PACIFIC
ENVIRONMENTAL
GROUP, INC.

March 16, 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
October to December Quarter 1992
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 above referenced site. Groundwater samples were collected on December 21 and 22, 1992, and analyzed for total petroleum hydrocarbons calculated as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). **As requested by Alameda County Health Care Services (ACHCS) in a letter dated October 2, 1992, a groundwater sample collected from MW-8 was also analyzed for halogenated volatile organic compounds (HVOCs), semi-volatile organic compounds (SVOCs), and California Assessment Metals (CAM 17 Metals).** Groundwater monitoring procedures are presented as Attachment A. Also included in this report is a performance evaluation of the groundwater remedial system.

RESULTS

During this quarter, all site wells remained within historical levels except Well MW-5. TPH-g was detected at concentrations ranging from 75 parts per billion (ppb) in Well MW-9 to 3,600 ppb in Well MW-8. **The concentration of 75 ppb TPH-g in Well MW-9 is the first hydrocarbon detection since June 22,**

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1990. Benzene was detected at concentrations ranging from 1.2 ppb in Well MW-17 to 410 ppb in Well MW-8. Wells MW-7, MW-11, MW-13, MW-14, MW-16, and MW-18 through MW-23 remained at non-detectable levels for TPH-g and BTEX compounds. Separate-phase hydrocarbons were not observed in any site well this quarter. Groundwater analytical results for TPH-g and BTEX compounds are presented in Table 1. A dissolved gasoline and benzene concentration map is presented on Figure 1.

The additional analysis performed on groundwater samples collected from Well MW-8 indicated non-detectable levels of halogenated volatile organics; however, SVOCs were detected including: acenaphthene, dibenzofuran, fluorene, 2-methylnaphthalene, naphthalene, and phenanthrene. In addition, arsenic, barium, and zinc metals were also detected. No established maximum contaminant levels (MCLs) exist for the SVOCs detected. The SVOCs noted in Well MW-8 are used primarily in fungicides and insecticides. These concentrations may be the result of historical land use as orchard. Detected concentrations of arsenic, barium, and zinc were significantly below the Title 22 solubility threshold level concentration (STLC) and total threshold level concentration (TTLC) levels.

Certified analytical reports, chain-of-custody documentation, and field data sheets are presented as Attachment B. Groundwater analytical results for HVOCs, SVOCs, and CAM 17 Metals are presented in Table 2.

Depth to water data indicates that groundwater elevations have risen in site wells an average of 1.55 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 is presented in Table 3. A groundwater elevation contour map based on the December 1992 data is presented on Figure 2.

REMEDIAL PERFORMANCE EVALUATION

Groundwater Treatment System

The data presented in this section covers the period from September 15 to December 17, 1992. 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, 1993.

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 non-detectable (less than 50 ppb) to 96 ppb, while effluent concentrations were non-detectable (less than 50 ppb). A graphical summary of influent TPH-g concentration versus total flow is presented as Figure 3, and a graphical summary of dissolved TPH-g removed versus total flow is presented as Figure 4. Analytical results for the treatment system are summarized in Table 5 and the certified analytical results, chain-of-custody documentation, and field data sheets for the monthly sampling dates are included in Attachment B.

The treatment system utilizes one groundwater extraction well (E-1A). The average pumping rate for the treatment system during the period was 2.5 gallons per minute (gpm). A total of 328,660 gallons of groundwater was extracted, and 0.04 pound of dissolved TPH-g was recovered during this period of operation (Table 4 and 6). A total of 1,864,300 gallons of groundwater has been extracted and 1.32 pounds of dissolved TPH-g has been recovered since the beginning of operation. Calculations indicate the primary carbon unit is approximately 2 percent loaded and breakthrough is not expected during the next 12 months. The treatment system experienced no down time during this period.

Groundwater elevation data indicates the groundwater extraction system has achieved hydraulic control of the on-site dissolved hydrocarbon plume.

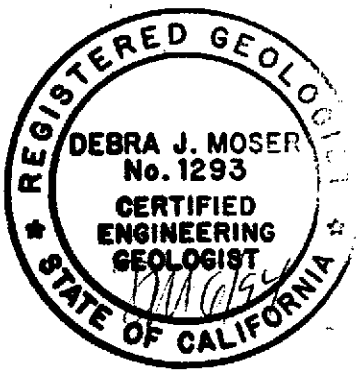
If there are any questions regarding the contents of this report, please call.

Sincerely,

Pacific Environmental Group, Inc.

Keith Winemiller
Senior Staff Engineer

Debra J. Moser
Senior Geologist
CEG 1293



REFERENCES

Marshack, J.B., A Compilation of Water Quality Goals, RWQCB, September 1991.

Attachments:
- Table 1 - Groundwater Analytical Data - Total Petroleum Hydrocarbons
- 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
- Table 6 - Treatment System Metered Volume
- Figure 1 - Dissolved Gasoline 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 - Groundwater Sampling and Analytical 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 Heitt, Regional Water Quality Control Board - S.F. Bay Region

Table 1
Groundwater Analytical Data
Total Petroleum Hydrocarbons

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

Well Number	Sample Date	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

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons

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

Well Number	Sample Date	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
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**
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
	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
	12/21/92	75*	<0.5	<0.5	<0.5	<0.5

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons

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

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
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
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
E-1A (MW-12)	09/19/90	<50	7	0.9	1	2
	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				
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

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons

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

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
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
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
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
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
	09/16/92	77	1.5	<0.5	1.2	1.0
	12/21/92	**220**	**1.2**	<0.5	**9.8**	**9.4**
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
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

Table 1 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons

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

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-19 (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
	12/21/92	<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
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
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
	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
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

ppb = Parts per billion
NA = Not available
< = Denotes laboratory detection limits. See attached analytical reports.
* Non-typical chromatograph pattern.
** Ethylbenzene and xylenes given as a combined value.
*** Well contained slight product sheen.

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		[illegible]
Dibenzofuran		[illegible]
Fluorene		[illegible]
2-Methylnaphthalene		[illegible]
Naphthalene		[illegible]
Phenanthrene		[illegible]
Metals	**STLC (ppm)**	**TTLC (ppm)**
Arsenic	ND	[illegible]
Barium	ND	[illegible]
Zinc	ND	[illegible]

ppb = Parts per billion
ppm = Parts per million
ND = Not detected
STLC = Soluble Threshold Limit Concentration
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	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	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	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	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
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	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
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
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
	05/14/92		11.19	--	20.92
	06/15/92		11.86	--	20.25
	07/14/92		12.28	--	19.83

Table 3 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-9 (cont.)	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
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
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
	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

Table 3 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-11 (cont.)	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
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
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
	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

Table 3 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
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
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
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
	06/15/92		12.64	--	18.75
	09/15/92		14.07	--	17.32
	12/17/92		12.56	--	18.83
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

Table 3 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
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
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
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
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
	09/15/92		12.78	--	15.94
	12/17/92		10.80	--	17.92
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
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

TOB = Top of box
MSL = Mean sea level
NA = Not analyzed
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	Sample Date	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	178,986	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
TOTAL POUNDS OF TPH-g REMOVED:						1.32		
TOTAL GALLONS OF TPH-g REMOVED:							0.23	

TPH-g = Total petroleum hydrocarbons, calculated as gasoline
ppb = Parts per billion
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

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)
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
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

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

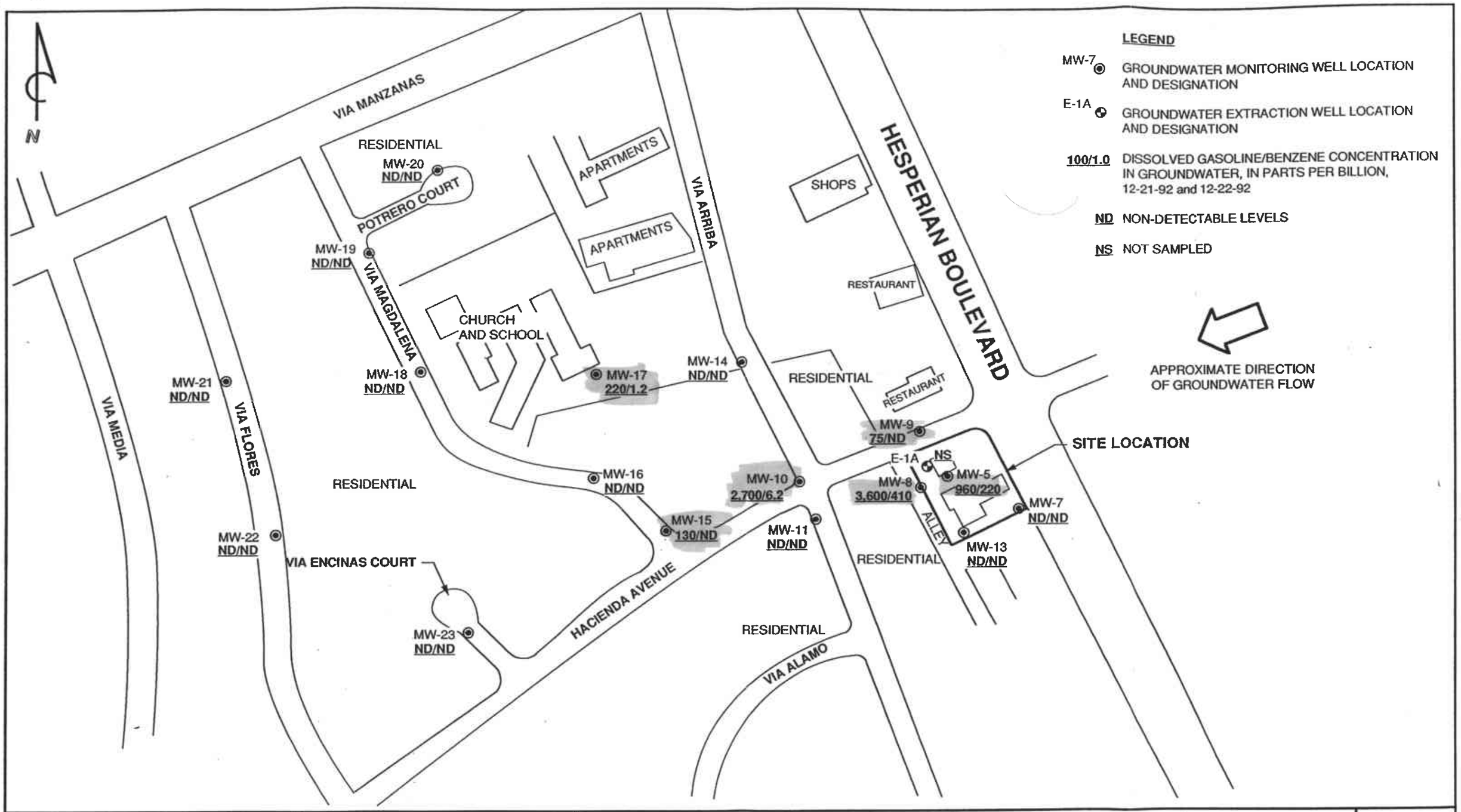
ppb = Parts per billion
NS = Not sampled
< = Analyte was not present above the stated detection limit.

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

gpm = Gallons per minute
NA = Not analyzed
* Start-up



PACIFIC ENVIRONMENTAL GROUP, INC.

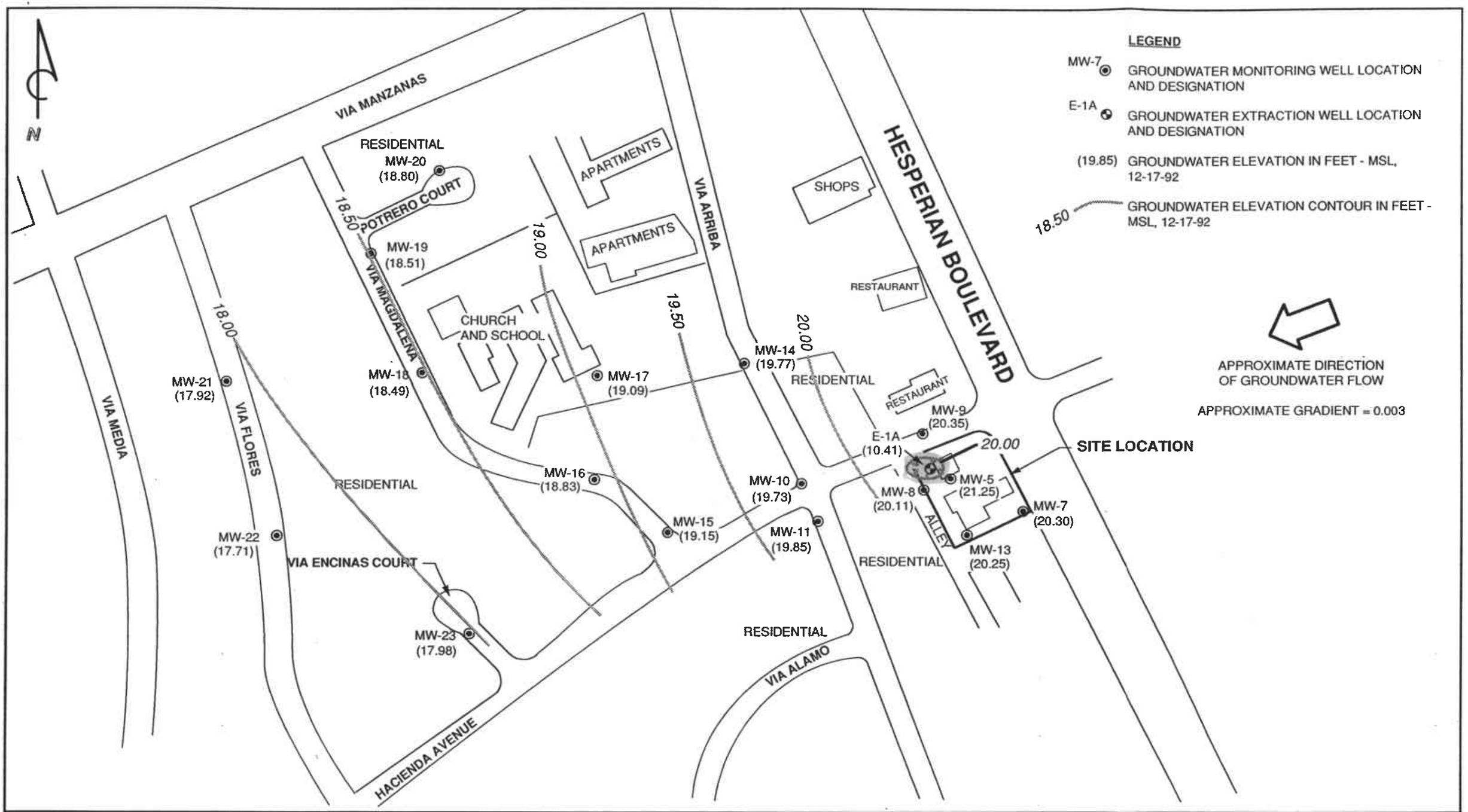
APPROXIMATE SCALE
0 150 300 FEET

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard
San Lorenzo, California

DISSOLVED GASOLINE AND BENZENE CONCENTRATION MAP

FIGURE: 1
PROJECT: 330-06.05

2/23/93



PACIFIC ENVIRONMENTAL GROUP, INC.

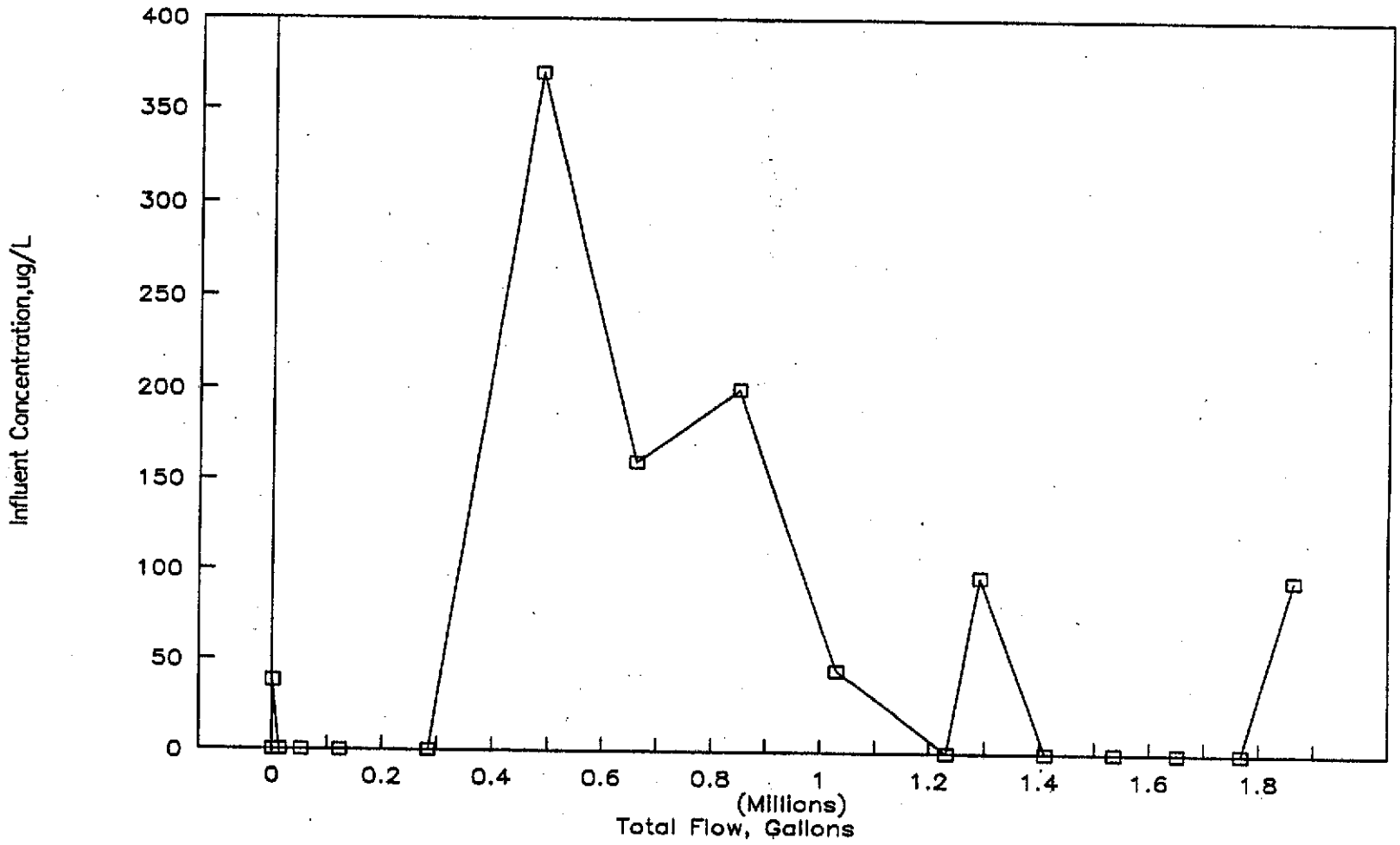
APPROXIMATE SCALE
0 150 300 FEET

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 2
PROJECT: 330-06.05

2/26/93



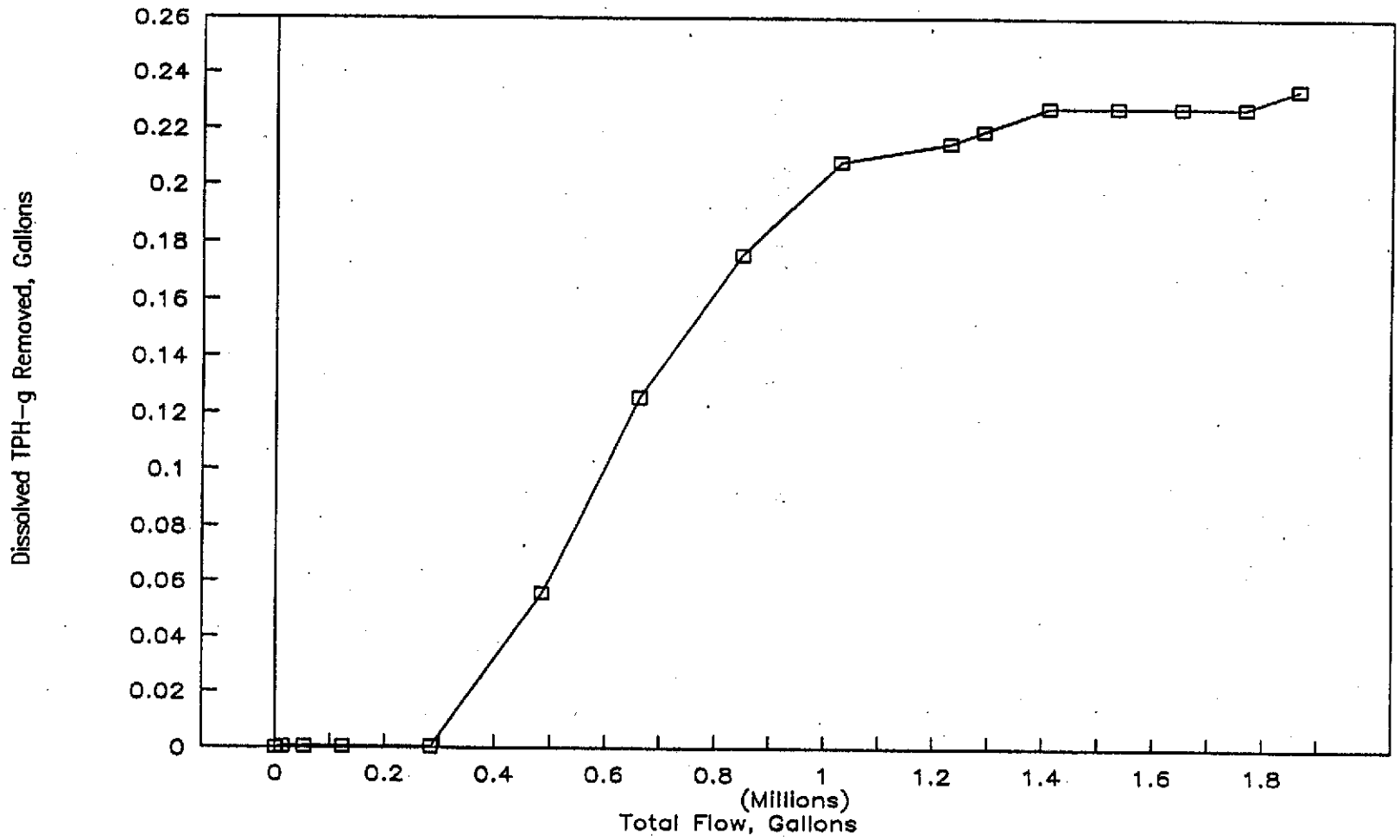
PACIFIC ENVIRONMENTAL GROUP, INC.

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

GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES

ATTACHMENT A
GROUNDWATER SAMPLING AND ANALYTICAL 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 Analysis

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 modified EPA Methods 8015, 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 document, and field data sheets are presented in Attachment B.

ATTACHMENT B

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

SEQUOIA ANALYTICAL

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(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	Sampled: 12/21&12/22/92
620 Contra Costa Blvd., #209	Sample Matrix:	Water	Received: Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported: Jan 7, 1993
Attention: Kelly Brown	First Sample #:	212-1002	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 212-1002 TB-1	Sample I.D. 212-1003 MW-7	Sample I.D. 212-1004 MW-5	Sample I.D. 212-1005 MW-8	Sample I.D. 212-1006 MW-9	Sample I.D. 212-1007 MW-10
Purgeable Hydrocarbons	50	N.D.	N.D.	960	3,600	75	2,700
Benzene	0.5	N.D.	N.D.	220	410	N.D.	6.2
Toluene	0.5	N.D.	N.D.	6.5	56	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	4.0	62	N.D.	7.5
Total Xylenes	0.5	N.D.	N.D.	2.0	4.4	N.D.	2.8
Chromatogram Pattern:		--	--	Gasoline	Gasoline	Non-Gasoline Mixture (<C7)	Gasoline and Non-Gasoline Mixture (>C10)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	2.0	2.0	1.0	2.0
Date Analyzed:	12/30/92	12/30/92	12/30/92	12/30/92	12/31/92	12/30/92
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-4	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	98	100	107	101	101	105

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

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Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	Sampled: 12/21&12/22/92
620 Contra Costa Blvd., #209	Sample Matrix:	Water	Received: Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported: Jan 7, 1993
Attention: Kelly Brown	First Sample #:	212-1008	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 212-1008 MW-11	Sample I.D. 212-1009 MW-13	Sample I.D. 212-1010 MW-14	Sample I.D. 212-1011 MW-15	Sample I.D. 212-1012 MW-16	Sample I.D. 212-1013 MW-17
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	130	N.D.	220
Benzene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	1.2
Toluene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	9.8
Total Xylenes	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	9.4
Chromatogram Pattern:		--	--	--	Non-Gasoline Mixture (>C9)	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	12/30/92	12/30/92	12/30/92	12/30/92	12/31/92	12/31/92
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	101	101	101	97	97	111

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

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Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	Sampled: 12/21&12/22/92
620 Contra Costa Blvd., #209	Sample Matrix:	Water	Received: Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported: Jan 7, 1993
Attention: Kelly Brown	First Sample #:	212-1014	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 212-1014 MW-18	Sample I.D. 212-1015 MW-19	Sample I.D. 212-1016 MW-20	Sample I.D. 212-1017 MW-21	Sample I.D. 212-1018 MW-22	Sample I.D. 212-1019 MW-23
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	12/31/92	12/31/92	12/31/92	12/31/92	12/31/92	12/31/92
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	99	100	100	105	101	101

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

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Pacific Environmental Group	Client Project ID:	Arco #0608-62-5,San Lorenzo/ #330-06.15	Sampled:	Dec 22, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, MW-8	Received:	Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8010	Analyzed:	Dec 31, 1992
Attention: Kelly Brown	Lab Number:	212-1005	Reported:	Jan 7, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethylvinyl ether	10	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
Dibromochloromethane	5.0	N.D.
1,3-Dichlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	5.0	N.D.
1,2-Dichlorobenzene	5.0	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	5.0	N.D.
trans-1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	50	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Project Manager

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Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	Sampled:	Dec 22, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, MW-8	Received:	Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 8270	Extracted:	Dec 29, 1992
Attention: Kelly Brown	Lab Number:	212-1005	Analyzed:	Dec 31, 1992
			Reported:	Jan 7, 1993

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	1.0	2.7
Acenaphthylene	1.0	N.D.
Aniline	1.0	N.D.
Anthracene	1.0	N.D.
Benzidine	25	N.D.
Benzoic Acid	5.0	N.D.
Benzo(a)anthracene	1.0	N.D.
Benzo(b)fluoranthene	1.0	N.D.
Benzo(k)fluoranthene	1.0	N.D.
Benzo(g,h,i)perylene	1.0	N.D.
Benzo(a)pyrene	1.0	N.D.
Benzyl alcohol	1.0	N.D.
Bis(2-chloroethoxy)methane	1.0	N.D.
Bis(2-chloroethyl)ether	1.0	N.D.
Bis(2-chloroisopropyl)ether	1.0	N.D.
Bis(2-ethylhexyl)phthalate	5.0	N.D.
4-Bromophenyl phenyl ether	1.0	N.D.
Butyl benzyl phthalate	1.0	N.D.
4-Chloroaniline	1.0	N.D.
2-Chloronaphthalene	1.0	N.D.
4-Chloro-3-methylphenol	1.0	N.D.
2-Chlorophenol	1.0	N.D.
4-Chlorophenyl phenyl ether	1.0	N.D.
Chrysene	1.0	N.D.
Dibenz(a,h)anthracene	1.0	N.D.
Dibenzofuran	1.0	1.2
Di-N-butyl phthalate	5.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
3,3-Dichlorobenzidine	5.0	N.D.
2,4-Dichlorophenol	1.0	N.D.
Diethyl phthalate	1.0	N.D.
2,4-Dimethylphenol	1.0	N.D.
Dimethyl phthalate	1.0	N.D.
4,6-Dinitro-2-methylphenol	5.0	N.D.
2,4-Dinitrophenol	5.0	N.D.

SEQUOIA ANALYTICAL

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Pacific Environmental Group	Client Project ID:	Arco #0606-92-5,San Lorenzo/ #330-06.15	Sampled:	Dec 22, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, MW-8	Received:	Dec 23, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 8270	Extracted:	Dec 29, 1992
Attention: Kelly Brown	Lab Number:	212-1005	Analyzed:	Dec 31, 1992
			Reported:	Jan 7, 1993

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	1.0	N.D.
2,6-Dinitrotoluene	1.0	N.D.
Di-N-octyl phthalate	1.0	N.D.
Fluoranthene	1.0	N.D.
Fluorene	1.0	1.6
Hexachlorobenzene	1.0	N.D.
Hexachlorobutadiene	1.0	N.D.
Hexachlorocyclopentadiene	1.0	N.D.
Hexachloroethane	1.0	N.D.
Indeno(1,2,3-cd)pyrene	1.0	N.D.
Isophorone	1.0	N.D.
2-Methylnaphthalene	1.0	14
2-Methylphenol	1.0	N.D.
4-Methylphenol	1.0	N.D.
Naphthalene	1.0	34
2-Nitroaniline	5.0	N.D.
3-Nitroaniline	5.0	N.D.
4-Nitroaniline	5.0	N.D.
Nitrobenzene	1.0	N.D.
2-Nitrophenol	1.0	N.D.
4-Nitrophenol	5.0	N.D.
N-Nitrosodiphenylamine	1.0	N.D.
N-Nitroso-di-N-propylamine	1.0	N.D.
Pentachlorophenol	5.0	N.D.
Phenanthrene	1.0	1.8
Phenol	1.0	N.D.
Pyrene	1.0	N.D.
1,2,4-Trichlorobenzene	1.0	N.D.
2,4,5-Trichlorophenol	5.0	N.D.
2,4,6-Trichlorophenol	1.0	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

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Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	Sampled:	Dec 22, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, MW-8	Received:	Dec 23, 1992
Pleasant Hill, CA 94523			Extracted:	12/31/92-1/5/93
Attention: Kelly Brown	Lab Number:	212-1005	Reported:	Jan 7, 1993

INORGANIC PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCES

	Soluble Threshold Limit Concentration (Waste Extraction Test)			Total Threshold Limit Concentration		
Analyte	STLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)	TTLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)
Antimony	15	0.0050	-	500	0.0050	N.D.
Arsenic	5	0.0050	-	500	0.0050	0.025
Barium	100	0.10	-	10,000	0.10	0.21
Beryllium	0.75	0.010	-	75	0.010	N.D.
Cadmium	1	0.010	-	100	0.010	N.D.
Chromium (VI)	5	0.0050	-	500	0.0050	-
Chromium (III)	560	0.010	-	2,500	0.010	N.D.
Cobalt	80	0.050	-	8,000	0.050	N.D.
Copper	25	0.010	-	2,500	0.010	N.D.
Lead	5	0.0050	-	1,000	0.0050	N.D.
Mercury	0.2	0.00020	-	20	0.00020	N.D.
Molybdenum	350	0.050	-	3,500	0.050	N.D.
Nickel	20	0.050	-	2,000	0.050	N.D.
Selenium	1	0.0050	-	100	0.0050	N.D.
Silver	5	0.010	-	500	0.010	N.D.
Thallium	7	0.0050	-	700	0.0050	N.D.
Vanadium	24	0.050	-	2,400	0.050	N.D.
Zinc	250	0.010	-	5,000	0.010	0.015
Asbestos	-	10	-	10,000	10	-
Fluoride	180	0.10	-	18,000	0.10	-

Asbestos results are reported as fibers/g.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

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

Client Project ID: Arco #0608-92-5,San Lorenzo/ #330-06.15

QC Sample Group: 2121002-19

Reported: Jan 7, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Selenium	Lead	Mercury
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 200.9	EPA 200.9	EPA 7470
Analyst:	A.T.	A.T.	A.T.	A.T.	D. Ballard	D. Ballard	D. Ballard
Reporting Units:	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L
Date Analyzed:	Dec 30, 1992	Dec 30, 1992	Dec 30, 1992	Dec 30, 1992	Jan 5, 1993	Dec 31, 1992	Jan 5, 1993
QC Sample #:	212-0951	212-0951	212-0951	212-0951	212-0750	212-0750	212-0750
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60	0.020	0.050	0.0050
Conc. Matrix Spike:	22	21	21	67	0.022	0.048	0.0049
Matrix Spike % Recovery:	110	105	105	112	110	96	98
Conc. Matrix Spike Dup.:	23	22	22	69	0.025	0.050	0.0045
Matrix Spike Duplicate % Recovery:	115	110	110	115	125	100	90
Relative % Difference:	4.4	4.6	4.6	2.9	13	4.1	8.5

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

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

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

SEQUOIA ANALYTICAL

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

Client Project ID: Arco #0608-92-5,San Lorenzo/ #330-06.15

QC Sample Group: 2121002-19

Reported: Jan 7, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill	K.Nill
Reporting Units:	µg/L	µg/L	µg/L
Date Analyzed:	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10
Conc. Matrix Spike:	8.5	10	10
Matrix Spike % Recovery:	85	100	100
Conc. Matrix Spike Dup.:	8.2	10	10
Matrix Spike Duplicate % Recovery:	82	100	100
Relative % Difference:	3.6	0.0	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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	Arco #0608-92-5,San Lorenzo/ #330-06.15	
620 Contra Costa Blvd., #209	Method:	EPA 8270	Q.C. Sample Dates
Pleasant Hill, CA 94523	Analyst(s):	Son Le	Extracted: Dec 29, 1992
Attention: Kelly Brown	QC Sample #:	Matrix Blank	Analyzed: Jan 5, 1993
			Reported: Jan 7, 1993

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	37	37	37	37	0.0
2-Chlorophenol	N.D.	100	61	61	65	65	6.4
1,4-Dichloro-benzene	N.D.	50	31	62	30	60	3.3
N-Nitroso-Di-N-propylamine	N.D.	50	40	80	38	76	5.1
1,2,4-Trichloro-benzene	N.D.	50	35	70	35	70	0.0
4-Chloro-3-Methylphenol	N.D.	100	76	76	75	75	1.3
Acenaphthene	N.D.	50	37	74	37	74	0.0
4-Nitrophenol	N.D.	100	28	28	27	27	3.6
2,4-Dinitro-toluene	N.D.	50	34	68	34	68	0.0
Pentachloro-phenol	N.D.	100	60	60	61	61	1.7
Pyrene	N.D.	50	49	98	52	104	5.9

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

SEQUOIA ANALYTICAL

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(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: Arco #0608-92-5,San Lorenzo/ #330-06.15

QC Sample Group: 2121002-19

Reported: Jan 7, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Antimony	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper
Method:	EPA 200.9	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard
Reporting Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Date Analyzed:	Jan 5, 1993	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992
QC Sample #:	212-0750	212-0750	212-0750	212-0750	212-0750	212-0750	212-0750
Sample Conc.:	N.D.	0.21	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.050	1.0	1.0	1.0	1.0	1.0	1.0
Conc. Matrix Spike:	0.046	1.3	1.1	1.0	1.1	1.0	1.1
Matrix Spike % Recovery:	92	109	110	100	110	100	110
Conc. Matrix Spike Dup.:	0.047	1.2	1.1	1.0	1.1	1.0	1.1
Matrix Spike Duplicate % Recovery:	94	99	110	100	110	100	110
Relative % Difference:	2.2	8.0	0.0	0.0	0.0	0.0	0.0

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

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

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

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: Arco #0608-92-5,San Lorenzo/ #330-06.15

QC Sample Group: 2121002-19

Reported: Jan 7, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Molybdenum	Nickel	Silver	Thallium	Vanadium	Zinc	Arsenic
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.9	EPA 200.7	EPA 200.7	EPA 200.9
Analyst:	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard	D. Ballard
Reporting Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Date Analyzed:	Dec 31, 1992	Dec 31, 1992	Dec 31, 1992	Jan 4, 1993	Dec 31, 1992	Dec 31, 1992	Jan 5, 1993
QC Sample #:	212-0750	212-0750	212-0750	212-0750	212-0750	212-0750	212-0750
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	0.015	0.025
Spike Conc. Added:	1.0	1.0	1.0	0.050	1.0	1.0	0.020
Conc. Matrix Spike:	1.1	1.1	1.1	0.050	1.1	1.1	0.045
Matrix Spike % Recovery:	110	110	110	100	110	109	100
Conc. Matrix Spike Dup.:	1.1	1.1	1.1	0.051	1.2	1.1	0.046
Matrix Spike Duplicate % Recovery:	110	110	110	102	120	109	105
Relative % Difference:	0.0	0.0	0.0	2.0	0.0	0.0	2.2

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

330.06.15 Task Order No. 0608-92-5

Chain of Custody

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO) ←	Telephone no. (Consultant) 825-0855	Fax no. (Consultant) 825-0882
Consultant name Pacific Env. Group	Address (Consultant) 620 Contra Costa Blvd. Pleasant Hill		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 GCS	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 ☐		
TB-1		2		X			HCl	12-21-92	←		X	2/12	1002	AB								
MW-7		3					HCl	12-21-92	8:05		X		1003	AC								
MW-5		3					HCl	12-22-92	12:45		X		1004	AC								
MW-8		4					HCl	12-22-92	14:20		X		1005	AD	X							
MW-8		2					NP	↓	↓					EF			X					
MW-8		1					HNO_3	↓	↓					G					X			
MW-9		3					HCl	12-21-92	9:15		X		1006	AC								
MW-10		3					HCl	12-22-92	12:20		X		1007	AC								
MW-11		3					HCl	12-22-92	11:00		X		1008	AC								
~~MW-12~~	SP																					
MW-13		3					HCl	12-21-92	8:30		X		1009	AC								
MW-14		3					HCl	12-22-92	10:35		X		1010	AC								
MW-15		3					HCl	12-22-92	12:40		X		1011	AC								
MW-16		3					HCl	12-22-92	13:40		X		1012	AC								
MW-17		3					HCl	12-21-92	11:45		X		1013	AC								
MW-18		3		↓			HCl	12-21-92	14:30		X	↓	1014	AC								

Special detection Limit/reporting

Special QA/QC
Trip Blanks from Sequoia Lab.

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:

Relinquished by sampler	Date 12-23-92	Time 9:20	Received by Dennis Newcomb
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory / Date / Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APPC-3292 (2-91)

ARCO Products Company
Division of AtlanticRichfieldCompany

330-CC.15 Task Order No. 6608-92-5

Chain of Custody

ARCO Facility no. 6665	City (Facility) San Leandro	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 825-0555	Fax no. (Consultant) 825-0582
Consultant name Pacific Env. Group	Address (Consultant) 626 Contra Costa Blvd Pleasant Hill		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 Gas	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 ☐		
MW-19		3		X			HCl	12-21-92	13:20		X		2	12	1015AC							
MW-20								12-21-92	13:45						1016AC							
MW-21								12-22-92	9:35						1017AC							
MW-22								12-22-92	9:10						1018AC							
MW-23								12-22-92	8:55						1019AC							

Special detection Limit/reporting

Special QA/QC
Trip Blanks are from Seq. Lab

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	12-22-92	9:20	Received by		
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by laboratory	Date	Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APPC-3292 (2-91)

WELL SAMPLING REQUEST

SITE INFORMATION FORM

Identification

Proj # 330-06-15
Data # 0608
Site Address: 17601 Hesperian
San Lorenzo
County: Alameda
Project Manager: Kelley Brown
Requestor:
Client: ARCO
Client P.O.C.:
Date of request:

Project Type

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

Ideal field date(s):

Prefield Contacts/Permits

- ☐ Cal Trans
- ☒ County 48 hr SAMPLE 670-5482
- ☒ City Private Calvary Lutheran Church 415 278?
- ☒ ~~Private~~ ARCO Dist Mgr 1 wk notice
- ☐ Multi-Consultant Scheduling
  Date(s):

Purge Water Containment:

- ☐ Drums
- ☒ Treatment System Use in line filter
- ☐ Other Describe:

Field Tasks

EI-A TOB

- ☒ H_2O levels (MW-5, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 plus Extraction Wells EI-A (EI-A is QAM IFFL Sample)
- ☒ H_2O Sampling
- gas/BTEX
- ☐ Well Development
- ☒ Other: Go to church office for key for school well

Describe task (i.e: Well groups and analytical params):

Activities occuring on site
(i.e: remedial system construction, ongoing projects, etc.)

Please attach Site Map, Well Information Data, Site Safety Plan, Well logs as appropriate)

Completed hours:
Actual hours; On-Site: 18
Mob-de-Mob: 2 hrs

Site Safety

offsite wells

Wells	Concerns

- ☐ Flash Safety
- ☐ Flagman
- ☒ Cones
- ☒ Barricades
- ☐ No Turn/Lane Closed sign

Other:

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

* Replaced 4" J plug at wells MW-18 & MW-13

☒ All Wells secured

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: Scott Pisle Date: 12-22-92
Checked by: PITS Update:

WELL SAMPLING REQUEST

SITE INFORMATION FORM

Identification

ject # 330-06.15 (608)

Station # 608

Site Address: 17601 Hesperian San Lorenzo

County: Alameda

Project Manager: K. Brown

Requestor: K. Brown

Client: ARCO

Client P.O.C.:

Date of request: 12/9/92

Project Type

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

Ideal field date(s): during 4th QTR event

Prefield Contacts/Permits

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

Purge Water Containment:

- ☐ Drums
- ☐ Treatment System
- ☐ Other Describe:

Field Tasks

- ☑ H_2O levels
- ☑ H_2O Sampling additional analyses from Well MW-8 – see attached –
- ☐ Well Development
- ☐ Other:

8010 ↓ Med chlorinated Hydrocarbons
8270 SVOCs
CAM 17 Metals
* also added Domestic irrigation wells to 4th QTR event 330-06.18

Describe task (i.e: Well groups and analytical params):

Site Safety

Wells	Concerns

- ☐ Flash Safety
- ☐ Flagman
- ☐ Cones
- ☐ Barricades
- ☐ No Turn/Lane Closed sign

Other:

Activities occuring on site
(ie: remedial system construction, ongoing projects, etc.)

make sure times are separated

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

(Please attach: Site Map, Well Information Data, Site Safety Plan, Well logs as appropriate)

Budgeted hours:

Actual hours; On-Site:

Mob-de-Mob:

☐ All Wells secured

Completed by: [signature] Date: 12-22-92

PACIFIC ENVIRONMENTAL GROUP, INC.

Checked by: PITS Update:

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 (.15) LOCATION: San Lorenzo DATE: 12-17-92

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

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☒ H_2O level Indicator PH
- ☐ 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-16	14:50							12.56											
	MW-17	14:43							13.34											
	MW-18	14:34							11.21											
	MW-19	14:32							10.51											
	MW-20	14:30		-					10.74											
	MW-21	14:26							10.80											
	MW-22	14:24							11.58											
	MW-23	14:20							13.01											
	E-1A	11:45							22.65	L	—	—								

Comments:

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12(15) LOCATION: San Lorenzo DATE: 12-17-92

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

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☐ H_2O level Indicator pH
- ☐ 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				VISCOSITY		LIQUID REMOVED (gallons) SPH / H_2O
													Fresh	Weathered	Gas	Oil	Lite	Medium / Heavy	
	MW-5	13:50							12.74	✓									
	MW-7	13:50							13.69	✓									
	MW-8	13:59							12.68										
	MW-9	14:01							11.76										
	MW-10	14:13							11.94										
	MW-11	14:16							12.69										
	MW-13	13:53							15.07	✓									
	MW-14	14:10							10.69										
	MW-15	14:58							12.26										

Comments: MW-5 inundated christy Box (water)

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 (15) LOCATION: San Lorenzo DATE: 12-17-92

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

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☒ H_2O level Indicator PH
- ☐ 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
	School well	14:44							13.12	✓										

Comments:

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: —

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

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_____ = _____ x Gal/Linear Foot_____ = _____ x Number of 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

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:_____ TOB/TOC

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

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

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
TB-1	12-21-93	—	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☐ Good ☐ Fair ☐ Poor

REMARKS:_____

SIGNATURE:_____

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 / 330-06.12 EFFL SP — LOCATION: San Lorenzo — WELL ID #: MW-E1A ~~EFFL~~ SP INFL

CLIENT/STATION No.: Arco 0608 — FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: — TOB — TOC
Total depth: — TOB — TOC
Date: 12-17-92 Time (2400): —

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

CASING DIAMETER / GAL/LINEAR FT.

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

SAMPLE TYPE

- ☒ Groundwater
- ☐ Duplicate
- ☒ ~~Extraction well~~
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other:

TD — DTW — = — x Gal/Linear Foot — = — x Number of Casings 5 = Calculated Purge —

DATE PURGED: 12-17-92 START: — END (2400 hr): — PURGED BY: SP

DATE SAMPLED: 12-17-92 START: — END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 2 5°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR

Pumped dry Yes / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: — TOB/TOC

PURGING EQUIPMENT/I.D.

- ☐ Bailer:
- ☐ Airlift:
- ☐ Centrifugal:
- ☒ ~~Dedicated~~:
- ☐ Other:

SAMPLING EQUIPMENT/I.D.

- ☐ Bailer:
- ☒ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-E1A (~~EFFL~~ SP INFL)	12-17-92	12:00	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☐ Good ☐ Fair ☐ Poor

REMARKS: MW-E1A is sampled with the O&M work - Refer to Sample (~~EFFL~~ INFL) from the 330-06.12 project - Sample taken 12-17-92

SIGNATURE: [signature]

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 830-06.15 LOCATION: San Lorenzo WELL ID #: MW-5

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.92 TOB — TOC
Total depth: 14 TOB — TOC
Date: 12-17-92 Time (2400): 14:36

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

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

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

TD 14 - DTW 12.92 = 1.08 x Gal/Linear Foot 0.66 = 0.71 x Number of Casings 5 = Calculated Purge 3.564

DATE PURGED: 12-21-92 START: 14:40 END (2400 hr): 14:42 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 12:45 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14:42	0.5	6.51	618	63.3	Cloudy	light	Strong

Pumped dry (Yes) / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: 13.46	TOB/TOC	6.30	648	61.2	clear	trace	Strong

PURGING EQUIPMENT/I.D. #
- ☒ Bailer: 17-7
- ☐ Airlift:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

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

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-5 (14)	12-22-92	12:45	3	40	VOA	HCl	602/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-7

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 13.68 TOB — TOC
Total depth: 18.9 TOB — TOC
Date: ~~12-17-92~~ 12-21-92 Time (2400): 07:50

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator PH ☐ 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 18.9 - DTW 13.68 = 5.22 x Gal/Linear Foot 0.38 = 1.98 x Number of Casings 5 = Calculated Purge 9.91

DATE PURGED 12-21-92 START: 7:52 END (2400 hr): 08:04 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 8:05 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
07:55	3.5	6.79	995	64.7	Clear	trace	No
08:00	7	6.77	994	64.7	"	"	"
08:04	10	6.75	994	64.6	"	"	"

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

Pumped dry Yes / (No)

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC

PURGING EQUIPMENT/I.D. #

☒ Bailer: 17-1 ☐ Airlift: ☐ Centrifugal: ☐ Dedicated: ☐ Other:

SAMPLING EQUIPMENT/I.D. #

☒ Bailer: 17-1 ☐ Dedicated: ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-7(6)	12-21-92	8:05	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-8

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.60 TOB — TOC
Total depth: 21.7 TOB — TOC
Date: 12-22-92 Time (2400): 13:58

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 21.7 - DTW 12.60 = 9.10 x Gal/Linear Foot 0.38 = 3.45 x Number of Casings 5 = Calculated Purge 17.29

DATE PURGED: 12-22-92 START: 14:03 END (2400 hr): 14:12 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 14:20 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14:06	6	6.50	1025	62.5	clear	trace	strong
14:09	12	6.49	1042	64.3	↓	↓	↓
14:12	17.5	6.51	1050	64.7	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: — TOB/TOC

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-3
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-8 (17)	12-22-92	14:20	SP 3 4	40	VOA	HCl	Gas/BTEX/8010
↓	↓	↓	2	1000	Glass	NP	8270
							8010
↓	↓	↓	1	~~500~~ 1000	plastic	HNO3	Cam 17

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-9

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.72 TOB — TOC
Total depth: 18.7 TOB — TOC
Date: 12-17-92 SP (12-21-92) Time (2400): 8:55

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

CASING DIAMETER / GAL/LINEAR FT.

	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 18.7 - DTW 11.72 = 6.98 x Gal/Linear Foot 0.38 = 2.65 x Number of Casings 5 = Calculated Purge 13.26

DATE PURGED 12-21-92 START: 8:57 END (2400 hr): 9:09 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 9:15 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:01	4.5	6.75	943	61.0	Cloudy	light	none
9:05	9	6.72	972	64.1	↓	↓	↓
9:09	13.5	6.72	980	64.3	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC

PURGING EQUIPMENT/I.D. #
- ☒ Bailer: 17-6
- ☐ Airlift:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-6
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-9 (05)	12-21-92	9:15	3	40	VOA	HCl	6as/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-10

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.86 TOB — TOC
Total depth: 23 TOB — TOC
Date: ~~12-22-92~~ 12-22-92 SP Time (2400): 12:00

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 23 - DTW 11.86 = 11.14 x Gal/Linear Foot 0.38 = 4.23 x Number of Casings 5 = Calculated Purge 21.16

DATE PURGED: 12-22-92 START: 12:05 END (2400 hr): 12:09 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 12:20 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:07	7	6.58	971	59.8	Clear	trace	Moderate
12:08	14	6.52	1013	64.0	↓	↓	↓
12:09	21	6.10	1020	64.3			

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-6
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-10 (19)	12-22-92	12:20	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☑ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-11

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.59 TOB — TOC
Total depth: 19.2 TOB — TOC
Date: 12-22-92 Time (2400): 10:40

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator PH ☐ 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 19.2 - DTW 12.59 = 6.61 x Gal/Linear Foot 0.38 = 2.51 x Number of Casings 5 = Calculated Purge 12.55

DATE PURGED: 12-22-92 START: 10:41 END (2400 hr): 10:56 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 11:00 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:45	4.5	6.50	942	60.1	lt. Brown	light	none
10:51	8.5	6.46	957	61.7	↓	↓	↓
10:56	12.5	6.46	961	62.0	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #

☒ Bailer: 17-5 ☐ Airlift: ____
☐ Centrifugal: ____ ☐ Dedicated: ____
☐ Other: ____

SAMPLING EQUIPMENT/I.D. #

☒ Bailer: 17-5
☐ Dedicated: ____
☐ Other: ____

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-11 (15)	12-22-92	11:00	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-13

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 14.98 TOB — TOC
Total depth: 23.4 TOB — TOC
Date: ~~12-17-92~~ 12-21-92 Time (2400): 8:10

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator PH ☐ 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 23.4 - DTW 14.98 = 8.42 x Gal/Linear Foot 0.38 = 3.19 x Number of Casings 5 = Calculated Purge 15.99

DATE PURGED: 12-21-92 START: 8:17 END (2400 hr): 8:28 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 8:30 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
8:18	5.5	6.70	992	62.7	cloudy	light	none
8:23	11	6.75	1007	64.0	↓	↓	↓
8:28	16	6.76	1015	64.1	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
☒ Bailer: 17-2 ☐ Airlift: ☐ Centrifugal: ☐ Dedicated: ☐ Other:

SAMPLING EQUIPMENT/I.D. #
☒ Bailer: 17-2 ☐ Dedicated: ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-13 (20)	12-21-92	8:30	3	40	VOA	HCl	602 / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS: Replaced 4" J plug.

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-14

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 10.67 TOB — TOC
Total depth: 23.1 TOB — TOC
Date: 12-22-92 Time (2400): 10:17

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 23.1 - DTW 10.67 = 12.43 x Gal/Linear Foot 0.38 = 4.72 x Number of Casings 5 = Calculated Purge 23.6

DATE PURGED: 12-22-92 START: 10:20 END (2400 hr): 10:21 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 10:35 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:21	8	6.88	869	58.5	cloudy	light	none
10:21	16/10	6.94	894	61.3	↓	↓	↓
~~10~~	~~24~~ 8						

Pumped dry (Yes) / ~~No~~ SP

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: 10.70 TOB/TOC 6.83 902 61.1 cloudy trace none

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

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: 17-4
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-14 (20)	12-22-92	10:35	3	40	VOA	HCl	602/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-15

CLIENT/STATION No.: Arco 0606 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.17 TOB — TOC
Total depth: 23.6 TOB — TOC
Date: 12-22-92 Time (2400): 12:26

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 23.6 - DTW 12.17 = 11.43 x Gal/Linear Foot 0.38 = 4.34 x Number of Casings 5 = Calculated Purge 21.71

DATE PURGED: 12-22-92 START: 12:28 END (2400 hr): 12:32 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 12:40 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:29	7.5	6.57	989	60.4	clear	trace	Moderate
12:31	15	6.57	1025	63.0	↓	↓	↓
12:32	22	6.58	1040	63.6			

Pumped dry Yes / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-1
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-15 (19)	12-22-92	12:41	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-16

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.50 TOB — TOC
Total depth: 22.5 TOB — TOC
Date: 12-22-92 Time (2400): 13:17

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 22.50 - DTW 12.50 = 10.00 x Gal/Linear Foot 0.38 = 3.80 x Number of Casings 5 = Calculated Purge 19.0

DATE PURGED: 12-22-92 START: 13:21 END (2400 hr): 13:23 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 13:40 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:23	6.5	6.74	937	62.4	Brown	Mod	Faint

Pumped dry (Yes) / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: 13.02 TOB/TOC 6.74 946 62.9 cloudy light none

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

SAMPLING EQUIPMENT/I.D. #
- ☑ Bailer: 87-6
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-16 (18)	12-22-92	13:40	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-17

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 13.32 TOB — TOC
Total depth: 23.6 TOB — TOC
Date: ~~12-17-92~~ 12-21-92 Time (2400): 11:15

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 23.6 - DTW 13.32 = 10.28 x Gal/Linear Foot 0.38 = 3.90 x Number of Casings 5 = Calculated Purge 19.5

DATE PURGED: 12-21-92 START: 11:18 END (2400 hr): 11:23 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 11:35 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
11:20	6.5	6.80	876	60.1	cloudy	light	Med
11:21	13	6.82	940	62.5	clear	trace	/
11:23	20	6.85	949	63.0	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: 17-1
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-17 (20)	12-21-92	11:35	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-18

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.22 TOB — TOC
Total depth: 21.7 TOB — TOC
Date: 12-17-92 12-21-92 Time (2400): 14:10

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 21.7 - DTW 11.22 = 10.48 x Gal/Linear Foot 0.38 = 3.98 x Number of Casings 5 = Calculated Purge 19.91

DATE PURGED: 12-21-92 START: 14:14 END (2400 hr): 14:20 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 14:30 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14:16	7	6.76	898	60.9	Cloudy	Light	None
14:18	13.5	6.74	968	63.7	↓	↓	↓
14:20	20	6.81	975	64.1	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-4
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-18(17)	12-21-92	14:30	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS: Replaced "J" Plug (4")

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-19

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 10.58 TOB — TOC
Total depth: 21.6 TOB — TOC
Date: ~~12-17-92~~ SP 12-21-92 Time (2400): 13:01

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator PH ☐ 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 21.6 - DTW 10.58 = 11.02 x Gal/Linear Foot 0.38 = 4.18 x Number of Casings 5 = Calculated Purge 20.93

DATE PURGED: 12-21-92 START: 13:06 END (2400 hr): 13:12 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 13:20 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:08	7	6.85	930	60.6	Cloudy	light	none
13:10	14	6.80	964	62.6	↓	↓	↓
13:12	21	6.79	986	63.0	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC

PURGING EQUIPMENT/I.D. #

☐ Bailer: ☐ Airlift:
☒ Centrifugal: ☐ Dedicated:
☐ Other:

SAMPLING EQUIPMENT/I.D. #

☒ Bailer: 17-7
☐ Dedicated:
☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-19 (17)	12-21-92	13:20	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-20

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 10.73 TOB — TOC
Total depth: 21.9 TOB — TOC
Date: ~~12-17-92~~ SP Time (2400): 13:27
12-21-92

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator PH ☐ 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 21.9 - DTW 10.73 = 11.17 x Gal/Linear Foot 0.38 = 4.24 x Number of Casings 5 = Calculated Purge 21.22

DATE PURGED: 12-21-92 START: 13:30 END (2400 hr): 13:38 PURGED BY: SP

DATE SAMPLED: 12-21-92 START: 13:45 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:34	7	6.85	934	61.7	Cloudy	light	none
13:36	14	6.84	965	64.5	clear	trace	↓
13:38	21	6.81	974	65.2	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #

☐ Bailer: ☐ Airlift:
☒ Centrifugal: ☐ Dedicated:
☐ Other:

SAMPLING EQUIPMENT/I.D. #

☒ Bailer: 17-3
☐ Dedicated:
☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-20 (17)	12-21-92	13:45	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-21

CLIENT/STATION No.: Arco 0606 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 10.94 TOB — TOC
Total depth: 22 TOB — TOC
Date: 12-22-92 Time (2400): 9:16

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 22 - DTW 10.94 = 11.06 x Gal/Linear Foot .38 = 4.20 x Number of Casings 5 = Calculated Purge 21.0

DATE PURGED: 12-22-92 START: 9:23 END (2400 hr): 9:27 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 9:35 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:24	7	6.83	939	57.2	cloudy	light	none
9:26	14	6.82	988	61.9	↓	↓	↓
9:27	21	6.83	997	62.6	↓	↓	↓

Pumped dry Yes / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-3
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-21 (17)	12-22-92	9:35	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-22

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.59 TOB — TOC
Total depth: 21.8 TOB — TOC
Date: 12-22-92 Time (2400): 9:00

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 21.8 - DTW 11.59 = 10.21 x Gal/Linear Foot 0.38 = 3.87 x Number of Casings 5 = Calculated Purge 19.39

DATE PURGED: 12-22-92 START: 9:02 END (2400 hr): 9:05 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 9:10 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 2 5°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:03	6.5	6.78	895	55.9	cloudy	light	none
9:04	13	6.77	915	59.1	↓	↓	↓
9:05	19.5	6.75	930	59.7	↓	↓	↓

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-1
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-22(17)	12-22-92	9:10	3	40	VOA	HCl	6as/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-23

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.91 TOB — TOC
Total depth: 22 TOB — TOC
Date: 12-22-92 Time (2400): 8:30

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator PH
- ☐ 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 22 - DTW 12.91 = 7.09 x Gal/Linear Foot 0.38 = 2.69 x Number of Casings 5 = Calculated Purge 13.47

DATE PURGED: 12-22-92 START: 8:35 END (2400 hr): 8:49 PURGED BY: SP

DATE SAMPLED: 12-22-92 START: 8:55 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 2 5°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
8:39	4.5	6.87	1030	60.3	Cloudy	Light	None
8:44	9	6.74	1027	60.5	↓	↓	↓
8:49	13.5	6.71	1026	60.5	↓	↓	↓

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

Pumped dry Yes / (No)

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☒ Bailer: 17-7
- ☒ Centrifugal: ____
- ☐ Airlift: ____
- ☐ Dedicated: ____
- ☐ Other: ____

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-7
- ☐ Dedicated: ____
- ☐ Other: ____

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-23 (19)	12-22-92	8:55	3	40	VOA	HCl	Gas / BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE: Scott Fink

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD SERVICES/O and M REQUEST

SITE INFORMATION FORM

Identification

Project # 330-06.12

tation # 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 ± 3days

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.
( ) Sample system (monthly = M, quarterly = Q)

	E-1A	EFFL
Gas/BTEX	M	M
COD		Q
TSS		Q
pH		Q

(1) Note: 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: 4 Mob-de-Mob: 1.5

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

E-1A - 23.78
MW-5 - 14.03 DTW
MW-7 15.36
MW-8 14.51
MW-9 13.60
MW-10 13.74
MW-11 14.45
MW-13 16.81

Completed by: Scott Risk Date: 10-16-92

Checked by:

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 Risk Date/Time: 10-16-92 9:00 am.

Treatment System Readings

Effluent Totalizer (gallons)	01651623	Bag Filter INFL Pressure (psi)	7.5 psi
Effluent Flowrate (gpm)	2.75 gpm	Carbon 1 INFL Pressure (psi)	6.5 psi
E-1A Hourmeter (hours)	~~807~~ 070117	MID-1 Pressure Pressure (psi)	5 psi
Electric meter (kw-hrs)	03965	MID-2 Pressure (psi)	1.0 psi
Sewer Level Overflowing?	NO	EFFL Pressure (psi)	0 psi
E-1A DTW (TOB) (feet)	23.78	Spare Bag Filters On-site	NO
Does Autodialer Call Office?	Yes, but not by system malfunction	Does Pressure Switch Work?	Yes

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

Temperature (F)	E-1A	68.0	MID-1	68.0	MID-2	67.8	EFFL 66.0
pH (units)	E-1A	6.93	MID-1	6.89	MID-2	6.89	EFFL 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 Auto dialer currently will not dial out when the system stops due to a malfunction.

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: 10-6-92

CLIENT/STATION NO.: Arco 0608 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	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons): SPH / H_2O
	E-1A								23.76	✓										
	MW-5							DRY	14.03	✓										
	MW-7								15.38	✓										
	MW-8								14.51	✓										
	MW-9			-					13.60	✓										
	MW-10								13.74	✓										
	MW-11								14.45	✓										
	MW-13								16.81	✓										

Comments:

Identification

ect # 330-06,12
ion # 608
Address: 601 Hesperian Blvd.
San Lorenzo
nty:
ect Manager: LG/DM
uestor: JM
nt: ARCO
nt P.O.C.: Mike Whelan
e 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

ld Tasks

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

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
s/BTEX	M	M
COD		Q
TSS		Q
pH		Q

① Note: 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)

dgeted hours: 6. | Actual hours; On-Site: 3 Mob-de-Mob: 2

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

CIFIC ENVIRONMENTAL GROUP, INC.

Completed by: Scott Risk Date: 11-18-92
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: 11-18-92 14:00

Treatment System Readings

Effluent Totalizer (gallons)	01768076	Bag Filter INFL Pressure (psi)	4 psi
Effluent Flowrate (gpm)	2 gpm.	Carbon 1 INFL Pressure (psi)	3.75 psi
E-1A Hourmeter (hours)	078085	MID-1 Pressure Pressure (psi)	5 psi
Electric meter (kw-hrs)	04484	MID-2 Pressure (psi)	1 psi
Sewer Level Overflowing?	NO.	EFFL Pressure (psi)	0 psi
E-1A DTW (TOB) (feet)	23.80	Spare Bag Filters On-site	Yes 1 in Control Panel
Does Autodialer Call Office?	Not Currently	Does Pressure Switch Work?	Yes

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

Temperature (F)	E-1A ~~63.4~~ 64.6 ~~62.4~~	MID-1	61.3	MID-2	64.4	EFFL	62.4
pH (units)	E-1A ~~6.86~~ 6.87	MID-1	6.87	MID-2	6.76	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 Replaced Bag Filter

Replaced lock to Arco Combo lock.

called John before leaving site

Distribute a copy of this form to the project supervisor.

FIELD REPORT

PTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 LOCATION: San Lorenzo DATE: 11-18-92

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

Draw Order First	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	Total Depth TOB (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH) SPH Depth (feet)	SPH Thickness (feet)	COLOR: Fresh	COLOR: Weathered	COLOR: Gas	COLOR: Oil	VISCOSITY: Lite	VISCOSITY: Medium	VISCOSITY: Heavy	LIQUID REMOVED (gallons) SPH / H_2O
2	MW-5	13:33						13.95	Dry	Dry	—	—								
3	MW-7	13:37						"	15.10	15.10	—	—								
5	MW-8	13:47						—	14.15	14.15	—	—								
6	MW-9	13:50						"	13.24	13.24	—	—								
7	MW-10	13:53						—	13.42	13.42	—	—								
8	MW-11	13:55						"	14.11	14.11	—	—								
4	MW-13	13:44						—	16.50	16.50	—	—								
1	E-1A	13:28						—	23.80	23.80	—	—								

Comments: 7

PROBE TYPE/ID No.

- ☐ Oil/Water IF: _____
- ☒ H_2O level indicator: PH.
- ☐ Other: _____

TE INFORMATION FORM

Identification

oject # 330-06,12
r # 608
e Address: 7601 Hesperian Blvd.
San Lorenzo
unty:
oject Manager: LG/DM
questor: JM
ient: ARCO
ient P.O.C.: Mike Whelan
ate 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

ield 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
as/BTEX	M	M
COD		Q
TSS		Q
pH		Q

① Note: Quarterly event to occur in January, April, July, October.
② MED 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)

udgeted hours: 6 | Actual hours; On-Site: 4 Mob-de-Mob: 2

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

Containment pad inundated with 5 inches of water. Used centrifugal pump to reduce it to about an inch. This took an hour.

Completed by: Scott Pisle Date: 12-17-92

ACIFIC 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: 12-17-92 12:00

Treatment System Readings

Effluent Totalizer (gallons)	018643	Bag Filter INFL Pressure (psi)	4psi
Effluent Flowrate (gpm)	3	Carbon 1 INFL Pressure (psi)	3 psi
E-1A Hourmeter (hours)	8501.7	MID-1 Pressure Pressure (psi)	5
Electric meter (kw-hrs)	0474605	MID-2 Pressure (psi)	1.75
Sewer Level Overflowing?	No	EFFL Pressure (psi)	0
E-1A DTW (TOB) (feet)	22.65	Spare Bag Filters On-site	Yes
Does Autodialer Call Office?	system will not activate it, does work though	Does Pressure Switch Work?	Yes

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

Temperature (F)	E-1A 62.6	MID-1 53.6	MID-2 60.6	EFFL 60.0
pH (units)	E-1A 6.90	MID-1 6.92	MID-2 6.84	EFFL 6.79

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 5" standing water Pumped down to 1"

Distribute a copy of this form to the project supervisor.

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12(15) LOCATION: San Lorenzo DATE: 12-17-92

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

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☒ H_2O level Indicator pH.
- ☐ Other:

Drw 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	13:50							12.74	✓										
	MW-7	13:50							13.69	✓										
	MW-8	13:59							12.68											
	MW-9	14:01							11.76											
	MW-10	14:13							11.94											
	MW-11	14:16							12.69											
	MW-13	13:53							15.07	✓										
	MW-14	14:10							10.69											
	MW-15	14:58							12.26											

Comments: MW-5 inundated christy Box (water)

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 (.15) LOCATION: San Lorenzo DATE: 12-17-92

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

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☒ H_2O level Indicator pH
- ☐ 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-16	14:50							12.56											
	MW-17	14:43							13.34											
	MW-18	14:34							11.21											
	MW-19	14:32							10.51											
	MW-20	14:30		-					10.74											
	MW-21	14:26							10.80											
	MW-22	14:24							11.58											
	MW-23	14:20							13.01											
	E-1A	11:45							22.65	L	—	—								

Comments:

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.12 (15) LOCATION: San Lorenzo DATE: 12-17-92

CLIENT/STATION NO.: 0608 ARCO FIELD TECHNICIAN: SP DAY OF WEEK: Thursday

PROBE TYPE/ID No.
- ☐ Oil/Water IF _____
- ☒ H_2O level indicator PH
- ☐ 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
	School well	14:44							13.12	✓										

Comments: _____

SEQUOIA ANALYTICAL

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Pacific Environmental Group	Client Project ID:	#0606-91-5 / Arco #0606 / #330-06.12 San Lorenzo	Sampled:	Oct 16, 1992
620 Contra Costa Blvd., #209	Sample Matrix:	Water	Received:	Oct 16, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported:	Oct 29, 1992
Attention: Dan Landry	First Sample #:	210-0477		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 210-0477 INFL	Sample I.D. 210-0478 EFFL
Purgeable Hydrocarbons	50	N.D.	N.D.
Benzene	0.5	N.D.	N.D.
Toluene	0.5	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.
Total Xylenes	0.5	N.D.	N.D.
Chromatogram Pattern:		--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	10/16/92	10/16/92
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	110	112

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
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.cific Environmental Group	Client Project ID:	#0608-91-5 / Arco #0608 / #330-06.12	Sampled:	Oct 16, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, EFFL San Lorenzo	Received:	Oct 16, 1992
Pleasant Hill, CA 94523			Analyzed:	10/22-10/27/92
Attention: Dan Landry	Lab Number:	210-0478	Reported:	Oct 29, 1992

LABORATORY ANALYSIS

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

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cific Environmental Group	Client Project ID:	#0608-91-5 / Arco #0608 / #330-06.12	Sampled:	Oct 16, 1992
620 Contra Costa Blvd., #209	Sample Descript:	Water, EFFL San Lorenzo	Received:	Oct 16, 1992
Pleasant Hill, CA 94523			Analyzed:	Oct 19, 1992
Attention: Dan Landry	Lab Number:	210-0478	Reported:	Oct 29, 1992

LABORATORY ANALYSIS

Analyte	Detection Limit	Sample Results mg/L
pH	N/A	7.3

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

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..cific Environmental Group
620 Contra Costa Blvd., #209
Pleasant Hill, CA 94523
Attention: Dan Landry

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

QC Sample Group: 2100477-478

Reported: Oct 29, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Chemical Oxygen Demand	Toluene	Ethyl-Benzene	Xylenes	Benzene	pH	Total Suspended Solids
Method:	EPA 410.4	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 9040	EPA 160.2
Analyst:	Alan Kemp	J.F.	J.F.	J.F.	J.F.	B. Pascalli	B. Pascalli
Reporting Units:	mg/L	µg/L	µg/L	µg/L	µg/L	N/A	mg/L
Date Analyzed:	Oct 27, 1992	Oct 16, 1992	Oct 16, 1992	Oct 16, 1992	Oct 16, 1992	Oct 19, 1992	Oct 22, 1992
QC Sample #:	210-0478	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	210-0478	210-0468
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	7.3	21
Spike Conc. Added:	250	20	20	60	20	N/A	N/A
Conc. Matrix Spike:	250	21	22	62	23	N/A	N/A
Matrix Spike % Recovery:	100	105	110	103	115	N/A	N/A
Conc. Matrix Spike Dup.:	250	22	23	66	18	7.3	21
Matrix Spike Duplicate % Recovery:	100	110	115	110	90	N/A	N/A
Relative % Difference:	0.0	4.6	4.4	6.2	24	0.0	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-C6.12 Task Order No. 0600-91-5

Chain of Custody

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Don Landry	Laboratory name Sequoia
ARCO engineer Chuck Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 570-825-0853	Fax no. (Consultant) 825-0882
Consultant name Pacific Env. Group	Address (Consultant) 620 Contra Costa blvd. #209 Pleasant Hill		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 GAS	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 ☐	TSS/pH	C.O.D.
INFL		3		X		X	HCl	10/16/92	10:00		X				2	10	0	4	7	7AC		
EFFL		3		↓		↓	HCl	↓	10:30		X						↓	4	7	8AC		
EFFL		2		↓		↓	H_2SO_4	↓	↓										↓	DE		X
EFFL		1		↓		↓	—	↓	↓								↓		↓	F	X	

Special detection Limit/reporting

Special QA/QC

Remarks
COD Chemical Oxygen Demand
TSS, Total Suspended Solids

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	Received by
Relinquished by sampler	10-16-92	2:00PM	
Relinquished by			
Relinquished by			
			Received by laboratory: Date 10/16/92 Time 2:00 PM

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

SEQUOIA ANALYTICAL

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Pacific Environmental Group	Client Project ID:	#608-91-5 / #330-06.12/ Arco #0608,		Sampled:	Nov 18, 1992
0 Contra Costa Blvd., #209	Sample Matrix:	Water	San Lorenzo	Received:	Nov 19, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020		Reported:	Nov 25, 1992
Attention: Kelly Brown/ Dan Landry	First Sample #:	211-1023			

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 211-1023 INFL	Sample I.D. 211-1024 EFFL
Purgeable Hydrocarbons	50	N.D.	N.D.
Benzene	0.5	N.D.	N.D.
Toluene	0.5	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.
Total Xylenes	0.5	N.D.	N.D.
Chromatogram Pattern:		--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	11/20/92	11/20/92
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	100	100

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
20 Contra Costa Blvd., #209
Pleasant Hill, CA 94523
Attention: Kelly Brown/ Dan Landry

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

QC Sample Group: 2111023-24

Reported: Nov 25, 1992

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:	Nov 20, 1992	Nov 20, 1992	Nov 20, 1992	Nov 20, 1992
QC Sample #:	211-0877	211-0877	211-0877	211-0877
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	21	19	20	70
Matrix Spike % Recovery:	105	95	100	117
Conc. Matrix Spike Dup.:	21	19	19	70
Matrix Spike Duplicate % Recovery:	105	95	95	117
Relative % Difference:	0.0	0.0	5.1	0.0

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

ARCO Products Company
Division of AtlanticRichfieldCompany

330-66.12 Task Order No. 6008-91-5

Cha... of Custody

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Dan Landry / Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 825-0855	Fax no. (Consultant) 825-0882
Consultant name Pacific Env. Group	Address (Consultant) 620 - Contra Costa Blvd #209 Pleasant Hill		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 6-45 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 ☐		
INFL		3		W			HCl	11-18-92	14:30		X			2-1		NO2 3				AC		
EFFL		3		W			HCl	↓	14:30		X			↓		1024				AC		

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Method of shipment

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 11-19-92 Time 9:16AM	Received by
Relinquished by	Date Time	Received by
Relinquished by	Date Time	Received by laboratory Date Time

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

SEQUOIA ANALYTICAL

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.cific Environmental Group	Client Project ID:	#608-91-5 / Arco #0608 / 330-06.12, San Lorenzo	Sampled:	Dec 17, 1992
620 Contra Costa Blvd., Ste 209	Sample Matrix:	Water	Received:	Dec 22, 1992
Pleasant Hill, CA 94523	Analysis Method:	EPA 5030/8015/8020	Reported:	Jan 5, 1993
Attention: Kelly Brown	First Sample #:	212-0922		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 212-0922 INFL	Sample I.D. 212-0923 EFFL
Purgeable Hydrocarbons	50	96	N.D.
Benzene	0.5	7.7	N.D.
Toluene	0.5	13	N.D.
Ethyl Benzene	0.5	0.56	N.D.
Total Xylenes	0.5	9.7	N.D.
Chromatogram Pattern:		Gasoline	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	12/28/92	12/28/92
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	105	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

SEQUOIA ANALYTICAL

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

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

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

QC Sample Group: 2120922-23

Reported: Jan 5, 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:	A.T.	A.T./A.P./J.F.	A.T./A.P./J.F.	A.T./A.P./J.F.
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Dec 28, 1992	Dec 28, 1992	Dec 28, 1992	Dec 28, 1992
QC Sample #:	212-0888	212-0888	212-0888	212-0888
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	20	20	21	71
Matrix Spike % Recovery:	100	100	105	118
Conc. Matrix Spike Dup.:	20	20	21	71
Matrix Spike Duplicate % Recovery:	100	100	105	118
Relative % Difference:	0.0	0.0	0.0	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