PACIFIC
ENVIRONMENTAL
GROUP, INC.

June 30, 1993
Project 330-06.05

Mr. Michael Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Re: Groundwater Monitoring Results and
Remedial Performance Evaluation
First Quarter 1993
ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Dear Mr. Whelan:

This report presents the results of groundwater monitoring performed by Pacific Environmental Group, Inc. (PACIFIC) on behalf of ARCO Products Company (ARCO) at the site referenced above. Groundwater samples were collected on March 16, 17, 18, and 29, 1993, and analyzed for total petroleum hydrocarbons calculated as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). Field and laboratory procedures are presented as Attachment A. Also included in this report is a performance evaluation of the groundwater remedial system.

RESULTS

During this quarter, Wells MW-24 through MW-26 were sampled for the first time. TPH-g was not detected in these wells. All other site wells remained within historical levels of TPH-g and benzene, except Wells MW-10 and MW-17, which had a historical high of benzene and a first non-detectable concentration of benzene, respectively. TPH-g was detected at concentrations ranging from 130 parts per billion (ppb) in Well MW-15 to 4,100 ppb in Well MW-10. Benzene was detected at concentrations ranging from 0.69 ppb in Well MW-25 to 340 ppb in Well MW-10. Wells MW-7, MW-9, MW-11, MW-13, MW-14, MW-18 through MW-24, and MW-26 had non-detectable levels of TPH-g and BTEX compounds. Separate-phase hydrocarbons were not observed in any site well this quarter.

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Groundwater analytical data for TPH-g and BTEX compounds are presented in Table 1. A TPH-g and benzene concentration map is presented on Figure 1. Certified analytical reports, chain-of-custody documentation, and field data sheets are presented as Attachment B. Additional groundwater analytical data for groundwater samples collected from Well MW-8 on December 22, 1992 are presented in Table 2.

Depth to water data indicate that groundwater elevations have risen in site wells an average of 1.80 feet since the previous monitoring event. Groundwater flow was to the west with an approximate gradient of 0.003. As discussed below, a groundwater depression has developed as a result of pumping extraction Well E-1A. Groundwater elevation data are presented in Table 3. A groundwater elevation contour map based on the March 1993 data is presented on Figure 2.

REMEDIAL PERFORMANCE EVALUATION

Groundwater Treatment System

The data presented in this section cover the period from December 17, 1992 to March 15, 1993. The system began continuous operation on October 15, 1991. The treatment system uses three granular activated carbon vessels to treat the influent groundwater stream before it is discharged into the sanitary sewer. The carbon vessels are arranged in series, with valving to permit bed order rotation. This allows for the primary vessel to become the secondary vessel after the carbon has been renewed. Sample ports are located at the treatment system influent, effluent, the mid-point between the carbon vessels, and at each individual well head. A sanitary sewer discharge permit was obtained from the Oro Loma Sanitary District on April 4, 1991. The updated permit is effective through April 4, 1994.

In order to evaluate treatment system performance, PACIFIC monitored water levels, recorded instantaneous and average flow rates, and sampled the influent and effluent of the treatment system for TPH-g and BTEX compounds on a monthly basis. Treatment system effluent is also analyzed for arsenic, as requested by the Oro Loma Sanitary District.

The dissolved TPH-g removed to date was calculated based on influent concentrations and total flow through the system (Table 4). **Influent concentrations of TPH-g have ranged from 100 to 400 ppb, while TPH-g was not detected in treatment system effluent.** A graphical summary of influent TPH-g concentration versus total flow is presented on Figure 3, and a graphical summary of dissolved TPH-g removed versus total flow is presented on Figure 4. Analytical data for the treatment system are summarized in Table 5. Certified analytical reports, chain-

of-custody documentation, and field data sheets for the monthly sampling dates are included as Attachment B.

The treatment system utilizes one groundwater extraction well (E-1A). The average pumping rate for the treatment system during this period was 2.7 gallons per minute (gpm). A total of 341,533 gallons of groundwater were extracted and 0.84 pound of dissolved TPH-g was recovered during this period of operation (Tables 4 and 6). A total of 2,205,833 gallons of groundwater have been extracted and 2.16 pounds of dissolved TPH-g have been recovered since the beginning of operation. Calculations indicate the primary carbon unit is approximately 3 percent loaded, and breakthrough is not expected during the next 12 months. The treatment system experienced no downtime during this period.

Groundwater elevation data indicate the groundwater extraction system has achieved partial hydraulic control of the dissolved hydrocarbon plume.

SUMMARY OF WORK

Work Performed During First Quarter 1993

- Continued monitoring groundwater treatment system performance.
- Submittal of fourth quarter 1992 groundwater monitoring report.
- Conducted meeting with Alameda County Health Care Services Agency (ACHCSA), Regional Water Quality Control Board, and ARCO regarding site activities on February 5, 1993.
- Conducted meeting with ACHCSA regarding risk assessment parameters.
- Preparation and submittal of off-site domestic well sampling letters for First Quarter 1993.
- Submitted letters to domestic well owners regarding well use and inoperable wells.
- Conducted monthly meetings with ARCO regarding site activities.
- Preparation of risk assessment program outline for ACHCSA review.
- Initiated biofeasibility analysis.
- Initiated remedial investigation field work consisting of impact delineation and biofeasibility and aquifer testing. A remedial investigation report will be issued by July 26, 1993.

- o Submitted follow-up letters to domestic irrigation water well owners regarding quarterly sampling authorization and discontinuation of well use.
- o Initiated domestic irrigation water well owner reimbursement program with owners who have discontinued well use.
- o Sampled site wells for first quarter 1993 groundwater monitoring program. Sampling performed by PACIFIC.
- o Sampled domestic wells for second quarter 1993 groundwater monitoring program. Sampling performed by PACIFIC.

Work Anticipated During Second Quarter 1993

- o Continue monitoring groundwater treatment system performance.
- o Complete risk assessment program outline for ACHCSA review.
- o Conduct on- and off-site soil vapor extraction and air sparge testing, aquifer testing, and groundwater modeling.
- o Initiate preparation of remedial investigation report.
- o Submit remedial investigation and feasibility study schedule to ACHCSA District Attorney.
- o Conduct monthly meetings with ARCO regarding site activities.
- o Preparation and submittal of first quarter 1993 groundwater monitoring report.
- o Sample site wells for second quarter 1993 groundwater monitoring program. Sampling to be performed by PACIFIC.
- o Preparation and submittal of off-site domestic well sampling letters for Second Quarter 1993.
- o Sample domestic wells for third quarter 1993 groundwater monitoring program. Sampling to be performed by PACIFIC.

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

Sincerely,

Pacific Environmental Group, Inc.

Keith Winemiller
Senior Staff Engineer

Debra J. Moser
Senior Geologist
CEG 1293

REGISTERED GEOLOGIST
DEBRA J. MOSER
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REFERENCES

Marshack, J.B., A Compilation of Water Quality Goals, Regional Water Quality Control Board, September 1991.

Attachments:
- Table 1 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)
- Table 2 - Groundwater Analytical Data - Halogenated Volatile Organics, Semi-Volatile Organics, and Metals (Collected from Well MW-8 on December 22, 1992)
- Table 3 - Groundwater Elevation Data
- Table 4 - Estimated Total Dissolved TPH-g Removed by the Groundwater Extraction System
- Table 5 - Treatment System Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)
- Table 6 - Treatment System Metered Volume
- Figure 1 - TPH-g and Benzene Concentration Map
- Figure 2 - Groundwater Elevation Contour Map
- Figure 3 - Influent Concentration versus Total Flow
- Figure 4 - Dissolved TPH-g Removed versus Total Flow
- Attachment A - Field and Laboratory Procedures
- Attachment B - Certified Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets

cc: Ms. Susan Hugo, Alameda County Health Care Services
Ms. Juliett Shin, Alameda County Health Care Services
Mr. Richard Hiett, Regional Water Quality Control Board - S.F. Bay Region

Table 1
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	01/11/88	300	20	10	50	80
	06/14/88	Well Destroyed				
MW-2	07/05/85	32,000	1,000	690	NA*	1,500*
	01/11/88	3,300	804	115	168	166
	06/14/88	Well Destroyed				
MW-3	01/11/88	1,800	20	20	80	60
	03/07/89	150,000	4,600	5,200	5,600	13,000
	06/21/89	63,000	2,700	5,800	3,300	12,000
	12/12/89	Not Sampled--Insufficient Water Volume				
	03/29/90	1,100,000**	13,000	60,000	17,000	91,000
	06/22/90	Not Sampled--Insufficient Water Volume				
	07/18/90	Well Destroyed				
MW-4	01/11/88	62,000	2,700	7,900	850	5,200
	09/12/88	Not Sampled--Separate-Phase Hydrocarbon				
	03/07/89	84,000	2,400	3,400	2,500	7,600
	06/21/89	31,000	400	800	200	1,500
	12/12/89	Not Sampled--Well Dry				
	03/29/90	Not Sampled-0.01 foot Separate-Phase Hydrocarbon				
	06/22/90	Not Sampled--Well Dry				
	07/18/90	Well Destroyed				
MW-5	01/11/88	31,000	4,000	2,700	3,800	5,500
	03/07/89	1,300	340	ND	140	50
	06/21/89	1,100	200	ND	130	40
	12/12/89	Not Sampled--Well Dry				
	03/29/90	Not Sampled--Insufficient Water Volume				
	06/22/90	Not Sampled--Insufficient Water Volume				
	09/19/90	Not Sampled--Well Dry				
	12/27/90	Not Sampled--Well Dry				
	03/21/91	Not Sampled--Well Dry				
	06/26/91	Not Sampled--Well Dry				
	09/24/91	Not Sampled--Well Dry				
	12/19/91	Not Sampled--Well Dry				
	03/18/92	11,000	110	2.0	410	150
	06/15/92	Not Sampled--Well Dry				
	09/16/92	Not Sampled--Well Dry				
	12/22/92	960	220	6.5	4.0	2.0
	03/17/93	**2,600**	**180**	**1.4**	**28**	**1.2**

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-6	06/21/89	1,700	170	170	85	290
(E-1)	12/12/89	500	26	7	8	18
	03/29/90	130	14	9	4	11
	06/22/90	150	15	5	4	13
	07/18/90	Well Destroyed				
MW-7	04/13/90	<50	<0.3	<0.3	<0.3	<0.3
	06/22/90	<50	0.5	1	0.6	3
	09/19/90	<50	<0.3	<0.3	<0.3	<0.3
	12/27/90	69	<0.3	0.3	0.4	2
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/17/92	<30	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-8	04/13/90	4,900	350	16	450	33
	06/22/90	3,700	370	12	330	28
	09/19/90	140	4	3	3	3
	12/27/90	1,200	7	0.3	53	<0.3
	03/21/91	540	8.8	<6.0	21	9.6
	06/26/91	2,100	290	<6.0	56	<6.0
	09/24/91	260	51	0.34	7.9	<0.30
	12/19/91	5,300	300	<3.0	21	4.8
	03/17/92	9,200	370	3.0	48	4.9
	06/17/92	3,300	460	2.7	63	6.9
	09/16/92	1,500	58	<0.5	6.1	4.5
	12/22/92	3,600	410	56	62	4.4
	03/18/93	**3,800**	**61**	**<0.5**	**11**	**1.2**
MW-9	04/13/90	<50	<0.3	<0.3	<0.3	2
	06/22/90	12,000	200	3	250	180
	09/19/90	<50	<0.3	<0.3	<0.3	0.6
	12/27/90	<50	<0.3	<0.3	<0.3	<0.3
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-9	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
(cont.)	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	75***	<0.5	<0.5	<0.5	<0.5
	03/16/93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	04/13/90	10,000	150	4	280	200
	06/22/90	9,700	28	<0.3	131	210
	09/19/90	1,800	<0.3	4	0.8	10
	12/27/90	5,700	7	3	95	61
	03/21/91	6,900	22	<15	92	33
	06/26/91	9,300	51	<0.30	59	34
	09/24/91	360	8.6	5.2	14	6.2
	12/19/91	3,300	9.2	8.4	11	17
	03/18/92	4,700	14	<6.0	29	10
	06/16/92	4,800	0.46	0.34	7.4	3.8
	09/16/92	2,000	8.3	3.0	3.3	5.5
	12/22/92	2,700***	6.2	<1.0	7.5	2.8
	03/16/93	**4,100**	**340**	**2.4**	**58**	**54**
MW-11	04/13/90	<50	<0.3	<0.3	<0.3	<0.3
	06/22/90	63	0.4	0.9	0.7	3
	09/19/90	<50	<0.3	<0.3	<0.3	<0.3
	12/27/90	<50	<0.3	<0.3	<0.3	<0.3
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/16/93	<50	<0.5	<0.5	<0.5	<0.5
E-1A	09/19/90	<50	7	0.9	1	2
(MW-12)	12/27/90	<50	3	0.5	1	1
	03/21/91	<30	4.2	<0.30	1.1	0.89
	06/26/91	41	6.3	<0.30	1.2	0.59
		---------- Converted to Extraction Well 8/91 ----------				

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-13	07/03/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/17/92	<30	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	07/03/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/16/93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	07/03/91	570	1.8	1.0	1.0	2.2
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	360	<0.60	<0.60	0.64	<0.60
	03/18/92	730	0.74	0.98	1.8	0.68
	06/16/92	310	0.54	0.34	0.96	2.5
	09/16/92	100	1.0	<0.5	<0.5	<0.5
	12/22/92	130***	<0.5	<0.5	<0.5	<0.5
	03/18/93	**130*** **	<0.5	<0.5	<0.5	<0.5
MW-16	07/03/91	2,700	31	6.9	4.6	3.1
	09/24/91	430	1.8	1.3	1.9	1.5
	12/19/91	75	<0.30	<0.30	<0.30	<0.30
	03/18/92	1,500	4.0	0.73	2.2	1.3
	06/16/92	80	<0.30	<0.30	<0.30	<0.30
	09/16/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/18/93	**380*** **	<0.5	<0.5	<0.5	<0.5
MW-17	07/03/91	1,200	12	1.9	28	40
	09/24/91	150	2.7	0.50	3.9	0.59
	12/19/91	370	2.6	<0.30	7.2	6.5
	03/18/92	470	3.1	<0.30	9.1	8.6
	06/16/92	310	1.7	0.56	12	9.6

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-17	09/16/92	77	1.5	<0.5	1.2	1.0
(cont.)	12/21/92	220	1.2	<0.5	9.8	9.4
	03/17/93	250	<0.5	<0.5	7.8	3.3
MW-18	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-19	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-20	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-21	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-22	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-22 (cont.)	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/17/93	<50	<0.5	<0.5	<0.5	<0.5
MW-23	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
	09/15/92	<50	<0.5	<0.5	<0.5	<0.5
	12/22/92	<50	<0.5	<0.5	<0.5	<0.5
	03/16/93	<50	<0.5	<0.5	<0.5	<0.5
MW-24	03/29/93	<50	<0.5	<0.5	<0.5	<0.5
MW-25	03/29/93	<50	0.69	<0.5	<0.5	<0.5
MW-26	03/29/93	<50	<0.5	<0.5	<0.5	<0.5

ppb = Parts per billion
NA = Not available
* = Ethylbenzene and xylenes given as a combined value.
** = Well contained slight product sheen.
*** = Non-typical gasoline chromatograph pattern.
< = Denotes minimum laboratory detection limits. See attached certified analytical reports.
MW-1 and MW-2 destroyed prior to March 7, 1989 sampling event.
MW-3, MW-4, and MW-6 (E-1) destroyed June 18, 1990.

Table 2
Groundwater Analytical Data
Halogenated Volatile Organics, Semi-Volatile Organics, and Metals
(Collected from Well MW-8 on December 22, 1992)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Analyses		Sample Results (ppb)
Halogenated Volatile Organics		ND
Semi-Volatile Organics		
Acenaphthene		27
Dibenzofuran		12
Fluorene		15
2-Methylnaphthalene		14
Naphthalene		34
Phenanthrene		18
Metals	**STLC (ppm)**	**TTLC (ppm)**
Arsenic	ND	0.025
Barium	ND	0.21
Zinc	ND	0.015

ppb = Parts per billion
ND = Not detected
STLC = Soluble Threshold Limit Concentration
ppm = Parts per million
TTLC = Total Threshold Limit Concentration

Table 3
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-1	01/11/88	NA	NA	--	NA
	06/14/88	Well Destroyed			
MW-2	07/05/85	NA	NA	--	NA
	01/11/88	NA	NA	--	NA
	06/14/88	Well Destroyed			
MW-3	01/11/88	33.27	NA	--	NA
	03/07/89		11.96	--	21.31
	06/21/89		12.85	--	20.42
	12/12/89		13.46	--	19.81
	03/29/90		13.21	--	20.06
	05/08/90		13.23	--	20.04
	06/22/90		NA	--	NA
	07/18/90	Well Destroyed			
MW-4	01/11/88	32.43	NA	--	NA
	09/12/88		NA	--	NA
	03/07/89		10.76	--	21.67
	06/21/89		11.96	--	20.47
	12/12/89		NA	--	NA
	03/29/90		11.72	0.01	20.71
	05/08/90		12.19	--	20.24
	06/22/90		NA	--	NA
	07/18/90	Well Destroyed			
MW-5	01/11/88	33.99	NA	--	NA
	03/07/89		12.74	--	21.25
	06/21/89		13.26	--	20.73
	12/12/89		NA	--	NA
	03/29/90		13.30	--	20.69
	05/08/90		NA	--	NA
	06/22/90		13.52	--	20.47
	09/19/90		13.99	--	20.00
	12/27/90		NA	--	NA
	03/21/91		13.00	--	20.99
	06/26/91		13.25	--	20.74
	07/03/91		13.33	--	20.66
	09/24/91		Dry	--	NA
	10/04/91		Dry	--	NA
	12/19/91		Dry	--	NA
	01/16/92		Dry	--	NA

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-5 (cont.)	02/19/92		13.5	--	20.49
	03/17/92		11.90	--	22.09
	04/15/92		12.18	--	21.81
	05/14/92		12.78	--	21.21
	06/15/92		Well Dry		
	07/14/92		Well Dry		
	08/18/92		Well Dry		
	09/15/92		Well Dry		
	10/16/92		Well Dry		
	11/18/92		Well Dry		
	12/17/92		12.74	--	21.25
	01/19/93		10.92	--	23.07
	02/22/93		11.10	--	22.89
	03/15/93		11.13	--	22.86
MW-6 (E-1)	06/21/89	32.95	12.48	--	20.47
	12/12/89		13.16	--	13.16
	03/29/90		12.39	--	12.39
	05/08/90		12.93	--	12.93
	06/22/90		12.94	--	12.94
	07/18/90		Well Destroyed		
MW-7	04/13/90	34.40	NA	--	NA
	05/08/90		13.98	--	20.42
	06/22/90		13.91	--	20.49
	09/19/90		15.09	--	19.31
	12/27/90		14.67	--	19.73
	03/21/91		12.88	--	21.52
	06/26/91		13.85	--	20.55
	07/03/91		13.95	--	20.45
	09/24/91		15.54	--	18.86
	10/04/91		15.60	--	18.80
	12/19/91		15.70	--	18.70
	01/16/92		13.33	--	21.83
	02/19/92		12.16	--	NA
	03/17/92		11.86	--	22.54
	04/15/92		12.30	--	22.10
	05/14/92		13.04	--	21.36
	06/15/92		13.78	--	20.62
	07/14/92		14.20	--	20.20
	08/18/92		14.79	--	19.61
	09/15/92		15.12	--	19.28
	10/16/92		15.38	--	19.02
	11/18/92		15.10	--	19.30
	12/17/92		13.69	--	20.71

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-7 (cont.)	01/19/93		10.92	--	23.48
	02/22/93		10.91	--	23.49
	03/15/93		11.13	--	23.03
MW-8	04/13/90	32.79	NA	--	NA
	05/08/90		12.77	--	20.02
	06/22/90		12.73	--	20.06
	09/19/90		13.95	--	18.84
	12/27/90		13.56	--	19.23
	03/21/91		11.78	--	21.01
	06/26/91		12.66	--	20.13
	07/03/91		12.75	--	20.04
	09/24/91		13.97	--	18.82
	10/04/91		14.01	--	18.78
	12/19/91		13.35	--	19.44
	01/16/92		13.40	--	19.39
	02/19/92		11.26	--	21.53
	03/17/92		10.90	--	21.89
	04/15/92		11.35	--	21.44
	05/14/92		12.06	--	20.73
	06/15/92		12.83	--	19.96
	07/14/92		12.75	--	20.04
	08/18/92		13.83	--	18.96
	09/15/92		14.17	--	18.62
	10/16/92		14.51	--	18.28
	11/18/92		14.15	--	18.64
	12/17/92		12.68	--	20.11
	01/19/93		9.79	--	23.00
	02/22/93		9.95	--	22.84
	03/15/93		10.31	--	22.48
MW-9	04/13/90	32.11	NA	--	NA
	05/08/90		12.02	--	20.09
	06/22/90		11.93	--	20.18
	09/19/90		13.18	--	18.93
	12/27/90		12.77	--	19.34
	03/21/91		10.94	--	21.17
	06/26/91		11.92	--	20.19
	07/03/91		12.02	--	20.09
	09/24/91		13.27	--	18.84
	10/04/91		13.29	--	18.82
	12/19/91		13.42	--	18.69
	01/16/92		12.45	--	19.66
	02/19/92		10.25	--	21.86
	03/17/92		10.01	--	22.10
	04/15/92		10.49	--	21.62

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-9 (cont.)	05/14/92		11.19	--	20.92
	06/15/92		11.86	--	20.25
	07/14/92		12.28	--	19.83
	08/18/92		12.89	--	19.22
	09/15/92		13.28	--	18.83
	10/16/92		13.60	--	18.51
	11/18/92		13.24	--	18.87
	12/17/92		11.76	--	20.35
	01/19/93		8.99	--	23.12
	02/22/93		9.13	--	22.98
	03/15/93		9.48	--	22.63
MW-10	04/13/90	31.67	NA	--	NA
	05/08/90		12.16	--	19.51
	06/22/90		12.10	--	19.57
	09/19/90		13.41	--	18.26
	12/27/90		13.67	--	18.00
	03/21/91		11.11	--	20.56
	06/26/91		12.00	--	19.67
	07/03/91		12.16	--	19.51
	09/24/91		13.40	--	18.27
	10/04/91		13.50	--	18.17
	12/19/91		13.57	--	18.10
	01/16/92		12.55	--	19.12
	02/19/92		10.50	--	21.17
	03/18/92		10.12	--	21.55
	04/15/92		10.59	--	21.08
	05/14/92		11.30	--	20.37
	06/15/92		11.93	--	19.74
	07/14/92		12.42	--	19.25
	08/18/92		13.03	--	18.64
	09/15/92		13.42	--	18.25
	10/16/92		13.74	--	17.93
	11/18/92		13.42	--	18.25
	12/17/92		11.94	--	19.73
	01/19/93		9.13	--	22.54
	02/22/93		9.22	--	22.45
	03/15/93		9.64	--	22.03
MW-11	04/13/90	32.54	NA	--	NA
	05/08/90		12.84	--	19.70
	06/22/90		12.82	--	19.72
	09/19/90		14.09	--	18.45
	12/27/90		13.66	--	18.88
	03/21/91		11.85	--	20.69
	06/26/91		12.69	--	19.85
	07/03/91		12.81	--	19.73

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-11 (cont.)	09/24/91		14.03	--	18.51
	10/04/91		14.18	--	18.36
	12/19/91		14.29	--	18.25
	01/16/92		13.28	--	19.26
	02/19/92		11.29	--	21.25
	03/17/92		10.81	--	21.73
	04/15/92		11.23	--	21.31
	05/14/92		11.96	--	20.58
	06/15/92		12.64	--	19.90
	07/14/92		13.08	--	19.46
	08/18/92		13.72	--	18.82
	09/15/92		14.13	--	18.41
	10/16/92		14.45	--	18.09
	11/18/92		14.11	--	18.43
	12/17/92		12.69	--	19.85
	01/19/93		9.91	--	22.63
	02/22/93		9.95	--	22.59
	03/15/93		10.30	--	22.24
E-1A (MW-12)	09/19/90	33.06	14.31	--	18.75
	12/27/90		13.97	--	19.09
	03/21/91		12.11	--	20.95
	06/26/91		12.90	--	20.16
	07/03/91		13.00	--	20.06
	09/24/91		22.47	--	10.59
	01/16/92		23.68	--	9.38
	02/19/92		18.71	--	14.35
	03/17/92		23.10	--	9.96
	04/15/92		20.54	--	12.52
	05/14/92		23.09	--	9.97
	06/15/92		23.72	--	9.34
	07/14/92		13.25	--	19.81
	08/18/92		23.73	--	9.33
	09/15/92		23.62	--	9.44
	10/16/92		23.78	--	9.28
	11/18/92		23.80	--	9.26
	12/17/92		22.65	--	10.41
	01/19/93		23.65	--	9.41
	02/22/93		23.70	--	9.36
	03/15/93		22.92	--	10.14
MW-13	07/03/91	35.42	15.19	--	20.23
	09/24/91		16.45	--	18.97
	12/19/91		16.66	--	18.76
	01/16/92		15.70	--	19.72

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-13 (cont.)	02/19/92		13.60	--	21.82
	03/17/92		13.20	--	22.22
	04/15/92		13.64	--	21.78
	05/14/92		14.34	--	21.08
	06/15/92		15.13	--	20.29
	07/14/92		15.45	--	19.97
	08/18/92		16.15	--	19.27
	09/15/92		16.51	--	18.91
	10/16/92		16.81	--	18.61
	11/18/92		16.50	--	18.92
	12/17/92		15.07	--	20.35
	01/19/93		12.40	--	23.02
	02/22/93		12.35	--	23.07
	03/15/93		12.69	--	22.73
MW-14	07/03/91	30.46	11.05	--	19.41
	09/24/91		12.30	--	18.16
	10/04/91		12.38	--	18.08
	12/19/91		12.39	--	18.07
	01/16/92		11.34	--	19.12
	02/19/92		9.32	--	21.14
	03/17/92		9.04	--	21.42
	06/15/92		10.83	--	19.63
	09/15/92		12.27	--	18.19
	12/17/92		10.69	--	19.77
	03/15/93		8.70	--	21.76
MW-15	07/03/91	31.41	12.43	--	18.89
	09/24/91		13.69	--	17.72
	10/04/91		13.80	--	17.61
	12/19/91		13.78	--	17.63
	01/16/92		12.80	--	18.61
	02/19/92		10.85	--	20.56
	03/18/92		10.41	--	21.00
	06/15/92		12.19	--	19.22
	09/15/92		13.69	--	17.72
	12/17/92		12.26	--	19.15
	03/15/93		10.05	--	21.36
MW-16	07/03/91	31.39	12.92	--	18.47
	09/24/91		14.10	--	17.29
	10/04/91		14.20	--	17.19
	12/19/91		14.14	--	17.25
	01/16/92		13.09	--	18.30
	02/19/92		10.99	--	20.40
	03/18/92		10.85	--	20.54

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-16 (cont.)	06/15/92		12.64	--	18.75
	09/15/92		14.07	--	17.32
	12/17/92		12.56	--	18.83
	03/15/93		10.60	--	20.79
MW-17	07/03/91	32.43	13.75	--	18.68
	09/24/91		14.98	--	17.45
	10/04/91		15.20	--	17.23
	12/19/91		15.02	--	17.41
	01/16/92		13.92	--	18.51
	02/19/92		11.65	--	20.78
	03/18/92		11.71	--	20.72
	06/15/92		13.50	--	18.93
	09/15/92		14.95	--	17.48
	12/17/92		13.34	--	19.09
	03/15/93		11.47	--	20.96
MW-18	10/04/91	29.70	13.00	--	16.59
	12/19/91		12.91	--	16.71
	03/18/92		9.73	--	19.97
	06/15/92		11.50	--	18.20
	09/15/92		12.90	--	16.80
	12/17/92		11.21	--	18.49
	03/15/93		9.62	--	20.08
MW-19	10/04/91	29.02	12.43	--	16.59
	12/19/91		12.31	--	16.71
	03/18/92		9.22	--	19.80
	06/15/92		10.94	--	18.08
	09/15/92		12.38	--	16.64
	12/17/92		10.51	--	18.51
	03/15/93		9.23	--	19.79
MW-20	10/04/91	29.54	12.56	--	16.98
	12/19/91		12.48	--	17.06
	03/18/92		9.49	--	20.05
	06/15/92		11.11	--	18.43
	09/15/92		12.50	--	17.04
	12/17/92		10.74	--	18.80
	03/15/93		9.44	--	20.10
MW-21	10/04/91	28.72	12.88	--	15.84
	12/19/91		12.68	--	16.04
	03/18/92		9.55	--	19.17
	06/15/92		11.30	--	17.42

Table 3 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-21 (cont.)	09/15/92		12.78	--	15.94
	12/17/92		10.80	--	17.92
	03/15/93		9.59	--	19.13
MW-22	10/04/91	29.29	13.37	--	15.92
	12/19/91		13.19	--	16.10
	03/17/92		10.05	--	19.24
	06/15/92		11.84	--	17.45
	09/15/92		13.27	--	16.02
	12/17/92		11.58	--	17.71
	03/15/93		10.03	--	19.26
MW-23	10/04/91	30.99	14.50	--	16.49
	12/19/91		14.38	--	16.61
	03/17/92		11.20	--	19.79
	06/15/92		12.94	--	18.05
	09/15/92		14.40	--	16.59
	12/17/92		13.01	--	17.98
	03/15/93		11.01	--	19.98

MSL = Mean sea level
TOB = Top of box
NA = Not available
Well elevations are measured from set mark at top of vault box.

Table 4

Estimated Total Dissolved TPH–g Removed by the Groundwater Extraction System

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Sample ID	Date Sampled	Volume Reading (gallon)	Net Volume (gallon)	Sample Concentration TPH–g (ppb)	Net Dissolved TPH–g Removed (pound)	Dissolved TPH–g Removed To Date (pound)	Dissolved TPH–g Removed To Date (gallon)	Primary Carbon Loading (%)
INFL	09/25/91	0	0	<50	0.00	0.00	0.00	0.00
INFL	09/26/91	1,144	1,144	38	0.00	0.00	0.00	0.00
INFL	10/22/91	12,844	11,700	<50	0.00	0.00	0.00	0.00
INFL	11/22/91	52,532	39,688	<50	0.00	0.00	0.00	0.00
INFL	12/19/91	122,540	70,008	<50	0.00	0.00	0.00	0.00
INFL	01/16/92	283,289	160,749	<50	0.00	0.00	0.00	0.00
INFL	02/19/92	485,200	201,911	370	0.31	0.31	0.06	0.39
INFL	03/17/92	662,847	177,647	160	0.39	0.71	0.13	0.88
INFL	04/15/92	851,100	188,253	200	0.28	0.99	0.18	1.24
INFL	05/14/92	1,030,086	176,986	45	0.18	1.17	0.21	1.46
INFL	06/19/92	1,229,960	199,874	<50	0.04	1.21	0.21	1.51
INFL	07/14/92	1,291,201	61,241	97	0.02	1.23	0.22	1.54
INFL	08/18/92	1,410,018	118,817	<50	0.05	1.28	0.23	1.60
INFL	09/15/92	1,535,640	125,622	<50	0.00	1.28	0.23	1.60
INFL	10/16/92	1,651,623	115,983	<50	0.00	1.28	0.23	1.60
INFL	11/18/92	1,768,076	116,453	<50	0.00	1.28	0.23	1.60
INFL	12/17/92	1,864,300	96,224	96	0.04	1.32	0.23	1.65
INFL	01/18/93	1,915,165	50,865	100	0.04	1.36	0.24	1.70
INFL	02/22/93	2,096,930	181,765	480	0.44	1.80	0.32	2.25
INFL	03/15/93	2,205,833	108,903	310	0.36	2.16	0.38	2.70
TOTAL POUNDS OF TPH–g REMOVED:						**2.16**		
TOTAL GALLONS OF TPH–g REMOVED:							**0.38**	

TPH–g = Total petroleum hydrocarbons calculated as gasoline
ppb = Parts per billion
< = Denotes minimum laboratory detection limits.
Net dissolved TPH–g removed data are approximate.
Density of Gasoline = 5.63 pounds per gallon.
The system uses three 1,000 pound carbons. The percent carbon loading calculation assumes a loading isotherm of 8 percent by weight.

Equations:
Net Dissolved TPH–g Removed [pounds] =
TPH–g concentration, [ug/L] x net volume (gallon) x density of gasoline [pound/gallon]
(Net dissolved TPH–g removed is calculated by averaging influent concentrations)

Table 5
Treatment System Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
INFL (influent to primary carbon)					
09/26/91	38	4.8	0.60	1.6	1.1
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
11/22/91	<30	0.52	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	370	14	0.34	14	2.4
03/17/92	160	18	0.32	0.56	1.6
04/15/92	200	11	<0.30	7.3	0.77
05/14/92	45	1.4	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30
07/14/92	97	25	<0.50	8.5	<0.50
08/18/92	<50	<0.50	<0.50	<0.50	<0.50
09/15/92	<50	<0.50	<0.50	<0.50	<0.50
10/16/92	<50	<0.50	<0.50	<0.50	<0.50
11/18/92	<50	<0.50	<0.50	<0.50	<0.50
12/17/92	96	7.7	13	0.56	9.7
01/18/93	100	13	6.6	1.1	11
02/22/93	480	36	29	4.9	96
03/15/93	310	29	14	4.9	55
MID-1 (between carbons)					
09/26/91	<30	<0.30	<0.30	<0.30	<0.30
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	<30	<0.30	<0.30	<0.30	<0.30
03/17/92	<30	<0.30	<0.30	<0.30	<0.30
04/15/92	<30	<0.30	<0.30	<0.30	<0.30
05/14/92	<30	<0.30	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30
07/14/92	NS	NS	NS	NS	NS
08/18/92	NS	NS	NS	NS	NS
09/15/92	NS	NS	NS	NS	NS
10/16/92	NS	NS	NS	NS	NS
11/18/92	NS	NS	NS	NS	NS
12/17/92	NS	NS	NS	NS	NS
01/18/93	NS	NS	NS	NS	NS
02/22/93	NS	NS	NS	NS	NS
03/15/93	NS	NS	NS	NS	NS

Table 5 (continued)
Treatment System Analytical Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
EFFL (effluent to sewer)					
09/26/91	<30	<0.30	<0.30	<0.30	<0.30
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
11/22/91	<30	<0.30	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	<30	<0.30	<0.30	<0.30	<0.30
03/17/92	<30	<0.30	<0.30	<0.30	<0.30
04/15/92	<30	<0.30	<0.30	<0.30	<0.30
05/14/92	<30	<0.30	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30
07/14/92	<50	<0.50	<0.50	<0.50	<0.50
08/18/92	<50	<0.50	<0.50	<0.50	<0.50
09/15/92	<50	<0.50	<0.50	<0.50	<0.50
10/16/92	<50	<0.50	<0.50	<0.50	<0.50
11/18/92	<50	<0.50	<0.50	<0.50	<0.50
12/17/92	<50	<0.50	<0.50	<0.50	<0.50
01/18/93	<50	<0.5	<0.5	<0.5	<0.5
02/22/93	<50	<0.5	<0.5	<0.5	<0.5
03/15/93	<50	<0.5	<0.5	<0.5	<0.5

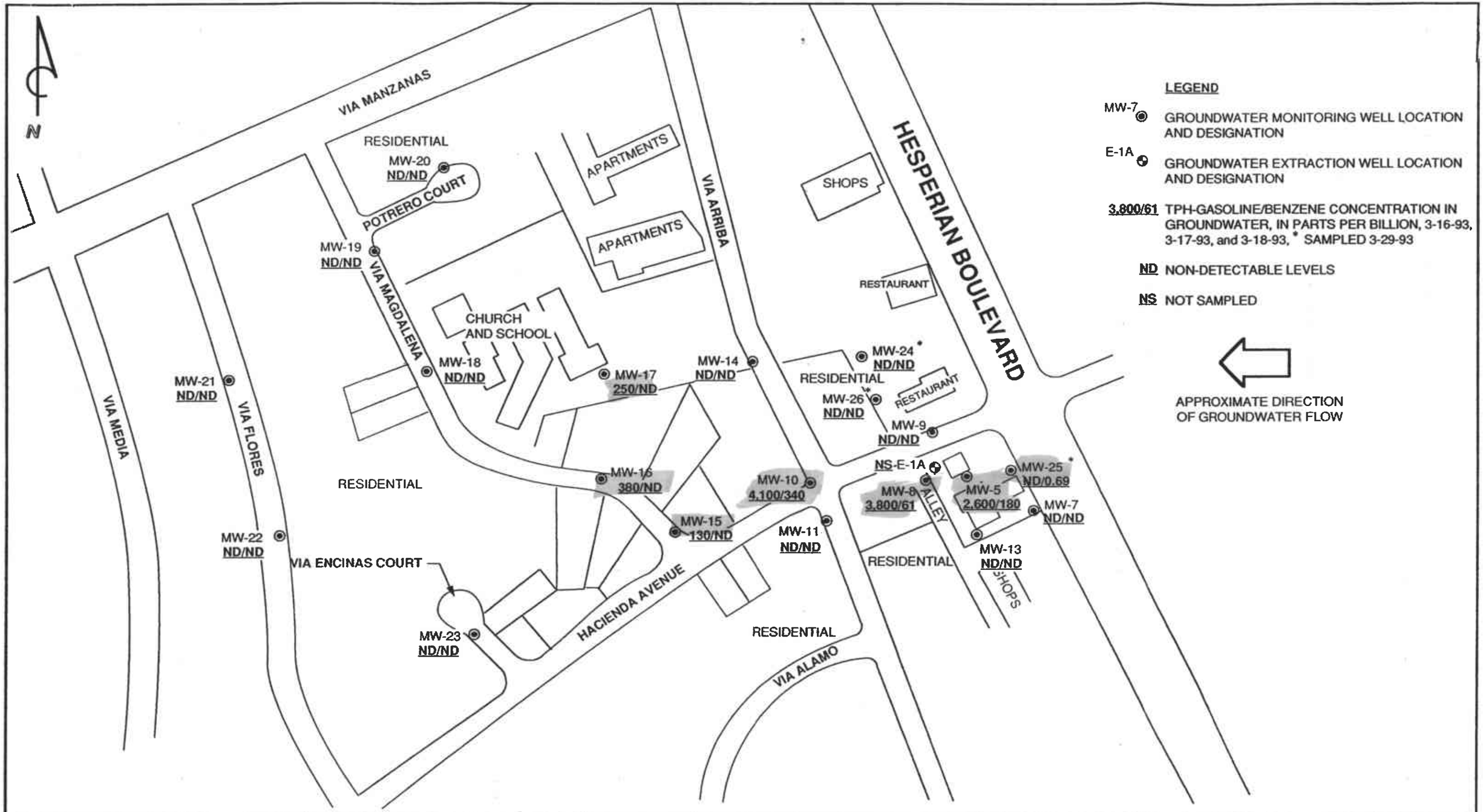
ppb = Parts per billion
< = Denotes minimum laboratory detection limit.
NS = Not sampled

Table 6
Treatment System Metered Volume

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Meter Reading Date	Meter Reading (gallons)	Volume Since Previous Reading (gallons)	Volume Since Start-up (gallons)	Approximate Flow Rate (gpm)
09/25/91	0	0	0	NA*
09/26/91	1,144	1,144	1,144	0.8
10/15/91	5,146	4,002	5,146	0.1
10/22/91	12,844	7,698	12,844	0.9
11/22/91	52,532	39,688	52,532	0.6
12/11/91	78,842	26,310	78,842	1.0
12/19/91	122,540	43,698	122,540	3.8
01/16/92	283,289	160,749	283,289	4.0
02/19/92	485,200	201,911	485,200	4.1
03/17/92	662,847	177,647	662,847	4.7
04/15/92	851,100	188,253	851,100	4.5
05/14/92	1,030,086	178,986	1,030,086	4.3
06/19/92	1,229,960	199,874	1,229,960	3.9
07/14/92	1,291,201	61,241	1,291,201	1.7
08/18/92	1,410,018	118,817	1,410,018	2.4
09/15/92	1,535,640	125,622	1,535,640	3.1
10/16/92	1,651,623	115,983	1,651,623	2.6
11/18/92	1,768,076	116,453	1,768,076	2.6
12/17/92	1,864,300	96,224	1,864,300	2.3
01/19/93	1,915,165	50,865	1,915,165	1.1
02/22/93	2,096,930	181,765	2,096,930	3.7
03/15/93	2,205,833	108,903	2,205,833	3.6

gpm = Gallons per minute
NA = Not available
* = System start-up.



PACIFIC ENVIRONMENTAL GROUP, INC.

APPROXIMATE SCALE
0 150 300 FEET

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

TPH-g AND BENZENE CONCENTRATION MAP

FIGURE: 1
PROJECT: 330-06.05

6/10/93

N

VIA MANZANAS

RESIDENTIAL

MW-20 (20.10)

POTRERO COURT

APARTMENTS

APARTMENTS

VIA ARRIBA

SHOPS

HESPERIAN BOULEVARD

RESTAURANT

MW-19 (19.79)

VIA MAGDALENA

CHURCH AND SCHOOL

MW-18 (20.08)

MW-17 (20.96)

MW-14 (21.76)

MW-24 (22.58) *

RESIDENTIAL

MW-26 (22.79) *

RESTAURANT

22.00

MW-9 (22.63)

E-1A (10.14)

MW-25 (23.56) *

MW-8 (22.48)

ALLEY

MW-5 (22.86)

MW-7 (23.03)

MW-21 (19.13)

VIA MEDIA

VIA FLORES

MW-16 (20.79)

MW-10 (22.03)

MW-15 (21.36)

MW-11 (22.24)

MW-13 (22.73)

23.00

22.50

SHOPS

MW-22 (19.26)

VIA ENCINAS COURT

19.50

HACIENDA AVENUE

21.00

21.50

22.00

MW-23 (19.98)

20.50

20.00

RESIDENTIAL

VIA ALAMO

LEGEND

MW-7 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

E-1A — GROUNDWATER EXTRACTION WELL LOCATION AND DESIGNATION

(23.03) GROUNDWATER ELEVATION IN FEET - MSL, 3-15-93

19.50 GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 3-15-93

* NOT USED IN CONTOURING, GROUNDWATER ELEVATION MEASURED 3-29-93

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.003

PACIFIC ENVIRONMENTAL GROUP, INC.

APPROXIMATE SCALE

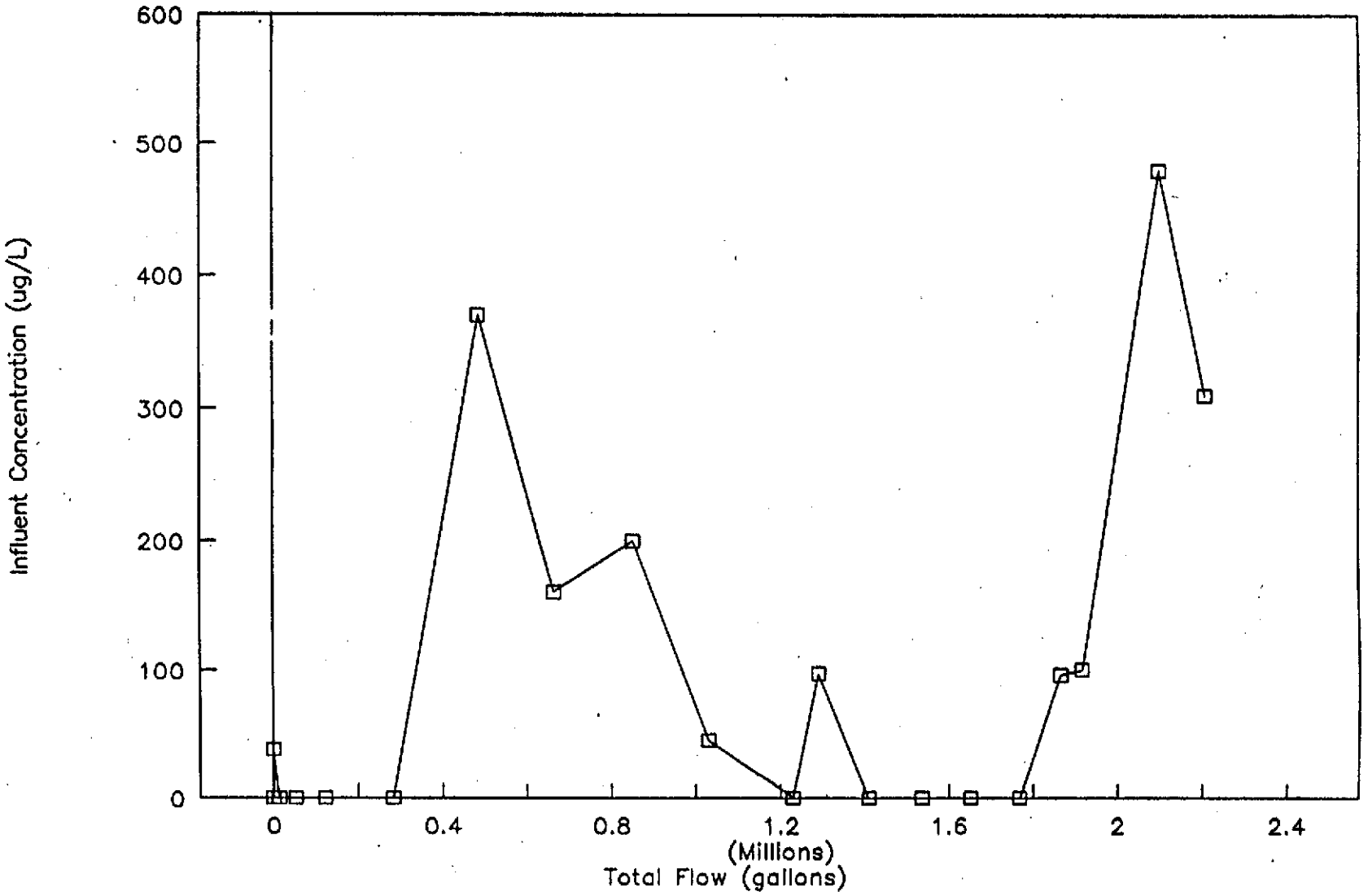
0 150 300 FEET

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: **2**

PROJECT: 330-06.05

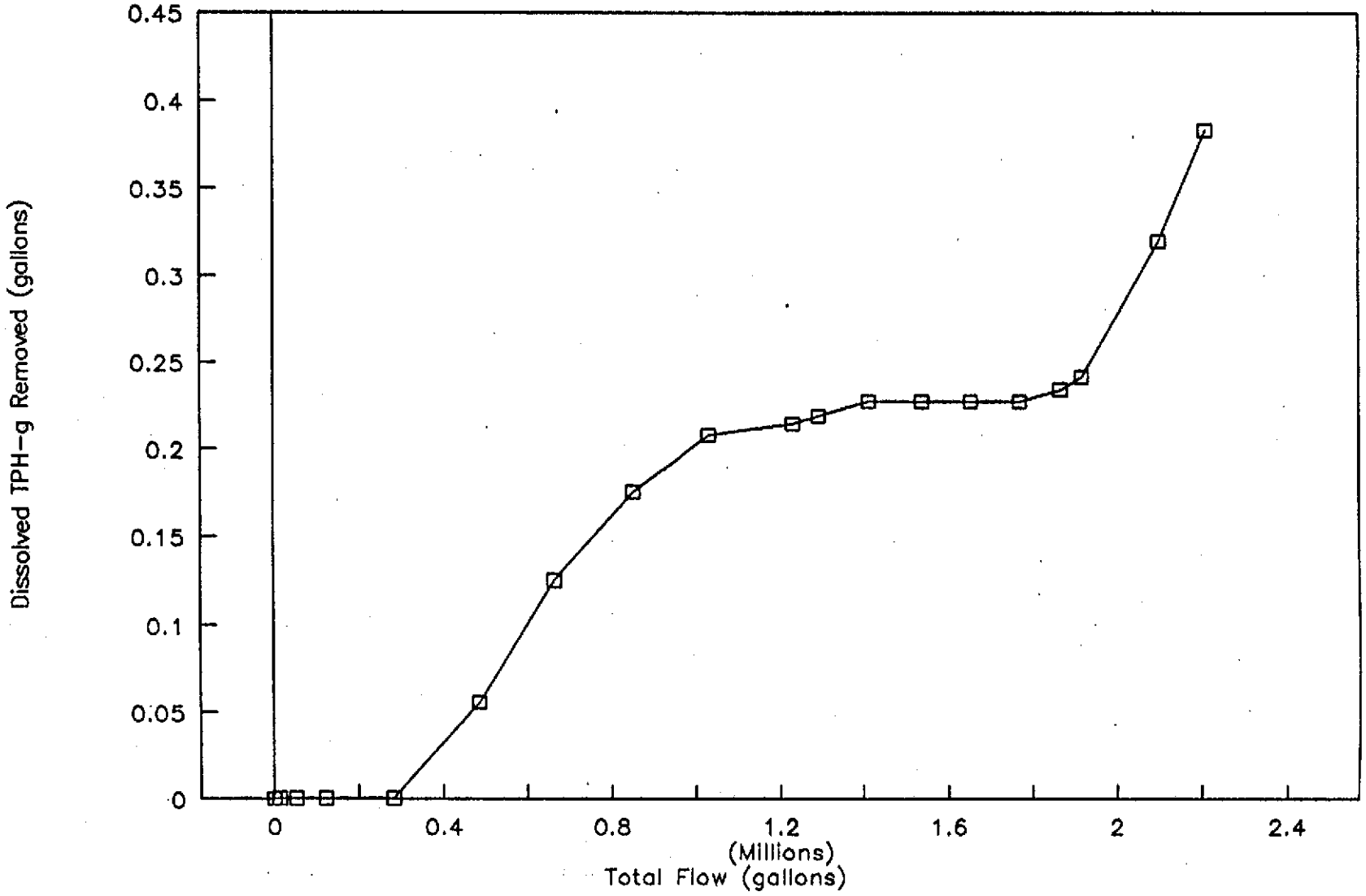


PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

INFLUENT CONCENTRATION VERSUS TOTAL FLOW

FIGURE:
3
PROJECT:
330-06.05



PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

DISSOLVED TPH-g REMOVED VERSUS TOTAL FLOW

FIGURE:
4
PROJECT:
330-06.05

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 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 (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 (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). 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 a flame-ionization detector and photo-ionization detector. 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 B.

ATTACHMENT B

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

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	#608-91-5/Arco #0608, San Lorenzo	Sampled:	Jan 18, 1993
620 Contra Costa Blvd. #209	Sample Matrix:	Water #330-06.12	Received:	Jan 20, 1993
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported:	Feb 1, 1993
Attention: Kelly Brown	First Sample #:	301-0417		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 301-0417 INFL	Sample I.D. 301-0418 EFFL
Purgeable Hydrocarbons	50	100	N.D.
Benzene	0.5	13	N.D.
Toluene	0.5	6.6	N.D.
Ethyl Benzene	0.5	1.1	N.D.
Total Xylenes	0.5	11	N.D.
Chromatogram Pattern:		Gasoline	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	1/21/93	1/21/93
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	111	108

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	#608-91-5/Arco #0608, San Lorenzo	Sampled:	Jan 18, 1993
620 Contra Costa Blvd. #209	Sample Descript:	Water, EFFL #330-06.12	Received:	Jan 20, 1993
Pleasant Hill, CA 94523			Analyzed:	1/20 & 1/29/92
Attention: Kelly Brown	Lab Number:	301-0418	Reported:	Feb 1, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L		Sample Results mg/L
Total Suspended Solids	1.0	.....	N.D.
Chemical Oxygen Demand	20	.....	N.D.

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	#608-91-5/Arco #0608, San Lorenzo	Sampled:	Jan 18, 1993
620 Contra Costa Blvd. #209	Sample Descript:	Water, EFFL #330-06.12	Received:	Jan 20, 1993
Pleasant Hill, CA 94523			Analyzed:	Jan 20, 1993
Attention: Kelly Brown	Lab Number:	301-0418	Reported:	Feb 1, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit	Sample Results
pH	N/A	7.2

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group
620 Contra Costa Blvd. #209
Pleasant Hill, CA 94523
Attention: Kelly Brown

Client Project ID: #608-91-5/Arco #0608, San Lorenzo #330-06.12

QC Sample Group: 3010417-418

Reported: Feb 1, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Total Suspended Solids	pH	Chemical Oxygen Demand
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 160.2	EPA 150.1	EPA 410.4
Analyst:	A.P.	A.P.	A.P.	A.P.	K.Anderson	K.Anderson	K.Anderson
Reporting Units:	µg/L	µg/L	µg/L	µg/L	mg/L	N/A	mg/L
Date Analyzed:	Jan 21, 1993	Jan 21, 1993	Jan 21, 1993	Jan 21, 1993	Jan 20, 1993	Jan 20, 1993	Jan 29, 1993
QC Sample #:	301-0350	301-0350	301-0350	301-0350	301-0275	301-0418	301-0418
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	82	7.3	N.D.
Spike Conc. Added:	20	20	20	60	N/A	N/A	250
Conc. Matrix Spike:	20	20	21	71	N/A	N/A	240
Matrix Spike % Recovery:	100	100	105	118	N/A	N/A	96
Conc. Matrix Spike Dup.:	21	21	21	72	81	7.4	240
Matrix Spike Duplicate % Recovery:	105	105	105	120	N/A	N/A	96
Relative % Difference:	4.9	4.9	0.0	1.4	1.2	1.4	0.0

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

ARCO Products Company ◆ Division of AtlanticRichfieldCompany — 330-06.12 Task Order No. 608-91-5 — **Chain of Custody**

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mark Whelan.	Telephone no. (ARCO)	Telephone no. (Consultant) 408-441-7500	Fax no. (Consultant) 408-441-7539
Consultant name Pacific Env. Group	Address (Consultant) 2025 Gateway Place. #440 San Jose 95110		Contract number

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 ☐	pH / Total suspended solids	C.O.D.
INFL		3		X		X	HCl	1-18-93	14:00		X				3010				417AC			
EFFL		3		↓		↓	HCl	↓	↓		X								418AC			
EFFL		2		↓		↓	H_2SO_4	↓	↓									↓	DE			X
EFFL		1		↓		↓	NP	↓	↓						↓			↓	F	X		

Special detection Limit/reporting

Special QA/QC

Remarks: Please send C.A.R. to above Address.

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:

	Date	Time	
Relinquished by sampler	1-20-93	9:30	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: Date 1/20/93 Time 0930

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

APPC-3292 (2-91)

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	#608-01-5 / #330.06.12, San Lorenzo	Sampled:	Feb 22, 1993
2025 Gateway Pl., Ste.440	Sample Matrix:	Water	Received:	Feb 23, 1993
San Jose, CA 95110	Analysis Method:	EPA 5030/8015/8020	Reported:	Mar 2, 1993
Attention: Kelly Brown	First Sample #:	302-0744		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 302-0744 EFFL	Sample I.D. 302-0745 INFL
Purgeable Hydrocarbons	50	N.D.	480
Benzene	0.5	N.D.	36
Toluene	0.5	N.D.	29
Ethyl Benzene	0.5	N.D.	4.9
Total Xylenes	0.5	N.D.	96
Chromatogram Pattern:		--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	2/24/93	2/24/93
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	103	103

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

Please Note:
REVISED REPORT 3/4/93

ARCO Products Company Division of AtlanticRichfieldCompany 330-06.12 **Task Order No.** 608-91-5 **Chain o[f Custody]**

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoi[a]
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 408-441-7500	Fax no. (Consultant) 408-441-7539
Consultant name Pacific Environmental Group	Address (Consultant) 2025 Gateway Place Suite 440 San Jose 9511[0]		Contract number

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 Gas 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 ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐
INFL		3		X			HCl	2-22-93	9:45		X									
EFFL		3		X			HCl	2-22-93	9:45		X					3030744 AC				
																↓ DHS AC				

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks
Concord Lab.

Lab number

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

[Con]dition of sample:		Temperature received:	
[Rel]inquished by sampler [signature]	Date 2-23-93 Time 9:10	Received by	
[Rel]inquished by	Date Time	Received by	
[Rel]inquished by	Date Time	Received by laboratory [signature]	Date 2/23/93 Time 0910

[Distrib]ution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
[...]-3292 (2-91)

SENT BY:SEQUOIA-Concord. ; 3- 4-93 ; 9:07AM ; 5106869689→ 4084417539;# 3

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	#608-91-5/Arco #0608, San Lorenzo	Sampled: Mar 15, 1993
2025 Gateway Pl., Ste.440	Sample Matrix:	Water	Received: Mar 17, 1993
San Jose, CA 95110	Analysis Method:	EPA 5030/8015/8020	Reported: Mar 24, 1993
Attention: Kelly Brown	First Sample #:	303-0511	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 303-0511 INFL	Sample I.D. 303-0512 EFFL
Purgeable Hydrocarbons	50	310	N.D.
Benzene	0.5	29	N.D.
Toluene	0.5	14	N.D.
Ethyl Benzene	0.5	4.9	N.D.
Total Xylenes	0.5	55	N.D.
Chromatogram Pattern:		Gasoline	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	3/17/93	3/17/93
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	101	99

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group
2025 Gateway Pl., Ste.440
San Jose, CA 95110
Attention: Kelly Brown

Client Project ID: #608-91-5/Arco #0608, San Lorenzo

QC Sample Group: 3030511-512

Reported: Mar 24, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Mar 17, 1993	Mar 17, 1993	Mar 17, 1993	Mar 17, 1993
QC Sample #:	303-0503	303-0503	303-0503	303-0503
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	19	19	20	64
Matrix Spike % Recovery:	95	95	100	106
Conc. Matrix Spike Dup.:	18	19	19	62
Matrix Spike Duplicate % Recovery:	90	95	95	103
Relative % Difference:	5.4	0.0	5.1	3.2

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

ARCO Products Company
Division of AtlanticRichfieldCompany

3k ((· 1?) **Task Order No.** 5008 · 91-5

Chain of Custody

ARCO Facility no.	1 (, ( )
City (Facility)	San Lorenzo
Project manager (Consultant)	Kelly Brown
Laboratory name	(General) Sequoia
ARCO engineer	Mike Whelan
Telephone no. (ARCO)	--
Telephone no. (Consultant)	408 441 · 7500
Fax no. (Consultant)	408 · 441 · 7539
Contract number	
Consultant name	Pacific Env. Group
Address (Consultant)	2025 Gateway Place Suite #440 San Jose 95110

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 Gas 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 ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
INFL		3		W		Y	HCl	3-15-93	12:35		X					3030511			AC			
EFFL		3		W		Y	HCl	3-15-93	12:30		X					3030512			AC			

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Condition of sample:

Temperature received:

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by sampler: [signature]	3-17-93	9:10	Received by: [signature]	3/17/93	0910
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by laboratory	Date	Time

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

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

SITE INFORMATION FORM

Identification

Project # 330-06,17
Station # 608
Site Address: 17601 Hesperian Blvd.
San Lorenzo
County:
Project Manager: LG/DM
Requestor: JM
Client: ARCO
Client P.O.C.: Mike Whelan
Date of request: 8/13/92

Project Type

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

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

- ☐ Cal Trans:
- ☐ County:
- ☐ City:
- ☐ Private:
- ☐ Multi-Consultant Scheduling
  Date(s):

SAMPLING

Site Safety Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-dow
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☐ Report required for: ☐ Data summary required for:

(1) DTW in wells MW-5, MW-7 MW-8, MW-9, MW-10, MW-11, MW-13, E-1A
(3) Change filter if necessary.
2 Sample system (monthly = M, quarterly = Q)

	INFL	EFFL
Gas/BTEX	M	M
COD		Q
TSS		Q
pH		Q

(1) Note: Quarterly event to occur in January, April July, Octob
(3) MID samples will be taken when breakthrough is expected in the future.

686-9600

(Please attach: Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: 6 | Actual hours; On-Site: 3 Mob-de-Mob: 1.5

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work) 1.1

MW-5	10.92	12:28
MW-7	10.92	12:30
MW-8	9.79	12:36
MW-9	8.99	12:40
MW-10	9.13	12:43
MW-11	9.91	12:45
MW-13	12.40	12:32
E-1A	23.65	~~12:~~ 13:10 - System running

System off

~~3.14~~ gal/m

Completed by: Scott Pitz Date: 1-19-93

PACIFIC ENVIRONMENTAL GROUP, INC.

Checked by: PITS Update:

Groundwater Extraction System
San Lorenzo ARCO 608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12
Revised: October 12, 1992

Name: Scott Pisle Date/Time: 1-19-93 12:00

Treatment System Readings

Effluent Totalizer (gallons)	01915165	Bag Filter INFL Pressure (psi)	3 psi
Effluent Flowrate (gpm)	4 gpm	Carbon 1 INFL Pressure (psi)	1.25 psi
E-1A Hourmeter (hours) 087975	~~087975~~ 04919	MID-1 Pressure Pressure (psi)	2.75 psi
Electric meter (kw-hrs)	04 919	MID-2 Pressure (psi)	1 psi
Sewer Level Overflowing?	NO	EFFL Pressure (psi)	0 psi
E-1A DTW (TOB) (feet)	23.65	Spare Bag Filters On-site	Yes
Does Autodialer Call Office?	Only if manually operated	Does Pressure Switch Work?	Yes

Sample groundwater at E-1A, MID-1, and EFFL

Temperature (F)	E-1A	63.2	MID-1	59.8	MID-2 53.1	EFFL	50.9
pH (units)	E-1A	6.91	MID-1	6.82	MID-2 7.03	EFFL	6.86

1. Check all fittings and piping for leaks. (Initials) SP
2. Check control panel for discrepancies. (Initials) SP
3. Take DTW/DTL from all on-site wells. (Initials) SP
4. Inspect the condition of the secondary containment (Initials) SP

Comments On/off switch was turned to the off position on the power pole. (Turned it back on) 13:18
Installed a 2357 lock on pole
Containment area was full of water. Opened drain and let water drain out.

Distribute a copy of this form to the project supervisor.

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 LOCATION: San Lorenzo DATE: 4-9-93

CLIENT/STATION NO.: 0608 Arco FIELD TECHNICIAN: SP DAY OF WEEK: Tuesday

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	SEPARATE-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
	MW-5	12:08							10.92											
	MW-7	12:30							10.92											
	MW-8	12:36							9.79											
	MW-9	12:40							8.99											
	MW-10	12:43							9.13											
	MW-11	12:45							9.91											
	MW-13	12:32							12.40											
	E-1A	13:10							23.65											

Comments: Water levels in MW-5 to MW-13 were taken upon arrival and the system was not running. 13:00 system was turned back on and E-1A was measured at 13:10

ARCO Products Company ◆ Division of AtlanticRichfieldCompany

330.06.12 Task Order No. 608-91-5

Chain of Custody

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mark Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 408-441-7500	Fax no. (Consultant) 408-441-7539
Consultant name Delta Env. Group		Address (Consultant) 2025 Gateway Place #440 San Jose 95110	Contract number

Method of shipment: C.O.D

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 8020/EPA 8020	BTEX/TPH EPA M602/8020/8015 Gas ☐ Diesel ☐	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM5303E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐	Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	pH Ignitability Solubility	
INFL		3		X		ice	HCl	1-19 93	14:00		X												
EFFL		3		↓		↓	HCl	↓	↓		X												
EFFL		2		↓		↓	H_2SO_4	↓	↓														X
EFFL		1		↓		↓	NP	↓	↓													X	

Special detection Limit/reporting

Special QA/QC

Remarks: Please send C.A.R. to above Address.

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	Date 1-19-93 Time 9:30	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory	Date 1/20/93 Time 9:20

ARCO Environmental Engineering: Pink copy — Consultant

SITE INFORMATION FORM

Identification

Project # 330-06.12

Station # 6885

Site Address: 17601 Hesperian Blvd. San Lorenzo

County:

Project Manager: LG/DM

Requestor: JM

Client: ARCO

Client P.O.C.: Mike Whelan

Date of request: 8/13/92

Project Type

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

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

- ☐ Cal Trans
- ☐ County
- ☐ City
- ☐ Private
- ☐ Multi-Consultant Scheduling Date(s):

Site Safety Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☐ Report required for: ☐ Data summary required for:

(1) DTW in wells MW-5, MW-7 MW-8, MW-9, MW-10, MW-11, MW-13, E-1A
Change filter if necessary.
Sample system (monthly = M, quarterly = Q)

	INFL	EFFL
Gas/BTEX	M	M
COD		Q
TSS		Q
pH		Q

(1) Note: Quarterly event to occur in January, April, July, October.
(2) MTD samples will be taken when breakthrough is expected in the future.

(Please attach Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: 6

Actual hours; On-Site: 2 Mob-de-Mob: 1.5 travel in 0.5 dre mob

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

Completed by: Scott Pisle Date: 2-22-93

PACIFIC ENVIRONMENTAL GROUP, INC.

Groundwater Extraction System
San Lorenzo ARCO 608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12
Revised: October 12, 1992

Name: Scott P?ske Date/Time: 2-22-93

Treatment System Readings

Effluent Totalizer (gallons)	02096930	Bag Filter INFL Pressure (psi)	18psi/2psi after filter bag Replace filter bag
Effluent Flowrate (gpm)	3.8gpm	Carbon 1 INFL Pressure (psi)	2.2psi
E-1A Hourmeter (hours)	09606.6 ~~05374~~	MID-1 Pressure Pressure (psi)	5.1psi
Electric meter (kw-hrs)	05374	MID-2 Pressure (psi)	1.5psi
Sewer Level Overflowing?	NO	EFFL Pressure (psi)	0psi
E-1A DTW (TOB) (feet)	23.70 9:10	Spare Bag Filters On-site	Yes
Does Autodialer Call Office?	Manually only	Does Pressure Switch Work?	Yes

Sample groundwater at E-1A, MID-1, and EFFL.

Temperature (F)	E-1A 63.0	MID-1 61.5	MID-2 63.6	EFFL 59.1
pH (units)	E-1A 6.87	MID-1 6.90	MID-2 6.78	EFFL ~~6.90~~ 6.87

1. Check all fittings and piping for leaks. (Initials) SP
2. Check control panel for discrepancies. (Initials) SP
3. Take DTW/DTL from all on-site wells. (Initials) SP
4. Inspect the condition of the secondary containment (Initials) SP

Comments: Secondary containment had 4" to 6" of water in it. (Rainwater) Opened drain valve and drained water.

9:05	MW-5	11.10
9:03	MW-7	10.91
9:06	MW-8	9.95
9:08	MW-9	9.13
9:17	MW-10	9.22
9:16	MW-11	9.95
9:40	MW-13	12.35

Distribute a copy of this form to the project supervisor.

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 LOCATION: San Lorenzo DATE: 2-22-93

CLIENT/STATION NO.: Arco 0608 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

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	SEPARATE-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
3	MW-5	9:05							11.10	✓										
2	MW-7	9:03							10.91	✓										
4	MW-8	9:08							9.95	✓										
8	MW-9	9:18							9.13	✓										
7	MW-10	9:17							9.22	✓										
6	MW-11	9:16							9.95	✓										
1	MW-13	9:20							12.35	✓										
5	E-1A	9:10							23.70	✓										

Comments:

ARCO Products Company — Chain of Custody

Division of AtlanticRichfield Company

330-06.12 Task Order No. 608-91-5

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer	Telephone no. (ARCO)	Telephone no. (Consultant) 408 441-7500	Fax no. (Consultant) 408-441-7539
Consultant name Pacific Environmental Group	Address (Consultant) 2025 Gateway Place Suite 440 San Jose 95110		Contract number

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 Gas EPA 602/8020/8015	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 ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
INFL		3		X			HCl	2-22-93	9:45		X											
EFFL		3		X			HCl	2-22-93	9:45		X											

Special detection limit/reporting

Special QA/QC

Remarks Concord Lab.

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:

	Date	Time	
Relinquished by sampler	2-23-93	9:10	Received by
Relinquished by			Received by
Relinquished by			Received by laboratory

Date: 2/23/93 Time: 0910

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

SITE INFORMATION FORM

Identification

Job # 330-06.12
Station # 608
Site Address: 17601 Hesperian Blvd. San Lorenzo
County:
Project Manager: LG/DM
Requestor: JM
Client: ARCO
Client P.O.C.: Mike Whelan
Date of request: 8/13/92

Project Type

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

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

- ☐ Cal Trans
- ☐ County
- ☐ City
- ☐ Private
- ☐ Multi-Consultant Scheduling
  Date(s):

Site Safety Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☐ Report required for: ☐ Data summary required for:

STW in wells MW-5, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, E-1A
② Change filter if necessary
③ Sample system (monthly = M, quarterly = Q)

	INFL	EFFL
Gas/BTEX	M	M
COD		Q
TSS		Q
pH		Q

① Notes Quarterly event to occur in January, April, July, October.
② MID samples will be taken when breakthrough is expected in the future.

(Please attach Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well Logs, Other information as appropriate)

Budgeted hours: 6. | Actual hours; On-Site: 5 Mob-de-Mob: 1

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

3.6 SPM
108,930

Completed by: Scott Fiske Date: 3-15-93

Groundwater Extraction System
San Lorenzo ARCO 608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12
Revised: October 12, 1992

Name: Scott Pisle Date/Time: 3-15-93 12:00

Treatment System Readings

Effluent Totalizer (gallons)	02205833	Bag Filter INFL Pressure (psi)	15 psi Initial Replaced Bag Filter (13:06) 7 psi
Effluent Flowrate (gpm)	35 gpm.	Carbon 1 INFL Pressure (psi)	2.1 psi
E-1A Hourmeter (hours)	10113.4	MID-1 Pressure Pressure (psi)	6.3 psi
Electric meter (kw-hrs)	05675	MID-2 Pressure (psi)	1.75
Sewer Level Overflowing?	NO	EFFL Pressure (psi)	0 psi
E-1A DTW (TOB) (feet)	22.92 (12100)	Spare Bag Filters On-site	Yes.
Does Autodialer Call Office?	Only Manually	Does Pressure Switch Work? Yes	Shuts system down at 23 psi

Sample groundwater at E-1A, MID-1, and EFFL.

Temperature (F)	E-1A 66.6	MID-1 62.1	MID-2 65.8	EFFL 66.4
pH (units)	E-1A 7.77	MID-1 6.99	MID-2 6.95	EFFL 7.80

Conductivity 1058

1.	Check all fittings and piping for leaks. (Initials)	SP
2.	Check control panel for discrepancies. (Initials)	SP
3.	Take DTW/DTL from all on-site wells. (Initials)	SP
4.	Inspect the condition of the secondary containment (Initials)	SP

Comments 45 minutes spent removing debris and leaves from containment pad.

Replaced Bag Filter - Rechecked Effluent Flowrate.
Effluent Flowrate 4 gpm 13:10 3-15-93

Distribute a copy of this form to the project supervisor.

MW-5	11.13	12:04
MW-7	11.37	12:10
MW-8	10.31	12:07
MW-9	9.48	12:22
MW-10	[illegible]	13:30
MW-11	10.30	13:34
MW-13	12.69	12:17
MW-14	7.70	12:19

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.15 / 330-06.12 LOCATION: San Lorenzo DATE: 3-15-93

CLIENT/STATION NO.: Arco 0668 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

PROBE TYPE/ID No.
- ☐ Oil/Water IF _____
- ☑ H_2O level Indicator FO
- ☐ 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	SEPARATE-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
	E-1A	12:00							22.92											
	MW-5	12:04							11.13											
	MW-7	12:10							11.37											
	MW-8	12:07							10.31											
	MW-9	12:21							9.48											
	MW-10	13:30							9.64											
	MW-11	13:34							10.30											
	MW-13	12:17							12.69											
	MW-14	13:35							8.70											

Comments: _____

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06-15/330-06-12 LOCATION: San Lorenzo DATE: 3-15-93

CLIENT/STATION NO.: Arco 0606 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

PROBE TYPE/ID No.
- ☐ Oil/Water IF _____
- ☒ H_2O level Indicator #0
- ☐ 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	SEPARATE-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
	MW-15	14:03							10.05											
	MW-16	14:01							10.60											
	MW-17	13:57							11.47											
	MW-18	13:53							9.62											
	MW-19	13:56							9.23											
	MW-20	13:48							9.44											
	MW-21	13:46							9.59											
	MW-22	13:43							10.03											
	MW-23	13:40							11.01	✓										

Comments: _____

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 32-06.15 LOCATION: San Lorenzo DATE: 3-15-93

CLIENT/STATION NO.: Arco 0608 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

PROBE TYPE/ID No.
- ☐ Oil/Water IF _____
- ☒ H_2O level indicator #0
- ☐ 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	SEPARATE-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
	church school well	13:58							11.32											

Comments: _____

SITE INFORMATION FORM

Identification

Project # 330-06.12
Station # 608
Site Address: 17601 Hesperian Blvd. San Lorenzo
County:
Project Manager: LG/DM
Requestor: JM
Client: ARCO
Client P.O.C.: Mike Whelan
Date of request: 8/13/92

Project Type

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

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

- ☐ Cal Trans
- ☐ County
- ☐ City
- ☐ Private
- ☐ Multi-Consultant Scheduling Date(s):

Site Safety Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☐ Report required for: ☐ Data summary required for:

1) DTW in wells MW-5, MW-7 MW-8, MW-9, MW-10, MW-11, MW-13, E-1A
2) Change filter if necessary.
3) Sample system (monthly = M, quarterly = Q)

	INFL	EFFL
Gas/BTEX	M	M
COD	Q	Q
TSS	Q	Q
pH	Q	Q

① Note: Quarterly event to occur in January, April July, October.
② MTD samples will be taken when breakthrough is expected in the future.

(Please attach Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: 6. | Actual hours; On-Site: 3.5 | Mob-de-Mob: ½ hr Travel, ½ hr to Lab, ½ Demob.

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

System was turned off the week of 3-29-93 to 4-2-93 However water was run through the system via Hydrotest equipment.

2.6 gpm

Completed by: Scott Pike Date: 4-9-93

Groundwater Extraction System
San Lorenzo ARCO 608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12
Revised: October 12, 1992

Name: Scott Pisle. Date/Time: 4-9-93 09:00

2.6 gpm

Treatment System Readings

Effluent Totalizer (gallons)	0229870	Bag Filter INFL Pressure (psi)	8.5 psi
Effluent Flowrate (gpm)	4.25 gpm	Carbon 1 INFL Pressure (psi)	6.5 psi
E-1A Hourmeter (hours)	10516.8	MID-1 Pressure Pressure (psi)	5.75
Electric meter (kw-hrs)	05918	MID-2 Pressure (psi)	1.5 psi
Sewer Level Overflowing?	NO	EFFL Pressure (psi)	0
E-1A DTW (TOB) (feet)	22.50	Spare Bag Filters On-site	Yes
Does Autodialer Call Office?	Only when Manually tripped	Does Pressure Switch Work?	Yes

Sample groundwater at E-1A, MID-1, and EFFL

Temperature (F)	E-1A 65.6	MID-1 65.3	MID-2 64.9	EFFL 64.0
pH (units)	E-1A 6.98	MID-1 6.98	MID-2 7.00	EFFL 7.08

1. Check all fittings and piping for leaks. (Initials) SP
2. Check control panel for discrepancies. (Initials) SP
3. Take DTW/DTL from all on-site wells. (Initials) SP
4. Inspect the condition of the secondary containment (Initials) SP

Comments H2O level in E-1A was fluctuating rapidly.
* Reduced Effluent flow rate to below 4 gal/min
* Replaced emergency call placard
* Picked up Barricade left from drilling
* Swept secondary containment.

Distribute a copy of this form to the project supervisor.

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 3306.12 LOCATION: San Lorenzo DATE: 4-9-93

CLIENT/STATION NO.: Arco 0628 FIELD TECHNICIAN: SP DAY OF WEEK: Friday

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	SEPARATE-PHASE HYDROCARBONS (SPH) SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	COLOR: Fresh	COLOR: Weathered	COLOR: Gas	COLOR: Oil	VISCOSITY: Lite	VISCOSITY: Medium	VISCOSITY: Heavy	LIQUID REMOVED (gallons): SPH	LIQUID REMOVED (gallons): H_2O
	E-1A	8:20							22.50	✓											
	MW-5	8:42							11.46	✓											
	MW-7	8:24							11.46	✓											
	MW-8	8:39							10.47	✓											
	MW-9	8:30							9.63	✓											
	MW-10	8:35							9.75	✓											
	MW-11	8:33							10.42	✓											
	MW-13	8:26							12.85	✓											
	MW-25	8:44							11.18	✓											

Comments: MW-25 is a new ~~on sight~~ site well. So, I took a measurement

SENT BY: PACIFIC ENVIRON. GRP. 04-09-93 01:25PM 5108250882→ 4084417539 # 8

SENT BY:PACIFIC ENVIRON. GRP. 04-09-93 01:26PM 5108250882→ 4084417539 # 5

ARCO Products Company

Division of AtlanticRichfieldCompany

330-06.12

Task Order No. 0608-91-5

Chain of Custody

ARCO Facility no. 0608

City (Facility)

ARCO engineer Mike Whelan

Telephone no. (ARCO)

Project manager (Consultant) Kelly Brown

Telephone no. (Consultant) 408-441-7500

Fax no. (Consultant) 408-441-7539

Consultant name Pacific Env. Group

Address (Consultant) 2025 Gateway Place #440 San Jose 95110

Laboratory name Sequoia

Contract number

Method of shipment

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 Gas 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 ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Chemical Oxygen Demand	pH / Total Sus. Solids
INFL		3		W		✓	HCl	4-9-93	9:15		X											
EFFL		3		↓			HCl	↓	9:00		X											
EFFL		2		↓			H2SO4	↓	9:00													
EFFL		1		↓			NP	↓	9:00												X	
																						X

Special detection Limit/reporting

Special QA/QC

Remarks
pH analysis needs to be run 48hrs from time sample taken

Lab number

Condition of sample:

Temperature received:

Relinquished by sampler [signature]	Date 4-9-93	Time 12:55	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory

Date | Time

Turnaround time

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days ☒

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

APPC-3292 (2-9