



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

ENVIRONMENTAL  
GROUP, INC.  
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May 12, 1995  
Project 330-048.2B

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

Re: Quarterly Report - First Quarter 1995  
ARCO Service Station 2152  
22141 Center Street at Grove Way  
Castro Valley, California

Dear Mr. Whelan:

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

#### **QUARTERLY GROUNDWATER MONITORING RESULTS**

Groundwater samples were collected by PACIFIC on February 27, 1995, and analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). As discussed below, Well MW-2 was also resampled on March 23, 1994 and analyzed for TPH-g and BTEX compounds. The certified analytical reports, 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 February 27, 1995 indicated that groundwater elevations in site monitoring wells have risen approximately 1.89 feet since November 22, 1994. Groundwater flow is toward the southwest with a gradient of approximately 0.006. Groundwater elevation data are presented in Table 1. A groundwater elevation contour map based on the data of February 27, 1995 is shown on Figure 1.

TPH-g and benzene were not detected in Wells MW-1, MW-3, and MW-4 during the groundwater sampling event of February 27, 1995. This is consistent with previous quarterly data. Well MW-2 was found to contain 210 parts per billion (ppb) TPH-g and

4.0 ppb benzene on February 27, 1995. Because, no hydrocarbons have been detected in site groundwater since July 1991, Well MW-2 was resampled on March 23, 1995. Results of the March 23, 1995 resample, indicated that TPH-g and BTEX compounds were not detected in Well MW-2. TPH-g and benzene values noted in Well MW-2 during the February 1995 sampling event appear to have been the result of sampling or laboratory error and are anomalous. 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 Completed First Quarter 1995**

- Pursued site closure with Alameda County Health Care Services Agency (ACHCSA).
- Prepared and submitted fourth quarter 1994 groundwater monitoring report.
- Sampled site wells for first quarter 1995 groundwater monitoring program. Sampling was performed by PACIFIC.
- Resampled Well MW-2 due to anomalous laboratory results.
- Prepared and submitted a soil boring work plan to ACHCSA.

### **Work Anticipated Second Quarter 1995**

- Preparation of a work plan radification letter proposing a angle soil boring.
- Prepare and submit first quarter 1995 groundwater monitoring report.
- Sample site wells for second quarter 1995 groundwater monitoring program. Sampling to be performed by PACIFIC.
- Prepare second quarter 1995 groundwater monitoring report.
- Drill one angle soil boring and one vertical soil boring adjacent to the former product recovery sump.
- Soil boring report preparation.
- Continue to pursue site closure with ACHCSA.

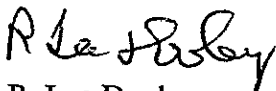
If there are any questions regarding the contents of this letter, please call.

Sincerely,

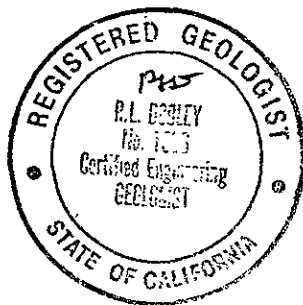
Pacific Environmental Group, Inc.



Edward Buskirk  
Project Scientist



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 Reports, Chain-of-Custody Documentation, and Field Data Sheets
  - Attachment B - Field and Laboratory Procedures

cc: Mr. Scott Seery, Alameda County Health Care Services Agency  
Mr. Kevin Graves, Regional Water Quality Control Board - S.F. Bay Region

Table 1  
Groundwater Elevation Data

ARCO Service Station 2152  
22141 Center Street at Grove Way  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	06/25/90	217.16	49.80	167.36
	09/07/90		50.00	167.16
	09/26/90		50.09	167.07
	12/14/90		50.44	166.72
	01/08/91		50.45	166.71
	02/21/91		50.51	166.65
	03/19/91		50.16	167.00
	04/02/91		50.14	167.02
	05/02/91		49.77	167.39
	06/18/91		49.75	167.41
	07/08/91		49.80	167.36
	08/22/91		50.08	167.08
	09/18/91		50.11	167.05
	10/15/91		50.30	166.86
	11/13/91		50.30	166.86
	12/27/91		50.28	166.88
	01/18/92		50.39	166.77
	02/20/92		50.16	167.00
	03/13/92		49.75	167.41
	04/24/92		49.18	167.98
	05/15/92		49.22	167.94
	06/08/92		49.30	167.86
	07/25/92		49.42	167.74
	08/23/92		49.52	167.64
	09/04/92		49.71	167.45
	10/19/02		49.98	167.18
	11/23/92		50.10	167.06
	12/18/92		50.29	166.87
	01/14/93		49.81	167.35
	02/24/93		48.71	168.45
	03/30/93		48.02	169.14
	04/09/93		47.81	169.35
	07/30/93		47.61	169.55
10/29/93	48.00	169.16		
03/04/94	48.34	168.82		
05/17/94	47.51	169.65		
08/25/94	47.86	169.30		
11/22/94	48.36	168.80		
02/27/95	46.42	170.74		
MW-2	06/25/90	216.50	49.04	167.46
	09/07/90		49.22	167.28
	09/26/90		49.32	167.18
	12/14/90		49.66	166.84
	01/08/91		49.72	166.78
	02/21/91		49.77	166.73
	03/19/91		49.44	167.06
	04/02/91		49.43	167.07
	05/02/91		49.03	167.47
	06/18/91		48.98	167.52
	07/08/91		49.03	167.47
	08/22/91		49.30	167.20
	09/18/91		49.34	167.16
	10/15/91		49.51	166.99
	11/13/91		49.53	166.97
	12/27/91		49.49	167.01
	01/18/92		49.60	166.90
	02/20/92		49.39	167.11
	03/13/92		48.97	167.53
	04/24/92		48.47	168.03
05/15/92	48.47	168.03		

Table 1 (continued)  
Groundwater Elevation Data

ARCO Service Station 2152  
22141 Center Street at Grove Way  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	
MW-2 (cont.)	06/08/92		48.50	168.00	
	07/25/92		48.52	167.98	
	08/23/92		44.95	171.55	
	09/04/92		48.95	167.55	
	10/19/02		49.20	167.30	
	11/23/92		49.35	167.15	
	12/18/92		49.57	166.93	
	01/14/93		49.10	167.40	
	02/24/93		47.86	168.64	
	03/30/93		47.17	169.33	
	04/09/93		47.02	169.48	
	07/30/93		46.80	169.70	
	10/29/93		47.20	169.30	
	03/04/94		47.48	169.02	
	05/17/94		46.68	169.82	
	08/25/94		47.04	169.46	
	11/22/94		47.53	168.97	
02/27/95		45.55	170.95		
MW-3	06/25/90	217.57	50.55	167.02	
	09/07/90		50.73	166.84	
	09/26/90		50.81	166.76	
	12/14/90		51.15	166.42	
	01/08/91		51.16	166.41	
	02/21/91		51.21	166.36	
	03/19/91		50.93	166.64	
	04/02/91		50.92	166.65	
	05/02/91		50.51	167.06	
	06/18/91		50.47	167.10	
	07/08/91		50.54	167.03	
	08/22/91		50.80	166.77	
	09/18/91		50.82	166.75	
	10/15/91		51.02	166.55	
	11/13/91		51.03	166.54	
	12/27/91		51.01	166.56	
	01/18/92		51.15	166.42	
	02/20/92		50.84	166.73	
	03/13/92		50.39	167.18	
	04/24/92		49.82	167.75	
	05/15/92		49.90	167.67	
	07/25/92		50.14	167.43	
	08/23/92		50.12	167.45	
	09/04/92		50.38	167.19	
	10/19/02		50.71	166.86	
	11/23/92		50.81	166.76	
	12/18/92		50.50	167.07	
	01/14/93		Well Inaccessible		
	02/24/93		Well Inaccessible		
	03/30/93			48.82	168.75
	04/09/93			48.71	168.86
	07/30/93			48.33	169.24
	10/29/93			48.64	168.93
03/04/94			49.15	168.42	
05/17/94			48.33	169.24	
08/25/94			48.66	168.91	
11/22/94			49.15	168.42	
02/27/95			47.38	170.19	
MW-4	06/25/90	215.18	48.06	167.12	
	09/07/90		48.25	166.93	
	09/26/90		48.35	166.83	

Table 1 (continued)  
Groundwater Elevation Data

ARCO Service Station 2152  
22141 Center Street at Grove Way  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-4 (cont.)	12/14/90		48.68	166.50
	01/08/91		48.70	166.48
	02/21/91		48.76	166.42
	03/19/91		48.44	166.74
	04/02/91		48.43	166.75
	05/02/91		48.04	167.14
	06/18/91		48.00	167.18
	07/08/91		48.04	167.14
	08/22/91		48.34	166.84
	09/18/91		48.35	166.83
	10/15/91		48.54	166.64
	11/13/91		48.56	166.62
	12/27/91		48.52	166.66
	01/18/92		48.68	166.50
	02/20/92		48.37	166.81
	03/13/92		47.96	167.22
	04/24/92		47.41	167.77
	05/15/92		47.46	167.72
	06/08/92		47.52	167.66
	07/25/92		47.67	167.51
	08/23/92		47.78	167.40
	09/04/92		47.78	167.40
	10/19/02		48.22	166.96
	11/23/92		48.34	166.84
	12/18/92		48.50	166.68
	01/14/93		48.03	167.15
	02/24/93		46.95	168.23
	03/30/93		46.25	168.93
	04/09/93		46.18	169.00
	07/30/93		45.96	169.22
10/29/93		46.12	169.06	
03/04/94		46.60	168.58	
05/17/94		45.78	169.40	
08/25/94		46.11	169.07	
11/22/94		46.60	168.58	
02/27/95		44.73	170.45	
VW-2	02/24/93	216.38	38.28	178.10
	03/30/93		38.32	178.06
	04/09/93		38.33	178.05
	07/30/93		38.36	178.02
	10/29/93		Well Dry	
	03/04/94		38.34	178.04
	05/17/94		NM	NM
	08/25/94		NM	NM
	11/22/94		NM	NM
	02/27/95		NM	NM
VW-3	02/24/93	NM	NM	NM
	03/30/93		38.27	NM
	04/09/93		Well Inaccessible	
	07/30/93		Well Dry	
	10/29/93		Well Dry	
	03/04/94		38.27	NM
	05/17/94		NM	NM
	08/25/94		NM	NM
	11/22/94		NM	NM
	02/27/95		NM	NM
VW-4	02/24/93	NM	NM	NM
	03/30/93		Well Dry	

Table 1 (continued)  
Groundwater Elevation Data

ARCO Service Station 2152  
22141 Center Street at Grove Way  
Castro Valley, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
VW-4 (cont.)	04/09/93	-----	Well Dry	-----
	07/30/93	-----	Well Dry	-----
	10/29/93	-----	Well Dry	-----
	03/04/94	-----	Well Dry	-----
	05/17/94		NM	NM
	08/25/94		NM	NM
	11/22/94		NM	NM
	02/27/95		NM	NM
VW-5	02/24/93	NM	35.22	NM
	03/30/93	-----	Well Dry	-----
	04/09/93	-----	Well Inaccessible	-----
	07/30/93	-----	Well Dry	-----
	10/29/93	-----	Well Inaccessible	-----
	03/04/94	-----	Well Dry	-----
	05/17/94		NM	NM
	08/25/94		NM	NM
	11/22/94		NM	NM
	02/27/95		NM	NM
MSL = Mean sea level				
TOC = Top of casing				
NM = Not measured				

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

ARCO Service Station 2152  
 22141 Center Street at Grove Way  
 Castro Valley, California

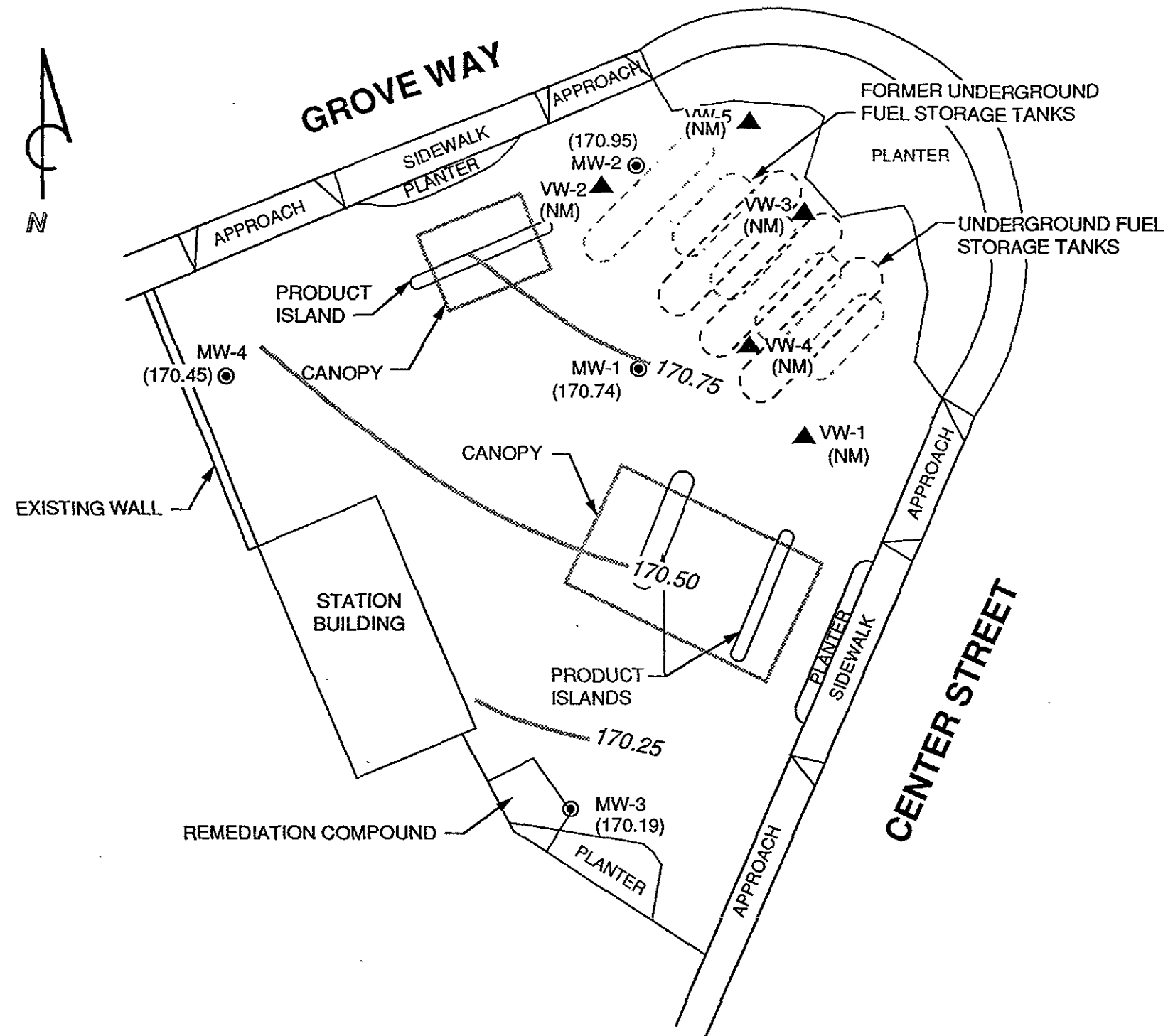
Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-1	06/26/90	64	0.63	<0.50	<0.50	<0.50
	09/26/90	<50	<0.50	<0.50	<0.50	<0.50
	01/08/91	<50	<0.50	<0.50	<0.50	<0.50
	04/02/91	<50	<0.05	<0.50	<0.05	<0.05
	07/08/91	120	2.3	4.6	1.3	9.6
	10/15/91	<30	<0.30	<0.30	<0.30	<0.30
	03/13/92	<30	<0.30	<0.30	<0.30	<0.30
	06/08/92	<30	<0.30	<0.30	<0.30	<0.30
	09/04/92	<50	<0.5	<0.5	<0.5	<0.5
	10/19/92	<50	<0.5	<0.5	<0.5	<0.5
	01/14/93	<50	<0.50	<0.50	<0.50	<0.50
	04/09/93	<50	<0.5	<0.5	<0.5	<0.5
	07/30/93	<50	<0.50	<0.50	<0.50	<0.50
	10/29/93	<50	<0.50	<0.50	<0.50	<0.50
	03/04/94	<50	<0.5	<0.5	<0.5	<0.5
	05/17/94	<50	<0.5	<0.5	<0.5	<0.5
08/25/94	<50	<0.5	<0.5	<0.5	<0.5	
11/22/94	<50	<0.5	<0.5	<0.5	<0.5	
02/27/95	<50	<0.50	<0.50	<0.50	<0.50	
MW-2	06/26/90	27	<0.50	<0.50	<0.50	<0.50
	09/26/90	<50	<0.50	<0.50	<0.50	<0.50
	01/08/91	<50	<0.50	<0.50	<0.50	<0.50
	04/02/91	<50	<0.05	<0.05	<0.05	<0.05
	07/08/91	30	0.42	0.47	<0.30	0.89
	10/15/91	<30	<0.30	<0.30	<0.30	<0.30
	03/13/92	<30	<0.30	<0.30	<0.30	<0.30
	06/08/92	<30	<0.30	<0.30	<0.30	<0.30
	09/04/92	<50	<0.5	<0.5	<0.5	<0.5
	10/19/92	<50	<0.5	<0.5	<0.5	<0.5
	01/14/93	<50	<0.50	<0.50	<0.50	<0.50
	04/09/93	<50	<0.5	<0.5	<0.5	<0.5
	07/30/93	<50	<0.50	<0.50	<0.50	<0.50
	10/29/93	<50	<0.50	<0.50	<0.50	<0.50
	03/04/94	<50	<0.5	<0.5	<0.5	<0.5
	05/17/94	<50	<0.5	<0.5	<0.5	<0.5
08/25/94	<50	<0.5	<0.5	<0.5	<0.5	
11/22/94	<50	<0.5	<0.5	<0.5	<0.5	
02/27/95	210	4.0	0.72	<0.50	1.2	
03/23/95	<50	<0.50	<0.50	<0.50	<0.50	
MW-3	06/26/90	52	0.65	1.5	<0.50	2
	09/26/90	<50	<0.50	<0.50	<0.50	<0.50
	01/08/91	<50	<0.50	<0.50	<0.50	<0.50
	04/02/91	<50	<0.50	<0.50	<0.50	<0.50
	07/08/91	67	0.69	1.5	0.65	4.7
	10/15/91	<30	<0.30	<0.30	<0.30	<0.30
	03/13/92	<30	<0.30	<0.30	<0.30	<0.30
	06/08/92	<30	<0.30	<0.30	<0.30	<0.30
	09/04/92	<50	<0.5	<0.5	<0.5	<0.5
	10/19/92	<50	<0.5	<0.5	<0.5	<0.5
	01/14/93	NS	NS	NS	NS	NS
	04/09/93	<50	<0.5	<0.5	<0.5	<0.5
	07/30/93	<50	<0.50	<0.50	<0.50	<0.50
10/29/93	<50	<0.50	<0.50	<0.50	<0.50	



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

ARCO Service Station 2152  
 22141 Center Street at Grove Way  
 Castro Valley, California

Well Number	Date Sampled	TPH as			Ethyl- benzene (ppb)	Xylenes (ppb)
		Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)		
MW-3 (cont.)	03/04/94	<50	<0.5	<0.5	<0.5	<0.5
	05/17/94	<50	<0.5	<0.5	<0.5	<0.5
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5
	11/22/94	<50	<0.5	<0.5	<0.5	<0.5
	02/27/95	<50	<0.50	<0.50	<0.50	<0.50
MW-4	06/26/90	<20	<0.50	<0.50	<0.50	<0.50
	09/26/90	<50	<0.50	<0.50	<0.50	<0.50
	01/08/91	<50	<0.50	<0.50	<0.50	<0.50
	04/02/91	<50	<0.05	<0.05	<0.05	<0.05
	07/08/91	50	1.4	2.4	0.62	4.2
	10/15/91	<30	<0.30	<0.30	<0.30	<0.30
	03/13/92	<30	<0.30	<0.30	<0.30	<0.30
	06/08/92	<30	<0.30	<0.30	<0.30	<0.30
	09/04/92	<50	<0.5	<0.5	<0.5	<0.5
	10/19/92	<50	<0.5	<0.5	<0.5	<0.5
	01/14/93	<50	<0.50	<0.50	<0.50	<0.50
	04/09/93	<50	<0.05	<0.5	<0.5	<0.5
	07/30/93	<50	<0.50	<0.50	<0.50	<0.50
	10/29/93	<50	<0.50	<0.50	<0.50	<0.50
	03/04/94	<50	<0.05	<0.5	<0.5	<0.5
	05/17/94	<50	<0.5	<0.5	<0.5	<0.5
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5
11/22/94	<50	<0.5	<0.5	<0.5	<0.5	
02/27/95	<50	<0.50	<0.50	<0.50	<0.50	
ppb = Parts per billion						
NS = Not sampled						



**LEGEND**

MW-4 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

(170.75) GROUNDWATER ELEVATION IN FEET - MSL, 2-27-95

170.50 — GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 2-27-95

(NM) WELL NOT MEASURED



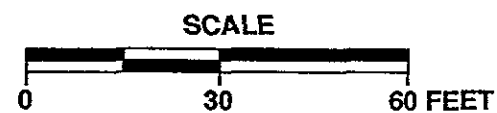
APPROXIMATE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.006

Reference: Basemap taken from RESNA



PACIFIC ENVIRONMENTAL GROUP, INC.

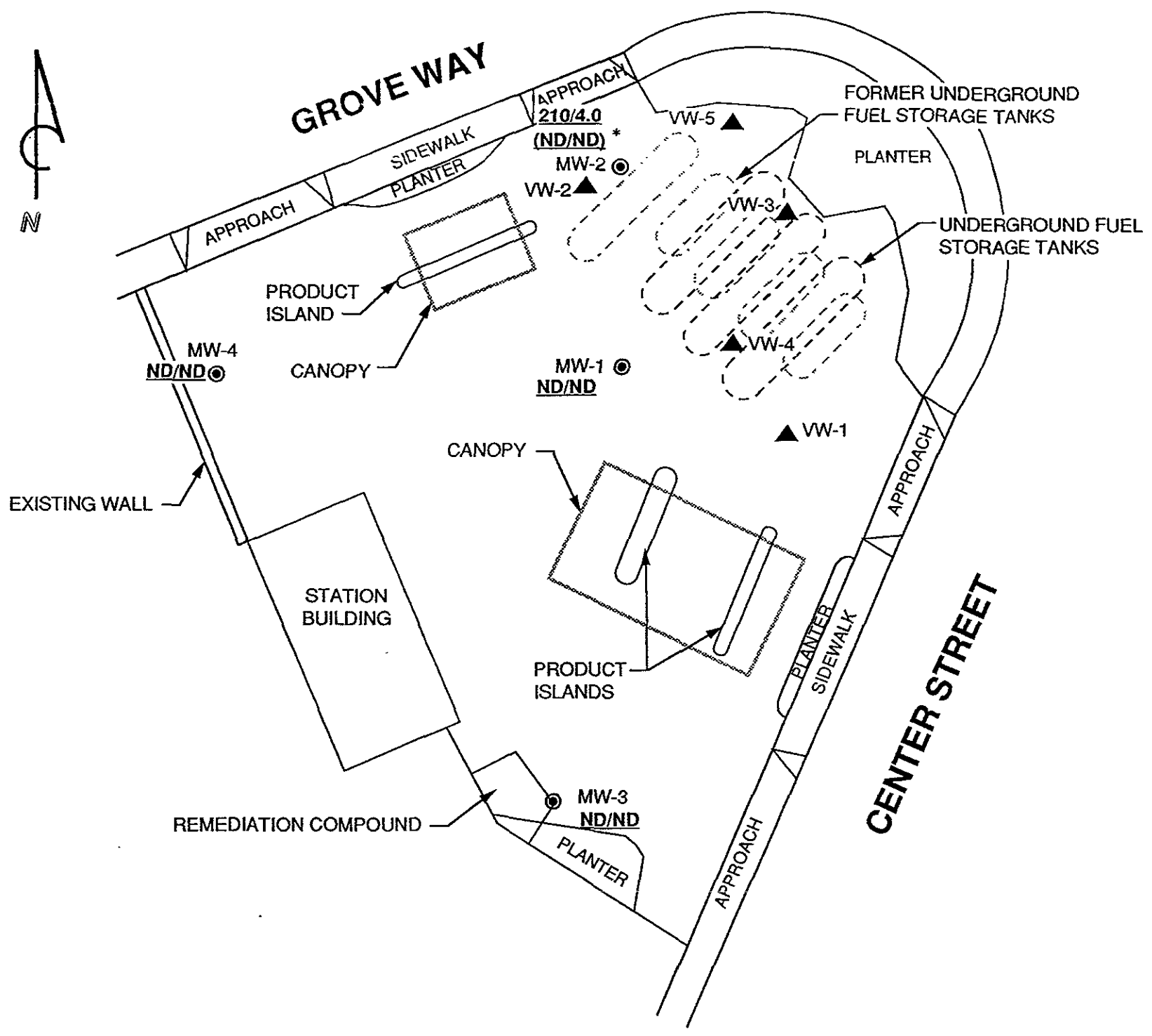


ARCO SERVICE STATION 2152  
22141 Center Street at Grove Way  
Castro Valley, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1

PROJECT: 330-048.2B



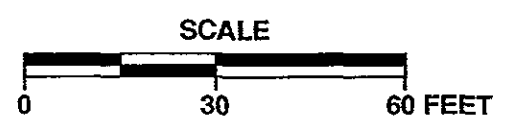
**LEGEND**

- MW-4 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- 210/4.0 TPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 2-27-95 (\* MW-2 RESAMPLED 3-23-95)
- ND NOT DETECTED



APPROXIMATE DIRECTION OF GROUNDWATER FLOW

Reference: Basemap taken from RESNA



**ARCO SERVICE STATION 2152**  
 22141 Center Street at Grove Way  
 Castro Valley, California

TPH-g/BENZENE CONCENTRATION MAP

FIGURE:  
**2**  
 PROJECT:  
 330-048.2B

**ATTACHMENT A**

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



# Sequoia Analytical

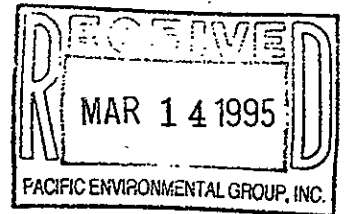
680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

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



Project: 330-048.2G/2152, Alameda

Enclosed are the results from samples received at Sequoia Analytical on February 28, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9502H7801	LIQUID, MW-1	2/27/95	TPHGB Purgeable TPH/BTEX
9502H7802	LIQUID, MW-2	2/27/95	TPHGB Purgeable TPH/BTEX
9502H7803	LIQUID, MW-3	2/27/95	TPHGB Purgeable TPH/BTEX
9502H7804	LIQUID, MW-4	2/27/95	TPHGB Purgeable TPH/BTEX
9502H7805	LIQUID, TB-1	2/27/95	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

  
Cynthia Corbin  
Quality Assurance Department



Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110  Attention: Maree Doden	Client Proj. ID: 330-048.2G/2152, Alameda	Sampled: 02/27/95
	Sample Descript: MW-1	Received: 02/28/95
	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/04/95
	Lab Number: 9502H78-01	Reported: 03/13/95

QC Batch Number: GC030495BTEX07A  
Instrument ID: GCHP07

**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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	86

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager



Table with 3 columns: Client/Address info, Client Proj. ID, Sample Description, Matrix, Analysis Method, Lab Number, and Sampling/Reporting dates.

QC Batch Number: GC030495BTEX07A
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Main data table with columns: Analyte, Detection Limit (ug/L), Sample Results (ug/L), and Surrogates/Control Limits/Recovery.

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: 330-048.2G/2152, Alameda Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9502H78-03	Sampled: 02/27/95 Received: 02/28/95 Analyzed: 03/04/95 Reported: 03/13/95
Attention: Maree Doden		

QC Batch Number: GC030495BTEX07A  
Instrument ID: GCHP07

**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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	94

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: 330-048.2G/2152, Alameda Sample Descript: MW-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9502H78-04	Sampled: 02/27/95 Received: 02/28/95 Analyzed: 03/04/95 Reported: 03/13/95
Attention: Maree Doden		

QC Batch Number: GC030495BTEX07A  
Instrument ID: GCHP07

**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	91

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: 330-048.2G/2152, Alameda Sample Descript: TB-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9502H78-05	Sampled: 02/27/95 Received: 02/28/95 Analyzed: 03/04/95 Reported: 03/13/95
Attention: Maree Doden		

QC Batch Number: GC030495BTEX07A  
Instrument ID: GCHP07

**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	84

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

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

Client Project ID: 330-048.2G/2152, Alameda  
Matrix: LIQUID

Work Order #: 9502H78 01-05

Reported: Mar 13, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC030495BTEX07A	GC030495BTEX07A	GC030495BTEX07A	GC030495BTEX07A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	A. Maralit	A. Maralit	A. Maralit	A. Maralit
MS/MSD #:	9502G2706	9502G2706	9502G2706	9502G2706
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/4/95	3/4/95	3/4/95	3/4/95
Analyzed Date:	3/4/95	3/4/95	3/4/95	3/4/95
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	30
MS % Recovery:	100	100	100	100
Dup. Result:	10	10	10	31
MSD % Recov.:	100	100	100	103
RPD:	0.0	0.0	0.0	0.0
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

9502H78.PPP <1>



**ARCO Products Company**  
Division of AtlanticRichfield Company

330504876 Task Order No. 17076 00

**Chain of Custody**

ARCO Facility no. 2152 City (Facility) 22141 CENTER ST. ALAMOGADO  
 ARCO engineer M. W. HELAN Telephone no. (ARCO) Telephone no. (Consultant) (408) 441 7500 Fax no. (Consultant) (408) 441 7539  
 Consultant name PACIFIC ENVIRONMENTAL GROUP Address (Consultant) 2075 GATEWAY PLACE #440 SAN JOSE CA.

Laboratory name AEDVIA  
 Contract number 07-073

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 802	TPH EPA 801	Oil and Grease EPA 801	EPA 624	EPA 625	TCUP Metals	Semi VOC	CAM Metals	Lead Org./DHS	Lead EPA
			Soil	Water	Other	Ice	Acid												
MW1		3	X			X	02-27-95	10:45	X										
MW2		1																	
MW3		1																	
MW4		1																	
TBI		2	X			X		NA	X										

Method of shipment  
 COURIER

Special detection Limit/reporting  
 -01  
 -02  
 -03  
 -04

Special QA/QC  
 -05

Remarks

Lab number  
 9502478

Turnaround time  
 Priority Rush 1 Business Day   
 Rush 2 Business Days   
 Expedited 5 Business Days   
 Standard 10 Business Days

Condition of sample: *Good* Temperature received:  
 Relinquished by sampler *[Signature]* Date 02-27-95 Time 16:00 Received by *M. Dodder* 2/27/95 16:00  
 Relinquished by *M. Dodder* Date 2/28/95 Time 10:05 Received by *[Signature]*  
 Relinquished by *[Signature]* Date 2/28/95 Time 11:25 Received by laboratory *[Signature]* Date 2/28/95 Time 14:27



**Sequoia  
Analytical**

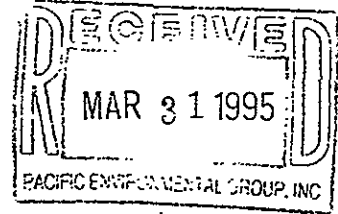
680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8

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: 330-048.2G/2152, CastroValley

Enclosed are the results from samples received at Sequoia Analytical on March 24, 1995.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9503173 -01	LIQUID, MW-2	03/23/95	TPHGBW Purgeable TPH/BTEX
9503173 -02	LIQUID, TB-1	03/23/95	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**

Eileen Manning  
Project Manager

Quality Assurance Department



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

Client Proj. ID: 330-048.2G/2152, CastroValley  
Sample Descript: MW-2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9503173-01

Sampled: 03/23/95  
Received: 03/24/95  
Analyzed: 03/27/95  
Reported: 03/30/95

Attention: Maree Doden

QC Batch Number: GC032795BTEX02A  
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	87

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: 330-048.2G/2152, CastroValley Sample Descript: TB-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9503173-02	Sampled: 03/23/95 Received: 03/24/95 Analyzed: 03/27/95 Reported: 03/30/95
Attention: Maree Doden		

QC Batch Number: GC032795BTEX02A  
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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	93

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      Client Project ID: 330-048.2G/2152, Castro Valley  
2025 Gateway Place, Suite 440      Matrix: LIQUID  
San Jose, CA 95110  
Attention: Maree Doden      Work Order #: 9503173 -01, 02      Reported: Mar 30, 1995

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC032795BTEX02A	GC032795BTEX02A	GC032795BTEX02A	GC032795BTEX02A
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 #:	9503E0203	9503E0203	9503E0203	9503E0203
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/27/95	3/27/95	3/27/95	3/27/95
Analyzed Date:	3/27/95	3/27/95	3/27/95	3/27/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	31
MS % Recovery:	100	100	100	103
Dup. Result:	10	10	10	31
MSD % Recov.:	100	100	100	103
RPD:	0.0	0.0	0.0	0.0
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
---------------------------	--------	--------	--------	--------

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.

*[Signature]*  
**SEQUOIA ANALYTICAL**

Eileen A. Manning  
Project Manager

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG  
 REC. BY (PRINT): CA

WORKORDER: 9503173  
 DATE OF LOG-IN: 3-24-95

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1. Custody Seal(s)	Present / <input checked="" type="radio"/> Absent Intact / Broken*	01		VVV-2	3VOAS	LQ	3/25	
2. Custody Seal Nos.:	Put in Remarks Section	02		TB-1	2VOAS	↓	↓	
3. Chain-of-Custody Records:	<input checked="" type="radio"/> Present / Absent*			EB-1	3VOAS	↓	↓	Hold
4. Traffic Reports or Packing List:	Present / <input checked="" type="radio"/> Absent			DI-	3VOAS	↓	↓	Hold
5. Airbill:	Airbill / Sticker Present / <input checked="" type="radio"/> Absent							
6. Airbill No.:								
7. Sample Tags:	<input checked="" type="radio"/> Present / Absent*							
Sample Tag Nos.:	<input checked="" type="radio"/> Listed / Not Listed on Chain-of-Custody							
8. Sample Condition:	<input checked="" type="radio"/> Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<input checked="" type="radio"/> Yes / No*							
10. Proper preservatives used:	<input checked="" type="radio"/> Yes / No*							
11. Date Rec. at Lab:	<u>3-24-95</u>							
12. Temp. Rec. at Lab:	<u>8°C</u>							
13. Time Rec. at Lab:	<u>1200</u>							

*Charles Allen*  
 3-24-95

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

ARCO Facility no. 02152 City (Facility) 22141 COASTER ST, SHERMAN, CA Project manager (Consultant) Kelly Brown  
 ARCO engineer Mike Whelan Telephone no. (ARCO) 415 441 7500 Fax no. (Consultant) 408 441 7539  
 Consultant name ARCO Environmental Group Address (Consultant) 2025 GARDENWAY, #142, SHERMAN, CA

Laboratory name  
 Contract number

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 8020	BTEX/TPH EPA 1602/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM503E	EPA 601/6010	EPA 624/6240	EPA 625/6270	TCMP Metals <input type="checkbox"/> VOA <input type="checkbox"/>	Semi Metals <input type="checkbox"/> VOA <input type="checkbox"/>	CMM Metals EPA 601/7000 ITLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org./DHS <input type="checkbox"/> Lead EPA 7420/7421 <input type="checkbox"/>	Method of shipment	
			Soil	Water	Other	Ice	Acid																
Mus 01	3			X		X	03-23-95	14:10		X													
TB-1	02	2																					
EB-1	03	3																					
DI	04	3																					

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks  
 Please  
 Pol EB-1  
 DI on  
 Model imple  
 notified.

Lab number  
 950513

Turnaround time  
 Priority Rush 1 Business Day   
 Rush 2 Business Days   
 Expedited 6 Business Days   
 Standard 10 Business Days

Condition of sample: [Signature] Temperature received:  
 Relinquished by sampler [Signature] Date 03-23-95 Time 15:45 Received by [Signature] 3/23/95  
 Relinquished by [Signature] Date 3/23/95 Time 10:15 Received by [Signature] 3/24/95  
 Relinquished by [Signature] Date 3/24/95 Time 12:00 Received by laboratory Date Time









FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 33001870 LOCATION: 2741 Center St WELL ID #: MW1

CLIENT/STATION No.: Arco/02152 FIELD TECHNICIAN: Redo Ruiz

WELL INFORMATION

Depth to Liquid:      TOB      TOC       
 Depth to water:      TOB 46.12 TOC       
 Total depth:      TOB 59.90 TOC       
 Date: 02-27-95 Time (2400): 16:20

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:     

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

TD 59.90 - DTW 16.12 = 13.48 Gal/Linear Foot 60 = 8.88 x Number of Casings 3 = Purge 26.69

DATE PURGED: 02-27-95 START: 10:25 END (2400 hr):      PURGED BY: PC  
 DATE SAMPLED: 02-27-95 START: 10:45 END (2400 hr):      SAMPLED BY: RE

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 2.5°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:35	8.75	6.85	1970	68.5	cloudy	Mod	Faint
10:40	16.5	6.70	2120	67.9	"	"	"
10:45	24.75	6.75	2180	67.9	clear	Mod	"

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

PURGING EQUIPMENT/I.D. #  
 Bailer:       
 Centrifugal Pump:       
 Other: GRONTOY

Airlift Pump:       
 Dedicated:     

SAMPLING EQUIPMENT/I.D. #  
 Bailer: 15-2  
 Dedicated:       
 Other:     

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW1	02-27-95	10:45	3	10ml	UBA	HCL	Gas/BTEX

REMARKS: Replace lock

*[Handwritten signature]*



**FIELD DATA SHEET**

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 33001876 LOCATION: 22141 Center St WELL ID #: MW2

CLIENT/STATION No.: Arco/02152 FIELD TECHNICIAN: Pedro Perez

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water:        TOB 45.55 TOC         
 Total depth:        TOB 59.95 TOC         
 Date: 02-27-95 Time (2400): 10:55

CASING DIAMETER	GAL/ LINEAR FT.
<input type="checkbox"/> 2	0.17
<input type="checkbox"/> 3	0.38
<input checked="" type="checkbox"/> 4	0.66
<input type="checkbox"/> 4.5	0.83
<input type="checkbox"/> 5	1.02
<input type="checkbox"/> 6	1.5
<input type="checkbox"/> 8	2.6

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

Probe Type and I.D. #

- Oil/Water interface
- Electronic indicator
- Other;

TD 59.95 - DTW 45.55 = 14.4 Gal/Linear Foot x 66 = 9.50 x Number of 3 Casings = Calculated Purge 28.51

DATE PURGED 02-27-95 START: 11:00 END (2400 hr):        PURGED BY: PE  
 DATE SAMPLED 02-27-95 START: 11:20 END (2400 hr):        SAMPLED BY: PE

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>11:05</u>	<u>9.5</u>	<u>6.90</u>	<u>1910</u>	<u>68.0</u>	<u>Clear</u>	<u>75.2</u>	<u>Faint</u>
<u>11:10</u>	<u>19</u>	<u>6.85</u>	<u>1840</u>	<u>68.4</u>	<u>cloudy</u>	<u>&gt;200</u>	<u>"</u>
<u>11:15</u>	<u>28.5</u>	<u>6.82</u>	<u>1910</u>	<u>67.4</u>	<u>"</u>	<u>"</u>	<u>"</u>

Pumped dry Yes / No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. #

- Bailer:
- Centrifugal Pump:
- Other: Gilson 704

SAMPLING EQUIPMENT/I.D. #

- Bailer: 4-11
- Dedicated:
- Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW2</u>	<u>02-27-95</u>	<u>11:20</u>	<u>3</u>	<u>40ml</u>	<u>UBA</u>	<u>HCL</u>	<u>Gas/BTEX</u>

REMARKS: Replace lock

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# FIELD DATA SHEET

## WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 33001876 LOCATION: 2741 Center St WELL ID #: UW 3

CLIENT/STATION No.: Arco/02152 FIELD TECHNICIAN: Pedro Ruiz

### WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water:        TOB 17.35 TOC 17.35  
 Total depth:        TOB 60.35 TOC 60.35  
 Date: 02-27-95 Time (2400): 12:00

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

CASING DIAMETER	GAL/ LINEAR FT.
<input type="checkbox"/> 2	0.17
<input type="checkbox"/> 3	0.38
<input checked="" type="checkbox"/> 4	0.66
<input type="checkbox"/> 4.5	0.83
<input type="checkbox"/> 5	1.02
<input type="checkbox"/> 6	1.5
<input type="checkbox"/> 8	2.6

### SAMPLE TYPE

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

TD 60.35 - DTW 17.35 = 17.97 x Gal/Linear Foot 0.66 = 8.56 x Number of Casings 3 = Calculated Purge 2568

DATE PURGED: 02-27-95 START: 12:05 END (2400 hr):        PURGED BY: PR  
 DATE SAMPLED: 02-27-95 START: 12:30 END (2400 hr):        SAMPLED BY: PR

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>12:10</u>	<u>8.5</u>	<u>6.90</u>	<u>2580</u>	<u>56.0</u>	<u>Cloudy</u>	<u>Mod</u>	<u>None</u>
<u>12:15</u>	<u>17</u>	<u>6.87</u>	<u>2560</u>	<u>65.8</u>	<u>Clear</u>	<u>LT/8.6</u>	<u>"</u>
<u>12:20</u>	<u>25.5</u>	<u>6.80</u>	<u>2560</u>	<u>65.4</u>	<u>"</u>	<u>4/19.1</u>	<u>"</u>

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

PURGING EQUIPMENT/I.D. # <input type="checkbox"/> Bailer: <u>      </u> <input checked="" type="checkbox"/> Centrifugal Pump: <u>      </u> <input checked="" type="checkbox"/> Other: <u>GreenFO3</u>	SAMPLING EQUIPMENT/I.D. # <input checked="" type="checkbox"/> Bailer: <u>23-3</u> <input type="checkbox"/> Dedicated: <u>      </u> <input type="checkbox"/> Other: <u>      </u>
---	--

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>UW3</u>	<u>02-27-95</u>	<u>12:30</u>	<u>3</u>	<u>10ml</u>	<u>UBA</u>	<u>HCL</u>	<u>Gas/BTEX</u>

REMARKS: Replace lock

*[Signature]*

# FIELD DATA SHEET

## WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 33001870 LOCATION: 2741 Center St WELL ID #: MW 1

CLIENT/STATION No.: Alco/02152 FIELD TECHNICIAN: PEPE ROJE

**WELL INFORMATION**

Depth to Liquid:      TOB      TOC       
 Depth to water:      TOB 44.73 TOC 60.75  
 Total depth:      TOB 60.75 TOC       
 Date: 07-27-95 Time (2400): 11:30

CASING DIAMETER	GAL/LINEAR FT.
<input type="checkbox"/> 2	0.17
<input type="checkbox"/> 3	0.38
<input checked="" type="checkbox"/> 4	0.66
<input type="checkbox"/> 4.5	0.83
<input type="checkbox"/> 5	1.02
<input type="checkbox"/> 6	1.5
<input type="checkbox"/> 8	2.6

- SAMPLE TYPE**
- Groundwater
  - Duplicate
  - Extraction well
  - Trip blank
  - Field blank
  - Equipment blank
  - Other: \_\_\_\_\_

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator  
 Other: \_\_\_\_\_

TD 60.75 DTW 44.73 = 15.5 x Foot 0.66 = 10.24 x Gal/Linear Casings 3 = Calculated = Purge 30.72

DATE PURGED: 07-27-95 START: 11:35 END (2400 hr):      PURGED BY: PE  
 DATE SAMPLED: 07-27-95 START: 11:55 END (2400 hr):      SAMPLED BY: PE

TIME (2400 hr)	VOLUME (gal.)	pH (units)	EC (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>11:40</u>	<u>10.25</u>	<u>6.90</u>	<u>1900</u>	<u>66.4</u>	<u>Clear</u>	<u>37.7</u>	<u>None</u>
<u>11:45</u>	<u>20.5</u>	<u>6.95</u>	<u>1920</u>	<u>67.2</u>	<u>"</u>	<u>36.8</u>	<u>"</u>
<u>11:50</u>	<u>30.75</u>	<u>6.93</u>	<u>1930</u>	<u>67.3</u>	<u>"</u>	<u>34.5</u>	<u>"</u>

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

**PURGING EQUIPMENT/I.D. #**  
 Bailer: \_\_\_\_\_  
 Centrifugal Pump: \_\_\_\_\_  
 Other: GRUNDFOS

**SAMPLING EQUIPMENT/I.D. #**  
 Bailer: 23-5  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW 1</u>	<u>07-27-95</u>	<u>11:55</u>	<u>3</u>	<u>40ml</u>	<u>UBA</u>	<u>HCL</u>	<u>GAZ/BTEX</u>

REMARKS: Replace loca

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FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 33001870 LOCATION: 2741 CENTER ST WELL ID #: T-B-1

CLIENT/STATION No.: ALCO/02152 FIELD TECHNICIAN: PEARL PEREZ

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        =        Gal/Linear x Foot =        Number of 3 Casings =        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       

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:         
 Dedicated:         
 Other:       

SAMPLE CTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>TB-1</u>	<u>02-27-95</u>	<u>NA</u>	<u>3</u>	<u>40ml</u>	<u>UBA</u>	<u>HCL</u>	<u>Gas/BTEX</u>

REMARKS:

ARCO Facility no. 2152 City (Facility) 22141 CENTER ST. ALAMEDA Project manager (Consultant) K. BROWN  
 ARCO engineer WHELAN Telephone no. (ARCO) \_\_\_\_\_ Telephone no. (Consultant) 408 4417500 Fax no. (Consultant) 408 4417539  
 Consultant name PACIFIC ENVIRONMENTAL GROUP Address (Consultant) 2075 GATEWAY PLACE #440 SAN BROS CA.

Laboratory name SEDOIA  
Contract number \_\_\_\_\_

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA 18602/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM503E	EPA 601/6010	EPA 624/8240	EPA 625/8270	TC/CP Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/>	Semi Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/>	CAN Metals EPA 6010/7000 TLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org./DHS <input type="checkbox"/> Lead EPA 7420/7421 <input type="checkbox"/>	
			Soil	Water	Other	Ice	Acid															
NW1		3		X		X	HCL	02-27-95	10:45		X											
NW2		1		↓		↓																
NW3		1		↓		↓																
NW4		1		↓		↓																
TBI		2		↓		↓			NA		↓											

Method of shipment \_\_\_\_\_

Special detection Limit/reporting \_\_\_\_\_

Special QA/QC \_\_\_\_\_

Remarks \_\_\_\_\_

Lab number \_\_\_\_\_

Turnaround time  
 Priority Rush 1 Business Day   
 Rush 2 Business Days   
 Expedited 5 Business Days   
 Standard 10 Business Days

Condition of sample: \_\_\_\_\_ Temperature received: \_\_\_\_\_  
 Relinquished by sampler [Signature] Date 02-27-95 Time 16:00 Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by \_\_\_\_\_  
 Relinquished by \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by laboratory \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

SITE INFORMATION FORM

Identification

Project # 330-048.2G  
 Station # 02152  
 Site Address: 72141 Center St.  
Paso Verde, CA  
 County: Alameda  
 Project Manager: Kelly Brown  
 Requestor: ARCO  
 Client: ARCO  
 Client P.O.C.: Mike Whelan  
 Date of request: 3/20/95

Project Type

- 1st Time visit
- Quarterly
  - 1st  2nd  3rd  4th
- Monthly
- Semi-Monthly
- Weekly
- One time event
- Other: \_\_\_\_\_

**FILE COPY**

Ideal field date(s): \_\_\_\_\_  
By 3/24

Prefield Contacts/Permits

	Initials	Date
<input type="checkbox"/> Cal Trans		
<input type="checkbox"/> County	<u>F/S</u>	<u>RY 3/24/95</u>
<input type="checkbox"/> City		
<input type="checkbox"/> Private	<u>Copy/Dist. R1</u>	<u>↓</u>
<input type="checkbox"/> Multi-Consultant Scheduling		

Check Appropriate Category

Budget Hrs. \_\_\_\_\_  
 Actual Hrs. 2  
 Mob de Mob 2

Field Tasks: For General Description

- Resample well MW 2 ⇒ Analyzed on One Week TAT
- Take extra caution for clean equipment. Well has been lid for several quarters
- Take Equipment blank Place on hold at lab pending Analysis of MW-2 sample USE ORGANIC FREE WATER
- Place De. blank on hold at lab
- Also Run a Trip Blank
- Lab - Sequoia
- See or call CD w/ any questions.

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Completed by: [Signature] Date: 03-23-95  
 Checked by: [Signature] 3-23-95



**FIELD DATA SHEET**

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 33004876 LOCATION: 2214 CENTER ST WELL ID #: NW 2  
 CLIENT/STATION No.: 02152 FIELD TECHNICIAN: RED RICE

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water:        TOB 4465 TOC         
 Total depth:        TOB        TOC         
 Date: 03-23-95 Time (2400): 13:30

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

SAMPLE TYPE  
 Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other:       

TD 59.95 - DTW 4465 = 15.3 Gal/Linear Foot 0.66 = 10.09 x Number of Casings 3 = Calculated Purge 30.29

DATE PURGED 03-23-95 START: 13:45 END (2400 hr):        PURGED BY: RE  
 DATE SAMPLED: 03-23-95 START: 14:10 END (2400 hr):        SAMPLED BY: RE

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>13:55</u>	<u>10</u>	<u>6.95</u>	<u>2010</u>	<u>66.8</u>	<u>CLEAR</u>	<u>34.1</u>	<u>FAINT</u>
<u>14:00</u>	<u>20</u>	<u>6.90</u>	<u>2200</u>	<u>66.0</u>	<u>CLEAR</u>	<u>59.9</u>	<u>FAINT</u>
<u>14:05</u>	<u>30</u>	<u>      </u>	<u>2370</u>	<u>65.2</u>	<u>CLEAR</u>	<u>338</u>	<u>None</u>

Pumped dry: Yes  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. #

Bailer:         Airlift Pump:         
 Centrifugal Pump:         Dedicated:         
 Other: CAPURGER

SAMPLING EQUIPMENT/I.D. #

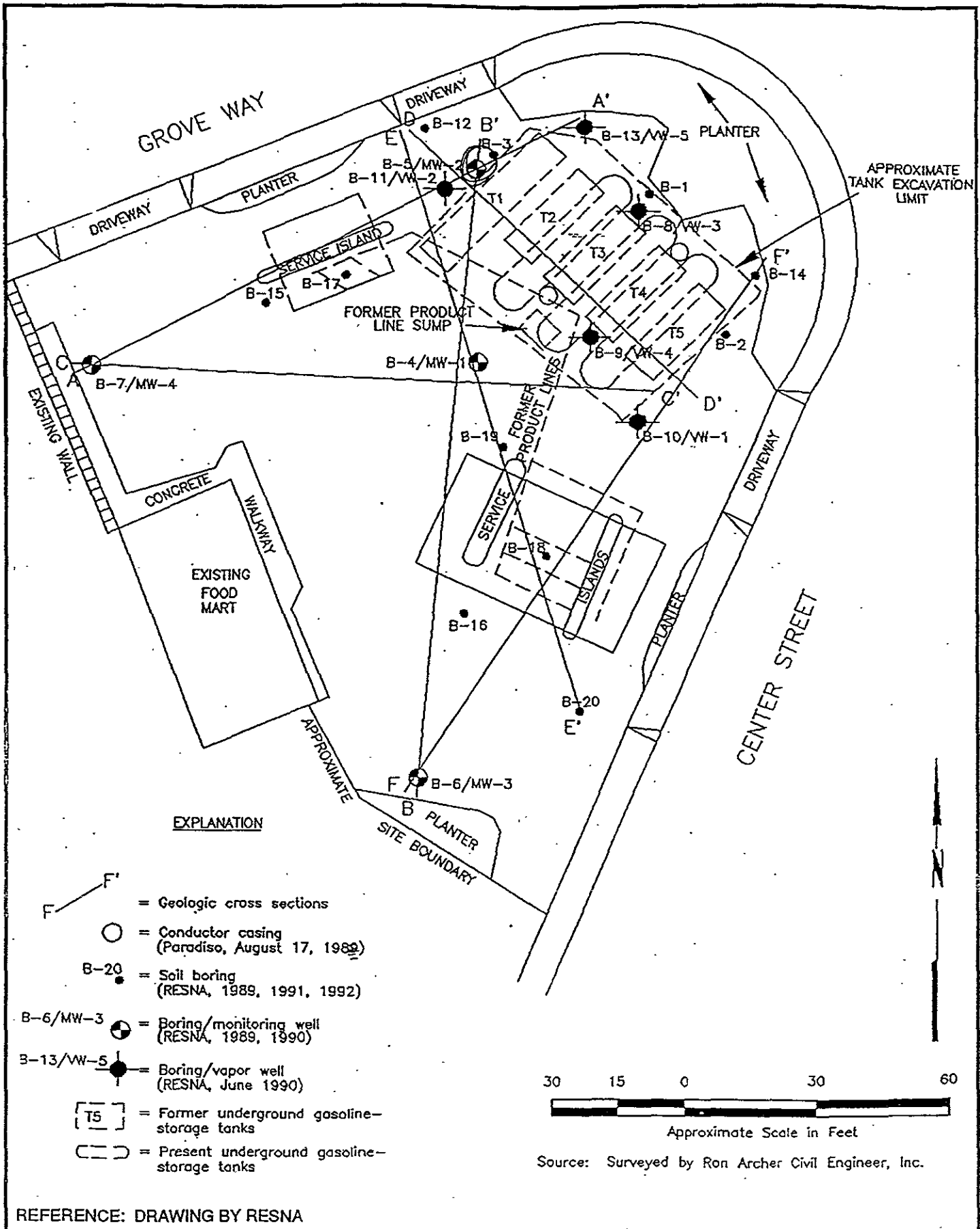
Bailer: 15-2  
 Dedicated:         
 Other:       

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>NW 2</u>	<u>032395</u>	<u>14:10</u>	<u>3</u>	<u>10ml</u>	<u>VOA</u>	<u>HCL</u>	<u>GAH BTEX</u>
<u>D1</u>	<u>"</u>	<u>NA</u>	<u>3</u>	<u>10ml</u>	<u>VOA</u>	<u>HCC</u>	<u>GAH BTEX</u>
<u>EB-1</u>	<u>"</u>	<u>NA</u>	<u>1</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>
<u>TB-1</u>	<u>"</u>	<u>NA</u>	<u>1</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>

REMARKS: E-B 1 BAILER 15-2  
D1 ORGANIC WATER

*[Handwritten signature]*





REFERENCE: DRAWING BY RESNA



PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION 2152  
22141 Center Street at Grove Way  
Castro Valley, California

SITE MAP

PLATE  
1  
PROJECT:  
330-048.6A



**ATTACHMENT B**  
**FIELD AND LABORATORY PROCEDURES**

## ATTACHMENT B

### FIELD AND LABORATORY PROCEDURES

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#### 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 four 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.