	48	46	5.9 +	ND +
05/03/95	O	55	N/A	N/A *	N/A *	O	55	47	ND *	N/A *	O	55	46	ND *	N/A *	O	55	46	10 *	N/A *
06/06/95	O	43	N/A	150 *	N/A *	O	43	40	20 *	N/A *	O	43	39	8 *	N/A *	O	43	40	8 *	N/A *
07/06/95	O	45	N/A	95 +	0.43 +	O	45	41	28.4 +	2 +	O	45	41	ND +	0.07 +	O	45	41	4 +	0.03 +
08/03/95 a	O	43	N/A	192 *	N/A *	O	43	40	21 *	N/A *	O	43	38	2 *	N/A *	O	43	39	3 *	N/A *

TPPH = Total purgeable petroleum hydrocarbons	M = Vacuum measured at manifold
O = Valve open	W = Vacuum measured at well head
C = Valve closed	* = Concentration readings obtained by flame-ionization detector (FID)
" H2O = Inches of water	+ = Air bag sampled analyzed by EPA Method 8015/8020.
ppmv = Parts per million by volume; converted from micrograms per liter.	N/A = Not available or not applicable
Pacific Environmental Group, Inc. startup 11/4/94; prior consultant was GeoStrategies Inc.	ND = Not detected above the detection limit
Prior to June 1995, TPPH as gasoline was reported as TPH as gasoline.	a. Remediation systems temporarily shut down 8/3/95.

Figure D-1
Groundwater Extraction System Mass Removal Trend

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

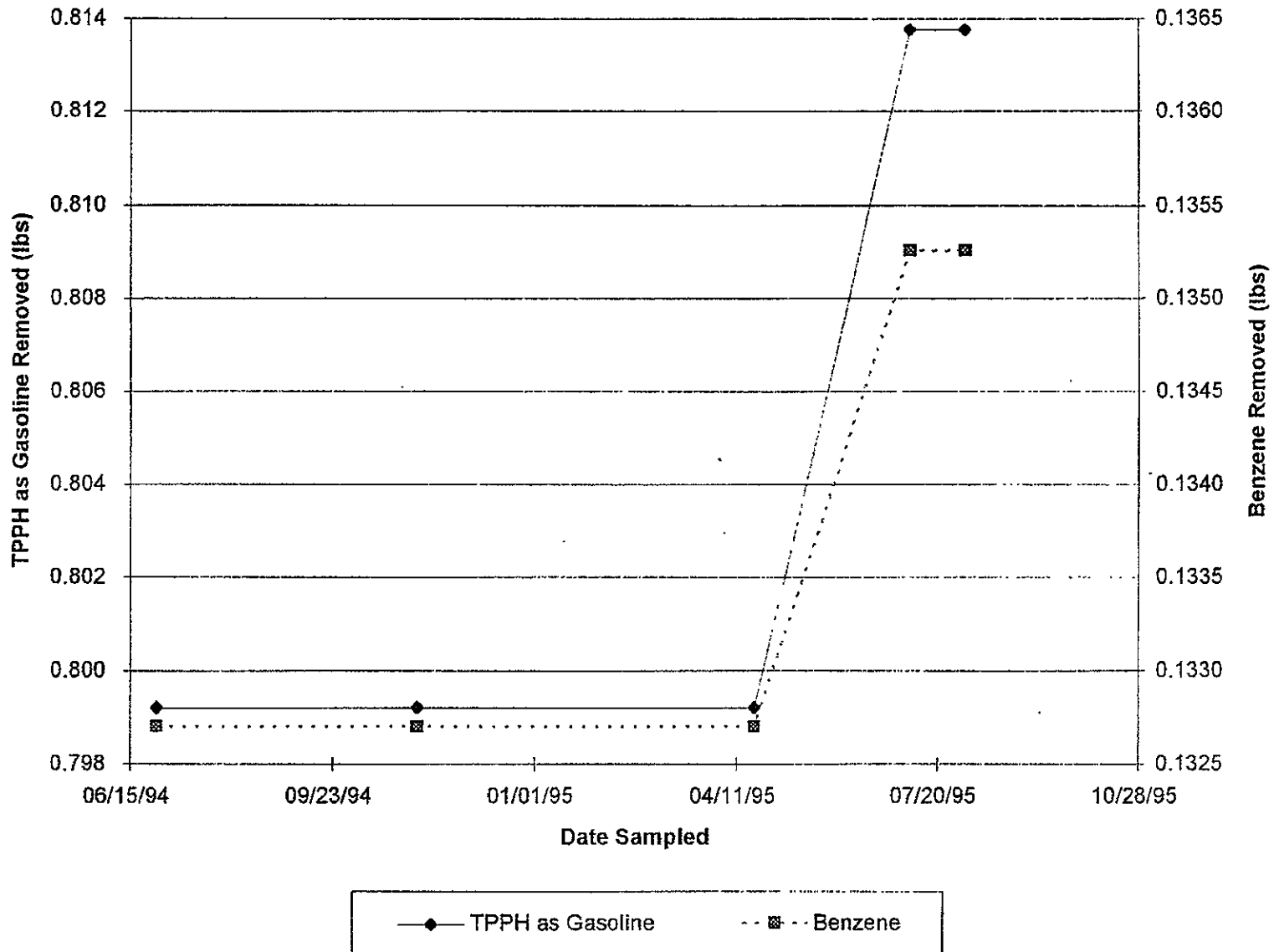


Figure D-2
Groundwater Extraction System Hydrocarbon Concentrations
 ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

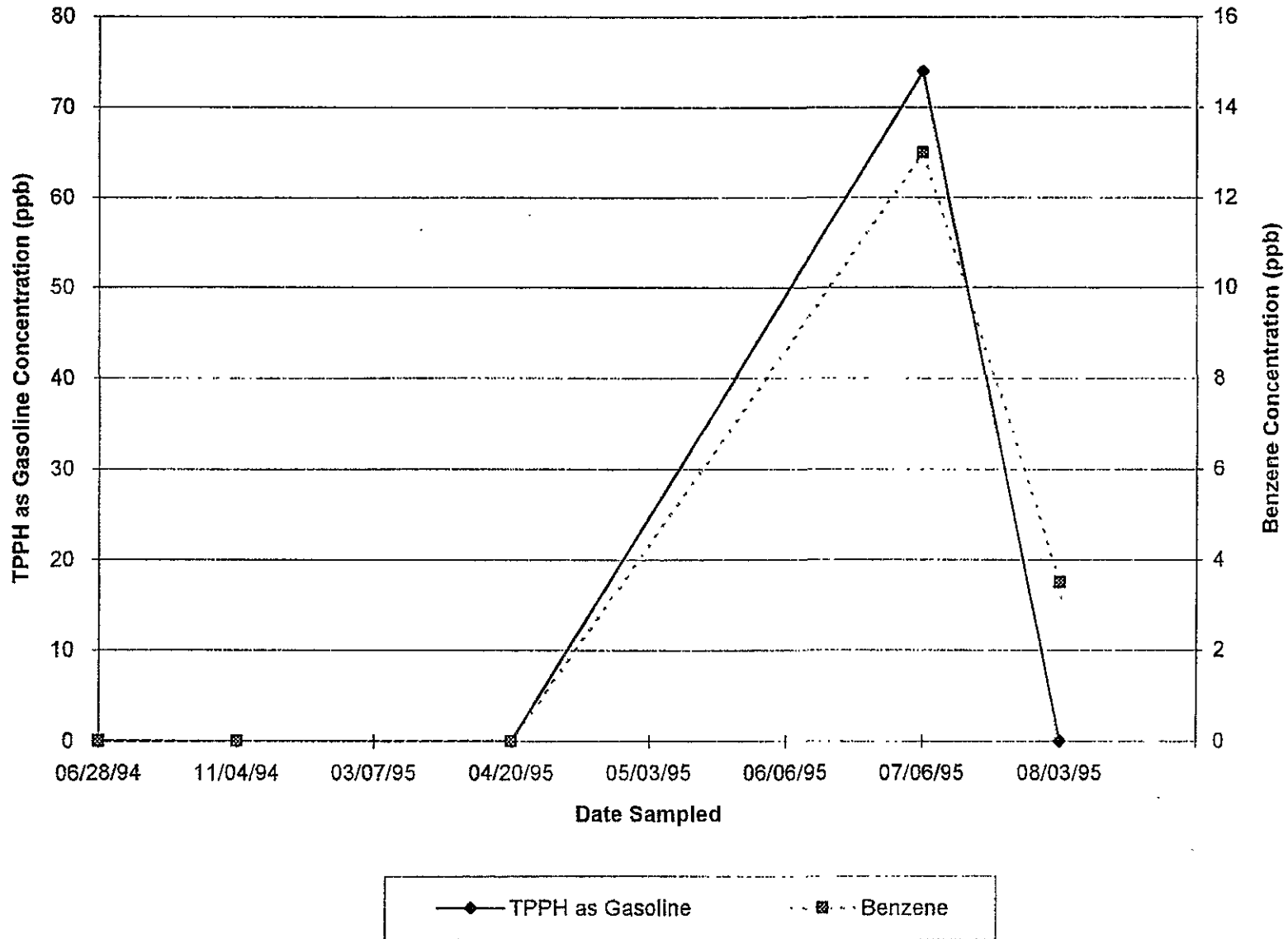


Figure D-3
Soil Vapor Extraction System Mass Removal Trend

ARCO Service Station 2112
1260 Park Street at Encinal Avenue
Alameda, California

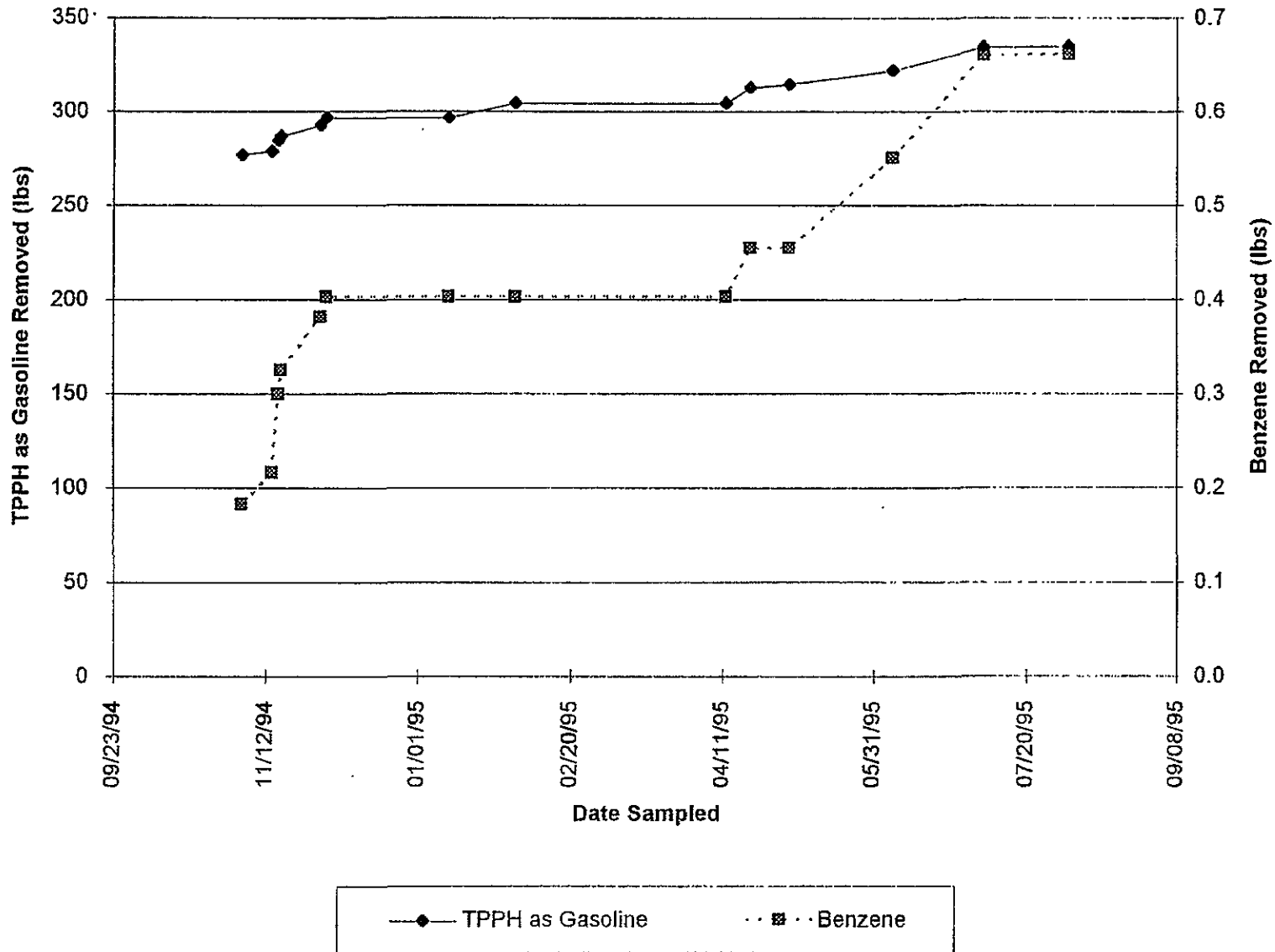


Figure D-4
Soil Vapor Extraction System Hydrocarbon Concentrations

ARCO Service Station 2112
 1260 Park Street at Encinal Avenue
 Alameda, California

