PACIFIC
ENVIRONMENTAL
GROUP, INC.

ENVIRONMENTAL
PROTECTION
97 JUL 28 PM 4: 26

Quarterly Groundwater Monitoring Report
First Quarter 1997

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Prepared for

Mr. Paul Supple
ARCO Products Company

July 22, 1997

Prepared by

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

Project 330-107.2D

Gary P. Pestana
Project Manager
RG 6451

REGISTERED GEOLOGIST
GARY P. PESTANA
No. 6451
EXP. 10/98
STATE OF CALIFORNIA

Date: July 22, 1997
Quarter: 1Q97

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 2162 Address: 15135 Hesperian Boulevard at Ruth Court, San Leandro
ARCO Environmental Engineer: Paul Supple
Consulting Co./Contact Person: Pacific Environmental Group, Inc./Gary P. Pestana
Consultant Project No.: 330-107.2D
Primary Agency/Regulatory ID No.: Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER (First - 1997):

1. Submitted fourth quarter 1996 groundwater monitoring report.
2. Performed first quarter 1997 groundwater monitoring event.
3. Prepared first quarter 1997 groundwater monitoring report.

WORK PROPOSED FOR NEXT QUARTER (Second - 1997):

1. Submit first quarter 1997 groundwater monitoring report.
2. Perform second quarter 1997 groundwater monitoring event.
3. Prepare second quarter 1997 groundwater monitoring report.
4. Pursue site closure with the Alameda County Health Care Service Agency.

Current Phase of Project:	Monitoring	(Assmnt. Remed., etc.)
Frequency of Groundwater Sampling:	Quarterly	(Quarterly, etc.)
Frequency of Groundwater Monitoring:	Quarterly	(Monthly, etc.)
Is Free Product (FP) Present On-Site:	No	(Yes/No)
FP Recovered this Quarter:	None	(gallons)
Cumulative FP Recovered to Date:	None	(gallons)
Bulk Soil Removed This Quarter:	None	(cubic yards)
Bulk Soil Removed to Date:	None	(cubic yards)
Current Remediation Techniques:	Natural Attenuation	(SVE/Sparge/FP Removal, etc.)
Approximate Depth to Groundwater:	7.83 to 8.70	(Measure Feet)
Groundwater Gradient:	South-southwest	(Direction)
	0.004	(Magnitude)

DISCUSSION:

- TPPH-g and benzene remained slightly above, or below detection limits for all wells.
- Please refer to PACIFIC's *Quarterly Groundwater Monitoring Report - Fourth Quarter 1996* for historical groundwater elevation and analytical data.

ATTACHMENTS:

- Table 1 - Groundwater Sampling Schedule
- Table 2 - Groundwater Elevation and Analytical Data
- Figure 1 - Groundwater Elevation Contour Map
- Figure 2 - TPPH-g/Benzene Concentration Map
- Attachment A - Field and Laboratory Procedures
- Attachment B - Certified Analytical Report, Chain-of-Custody Documentation, and Field Data Sheets

cc: Mr. John Jang, Regional Water Quality Control Board - S.F. Bay Region
Mr. Mike Bakaldin, City of San Leandro Fire Department, Hazardous Materials Division
Mr. Scott Seery, Alameda County Health Care Services Agency

Table 1
Groundwater Sampling Schedule

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Sampling Frequency
MW-1	a	a	a	a	Quarterly
MW-2	a	a	a	a	Quarterly
MW-3	a	a	a	a	Quarterly
MW-4	a	a	a	a	Quarterly

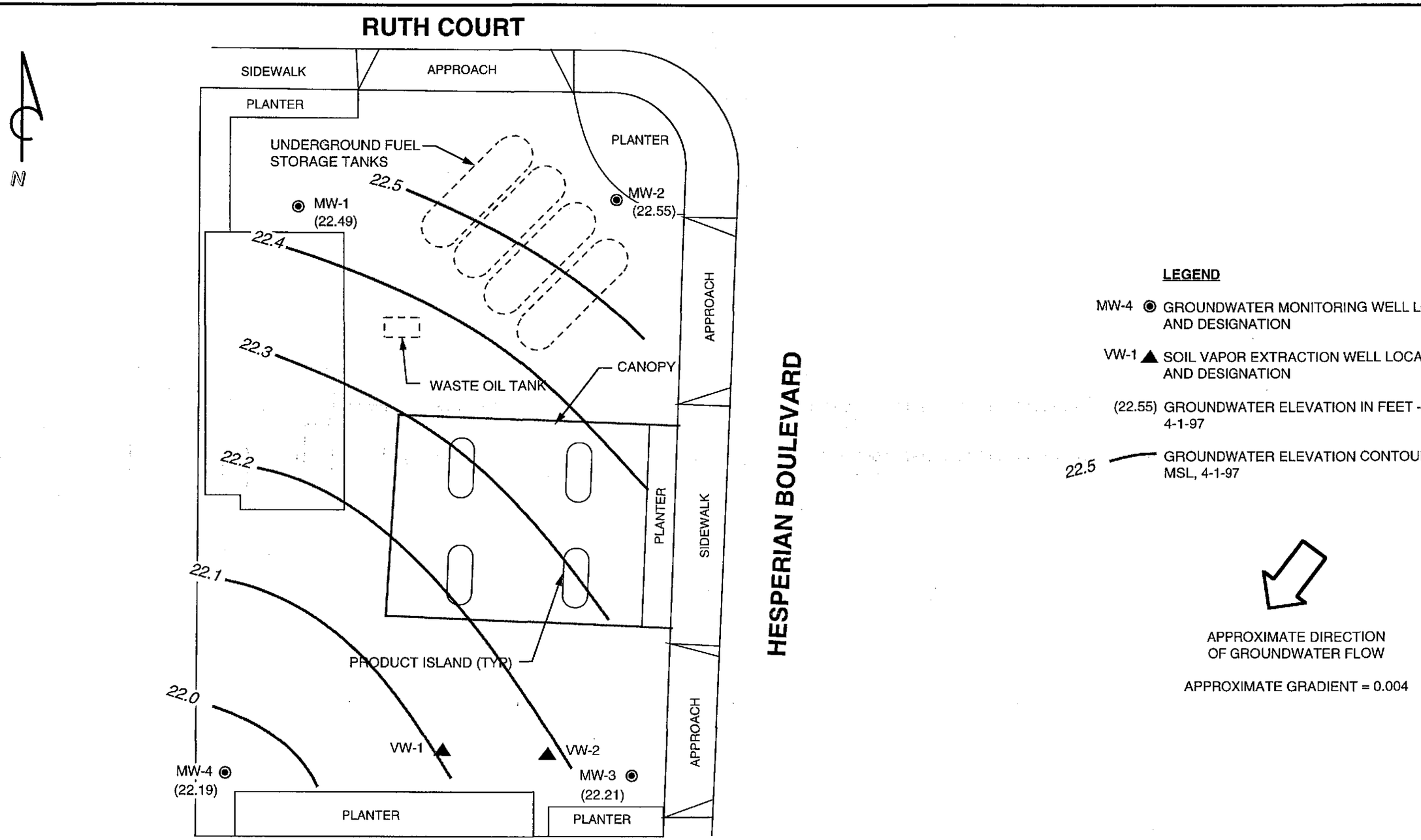
a. Samples analyzed for TPPH-g, BTEX compounds, and MtBE according to EPA Methods 8015 (modified) and 8020.

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

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MtBE (ppb)
MW-1	02/26/96	31.19	7.14	24.05	<50	<0.50	<0.50	<0.50	<0.50	NA
	05/23/96		7.70	23.49	<50	<0.50	<0.50	<0.50	<0.50	NA
	08/21/96		8.75	22.44	210	<0.50	<0.50	<0.50	<0.50	<2.5
	11/20/96		8.62	22.57	91	<0.50	<0.50	<0.50	<0.50	2.6
	04/01/97 †		8.70	22.49	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-2	02/26/96	30.38	6.41	23.97	770	<0.50	<0.50	45	28	NA
	05/23/96		6.80	23.58	590	0.50	<0.50	35	18	NA
	08/21/96		7.80	22.58	170	<0.50	<0.50	21	6.3	<2.5
	11/20/96		7.73	22.65	88	<0.50	<0.50	7.9	1.1	<2.5
	04/01/97		7.83	22.55	66	<0.50	<0.50	3.6	0.56	33
MW-3	02/26/96	30.30	6.72	23.58	120	5.0	<0.50	<0.50	<0.50	NA
	05/23/96		7.18	23.12	140	12	<0.50	<0.50	<0.50	NA
	08/21/96		8.17	22.13	<50	1.1	<0.50	<0.50	<0.50	130
	11/20/96		8.03	22.27	55	<0.50	<0.50	<0.50	<0.50	59
	04/01/97 †		8.09	22.21	<50	<0.50	<0.50	<0.50	<0.50	180
MW-4	02/26/96	30.39	7.59	22.80	110	9.9	<0.50	<0.50	<0.50	NA
	05/23/96		8.22	22.17	69	8.0	<0.50	<0.50	<0.50	NA
	08/21/96		9.28	21.11	<50	6.8	<0.50	<0.50	<0.50	<2.5
	11/20/96		9.12	21.27	95	10	0.59	<0.50	0.52	3.8
	04/01/97		8.20	22.19	73	5.7	<0.50	<0.50	<0.50	<2.5

MtBE = Methyl tert-butyl ether
MSL = Mean sea level
TOC = Top of casing
ppb = Parts per billion
NA = Not analyzed
< = Less than the laboratory detection limit stated to the right.
† = Well sampled without purging. Please refer to Field and Laboratory Procedures (Attachment A) for details.



SOURCE: MAP BY RESNA

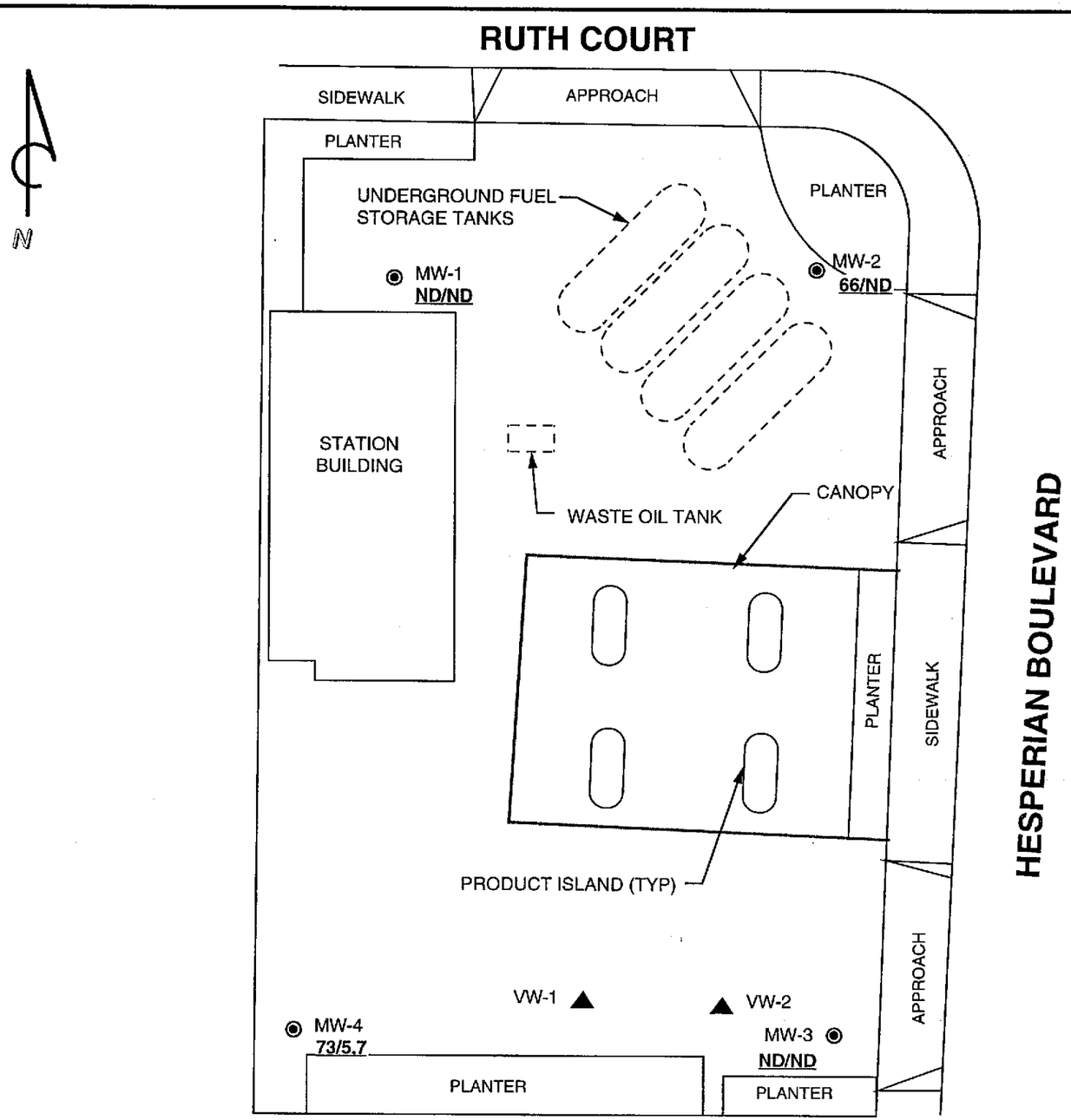
PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

ARCO SERVICE STATION 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE:
1
PROJECT:
330-107.2D



LEGEND

MW-4 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

73/5.7 TPPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 4-1-97

ND NOT DETECTED

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SOURCE: MAP BY RESNA

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

ARCO SERVICE STATION 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

TPPH-g/BENZENE CONCENTRATION MAP

FIGURE:
2
PROJECT:
330-107.2D

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and then checking for the presence of separate-phase hydrocarbons (SPH), using either an electronic indicator and a clear Teflon® bailer or an oil-water interface probe. Wells not containing SPH are then purged of approximately three casing volumes of water (or to dryness) using a centrifugal pump, gas displacement pump, or bailer. Equipment used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored in order to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially recover. Groundwater samples are collected using a Teflon® bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to a California State-certified laboratory.

ARCO initiated utilization of a case-by-case approach for the implementation of non-purge sampling of monitoring wells impacted by petroleum hydrocarbons, beginning first quarter 1997. The criteria for implementation of non-purge sampling include:

- The screened interval of the well casing is not fully submerged.
- The well is not located within a confined aquifer.
- The well is not being monitored for the first time.
- The site is not being monitored during the confirmation monitoring period, prior to site closure.

Based on the above criteria, prescreening of monitoring wells are performed for each site. Depth to water data obtained on the sampling date is compared to the well construction data, to decide whether the well may be sampled without purging.

Laboratory Procedures

The groundwater samples were analyzed for the presence of total purgeable petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether. The analyses were performed according to EPA Methods 8015 (modified) and 8020 utilizing a purge-and-trap extraction technique. Final detection was by gas chromatography using flame- and photo-ionization detectors. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment C.

ATTACHMENT B

CERTIFIED ANALYTICAL REPORT, CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD DATA SHEETS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Shaw Garakani

Project: 330-107.2K/2162, San Leandro

Enclosed are the results from samples received at Sequoia Analytical on April 2, 1997. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9704260 -01	LIQUID, MW-1	04/01/97	MTBE_W Methyl t-Butyl Ethe
9704260 -01	LIQUID, MW-1	04/01/97	TPHGBW Purgeable TPH/BTEX
9704260 -02	LIQUID, MW-2	04/01/97	MTBE_W Methyl t-Butyl Ethe
9704260 -02	LIQUID, MW-2	04/01/97	TPHGBW Purgeable TPH/BTEX
9704260 -03	LIQUID, MW-3	04/01/97	MTBE_W Methyl t-Butyl Ethe
9704260 -03	LIQUID, MW-3	04/01/97	TPHGBW Purgeable TPH/BTEX
9704260 -04	LIQUID, MW-4	04/01/97	MTBE_W Methyl t-Butyl Ethe
9704260 -04	LIQUID, MW-4	04/01/97	TPHGBW Purgeable TPH/BTEX
9704260 -05	LIQUID, TB-1	04/01/97	TPHGBW Purgeable TPH/BTEX

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Project Manager

Quality Assurance Department

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9704260-01

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/09/97
Reported: 04/11/97

QC Batch Number: GC040997BTEX06A
Instrument ID: GCHP06

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9704260-01

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/09/97
Reported: 04/11/97

QC Batch Number: GC040997BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

Analytes reported as N.D. were not present above the stated limit of detection.

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Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9704260-02

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/10/97
Reported: 04/11/97

QC Batch Number: GC041097BTEX01A
Instrument ID: GCHP01

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	33

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105

Analytes reported as N.D. were not present above the stated limit of detection.

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9704260-02

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/10/97
Reported: 04/11/97

QC Batch Number: GC041097BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**66**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**3.6**
Xylenes (Total)	**0.50**	**0.56**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105

Analytes reported as N.D. were not present above the stated limit of detection.

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San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9704260-03

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/10/97
Reported: 04/11/97

QC Batch Number: GC041097BTEX01A
Instrument ID: GCHP01

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	180

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	112

Analytes reported as N.D. were not present above the stated limit of detection.

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San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9704260-03

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/10/97
Reported: 04/11/97

QC Batch Number: GC041097BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	112

Analytes reported as N.D. were not present above the stated limit of detection.

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2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9704260-04

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/09/97
Reported: 04/11/97

QC Batch Number: GC040997BTEX06A
Instrument ID: GCHP06

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

Analytes reported as N.D. were not present above the stated limit of detection.

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Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9704260-04

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/09/97
Reported: 04/11/97

QC Batch Number: GC040997BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**73**
Benzene	**0.50**	**5.7**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

Analytes reported as N.D. were not present above the stated limit of detection.

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Sample Descript: TB-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9704260-05

Sampled: 04/01/97
Received: 04/02/97

Analyzed: 04/09/97
Reported: 04/11/97

QC Batch Number: GC040997BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Project ID:	330-107.2K / 2162, San Leandro	
2025 Gateway Place, Suite 440	Matrix:	LIQUID	
San Jose, CA 95110			
Attention: Shaw Garakani	Work Order #:	9704260 01-04	Reported: Apr 11, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC040997BTEX06A	GC040997BTEX06A	GC040997BTEX06A	GC040997BTEX06A	GC040997BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9703G9501	9703G9501	9703G9501	9703G9501	9703G9501
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/9/97	4/9/97	4/9/97	4/9/97	4/9/97
Analyzed Date:	4/9/97	4/9/97	4/9/97	4/9/97	4/9/97
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.5	9.3	9.3	27	75
MS % Recovery:	95	93	93	90	125
Dup. Result:	9.8	9.7	9.7	29	77
MSD % Recov.:	98	97	97	97	128
RPD:	3.1	4.2	4.2	7.1	2.6
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK040997BSA	BLK040997BSA	LK040997BSA	BLK040997BSA	BLK040997BSA
Prepared Date:	4/9/97	4/9/97	4/9/97	4/9/97	4/9/97
Analyzed Date:	4/9/97	4/9/97	4/9/97	4/9/97	4/9/97
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	30 µg/L
LCS Result:	9.9	9.7	9.9	29	77
LCS % Recov.:	99	97	99	97	128
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Tod Granicher
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Shaw Garakani

Client Project ID: 330-107.2K / 2162, San Leandro
Matrix: LIQUID
Work Order #: 9704260 01-04
Reported: Apr 11, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC041097BTEX01A	GC041097BTEX01A	GC041097BTEX01A	GC041097BTEX01A	GC040997BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Geckler	R. Geckler	R. Geckler	R. Geckler	R. Geckler
MS/MSD #:	9703G9501	9703G9501	9703G9501	9703G9501	9703G9501
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Analyzed Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	11	11	32	63
MS % Recovery:	110	110	110	107	105
Dup. Result:	12	12	12	34	67
MSD % Recov.:	120	120	120	113	112
RPD:	8.7	8.7	8.7	6.1	6.2
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK041097BSA	BLK041097BSA	LK041097BSA	BLK041097BSA	BLK041097BSA
Prepared Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Analyzed Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	30 µg/L
LCS Result:	11	11	11	32	62
LCS % Recov.:	110	110	110	107	103
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Tod Granicher
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Shaw Garakani

Client Proj. ID: 330-107.2K/2162, San Leandro
Lab Proj. ID: 9704260

Received: 04/02/97
Reported: 04/11/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 15 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Tod Granicher
Project Manager

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT) LDC

WORKORDER: 9704269
DATE OF LOG-IN: 4-5-97

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC.)
1. Custody Seal(s)	Present / (Absent) Intact / Broken*	1		MW1	VOA (4)	liq	4-1	
2. Custody Seal #:	Put in Remarks Section	2		MW2	↓	↓	↓	
3. Chain-of-Custody	(Present) / Absent*	3		MW3				
4. Traffic Reports or Packing List:	Present / (Absent)	4		MW4				
				TB-1	VOA (2)	↓	↓	
5. Airbill:	Airbill / Sticker Present / (Absent)							
6. Airbill #:								
7. Sample Tags:	(Present) / Absent							
Sample Tags #s:	(Listed) / Not Listed on Chain-of-Custody							
8. Sample Condition:	(Intact) / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	(Yes) / No*							
10. Proper Preservatives used:	(Yes) / No*							
11. Date Rec. at Lab:	4-2-97							
12. Time Rec. at Lab:	1121							
13. Temp Rec. at Lab:	4°C							

4-2-97 LDC checked

*if Circled, contact Project Manager and attach record of resolution.

Revision 9/10/96
RCPTLOG.XLS

ARCO Products Company
Division of AtlanticRichfieldCompany

330 1077 Task Order No. 21044-00

Chain of Custody

ARCO Facility no. 2162	City (Facility) San Leandro	Project manager (Consultant) Shaw Garakani	Laboratory name Sequoia
ARCO engineer Paul Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 408 441 7500	Fax no. (Consultant) 408 4417539
Consultant name Pacific Environmental	Address (Consultant) 2025 Gateway Pl #440 San Jose		Contract number 21044-00

Method of shipment: 9704125 (60)

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE DISTINGUISH
MW1	1	4		X		↓	HCL	4.1.97	14:10		X										X
MW2	2	↓		↓		↓	↓	↓	14:30		↓										↓
MW3	3								13:55												
MW4	4								13:43												
TB-1	5	2		↓		↓	↓	↓	N/A		↓										

Special detection Limit/reporting

Special QA/QC

Remarks

EE 2 11 21

Lab number

Turnaround time

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days X

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler: Paul Wenhardt	4.1.97	16:10	Received by: Josie Warren	4/1/97	16:10
Relinquished by: Josie Warren	4-2-97	1015	Received by: Stu Kempt	4/2/97	1015
Relinquished by: Stu Kempt	4/2/97	11:21	Received by laboratory: XO Cardenas	4-2-97	1121

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

Project #:330-107.2K

☐ 1st time visit

Station #:2162

☒ 1st ☐ 2nd ☐ 3rd ☐ 4th

Date of Request: 1Q

Site Address:15135 Hesperian Blvd. San Leandro, California

☐ Monthly

Ideal Field Date:

☐ Semi-Monthly

County: Alameda

☐ Weekly

Budget Hrs._____

Project Manager: Shaw Garakani

☐ One time Event

Actual Hrs. 4½

Requestor: David Nanstad

☐ Other._____

Mob de Mob_____

Client: Arco

Client P.O.C.: Paul Supple

Purge Total 4 Qgal

Prefield contacts:

Field Tasks: For General Description

First Quarter 1997 groundwater sampling event: DTW/DTL on all wells from TOB/TOC Sample per attached protocol. Please note and repair/replace any damaged J-plugs, locks ect.

WA# 21044 00

Comments, remarks, from Field Staff (include problems encountered)

4 Sampled

2 Purged

Completed by: Paul Wemhardt Date: 4-1-97

Checked by:_____

WELL SAMPLING REQUEST

SAMPLING PROTOCOL								
Project No.	Station #	Project Name	SEQUENCE	Project Manager	Approval	Date/s	Laboratory:	Client Engineer:
330-107.2k	2162	5135 Hesperian San Loren	1q97	Shaw Garakani	9/12/96		Sequoia 21044 00	Paul Supple

Well Number	Ideal Sampling Order	Sample I.D.	Sampling Frequency	Analyses	TOB TOC	Well Depth	Casing Diameter	Top of Screen	Well goes Dry?	Comments
MW-1	3		QLY	MtBE/GAS/BTEX	TOB/TOC	16 '	4"	8'		Please note and repair/replace
MW-2	4		QLY	MtBE/GAS/BTEX	TOB/TOC	16 '	4"	8'		any damaged J-plugs, locks ect.
MW-3	2		QLY	MtBE/GAS/BTEX	TOB/TOC	15 '	4"	8'		
MW-4	1		QLY	MtBE/GAS/BTEX	TOB/TOC	18 '	4"	9'		
TB-1			QLY	MtBE/GAS/BTEX						

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

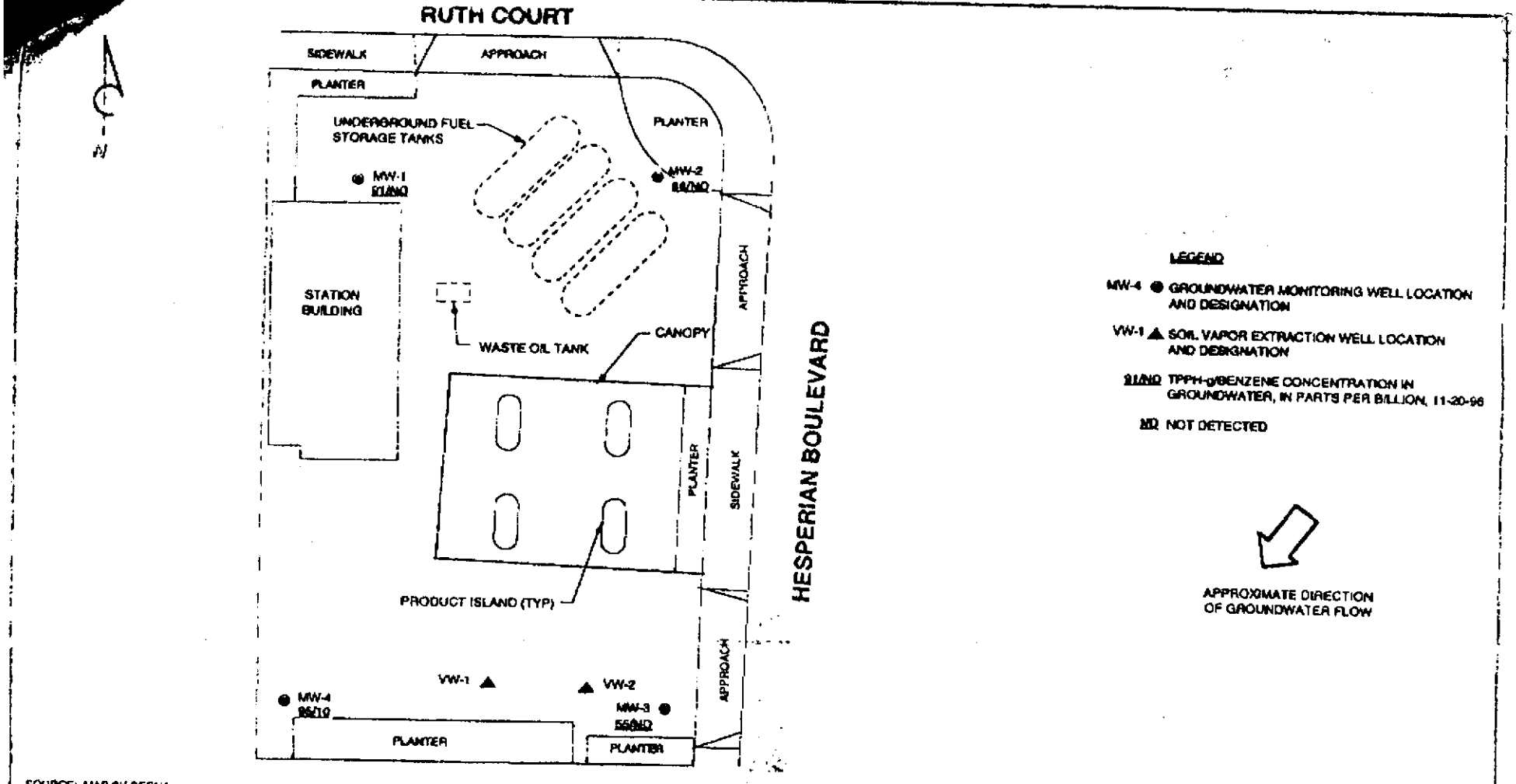
PROJECT No.: 330 10724 LOCATION: 1535 Hesperian Blvd DATE: 4-1-97

CLIENT/STATION NO.: 2162 FIELD TECHNICIAN: Paul Weinhardt DAY OF WEEK: Tues

PROBE TYPE/ID No.
- ☐ Oil/Water IF/ _____
- ☐ H_2O level indicator _____
- ☐ Other: _____

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SERARATE-PHASE HYDROCARBONS (SPH): SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons): SPH / H_2O
	mw1	13:24	X	X	X	X	X	16.0	8.95 / 8.70	8.95 / 8.70										
	mw2	13:21	X	X	X	X	X	16.0	8.17 / 7.83	8.17 / 7.83										
	mw3	13:18	X	X	X	X	X	15.0	8.35 / 8.09	8.35 / 8.09										
	MW4	13:14	X	X	X	X	X	18.0	8.45 / 8.20	8.45 / 8.20										

Comments: _____



SOURCE: MAP BY RESNA

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

ARCO SERVICE STATION 2142
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

TPPH-g/BENZENE CONCENTRATION MAP

FIGURE: 2
PROJECT: 339-107.2C

(408) 441-7500 FAX (408) 441-7539

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330107.2K LOCATION: 15135 Hesperian Blvd S.L. WELL ID #: MW1

CLIENT/STATION No.: 7162 FIELD TECHNICIAN: Paul Weinhardt

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.95 TOB 8.70 TOC
Total depth: _____ TOB _____ TOC
Date: 4.1.97 Time (2400): 1324

Probe Type and I.D. #
- ☐ Oil/Water interface _____
- ☒ Electronic Indicator #2
- ☐ Other: _____

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other: _____

TD _____ - DTW _____ = _____ x Gal/Linear Foot _____ = _____ x Number of Casings _____ = Calculated Purge _____

DATE PURGED: N/A START: / END (2400 hr): / PURGED BY: /

DATE SAMPLED: 4.1.97 START: 14:03 END (2400 hr): 14:12 SAMPLED BY: PW

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
	NO PURGE WATER IS Below the SCREEN						

Pumped dry Yes (No)

Color: Cobalt 0-100, Clear, Cloudy, Yellow, Brown
Turbidity: NTU 0-200, Heavy, Moderate, Light, Trace
Odor: Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW	TOB/TOC	pH	E.C.	TEMPERATURE	COLOR	TURBIDITY	ODOR
8.20	TOB/TOC	7.50	820	67.6	CLEAR	TRACE	none

PURGING EQUIPMENT/I.D. #
- ☐ Bailer: _____
- ☐ Centrifugal Pump: _____
- ☐ Other: _____
- ☐ Airlift Pump: _____
- ☐ Dedicated: _____

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: DISP
- ☐ Dedicated: _____
- ☐ Other: _____

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW1	4.1.97	14.10	4	40ml	VOA	HCL	GAS BTEX MTBE

REMARKS: _____

SIGNATURE: Paul Weinhardt

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 10721C LOCATION: 15135 Hesperian Blvd S.L. WELL ID #: MW2

CLIENT/STATION No.: 2162 FIELD TECHNICIAN: Paul Weinhardt

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.17 TOB 7.83 TOC
Total depth: — TOB 16.0 TOC
Date: 4.1.97 Time (2400): 13:21

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☐ Electronic Indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☑	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☑ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 16.0 - DTW 7.83 = 8.17 x Gal/Linear Foot .66 = 5.39 x Number of Casings 3 = Calculated Purge 16.17

DATE PURGED: 4.1.97 START: 14:17 END (2400 hr): 14:25 PURGED BY: PW

DATE SAMPLED: 4.1.97 START: 14:25 END (2400 hr): 14:33 SAMPLED BY: PW

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14.20	5.5	7.24	920	68.1	clear	Trace	none
14.22	11.0	7.16	920	68.2	clear	Trace	none
14.25	16.5	7.40	920	69.2	clear	Trace	none

Color: Colorless, Clear, Cloudy, Yellow, Brown
Turbidity: NTU 0-200, Heavy, Moderate, Light, Trace
Odor: Strong, Moderate, Faint, None

Pumped dry Yes (No)

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: 9.74 TOB/TOC

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump: #15
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: DISP
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW2	4.1.97	14.36	4	40mL	VOA	HCL	Gas BTEX MTBE

REMARKS: WATER WAS ABOVE the Screen PURGED

SIGNATURE: Paul Weinhardt

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21L LOCATION: 5135 Hesperian Blvd S.L. WELL ID #: MW3

CLIENT/STATION No.: 2162 FIELD TECHNICIAN: Paul Weinhardt

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.31 TOB 8.09 TOC
Total depth: — TOB 15.0 TOC
Date: 4.1.97 Time (2400): 13.18

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator 42
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☐ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD ____ - DTW ____ = ____ x Gal/Linear Foot ____ = ____ x Number of Casings ____ = Calculated Purge ____

DATE PURGED: / START: / END (2400 hr): / PURGED BY: /

DATE SAMPLED: 4.1.97 START: 13.50 END (2400 hr): 13.59 SAMPLED BY: ____

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
		NO PURGE WATER IS BELOW SCREEN					

Pumped dry Yes (No)

Color: Colorless, Clear, Cloudy, Yellow, Brown
Turbidity: NTU 0-200, Heavy, Moderate, Light, Trace
Odor: Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:	TOB (TOC)	pH	E.C.	TEMPERATURE	COLOR	TURBIDITY	ODOR
8.09	TOB (TOC)	7.21	1090	68.4	clear	Trace	none

PURGING EQUIPMENT/I.D. #
- ☐ Bailer: /
- ☐ Centrifugal Pump: / ☐ Airlift Pump: ____
- ☐ Other: ____ ☐ Dedicated: ____

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: DISP
- ☐ Dedicated: ____
- ☐ Other: ____

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW3	4.1.97	13.55	4	40ml	VOA	HCL	Gas Btex MTBE

REMARKS: ____

SIGNATURE: Paul Winhardt

PACIFIC ENVIRONMENTAL GROUP, INC.