

PACIFIC
ENVIRONMENTAL
GROUP, INC.

ENVIRONMENTAL
PROTECTION

95 JUL 17 PM 3:10

July 14, 1995
Project 330-107.2B

Mr. Michael Whelan
ARCO Products Company
2155 South Bascom Avenue, Suite 202
Campbell, California 95008

Re: Quarterly Report - Second Quarter 1995
ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Dear Mr. Whelan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) on behalf of ARCO Products Company, presents the results of the second quarter 1995 groundwater monitoring at the site referenced above. In addition, a summary of work performed and anticipated at the site is included.

QUARTERLY GROUNDWATER MONITORING RESULTS

Groundwater samples were collected by PACIFIC on May 31, 1995, and analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment A. Field and laboratory procedures are presented as Attachment B.

Depth to water data collected on May 31, 1995 indicate that groundwater levels across the site have risen an average of 0.04 foot since February 24, 1995. Groundwater flow was to the south-southwest with an approximate gradient of 0.01. This flow direction and gradient are consistent with historical data. Groundwater elevation data are presented in Table 1. A groundwater elevation contour map based on the May 31, 1995 data is shown on Figure 1.

Results of groundwater monitoring this quarter are generally consistent with previous results. TPH-g and benzene were below detection limits in Well MW-1. These are the lowest historical concentrations of TPH-g and benzene in this well. Benzene was also below detection limits in Well MW-2. TPH-g concentrations ranged from 97 to

450 parts per billion (ppb). Benzene was detected in Wells MW-3 and MW-4 at concentrations of 24 and 11 ppb, respectively. Separate-phase hydrocarbons have never been observed in any site well. Groundwater analytical data are presented in Table 2. A TPH-g and benzene concentration map is shown on Figure 2.

SUMMARY OF WORK

Work Performed Second Quarter 1995

- Prepared and submitted first quarter 1995 groundwater monitoring report.
- Performed second quarter 1995 groundwater monitoring event. Groundwater sampling was performed by PACIFIC.
- Prepared second quarter 1995 groundwater monitoring report.

Work Anticipated Third Quarter 1995

- Preparation and submittal of second quarter 1995 groundwater monitoring report.
- Perform third quarter 1995 groundwater monitoring event. Groundwater sampling to be performed by PACIFIC.
- Preparation of third quarter 1995 groundwater monitoring report.

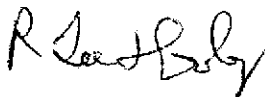
If there are any questions regarding the contents of this letter, please call.

Sincerely,

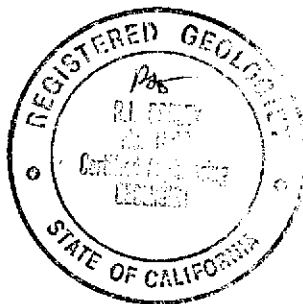
Pacific Environmental Group, Inc.



Kelly C. Brown
Project Manager



R. Lee Dooley
Senior Geologist
CEG 1006



Attachments: Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data - Total Petroleum
Hydrocarbons (TPH as Gasoline and BTEX Compounds)
Figure 1 - Groundwater Elevation Contour Map
Figure 2 - TPH-g/Benzene Concentration Map
Attachment A - Certified Analytical Report, Chain-of-Custody
Documentation, and Field Data Sheets
Attachment B - Field and Laboratory Procedures

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 Elevation Data**

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

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	
MW-1	09/30/92	31.19	10.68	20.51	
	10/16/92		10.83	20.36	
	01/14/93		7.25	23.94	
	02/24/93		7.23	23.96	
	03/30/93		7.58	23.61	
	04/14/93		7.96	23.23	
	05/19/93		8.26	22.93	
	06/17/93		8.42	22.77	
	07/28/93		8.68	22.51	
	08/11/93		9.07	22.12	
	09/28/93		9.60	21.59	
	10/15/93		9.51	21.68	
	11/16/93		— Well Inaccessible —		
	12/16/93		8.70	22.49	
	02/15/94		8.51	22.68	
	03/18/94		8.46	22.73	
	05/05/94		8.66	22.53	
	08/05/94		9.50	21.69	
	11/21/94		8.83	22.36	
	02/24/95		7.90	23.29	
05/31/95	7.86	23.33			
MW-2	09/30/92	30.38	9.74	20.64	
	10/16/92		9.91	20.47	
	01/14/93		6.56	23.82	
	02/24/93		6.67	23.71	
	03/30/93		6.76	23.62	
	04/14/93		7.10	23.28	
	05/19/93		7.40	22.98	
	06/17/93		7.51	22.87	
	07/28/93		7.73	22.65	
	08/11/93		8.11	22.27	
	09/28/93		8.57	21.81	
	10/15/93		8.56	21.82	
	11/16/93		8.87	21.51	
	12/16/93		7.92	22.46	
	02/15/94		7.62	22.76	
	03/18/94		7.57	22.81	
	05/05/94		7.75	22.63	
	08/05/94		8.53	21.85	
	11/21/94		7.92	22.46	
	02/24/95		6.98	23.40	
05/31/95	6.97	23.41			
MW-3	09/30/92	30.30	9.93	20.37	
	10/16/92		10.13	20.17	
	01/14/93		6.71	23.59	
	02/24/93		6.82	23.48	
	03/30/93		7.07	23.23	
	04/14/93		7.41	22.89	
	05/19/93		7.72	22.58	
	06/17/93		7.86	22.44	
	07/25/93		8.13	22.17	
	08/11/93		8.45	21.85	
	09/28/93		8.96	21.34	
	10/15/93		8.85	21.45	
	11/16/93		9.09	21.21	
12/16/93	8.10	22.20			

Table 1 (continued)
Groundwater Elevation Data

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

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3 (cont.)	02/15/94		7.88	22.42
	03/18/94		7.88	22.42
	05/05/94		8.08	22.22
	08/05/94		8.82	21.48
	11/21/94		8.17	22.13
	02/24/95		7.40	22.90
	05/31/95		7.35	22.95
MW-4	09/30/92	30.39	11.15	19.24
	10/16/92		11.33	19.06
	01/14/93		7.49	22.90
	02/24/93		7.57	22.82
	03/30/93		8.06	22.33
	04/14/93		8.48	21.91
	05/19/93		7.80	22.59
	06/17/93		8.94	21.45
	07/25/93		9.28	21.11
	05/11/93		9.61	20.78
	09/25/93		10.14	20.25
	10/15/93		10.00	20.39
	11/16/93		10.22	20.17
	12/16/93		9.11	21.28
	02/15/94		8.97	21.42
	03/15/94		8.99	21.40
	05/05/94		9.21	21.18
08/05/94		10.02	20.37	
11/21/94		9.30	21.09	
02/24/95		8.46	21.93	
05/31/95		8.41	21.98	
MSL = Mean sea level				
TOC = Top of casing				

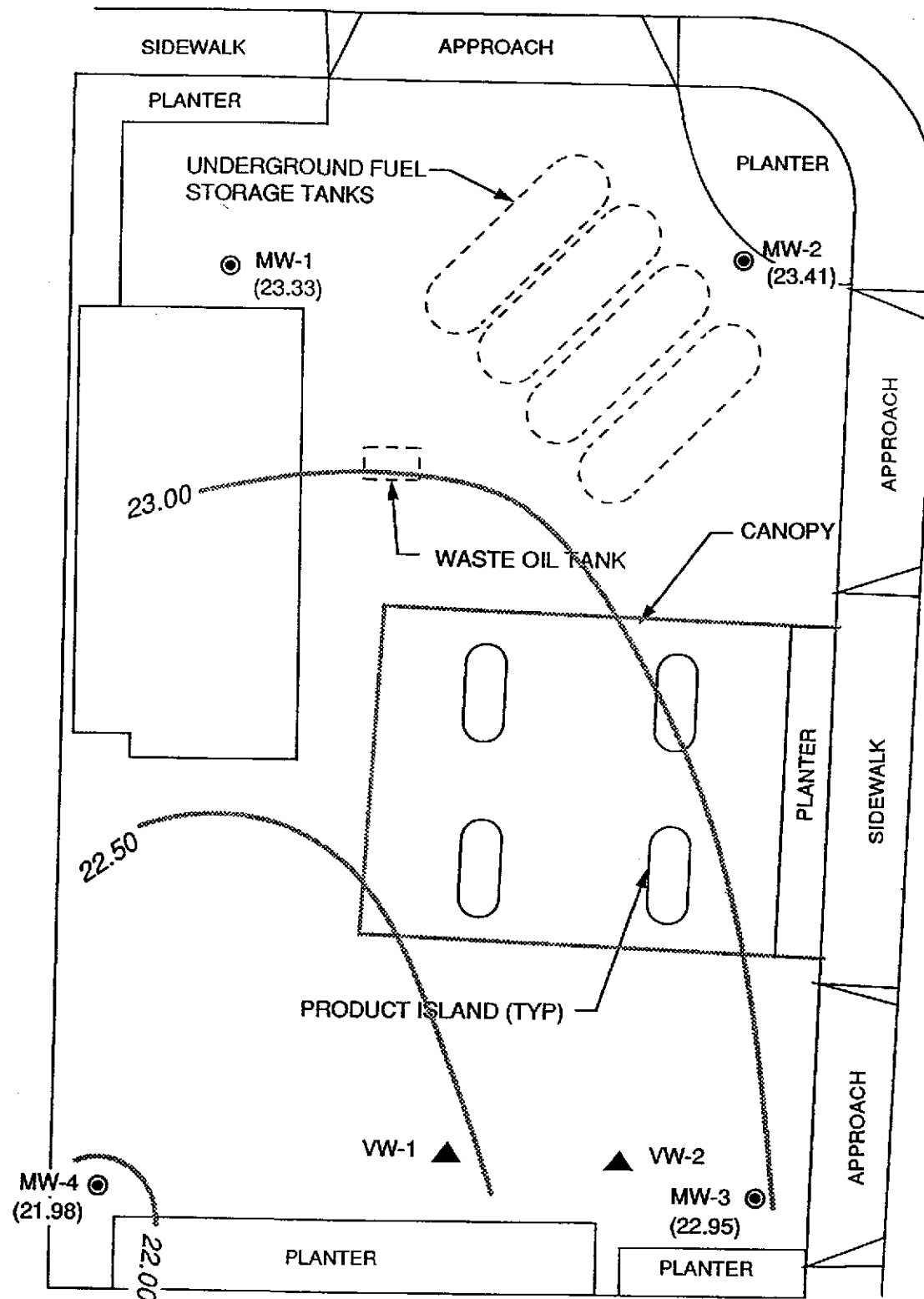
Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

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

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	09/30/92	1,100	6.2	<0.50	6.9	<0.50
	10/16/92	790	3.0	0.8	5.6	2.9
	01/14/93	660	1.2	<1 *	15	4.6
	04/14/93	310	<1 *	<1 *	<1 *	
	08/11/93	660	0.8	<0.7	9.0	<1 **
	10/15/93	620	0.7	<0.5	5.9	2.2
	02/15/94	650	1.9	<0.5	4.5	4.9 **
	05/05/94	510	<0.5	<0.5	<1	1.6
	08/05/94	310	<0.5	<0.5	1.5	1.2
	11/21/94	330	<0.5	<0.5	1.5	1.1
	02/24/95	120	<0.50	<0.50	<0.50	<0.50
	05/31/95	<50	<0.50	<0.50	<0.50	<0.50
	MW-2	09/30/92	1,000	9.6	<0.50	45
10/16/92		630	8	<1 *	37	64
01/14/93		7,800	33	5	340	920
04/14/93		1,600	7	<5 *	220	520
08/11/93		1,600	4.3	<1 *	80	120
10/15/93		1,100	1.7	<1 *	62	70
02/15/94		490	1.8	1.5	49	37
05/05/94		360	<0.5	<0.5	27	18
08/05/94		680	<0.5	<0.5	42	37
11/21/94		500	<0.5	<0.5	40	25
02/24/95		650	<0.50	<0.50	52	48
05/31/95		450	<0.50	<0.50	33	33
MW-3		09/30/92	<50	<0.50	<0.50	<0.50
	10/16/92	<50	<0.50	<0.50	<0.50	<0.50
	01/14/93	52	<0.50	<0.50	<0.50	<0.50
	04/14/93	360	86	2.1	5.1	4.0
	08/11/93	69	1.1	<0.5	<0.5	<0.5
	10/15/93	<50	<0.5	<0.5	<0.5	<0.5
	02/15/94	<50	<0.5	<0.5	<0.5	<0.5
	05/05/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/21/94	<50	<0.5	<0.5	<0.5	<0.5
	02/24/95	<50	0.93	<0.50	<0.50	<0.50
	05/31/95	120	24	<0.50	<0.50	<0.50
	MW-4	09/30/92	330	81	<0.50	<0.50
10/16/92		250	44	<0.50	<0.50	0.7
01/14/93		260	29	0.6	<0.50	1.1
04/14/93		NS	NS	NS	NS	NS
08/11/93		150	21	<0.5	<0.5	<0.5
10/15/93		190	12	<0.5	<0.5	<0.5
02/15/94		<50	2.0	<0.5	<0.5	<0.5
05/05/94		160	17	<0.5	<0.5	0.6
08/05/94		120	10	<0.5	<0.5	<0.5
11/21/94		120	17	<0.5	<0.5	0.6
02/24/95		110	14	<0.50	<0.50	<0.50
05/31/95		97	11	<0.50	<0.50	<0.50

ppb = Parts per million
NS = Not sampled, separate-phase hydrocarbon entered well during purging.
* = Raised MRL due to high analyte concentration requiring sample dilution
** = Raised MRL due to matrix interference

RUTH COURT



LEGEND

MW-4 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

(23.40) GROUNDWATER ELEVATION IN FEET - MSL, 5-31-95

23.00 — GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 5-31-95



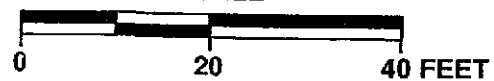
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
APPROXIMATE GRADIENT = 0.01

SOURCE: MAP BY RESNA



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE

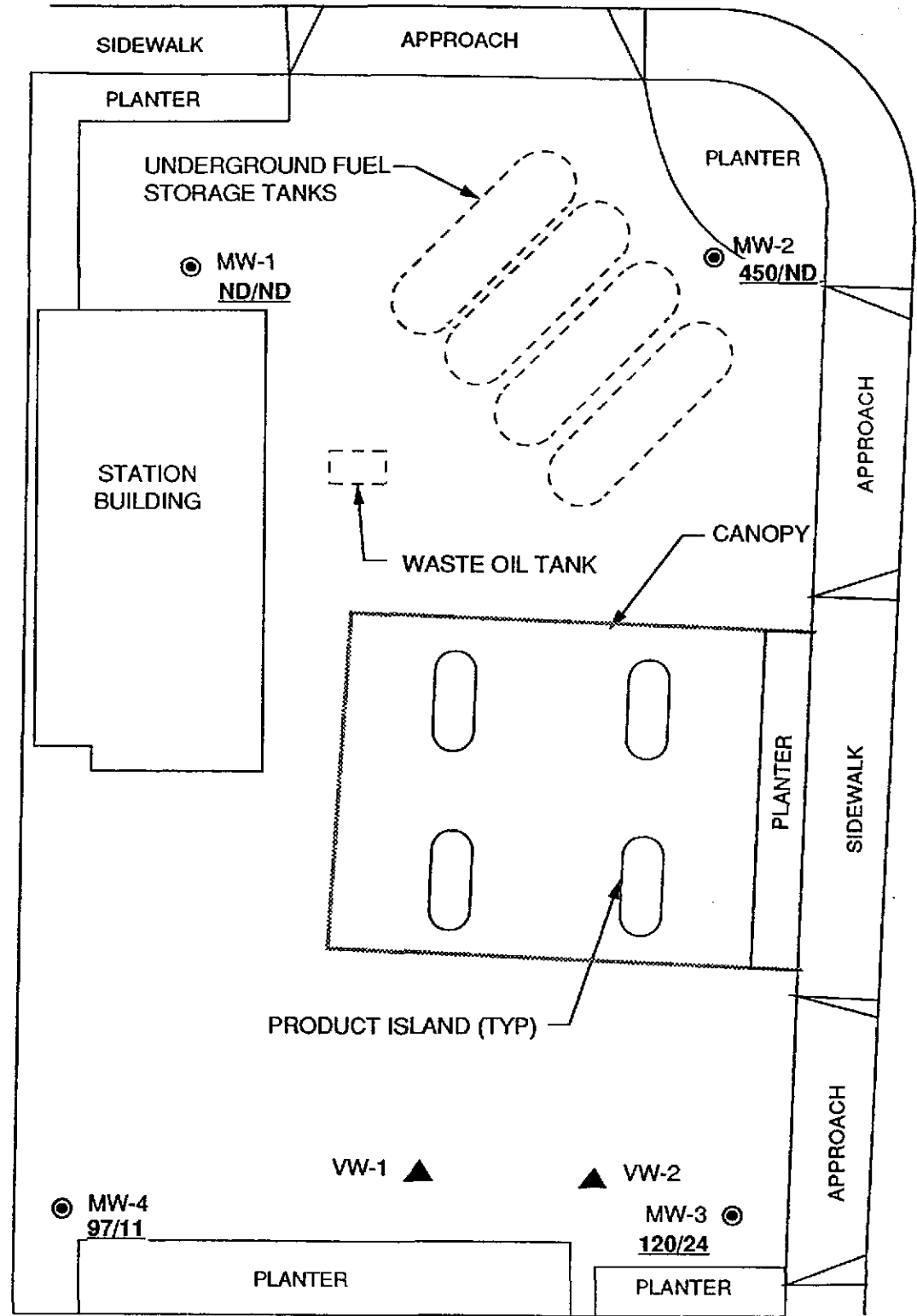


ARCO SERVICE STATION 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1
PROJECT: 330-107.2B

RUTH COURT

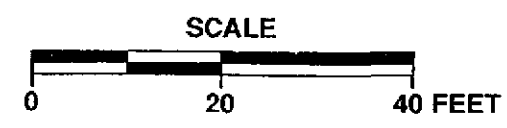


- LEGEND**
- MW-4 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
 - VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
 - 450/ND TPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 5-31-95
 - ND NOT DETECTED



APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SOURCE: MAP BY RESNA



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

TPH-g/BENZENE CONCENTRATION MAP

FIGURE:
2
 PROJECT:
 330-107.2B

ATTACHMENT A

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



Sequoia Analytical

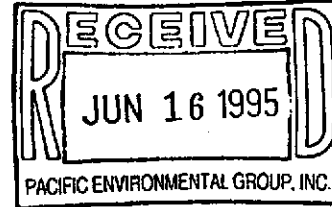
680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden



Project: 330-107.2G/2162, San Leandro


Enclosed are the results from samples received at Sequoia Analytical on June 1, 1995. The requested analyses are listed below:

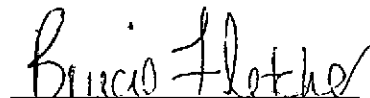
SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
950604901	LIQUID, MW-1	5/31/95	TPHGB Purgeable TPH/BTEX
950604902	LIQUID, MW-2	5/31/95	TPHGB Purgeable TPH/BTEX
950604903	LIQUID, MW-3	5/31/95	TPHGB Purgeable TPH/BTEX
950604904	LIQUID, MW-4	5/31/95	TPHGB Purgeable TPH/BTEX
950604905	LIQUID, TB-1	5/31/95	TPHGB 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


Eileen A. Manning
Project Manager


Bruce Fletcher
Quality Assurance Department



Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 330-107.2G/2162, San Leandro Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9506049-01	Sampled: 05/31/95 Received: 06/01/95 Analyzed: 06/05/95 Reported: 06/13/95
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QC Batch Number: GC060595BTEX02A
Instrument ID: GCHP02

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	92

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

SEQUOIA ANALYTICAL - ELAP #1210


Eileen Manning
Project Manager



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

Client Proj. ID: 330-107.2G/2162, San Leandro
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9506049-02

Sampled: 05/31/95
Received: 06/01/95
Analyzed: 06/05/95
Reported: 06/13/95

Attention: Maree Doden

QC Batch Number: GC060595BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	450
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	33
Xylenes (Total)	0.50	33
Chromatogram Pattern: Weathered Gas		C9-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	90

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

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager



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

Client Proj. ID: 330-107.2G/2162, San Leandro
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9506049-03

Sampled: 05/31/95
Received: 06/01/95
Analyzed: 06/05/95
Reported: 06/13/95

Attention: Maree Doden

QC Batch Number: GC060595BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	120
Benzene	0.50	24
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	89

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

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager



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

Attention: Maree Doden

Client Proj. ID: 330-107.2G/2162, San Leandro
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9506049-04

Sampled: 05/31/95
Received: 06/01/95
Analyzed: 06/06/95
Reported: 06/13/95

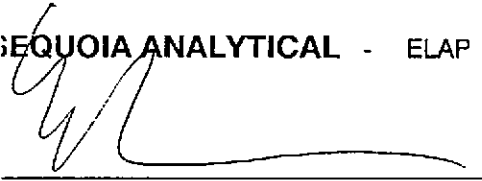
GC Batch Number: GC060695BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	97
Benzene	0.50	11
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	95

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

SEQUOIA ANALYTICAL - ELAP #1210


Aileen Manning
Project Manager



Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 330-107.2G/2162, San Leandro Sample Descript: TB-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9506049-05	Sampled: 05/31/95 Received: 06/01/95 Analyzed: 06/05/95 Reported: 06/13/95
Attention: Maree Doden		

QC Batch Number: GC060595BTEX02A
Instrument ID: GCHP02

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	81

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

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager



Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110 Attention: Maree Doden	Client Project ID: 330-107.2G/2162, San Leandro Matrix: LIQUID Work Order #: 9506049 01-03, 05	Reported: Jun 15, 1995
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QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC060595BTEX02A	GC060595BTEX02A	GC060595BTEX02A	GC060595BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950519002	950519002	950519002	950519002
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/5/95	6/5/95	6/5/95	6/5/95
Analyzed Date:	6/5/95	6/5/95	6/5/95	6/5/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.4	9.3	9.3	28
MS % Recovery:	94	93	93	93
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	6.2	7.3	7.3	6.9
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:
Analyzed Date:
Instrument I.D.#:
Conc. Spiked:

LCS Result:
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
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Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
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

9506049.PPP <1>



Pacific Environmental Group Client Project ID: 330-107.2G/2162, San Leandro
2025 Gateway Place, Suite 440 Matrix: LIQUID
San Jose, CA 95110
Attention: Maree Doden Work Order #: 9506049 04 Reported: Jun 15, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC060695BTEX17A	GC060695BTEX17A	GC060695BTEX17A	GC060695BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950603102	950603102	950603102	950603102
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/6/95	6/6/95	6/6/95	6/6/95
Analyzed Date:	6/6/95	6/6/95	6/6/95	6/6/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.9	8.5	8.4	25
MS % Recovery:	89	85	84	83
Dup. Result:	7.8	7.9	7.9	24
MSD % Recov.:	78	79	79	80
RPD:	13	7.3	6.1	4.1
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:
Analyzed Date:
Instrument I.D.#:
Conc. Spiked:

LCS Result:
LCS % Recov.:

MS/MSD LCS	71-133	72-128	72-130	71-120
Control Limits				

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

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.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG (330-107.26)
 REC. BY (PRINT): M.Y.

WORKORDER: 9506049
 DATE OF LOG-IN: _____

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1. Custody Seal(s)	Present / <u>Absent</u> Intact / Broken*	1	A-C	MW-1	VDA (3)	L	5/31	
2. Custody Seal Nos.:	Put in Remarks Section	2		MW-2				
3. Chain-of-Custody Records:	<u>Present</u> / Absent*	3		MW-3				
4. Traffic Reports or Packing List:	Present / <u>Absent</u>	4	↓	MW-4	↓	↓	↓	
5. Airbill:	Airbill / Slicker Present / <u>Absent</u>	5	A-B	TB-1	VDA (2)	↓	↓	
6. Airbill No.:	_____							
7. Sample Tags:	<u>Present</u> / Absent*							
Sample Tag Nos.:	<u>Listed</u> / Not Listed on Chain-of-Custody							
8. Sample Condition:	<u>Intact</u> / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<u>Yes</u> / No*							
10. Proper preservatives used:	<u>Yes</u> / No*							
11. Date Rec. at Lab:	<u>6/1/95</u>							
12. Temp. Rec. at Lab:	<u>10°C</u>							
13. Time Rec. at Lab:	<u>1155</u>							

* If Circled, contact Project manager and attach record of resolution

A/a

953558

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

	Initials	Date
F/S	Rf	6/2/95
Copy/Dist.	Rf	↓

Project #:330-107.2G 1st time visit

Station #:2162 1st 2nd 3rd 4th Date of Request:5/19/95

Site Address:15135 Hesperian blvd. Monthly Ideal Field Date:

San Leandro, California Semi-Monthly

County:Alameda Weekly Budget Hrs. _____

Project Manager:Kelly Brown One time Event Actual Hrs. 4

Requestor:Chuck Graves Other. _____ Mob de Mob 2

Client:Arco Client P.O.C.:Mike Whelan

Prefield contacts:

FILE COPY

Field Tasks: For General Description

Second quarter groundwater sampling event: DTW/DTL on all wells
 Sample per attached protocol
 WA#17076 00

Comments, remarks, from Field Staff (include problems encountered

Completed by: W Peck Date: 5/31/95

Checked by: Chalmers

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-107

LOCATION: 15135 HESPERIAN
SAN LEANORO

DATE: 5/31/95

CLIENT/STATION NO.: 02162

FIELD TECHNICIAN: W Peck

DAY OF WEEK: Wed

PROBE TYPE/ID No.

- Oil/Water IF/ _____
- H₂O level indicator _____
- Other: _____

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	TOC Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH)												
											SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	Fresh	Weathered	Gas	Oil	VISCOSITY			LIQUID REMOVED (gallons) SPH			
																	Light	Medium	Heavy		H ₂ O		
COLOR																							
4" 2	MW-1	8:48	X	X	X	X	X	15.72	7.86 7.86	8.06 8.06	/	/									X		
4" 1	MW-2	8:45	X	X	X	X	X	15.75	6.97 6.97	7.31 7.31	/	/										X	
4" 4	MW-3	8:53	X	X	X	X	X	14.76	7.35 7.35	7.58 7.58	/	/										X	
4" 3	MW-4	8:50	X	X	X	X	X	17.53	8.41 8.41	8.68 8.68	/	/										X	

Comments: _____

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-107 LOCATION: 15135 HESPERIAN RD WELL ID #: MW-1
SAN LEANDRO
 CLIENT/STATION No.: ARCO/02162 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: TOB TOC
 Depth to water: 8.06 TOB 7.86 TOC
 Total depth: TOB 15.72 TOC
 Date: 5/31/95 Time (2400): 8:48

Probe Type Oil/Water interface
 and Electronic indicator
 I.D. # 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 15.72 - DTW 7.86 = 7.86 Gal/Linear 0.66 = 5.18 Number of 3 Casings 3 = Purge 15.56

DATE PURGED: 5/31/95 START: 10:00 END (2400 hr): 10:08 PURGED BY: W. Peck
 DATE SAMPLED: 5/31/95 START: 10:08 END (2400 hr): 10:15 SAMPLED BY: W. Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>10:03</u>	<u>5.25</u>	<u>7.07</u>	<u>850</u>	<u>75.8</u>	<u>Brown</u>	<u>Mod</u>	<u>None</u>
<u>10:05</u>	<u>10.50</u>	<u>7.40</u>	<u>860</u>	<u>75.2</u>	<u>Cloudy</u>	<u>light</u>	<u>None</u>
<u>10:08</u>	<u>15.75</u>	<u>7.35</u>	<u>830</u>	<u>72.8</u>	<u>Cloudy</u>	<u>light</u>	<u>None</u>

Pumped dry Yes No
 FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:
 DTW: TOB/TOC

PURGING EQUIPMENT/I.D. # SAMPLING EQUIPMENT/I.D. #
 Bailer: Airlift Pump: Bailer: G-6
 Centrifugal Pump: Dedicated: Dedicated:
 Other: Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-1</u>	<u>5/30/95</u>	<u>10:15</u>	<u>3</u>	<u>40ml</u>	<u>VOA</u>	<u>HCL</u>	<u>TPH, BTEX</u>

REMARKS:

SIGNATURE: Walter F. Peck



WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-107 LOCATION: 15135 HESPERIAN RD WELL ID #: MW-2
 CLIENT/STATION No.: ARCO/02162 FIELD TECHNICIAN: W Peck
SANLEANDRO

WELL INFORMATION

Depth to Liquid: TOB TOC
 Depth to water: 7.31 TOB 6.97 TOC
 Total depth: TOB 15.75 TOC
 Date: 5/31/95 Time (2400): 8:45

CASING
DIAMETER
 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;

Probe Type Oil/Water interface
 and Electronic indicator
 I.D. # Other;

TD 15.75 - DTW 6.97 = 8.78 Gal/Linear 0.66 = 5.79 Number of 3 Casings = Calculated Purge 17.38

DATE PURGED: 5/31/95 START: 9:40 END (2400 hr): 9:50 PURGED BY: W Peck
 DATE SAMPLED: 5/31/95 START: 9:50 END (2400 hr): 9:55 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>9:45</u>	<u>8.75</u>	<u>6.77</u>	<u>930</u>	<u>74.5</u>	<u>Brown</u>	<u>Mod.</u>	<u>None</u>
<u>9:48</u>	<u>10.50</u>	<u>6.87</u>	<u>850</u>	<u>72.0</u>	<u>Cloudy/Mod</u>	<u>Mod</u>	<u>None</u>
<u>9:50</u>	<u>17.25</u>	<u>6.87</u>	<u>830</u>	<u>70.8</u>	<u>Cloudy</u>	<u>light</u>	<u>None</u>

Pumped dry Yes No

Cobalt 0-100
 Clear
 Cloudy
 Yellow
 Brown
 NTU 0-200
 Heavy
 Moderate
 Light
 Trace
 Strong
 Moderate
 Faint
 None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: TOB/TOC

PURGING EQUIPMENT/I.D. #

Bailer; Airlift Pump;
 Centrifugal Pump; Dedicated;
 Other;

SAMPLING EQUIPMENT/I.D. #

Bailer: G-3
 Dedicated;
 Other;

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-2</u>	<u>5/31/95</u>	<u>9:55</u>	<u>3</u>	<u>40ml</u>	<u>VOA</u>	<u>HCL</u>	<u>TPH₉/BTEX</u>

REMARKS:

SIGNATURE: Walter Peck



WATER SAMPLE FIELD DATA SHEET

FIELD DATA SHEET

PROJECT No.: 330-107 LOCATION: 15135 HESPERIAN RD WELL ID #: MW-3
SAN LEANDRO
 CLIENT/STATION No.: ARW/02162 FIELD TECHNICIAN: _____

WELL INFORMATION

Depth to Liquid: _____ TOB _____ TOC _____
 Depth to water: 7.58 TOB 7.35 TOC _____
 Total depth: _____ TOB 14.76 TOC _____
 Date: 5/31/95 Time (2400): 8:53

Probe Type Oil/Water interface
 and Electronic indicator
 I.D. # 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 14.76 - DTW 7.35 = 7.41 Gal/Linear 0.66 = 4.89 Number of 3 Calculated 14.67
 x Foot x Casings = Purge

DATE PURGED: 5/31/95 START: 10:50 END (2400 hr): 11:00 PURGED BY: W. Peck
 DATE SAMPLED: 5/31/95 START: 11:00 END (2400 hr): 11:05 SAMPLED BY: W. Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>10:53</u>	<u>5.00</u>	<u>7.50</u>	<u>900</u>	<u>75.1</u>	<u>Cloudy</u>	<u>light</u>	<u>None</u>
<u>10:56</u>	<u>10.00</u>	<u>7.42</u>	<u>910</u>	<u>73.8</u>	<u>Clear</u>	<u>Trace</u>	<u>None</u>
<u>11:00</u>	<u>15.00</u>	<u>7.32</u>	<u>920</u>	<u>73.4</u>	<u>Clear</u>	<u>Trace</u>	<u>None</u>

Pumped dry Yes / No _____
 FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:
 DTW: _____ TOB/TOC _____

PURGING EQUIPMENT/I.D. # SAMPLING EQUIPMENT/I.D. #
 Bailor: _____ Airlift Pump: _____ Bailor: G-2
 Centrifugal Pump: _____ Dedicated: _____ Dedicated: _____
 Other: _____ Other: _____

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-3</u>	<u>5/31/95</u>	<u>11:05</u>	<u>3</u>	<u>40ML</u>	<u>VOA</u>	<u>HCL</u>	<u>TPH₉/BTEX</u>

REMARKS: _____

SIGNATURE: Walter J. Peck



WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-107 LOCATION: 15135 HESPERIAN RD WELL ID #: MW-4

CLIENT/STATION No.: ARLW/02162 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: TOB TOC
 Depth to water: 8.68 TOB 8.41 TOC
 Total depth: TOB 17.53 TOC
 Date: 5/31/95 Time (2400): 8:50

Probe Type Oil/Water interface
 and Electronic indicator
 I.D. # Other;

CASING
DIAMETER

2 0.17
 3 0.38
 4 0.66
 4.5 0.83
 5 1.02
 6 1.5
 8 2.6

GAL/
LINEAR FT.

Groundwater
 Duplicate
 Extraction well
 Trip blank
 Field blank
 Equipment blank
 Other;

TD 17.53 DTW 8.41 = 9.12 x Gal/Linear Foot 0.66 = 6.01 x Number of Casings 3 = Calculated Purge 18.05

DATE PURGED: 5/31/95 START: 10:23 END (2400 hr): 10:32 PURGED BY: W Peck
 DATE SAMPLED: 5/31/95 START: 10:32 END (2400 hr): 10:35 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>10:25</u>	<u>6.00</u>	<u>7.59</u>	<u>850</u>	<u>77.3</u>	<u>Brown</u>	<u>Mod</u>	<u>None</u>
<u>10:28</u>	<u>12.00</u>	<u>7.40</u>	<u>840</u>	<u>73.4</u>	<u>Cloudy</u>	<u>light</u>	<u>None</u>
<u>10:32</u>	<u>18.00</u>	<u>7.39</u>	<u>830</u>	<u>73.0</u>	<u>Clear</u>	<u>Trace</u>	<u>None</u>

Pumped dry Yes No

Cobalt 0-100
 Clear
 Cloudy
 Yellow
 Brown

NTU 0-200
 Heavy
 Moderate
 Light
 Trace

Strong
 Moderate
 Faint
 None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: TOB/TOC

PURGING EQUIPMENT/I.D. #

Bailer; Airlift Pump;
 Centrifugal Pump; Dedicated;
 Other;

SAMPLING EQUIPMENT/I.D. #

Bailer; G-4
 Dedicated;
 Other;

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-4</u>	<u>5/31/95</u>	<u>10:35</u>	<u>3</u>	<u>40ml</u>	<u>VOA</u>	<u>HCL</u>	<u>TPH_g/BTEX</u>

REMARKS:

SIGNATURE: Walter J. Peck



PACIFIC ENVIRONMENTAL GROUP, INC.

WATER SAMPLE FIELD DATA SHEET

FIELD DATA SHEET

PROJECT No.: 330 107 2G LOCATION: 15135 Hesperian Blvd WELL ID #: TB-1
San Leandro

CLIENT/STATION No.: _____ FIELD TECHNICIAN: _____

WELL INFORMATION

Depth to Liquid: / TOB / TOC
 Depth to water: / TOB / TOC
 Total depth: / TOB / TOC
 Date: _____ Time (2400): _____

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 _____ DTW _____ = $\frac{\text{Gal/Linear}}{\text{Foot}}$ x _____ = $\frac{\text{Number of}}{\text{Casings}}$ x _____ = Calculated Purge _____

DATE PURGED: _____ START: _____ END (2400 hr): _____ PURGED BY: _____
 DATE SAMPLED: _____ START: _____ END (2400 hr): _____ SAMPLED BY: _____

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR

Pumped dry Yes / No

Cobalt 0-100
 Clear
 Cloudy
 Yellow
 Brown
 NTU 0-200
 Heavy
 Moderate
 Light
 Trace
 Strong
 Moderate
 Faint
 None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: _____ TOB/TOC _____

PURGING EQUIPMENT/I.D. #

Bailer: _____
 Centrifugal Pump: _____
 Other: _____
 Airlift Pump: _____
 Dedicated: _____

SAMPLING EQUIPMENT/I.D. #

Bailer: _____
 Dedicated: _____
 Other: _____

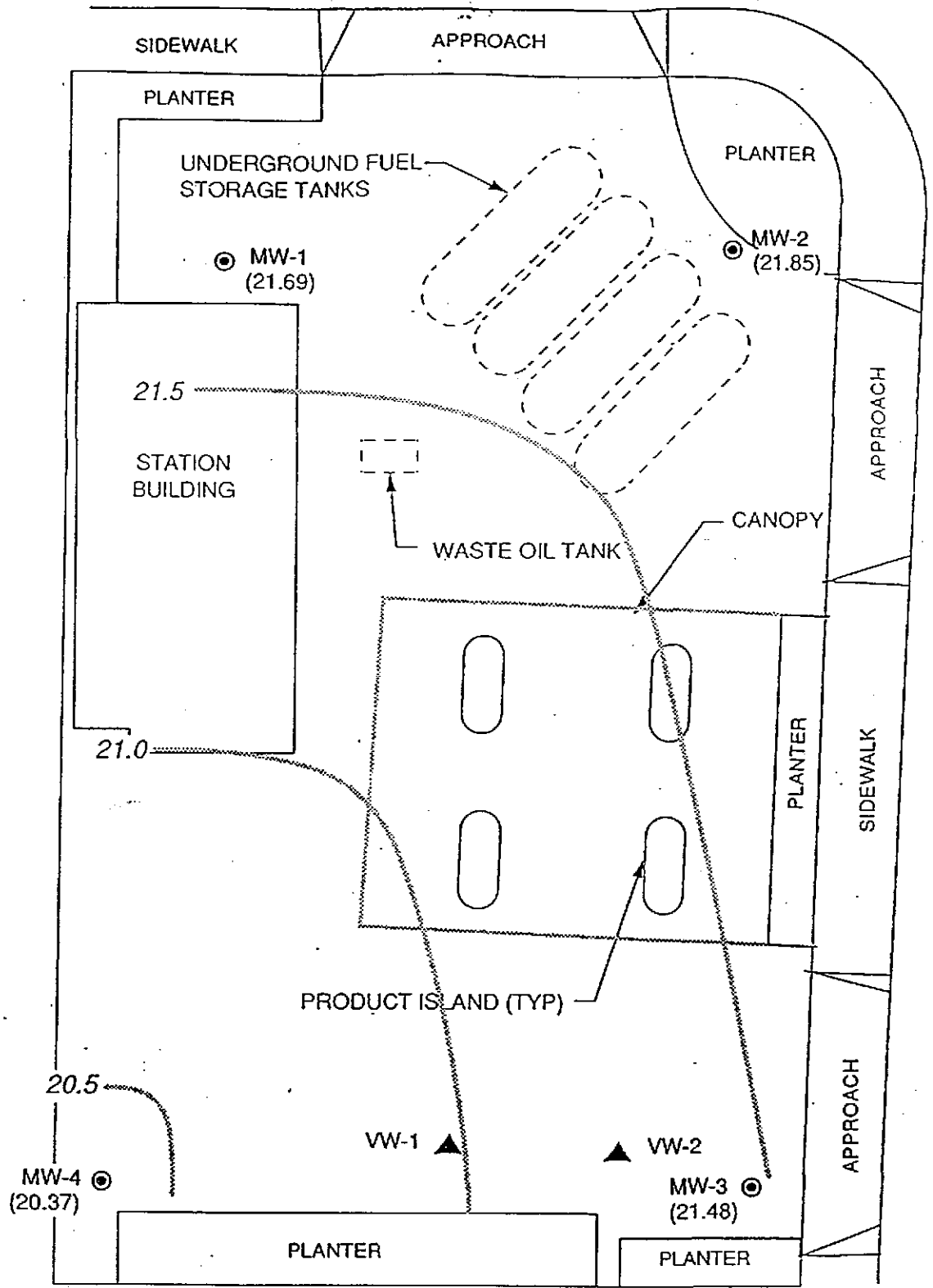
SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
TB-1	5/31/95	NA	2	40ml	VOR	HCL	Gas/PTex

REMARKS: TRIP BLANK

SIGNATURE: Walter P...



RUTH COURT

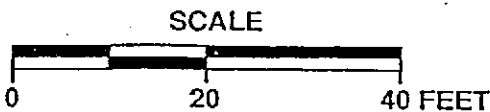


SOURCE: MAP BY RESNA

15135



PACIFIC ENVIRONMENTAL GROUP, INC.



ATTACHMENT B
FIELD AND LABORATORY PROCEDURES

ATTACHMENT B

FIELD AND LABORATORY PROCEDURES

Sampling Procedures

The sampling procedure for each well consists of first measuring the water level and 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.

Laboratory Procedures

The groundwater samples were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, and xylenes. The analyses were performed according to EPA Methods 8015 (modified), 8020, and 5030 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 A.