PACIFIC
ENVIRONMENTAL
GROUP, INC.

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Quarterly Groundwater Monitoring Report and Remedial System Performance Evaluation Second Quarter 1996

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Prepared for

ARCO Products Company

September 26, 1996

Prepared by

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

Project 330-109.2C

Shaw Garakani
Project Engineer

R. Lee Dooley
Senior Geologist
CEG 1006

REGISTERED GEOLOGIST
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No. 1006
Certified Engineering
GEOLOGIST
STATE OF CALIFORNIA

Date: September 26, 1996
Quarter: 2Q96

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 4931 Address: 731 West MacArthur Boulevard at West Street
Oakland, California
ARCO Environmental Engineer: Paul Supple
Consulting Co./Contact Person: Pacific Environmental Group, Inc./Shaw Garakani
Consultant Project No.: 330-109.2C
Primary Agency/Regulatory ID No.: Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER (Second - 1996):

1. Performed second quarter 1996 groundwater monitoring event.
2. Prepared second quarter 1996 groundwater monitoring report.
3. Relinquished EBMUD discharge permit, based on verbal approval from the ACHCSA to terminate groundwater extraction at the site.

WORK PROPOSED FOR NEXT QUARTER (Third - 1996):

1. Perform third quarter 1996 groundwater monitoring event.
2. Prepare third quarter 1996 groundwater monitoring report.
3. Continue bioremediation enhancement program.
4. Initiate ORC installation at Well A-8.

Current Phase of Project:	Monitoring/Remediation	(Assmnt, Remed., etc.)
Frequency of Groundwater Sampling:	Quarterly, Semiannually, and Annually	(Quarterly, etc.)
Frequency of Groundwater Monitoring:	Quarterly	(Monthly, etc.)
Is Free Product (FP) Present On-Site:	No	(Yes/No)
FP Recovered this Quarter:	None	(gallons)
Cumulative FP Recovered to Date:	Unknown	(gallons)
Bulk Soil Removed This Quarter:	None	(cubic yards)
Bulk Soil Removed to Date:	Unknown	(cubic yards)
Current Remediation Techniques:	Intrinsic Bioremediation Enhancement	(SVE/Sparge/FP Removal, etc.)
Approximate Depth to Groundwater:	5.2 to 8.6	(Measure Feet)
Groundwater Gradient:	Southwest	(Direction)
	0.04	(Magnitude)
Period TPPH-g/Benzene Removed:	0.0/0.0	(gallons)
Cumulative TPPH-g/Benzene Removed:	0.45/0.01	(gallons)

DISCUSSION:

- Hydrocarbon concentrations in groundwater are within historic levels.
- The GWE system was deactivated to evaluate plume stability. Plume appears stable.
- To date, 4.6 million gallons of groundwater have been extracted and only 0.01 gallon of benzene removed.
- Intrinsic bioremediation enhancement program utilizing ORCs is in progress.
- Wells AR-1 through AR-3 were not sampled since they are groundwater extraction wells. Well A-13 was not sampled due to being asphalted over.

ATTACHMENTS:

- Table 1 - Groundwater Sampling Schedule
- Table 2 - Groundwater Elevation and Analytical Data
- Figure 1 - Groundwater Elevation Contour Map
- Figure 2 - TPPH-g/Benzene Concentration Map
- Attachment A - Historical Liquid Surface Elevation and Groundwater Analytical Data Tables
- Attachment B - Field and Laboratory Procedures
- Attachment C - Certified Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets
- Attachment D - Remedial System Performance Evaluation

cc: Mr. Kevin Graves, Regional Water Quality Control Board - S.F. Bay Region
[redacted]
Ms. Sue Jenne, East Bay Municipal Utility District

Table 1
Groundwater Sampling Schedule

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Sampling Frequency
A-1	---------- Well Destroyed ----------				
A-2	a	a	a	a	Quarterly
A-3		a		a	Semiannually
A-4	a	a	a	a	Quarterly
A-5		a		a	Semiannually
A-6	a	a	a	a	Quarterly
A-7		a			Annually
A-8	a	a	a	a	Quarterly
A-9	a	a	a	a	Quarterly
A-10	---------- Removed from Sampling Program ----------				
A-11		a		a	Semiannually
A-12		a		a	Semiannually
A-13		a			Annually
AR-1	---------- Removed from Sampling Program ----------				
AR-2	---------- Removed from Sampling Program ----------				
AR-3	---------- Removed from Sampling Program ----------				

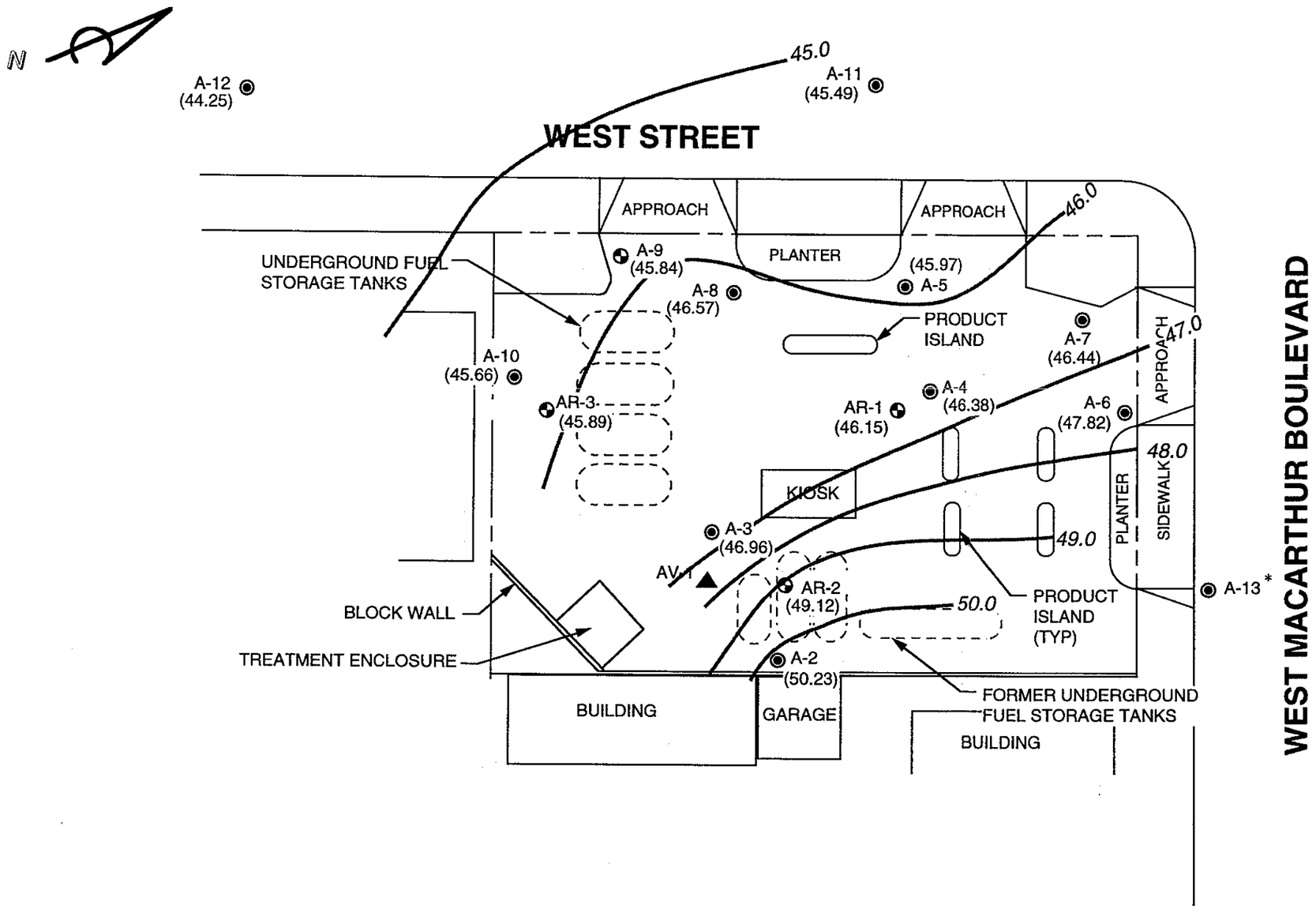
a. Groundwater samples analyzed for the presence of TPPH-g, BTEX compounds, and MtBE according to EPA Methods 8015 (modified) and 8020.

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

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-2	03/26/96	55.48	5.37	50.11	<50	<0.50	<0.50	<0.50	<0.50
	05/22/96		5.25	50.23	<50	<0.50	<0.50	<0.50	<0.50
A-3	03/26/96	54.66	7.20	47.46	---------- Well Sampled Semiannually ----------				
	05/22/96		7.70	46.96	<50	1.2	1.9	0.70	1.3
A-4	03/26/96	54.73	7.95	46.78	8,900	1,200	21	200	220
	05/22/96		8.35	46.38	5,300	700	<10	170	130
A-5	03/26/96	54.17	7.93	46.24	---------- Well Sampled Semiannually ----------				
	05/22/96		8.20	45.97	<50	<0.50	<0.50	<0.50	<0.50
A-6	03/26/96	55.17	7.15	48.02	52	2.7	<0.50	1.1	2 0
	05/22/96		7.35	47.82	<50	2.4	<0.50	0.88	1.7
A-7	03/26/96	54.71	6.90	47.81	---------- Well Sampled Annually ----------				
	05/22/96		8.27	46.44	<50	<0.50	<0.50	<0.50	<0.50
A-8	03/26/96	53.77	7.10	46.67	48,000	2,600	<100	650	1,100
	05/22/96		7.20	46.57	14,000	2,800	160	320	190
A-9	03/26/96	53.04	7.05	45.99	<50	<0.50	<0.50	<0.50	<0.50
	05/22/96		7.20	45.84	<50	<0.50	<0.50	<0.50	<0.50
A-10	03/26/96	54.26	8.28	45.98	---- Well Removed from Sampling Program ----				
	05/22/96		8.60	45.66	---- Well Removed from Sampling Program ----				
A-11	03/26/96	53.74	8.10	45.64	---------- Well Sampled Semiannually ----------				
	05/22/96		8.25	45.49	<50	<0.50	<0.50	<0.50	<0.50
A-12	03/26/96	52.05	7.83	44.22	---------- Well Sampled Semiannually ----------				
	05/22/96		7.80	44.25	<50	<0.50	<0.50	<0.50	<0.50
A-13	03/26/96	55.11	---------- Well Inaccessible ----------						
	05/22/96		---------- Well Inaccessible ----------						
AR-1	03/26/96	54.72	8.13	46.59	6,200	110	64	38	520
	05/22/96		8.57	46.15	NS	NS	NS	NS	NS
AR-2	03/26/96	54.77	4.93	49.84	<50	<0.50	<0.50	<0.50	<0.50
	05/22/96		5.65	49.12	NS	NS	NS	NS	NS
AR-3	03/26/96	54.19	7.95	46.24	<50	<0.50	<0.50	<0.50	<0.50
	05/22/96		8.30	45.89	NS	NS	NS	NS	NS

MSL = Mean sea level
TOB = Top of box
ppb = Parts per billion
< = Denotes laboratory detection limit
NS = Not sampled



LEGEND

- A-7 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- AR-3 ◉ GROUNDWATER EXTRACTION WELL LOCATION AND DESIGNATION
- AV-1 ▲ SOIL VAPOR WELL LOCATION AND DESIGNATION
- (47.82) GROUNDWATER ELEVATION IN FEET - MSL, 5-22-96
- 46.0 GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 5-22-96
- * WELL INACCESSIBLE

APPROXIMTE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.04

SOURCE: MAP FROM GEO STRATEGIES INC. DATED 6-94

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 30 60 FEET

ARCO SERVICE STATION 4931
731 West MacArthur Boulevard at West Street
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1

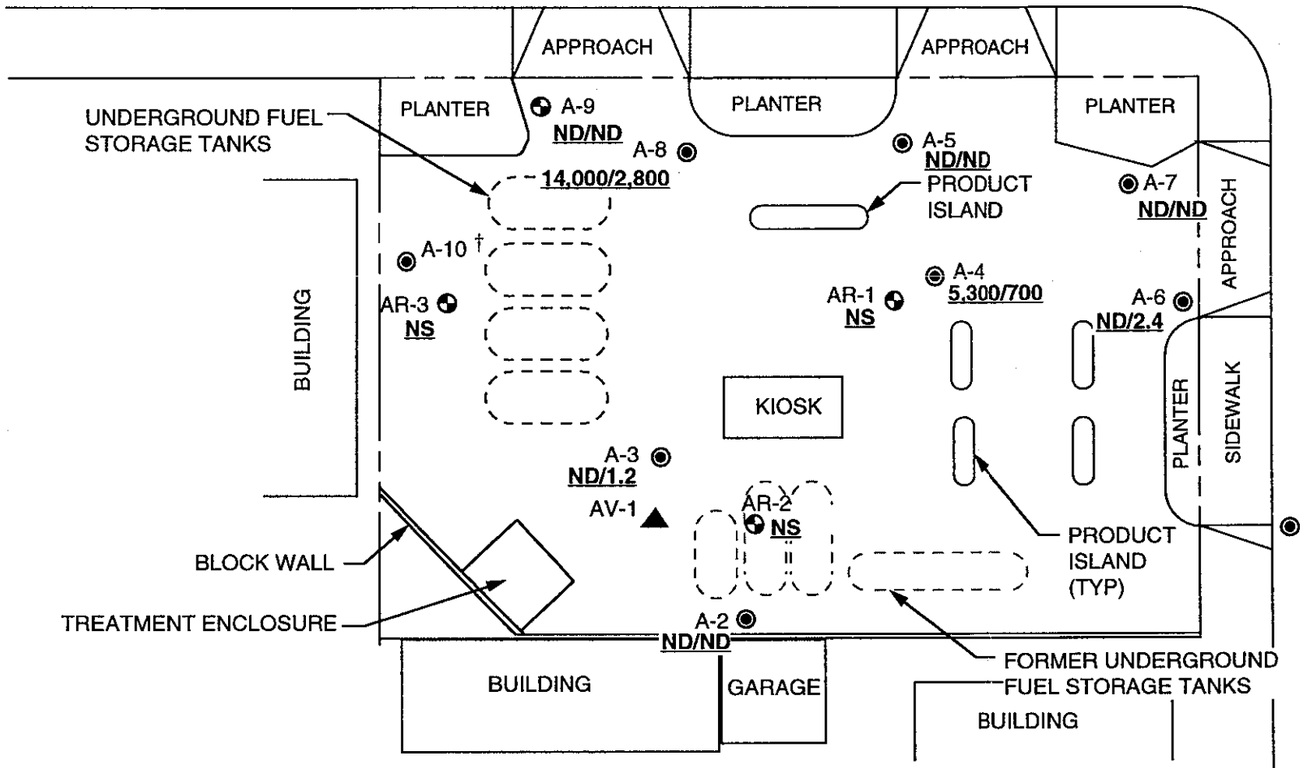
PROJECT: 330-109.2C

N

A-12
ND/ND

A-11
ND/ND

WEST STREET



WEST MACARTHUR BOULEVARD

LEGEND

- A-7 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- AR-3 ◉ GROUNDWATER EXTRACTION WELL LOCATION AND DESIGNATION
- AV-1 ▲ SOIL VAPOR WELL LOCATION AND DESIGNATION
- **ND/2.4** TPPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 5-22-96
- **ND** NOT DETECTED
- **NS** NOT SAMPLED
- * WELL INACCESSIBLE
- † WELL REMOVED FROM SAMPLING PROGRAM

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SOURCE: MAP FROM GEO STRATEGIES INC. DATED 6-94

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 30 60 FEET

ARCO SERVICE STATION 4931
731 West MacArthur Boulevard at West Street
Oakland, California

TPPH-g/BENZENE CONCENTRATION MAP

FIGURE: **2**
PROJECT: 330-109.2C

ATTACHMENT A

HISTORICAL LIQUID SURFACE ELEVATION AND GROUNDWATER ANALYTICAL DATA TABLES

Table A-1
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-2	03/20/89	55.38	3 45	3.45	0.00	51.93
	05/24/89		6.80	6.80	0.00	48.58
	08/18/89		10.82	10.82	0.00	44 56
	10/27/89		8.25	8.25	0.00	47.13
	01/15/90		4.87	4.87	0.00	50.51
	04/04/90		7.03	7.03	0.00	48.35
	07/30/90		10.01	10.01	0 00	45.37
	10/29/90		11.60	11.60	0.00	43.78
	01/16/91		9.43	9.43	0.00	45.95
	04/12/91		3.65	3 65	0 00	51.73
	07/10/91		9.57	9.57	0.00	45.81
	10/21/91		11.54	11.54	0.00	43.84
	02/01/92		11.20	11.20	0.00	44.18
	04/29/92		7.18	7.18	0.00	48.20
	07/29/92	55.48	11.81	11.81	0.00	43.67
	10/29/92		11.91	11.91	0.00	43.57
	01/26/93		5.06	5.06	0.00	50.42
	04/01/93		5.15	5.15	0.00	50.33
	08/06/93		15.33	15.33	0.00	40.15
	10/14/93		15.74	15.74	0.00	39.74
	11/16/93		14.61	14.61	0.00	40.87
	12/16/93		5.80	5.80	0.00	49.68
	02/10/94		4.88	4.88	0.00	50.60
	03/21/94		4.94	4.94	0.00	50.54
	05/06/94		----------	Well Inaccessible	----------	
	08/09/94		12.51	12.51	0.00	42.97
	11/17/94		5.24	5.24	0.00	50.24
	02/09/95		6.55	6.55	0.00	48.93
	05/08/95		6.08	6.08	0.00	49.40
	08/08/95		11.50	11.50	0.00	43.98
	11/03/95		10.92	10.92	0.00	44.56
A-3	03/20/89	54.48	7.51	7.51	0.00	46.97
	05/24/89		10.29	10.29	0.00	44.19
	08/18/89		11.60	11.60	0.00	42.88
	10/27/89		10.16	10.16	0.00	44.32
	01/15/90		8.55	8.55	0.00	45.93
	04/04/90		10.66	10.66	0.00	43.82
	07/30/90		11.26	11.26	0.00	43.22
	10/29/90		11.86	11.86	0.00	42.62
	01/16/91		11.46	11.46	0.00	43.02
	04/12/91		9.28	9.28	0.00	45.20
	07/10/91		11.29	11.29	0.00	43.19
	10/21/91		11.51	11.51	0.00	42.97
	02/02/92		----------	Well Inaccessible	----------	
	04/29/92		----------	Well Inaccessible	----------	
	07/29/92	54.66	11.59	11.59	0.00	43.07
	10/28/92		12.00	12.00	0.00	42.66
	01/26/93		9.82	9.82	0.00	44.84
	04/01/93		10.61	10.61	0.00	44.05
	08/06/93		14.90	14.90	0.00	39.76
	10/14/93		15.11	15.11	0.00	39.55
	11/16/93		14.72	14.72	0.00	39.94
	12/16/93		13.37	13.37	0.00	41.29
	02/10/94		9.20	9.20	0.00	45.46
	05/06/94		10.34	10.34	0.00	44.32
	08/09/94		12.09	12.09	0.00	42.57
	11/17/94		5.85	5.85	0.00	48.81
	02/09/95		9.93	9.93	0.00	44.73

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-3	05/08/95		11.32	11.32	0.00	43.34
(cont)	08/08/95		9.80	9.80	0.00	44.86
	11/03/95		10.26	10.26	0 00	44.40
A-4	03/21/86	54.62	NM	NM	3.50	NM
	01/07/88		NM	NM	0.02	NM
	03/20/89		8.13	8.13	0.00	46.49
	05/24/89		11.40	11.40	0.00	43.22
	08/18/89		11.90	11.91	0.01	42.72
	10/27/89		11.36	11.37	0.01	43.26
	01/15/90		9.73	9.74	0.01	44.89
	04/04/90		11.19	11.19	0.00	43.43
	07/30/90		11.70	11.71	0.01	42.92
	10/29/90		12.18	12.21	0.03	42.44
	01/16/91		11.88	11.89	0.01	42.74
	04/12/91		9.54	9.54	0.00	45.08
	07/10/91		11.55	11.55	0.00	43.07
	09/20/91		12.12	12.12	0.00	42.50
	10/21/91		11.73	11.76	0.03	42.89
	02/02/92		11.16	11.18	0.02	43.46
	04/29/92		10.76	10.78	0.02	43.86
	07/29/92	54.73	11.70	11.74	0.04	43.03
	10/28/92		11.90	11.93	0.03	42.83
	01/26/93		10.55	10.59	0.04	44.18
	04/01/93		10.15	10.17	0.02	44.58
	08/06/93		15.09	15.12	0.03	39.64
	10/14/93		15.37	15.37	0.00	39.36
	11/16/93		14.86	14.86	0.00	39.87
	12/16/93		13.41	13.41	0.00	41.32
	02/10/94		9.30	9.30	0.00	45.43
	05/06/94		10.02	10.02	0.00	44.71
	08/09/94		12.28	12.28	0.00	42.45
	11/17/94		9.44	9.44	0.00	45.29
	02/09/95		10.95	10.95	0.00	43.78
	05/08/95		11.29	11.29	0.00	43.44
	08/08/95		9.81	9.81	0.00	44.92
	11/03/95		10.42	10.42	0.00	44.31
A-5	03/20/89	54.15	8.09	8.09	0.00	46.06
	05/24/89		11.13	11.13	0.00	43.02
	08/18/89		11.58	11.58	0.00	42.57
	10/27/89		10.68	10.68	0.00	43.47
	01/15/90		9.24	9.24	0.00	44.91
	04/04/90		10.93	10.93	0.00	43.22
	07/30/90		11.48	11.48	0.00	42.67
	10/29/90		11.77	11.77	0.00	42.38
	01/16/91		11.36	11.36	0.00	42.79
	04/12/91		9.64	9.64	0.00	44.51
	07/10/91		11.30	11.30	0.00	42.85
	10/21/91		11.48	11.48	0.00	42.67
	02/02/92		10.73	10.73	0.00	43.42
	04/29/92		10.58	10.58	0.00	43.57
	07/29/92	54.17	11.46	11.46	0.00	42.71
	10/28/92		11.55	11.55	0.00	42.62
	01/26/93		10.32	10.32	0.00	43.85
	04/01/93		10.36	10.36	0.00	43.81
	08/06/93		14.82	14.82	0.00	39.35
	10/14/93		14.99	14.99	0.00	39.18
	11/16/93		14.47	14.47	0.00	39.70
	12/16/93		12.94	12.94	0.00	41.23
	02/10/94		8.94	8.94	0.00	45.23

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-5	05/06/94		10.48	10.48	0.00	43.69
(cont.)	08/09/94		11.86	11.86	0.00	42.31
	11/17/94		9.49	9.49	0.00	44.68
	02/09/95		10.50	10.50	0.00	43.67
	05/08/95		11.15	11.15	0.00	43.02
	08/08/95		9.39	9.39	0.00	44.78
	11/03/95		10.00	10.00	0.00	44.17
A-6	03/20/89	55.13	6.43	6.43	0.00	48.70
	05/24/89		9.43	9.43	0.00	45.70
	08/18/89		10.10	10.10	0.00	45.03
	10/27/89		9.16	9.16	0.00	45.97
	01/15/90		8.02	8.02	0.00	47.11
	04/04/90		9.29	9.29	0.00	45.84
	07/30/90		9.93	9.93	0.00	45.20
	10/29/90		10.42	10.42	0.00	44.71
	01/16/91		10.15	10.15	0.00	44.98
	04/12/91		8.05	8.05	0.00	47.08
	07/10/91		10.03	10.03	0.00	45.10
	10/21/91		10.30	10.30	0.00	44.83
	02/02/92		9.81	9.81	0 00	45.32
	04/29/92		---------- Well Inaccessible ----------			
	07/29/92	55.17	10.40	10.40	0.00	44.77
	10/28/92		10.55	10.55	0.00	44.62
	01/26/93		7.50	7.50	0.00	47.67
	04/01/93		7.59	7.59	0.00	47.58
	08/06/93		12.32	12.32	0.00	42.85
	10/14/93		12.82	12.82	0.00	42.35
	11/16/93		12.34	12.34	0.00	42.83
	12/16/93		10.40	10.40	0.00	44.77
	02/10/94		7.53	7.53	0.00	47.64
	05/06/94		8.71	8.71	0.00	46.46
	08/09/94		10.57	10.57	0.00	44.60
	11/17/94		7.91	7.91	0.00	47.26
	02/09/95		8.13	8.13	0.00	47.04
	05/08/95		8.85	8.85	0.00	46.32
	08/08/95		8.98	8.98	0.00	46.19
	11/03/95		9.64	9.64	0.00	45.53
A-7	03/20/89	54.67	6.29	6.29	0.00	48.38
	05/24/89		9.26	9.26	0.00	45.41
	08/18/89		9.97	9.97	0.00	44.70
	10/27/89		9.02	9.02	0.00	45.65
	01/15/90		7.90	7.90	0.00	46.77
	04/04/90		9.15	9.15	0.00	45.52
	07/30/90		9.80	9.80	0.00	44.87
	10/29/90		10.30	10.30	0.00	44.37
	01/16/91		11.35	11.35	0.00	43.32
	04/12/91		7.90	7.90	0.00	46.77
	07/10/91		9.82	9.82	0.00	44.85
	10/21/91		10.12	10.12	0.00	44.55
	02/02/92		9.28	9.28	0.00	45.39
	04/29/92		8.85	8.85	0.00	45.82
	07/29/92	54.71	10.09	10.09	0.00	44.62
	10/28/92		10.31	10.31	0.00	44.40
	01/26/93		7.33	7.33	0.00	47.38
	04/01/93		7.35	7.35	0.00	47.36
	08/06/93		12.67	12.67	0.00	42.04
	10/14/93		12.52	12.52	0.00	42.19
	11/16/93		12.13	12.13	0.00	42.58
	12/16/93		10.18	10.18	0.00	44.53

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-7	02/10/94		7.40	7.40	0.00	47.31
(cont.)	05/06/94		8.41	8.41	0 00	46 30
	08/09/94		10.57	10.57	0.00	44.14
	11/17/94		7.91	7.91	0.00	46.80
	02/09/95		7.85	7.85	0.00	46.86
	05/08/95		8.36	8.36	0.00	46.35
	08/08/95		8.66	8.66	0.00	46.05
	11/03/95		9.25	9.25	0.00	45.46
A-8	03/21/86	53.61	---------- Well Inaccessible ----------			
	01/07/88		---------- Well Inaccessible ----------			
	03/20/89		7.55	8.21	0.66	46.06
	05/24/89		10.21	11.41	1.20	43.40
	08/18/89		10.11	10.88	0.77	43.50
	10/27/89		10.35	11.66	1.31	43.26
	01/15/90		8.97	9.84	0.87	44.64
	04/04/90		11.10	11.35	0.25	42.51
	07/30/90		8.73	10.48	1.75	44.88
	10/29/90		11.29	11.39	0.10	42.32
	01/16/91		11.10	11.11	0.01	42.51
	04/12/91		9.15	9.16	0.01	44.46
	07/10/91		10.72	10.73	0.01	42.89
	10/21/91		10.87	10.98	0.11	42.74
	02/02/92		9.40	10.80	1.40	44.21
	04/29/92		9.85	11.15	1.30	43.76
	07/29/92	53.77	11.27	11.33	0.06	42.50
	10/28/92		---------- Well Dry ----------			
	01/26/93		---------- Well Dry ----------			
	04/01/93		9.38	9.38	0.00	44.39
	08/06/93		---------- Well Dry ----------			
	10/14/93		13.10	13.10	0.00	40.67
	11/16/93		---------- Well Dry ----------			
	12/16/93		13.40	13.40	0.00	40.37
	02/10/94		8.93	8.94	0.01	44.84
	05/06/94		8.38	8.80	0.42	45.39
	08/09/94		10.13	10.46	0.33	43.64
	11/17/94		9.09	9.41	0.32	44.68
	02/09/95		9.07	9.07	0.00	44.70
	05/08/95		10.60	10.60	<0.01	43.17
	08/08/95		8.87	8.87	0.00	44.90
	11/03/95		9.59	9.60	0.01	44.18
A-9	03/20/89	52.96	6.28	6.28	0.00	46.68
	05/24/89		10.12	10.12	0.00	42.84
	08/18/89		9.51	9.51	0.00	43.45
	10/27/89		8.56	8.56	0.00	44.40
	01/15/90		7.20	7.20	0.00	45.76
	04/04/90		8.78	8.78	0.00	44.18
	07/30/90		10.16	10.16	0.00	42.80
	10/29/90		10.71	10.71	0.00	42.25
	01/16/91		10.44	10.44	0.00	42.52
	04/12/91		8.69	8.69	0.00	44.27
	07/10/91		10.23	10.23	0.00	42.73
	09/20/91		10.47	10.47	0.00	42.49
	10/21/91		10.39	10.39	0.00	42.57
	02/02/92		9.05	9.05	0.00	43.91
	04/29/92		9.56	9.56	0.00	43.40
	07/29/92	53.04	10.43	10.43	0.00	42.61
	10/28/92		---------- Well Inaccessible ----------			
	01/26/93		---------- Well Inaccessible ----------			
	04/01/93		---------- Well Inaccessible ----------			

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-9	08/06/93		Well Inaccessible			
(cont.)	10/14/93		Well Inaccessible			
	11/16/93		Well Inaccessible			
	12/16/93		12.10	12.10	0.00	40.94
	02/10/94		8.00	8.00	0.00	45.04
	03/21/94		9.62	9.62	0.00	43.42
	05/06/94		9.41	9.41	0.00	43.63
	08/09/94		10.81	10.81	0.00	42.23
	11/17/94		9.89	9.89	0.00	43.15
	02/09/95		9.97	9.97	0.00	43.07
	05/08/95		10.28	10.28	0.00	42.76
	08/08/95		8.33	8.33	0.00	44.71
	11/03/95		9.00	9.00	0.00	44.04
A-10	03/20/89	54.16	8.52	8.52	0.00	45.64
	05/24/89		11.31	11.31	0.00	42.85
	08/18/89		11.82	11.82	0.00	42.34
	10/27/89		10.94	10.94	0.00	43.22
	01/15/90		9.58	9.58	0.00	44.58
	04/04/90		Well Inaccessible			
	07/30/90		11.57	11.57	0.00	42.59
	10/29/90		12.11	12.11	0.00	42.05
	01/16/91		11.60	11.60	0.00	42.56
	04/12/91		10.04	10.04	0.00	44.12
	07/10/91		11.55	11.55	0.00	42.61
	10/21/91		11.79	11.79	0.00	42.37
	02/02/92		Well Inaccessible			
	04/29/92		10.85	10.85	0.00	43.31
	07/29/92	54.26	11.84	11.84	0.00	42.42
	10/28/92		11.89	11.89	0.00	42.37
	01/26/93		10.81	10.81	0.00	43.45
	04/01/93		10.85	10.85	0.00	43.41
	08/06/93		15.06	15.06	0.00	39.20
	10/14/93		15.22	15.22	0.00	39.04
	11/16/93		14.70	14.70	0.00	39.56
	12/16/93		13.22	13.22	0.00	41.04
	02/10/94		9.61	9.61	0.00	44.65
	05/06/94		10.81	10.81	0.00	43.45
	08/09/94		12.24	12.24	0.00	42.02
	11/17/94		9.89	9.89	0.00	44.37
	02/09/95		11.00	11.00	0.00	43.26
	05/08/95		11.60	11.60	0.00	42.66
	08/08/95		9.65	9.65	0.00	44.61
	11/03/95		10.28	10.28	0.00	43.98
A-11	03/20/89	53.75	8.11	8.11	0.00	45.64
	05/24/89		10.92	10.92	0.00	42.83
	08/18/89		11.52	11.52	0.00	42.23
	10/27/89		10.63	10.63	0.00	43.12
	01/15/90		9.22	9.22	0.00	44.53
	04/04/90		10.85	10.85	0.00	42.90
	07/30/90		11.29	11.29	0.00	42.46
	10/29/90		11.66	11.66	0.00	42.09
	01/16/91		11.31	11.31	0.00	42.44
	04/12/91		9.55	9.55	0.00	44.20
	07/10/91		11.18	11.18	0.00	42.57
	10/21/91		11.24	11.24	0.00	42.51
	02/02/92		10.70	10.70	0.00	43.05
	04/29/92		10.57	10.57	0.00	43.18
	07/29/92	53.74	11.33	11.33	0.00	42.41
	10/28/92		11.54	11.54	0.00	42.20

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-11	01/26/93		9.90	9.90	0.00	43.84
(cont.)	04/01/93		10.11	10.11	0.00	43.63
	08/06/93		14.43	14.43	0.00	39.31
	10/14/93		14.72	14.72	0.00	39.02
	11/16/93		NM	NM	NM	NM
	12/16/93		NM	NM	NM	NM
	02/10/94		9.30	9.30	0.00	44.44
	05/06/94		9.94	9.94	0.00	43.80
	08/09/94		11.67	11.67	0.00	42.07
	11/17/94		9.32	9.32	0.00	44.42
	02/09/95		10.20	10.20	0.00	43.54
	05/08/95		10.88	10.88	0.00	42.86
	08/08/95		9.37	9.37	0.00	44.37
	11/03/95		10.10	10.10	0.00	43.64
A-12	03/20/89	52.05	8.00	8.00	0.00	44.05
	05/24/89		10.35	10.35	0.00	41.70
	08/18/89		10.75	10.75	0.00	41.30
	10/27/89		10.06	10.06	0.00	41.99
	01/15/90		8.88	8.88	0.00	43.17
	04/04/90		10.30	10.30	0.00	41.75
	07/30/90		10.66	10.66	0.00	41.39
	10/29/90		10.90	10.90	0.00	41.15
	01/16/91		10.60	10.60	0.00	41.45
	04/12/91		9.45	9.45	0.00	42.60
	07/10/91		10.56	10.56	0.00	41.49
	10/21/91		10.62	10.62	0.00	41.43
	02/02/92		10.10	10.10	0.00	41.95
	04/29/92		10.19	10.19	0.00	41.86
	07/29/92		10.81	10.81	0.00	41.24
	10/28/92		10.81	10.81	0.00	41.24
	01/26/93		9.48	9.48	0.00	42.57
	04/01/93		10.67	10.67	0.00	41.38
	08/06/93		12.95	12.95	0.00	39.10
	10/14/93		13.28	13.28	0.00	38.77
	11/16/93		NM	NM	NM	NM
	12/16/93		NM	NM	NM	NM
	02/10/94		8.66	8.66	0.00	43.39
	05/06/94		9.89	9.89	0.00	42.16
	08/09/94		11.07	11.07	0.00	40.98
	11/17/94		9.17	9.17	0.00	42.88
	02/09/95		9.90	9.90	0.00	42.15
	05/08/95		10.27	10.27	0.00	41.78
	08/08/95		8.47	8.47	0.00	43.58
	11/03/95		9.10	9.10	0.00	42.95
A-13	07/01/92	55.11	9.93	9.93	0.00	45.18
	07/29/92		11.12	11.12	0.00	43.99
	10/28/92		10.84	10.84	0.00	44.27
	01/26/93		8.99	8.99	0.00	46.12
	04/01/93		9.18	9.18	0.00	45.93
	08/06/93		13.70	13.70	0.00	41.41
	10/14/93		14.02	14.02	0.00	41.09
	11/16/93		NM	NM	NM	NM
	12/16/93		NM	NM	NM	NM
	02/10/94		9.64	9.64	0.00	45.47
	05/06/94		10.29	10.29	0.00	44.82
	08/09/94		11.45	11.45	0.00	43.66
	11/17/94		9.67	9.67	0.00	45.44
	02/09/95		9.38	9.38	0.00	45.73
	05/08/95		10.32	10.32	0.00	44.79

Table A-1 (continued)
Historical Liquid Surface Elevation Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Liquid (feet, TOB)	Depth to Water (feet, TOB)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
A-13	08/08/95		Well Inaccessible			
(cont.)	11/03/95		Well Inaccessible			
AR-1	07/01/92	54.72	10.27	10.27	0.00	44.45
	07/29/92		11.32	11.32	0.00	43.40
	10/28/92		Well Inaccessible			
	01/26/93		Well Inaccessible			
	04/01/93		Well Inaccessible			
	08/06/93		17.42	17.42	0.00	37.30
	10/14/93		Well Inaccessible			
	11/16/93		13.76	13.76	0.00	40.96
	12/16/93		19.44	19.44	0.00	35.28
	02/10/94		9.00	9.00	0.00	45.72
	03/21/94		9.99	10.00	0.01	44.73
	05/06/94		19.61	19.61	0.00	35.11
	08/09/94		17.51	17.59	0.08	37.21
	11/17/94		17.39	17.39	sheen	37.33
	02/09/95		18.83	18.83	0.00	35.89
	05/08/95		10.96	10.96	0.00	43.76
	08/08/95		9.70	9.70	0.00	45.02
	11/03/95		10.32	10.32	0.00	44.40
AR-2	07/01/92	54.77	11.33	11.33	0.00	43.44
	07/29/92		11.90	11.90	0.00	42.87
	10/28/92		Well Inaccessible			
	01/26/93		Well Inaccessible			
	04/01/93		Well Inaccessible			
	08/06/93		17.16	17.16	0.00	37.61
	10/14/93		18.11	18.11	0.00	36.66
	11/16/93		17.92	17.92	0.00	36.85
	12/16/93		18.02	18.02	0.00	36.75
	02/10/94		9.32	9.32	0.00	45.45
	03/21/94		10.36	10.36	0.00	44.41
	05/06/94		15.14	15.14	0.00	39.63
	08/09/94		18.25	18.25	0.00	36.52
	11/17/94		18.10	18.10	0.00	36.67
	02/09/95		17.10	17.10	0.00	37.67
	05/08/95		18.25	18.25	0.00	36.52
	08/08/95		10.20	10.20	0.00	44.57
	11/03/95		10.27	10.27	0.00	44.50
AR-3	07/01/92	54.19	10.11	10.11	0.00	44.08
	07/29/92		11.55	11.55	0.00	42.64
	10/28/92		Well Inaccessible			
	01/26/93		Well Inaccessible			
	04/01/93		Well Inaccessible			
	08/06/93		16.12	16.12	0.00	38.07
	10/14/93		Well Inaccessible			
	11/16/93		16.38	16.38	0.00	37.81
	12/16/93		Well Inaccessible			
	02/10/94		9.20	9.20	0.00	44.99
	03/21/94		10.80	10.80	0.00	43.39
	05/06/94		10.54	10.54	0.00	43.65
	08/09/94		11.92	11.92	0.00	42.27
	11/17/94		9.62	9.62	0.00	44.57
	02/09/95		15.90	15.90	0.00	38.29
	05/08/95		17.75	17.75	0.00	36.44
	08/08/95		9.47	9.47	0.00	44.72
	11/03/95		10.05	10.05	0.00	44.14

MSL = Mean sea level
TOB = Top of box
NM = Not measured

Table A-2
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-2	03/21/86	31,000	NA	NA	NA	NA
	01/07/88	12,000	920	1,500	--	4,000
	03/20/89	22,000	1,200	1,800	1,200	7,700
	05/24/89	9,000	460	260	250	2,400
	08/18/89	14,000	900	200	<200	1,300
	10/27/89	16,000	1,200	340	90	3,100
	01/15/90	9,900	1,100	460	150	2,900
	04/04/90	16,000	1,100	400	380	3,900
	07/30/90	16,000	1,400	340	290	3,600
	07/30/90	16,000	1,400	340	290	3,600
	10/29/90	14,000	1,100	210	66	2,700
	01/16/91	15,000	1,200	800	190	4,600
	04/12/91	16,000	640	290	280	2,600
	10/21/91	26,000	1,100	560	81	3,900
	02/02/92	11,000	150	13	91	94
	04/29/92	5,400	120	16	129	19
	07/30/92	590	10	<2.0	<2.0	9
	10/29/92	77	0.56	<0.50	<0.50	0.51
	01/26/93	390	0.87	<0.50	<0.50	4.3
	04/01/93	16,000	<10	<10	<10	<10
	08/06/93	Well Dry				
	10/14/93	350	<0.5	<0.5	<0.5	<0.5
	02/10/94	Well Dry				
	03/21/94	66	<0.5	<0.5	<0.5	<0.5
	05/06/94	Well Inaccessible				
	08/09/94	<50	1.1	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	50	1.7	2.0	<0.5	1.6
	05/08/95	<50	1.4	1.4	<0.50	0.50
	08/08/95	<50	<0.50	<0.50	<0.50	<0.50
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-3	03/21/86	1,000	NA	NA	NA	NA
	01/07/88	250	2.3	8	NA	21
	03/20/89	230	1.6	<1	3	3
	05/24/89	170	0.9	2	1	<3
	08/18/89	180	0.7	1	<1	<3
	10/27/89	120	<0.5	<0.5	<0.5	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	88	1.2	2.0	0.8	4
	07/30/90	120	8.3	2.9	2.3	12
	10/29/90	780	10	27	18	85
	01/16/91	69	2.0	3.5	<0.5	9.6
	04/12/91	<30	<0.30	<0.30	<0.30	<0.30
	07/10/91	59	<0.30	<0.30	0.50	0.51
	10/21/91	56	0.44	0.77	0.41	1.3
	02/01/92	Well Inaccessible				
	04/29/92	Well Inaccessible				
	07/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-3	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
(cont.)	02/09/95	90	0.9	<0.5	0.7	1.3
	05/08/95	<50	<0 50	<0.50	<0.50	<0.50
	08/08/95	NS	NS	NS	NS	NS
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-4	03/21/86	---------- 3.50 feet of Separate-Phase Hydrocarbons ----------				
	01/07/88	---------- 0.02 foot of Separate-Phase Hydrocarbons ----------				
	03/20/89	360,000	1,500	3,700	6,500	35,000
	05/24/89	1,500,000	1,000	2,000	6,000	23,000
	08/18/89	---------- 0.01 foot of Separate-Phase Hydrocarbons ----------				
	10/27/89	---------- 0.01 foot of Separate-Phase Hydrocarbons ----------				
	01/15/90	---------- 0.01 foot of Separate-Phase Hydrocarbons ----------				
	04/04/90	40,000	680	320	1,400	4,900
	07/30/90	---------- 0.01 foot of Separate-Phase Hydrocarbons ----------				
	10/29/90	---------- 0.03 foot of Separate-Phase Hydrocarbons ----------				
	01/16/91	---------- 0.01 foot of Separate-Phase Hydrocarbons ----------				
	04/12/91	1,800	<60	90	650	1,700
	07/10/91	61,000	2,700	8,500	1,700	8,200
	09/20/91	NA	1,200	5,300	1,500	11,000
	02/01/92	---------- 0.02 foot of Separate-Phase Hydrocarbons ----------				
	04/29/92	---------- 0.02 foot of Separate-Phase Hydrocarbons ----------				
	07/29/92	---------- 0.04 foot of Separate-Phase Hydrocarbons ----------				
	10/28/92	---------- 0.03 foot of Separate-Phase Hydrocarbons ----------				
	01/26/93	---------- 0.04 foot of Separate-Phase Hydrocarbons ----------				
	04/01/93	---------- 0.02 foot of Separate-Phase Hydrocarbons ----------				
	08/06/93	---------- 0.03 foot of Separate-Phase Hydrocarbons ----------				
	10/14/93	160,000	1,200	<250	4,100	950
	02/10/94	56,000	220	68	790	700
	05/06/94	18,000	210	<30	200	101
	08/09/94	20,000	800	<20	200	270
	11/17/94	3,900	420	11	38	92
	02/09/95	14,000	2,900	7.5	420	440
	05/08/95	5,100	700	<10 b	79	160
	08/08/95	4,200	240	17	88	110
	11/03/95	1,200	22	<0.50	6.4	3.7
A-5	03/21/86	88	NA	NA	NA	NA
	01/07/88	<50	0.5	1	NA	4
	03/20/89	60	0.5	1	2	10
	05/24/89	<50	0.5	<1	<1	<3
	08/18/89	<50	<0.5	<1	<1	<3
	10/27/89	<50	<0.50	<0.50	<0.50	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	<50	<0.5	<0.5	<0.5	<1
	07/30/90	<50	<0.5	<0.5	<0.5	<0.5
	10/29/90	280	<0.5	<0.5	<0.5	<0.5
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	<30	<0.30	<0.30	<0.30	0.84
	07/10/91	<30	<0.30	<0.30	<0.30	<0.30
	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
	02/01/92	<30	1.7	<0.30	<0.30	<0.30
	04/29/92	<30	<0.30	<0.30	<0.30	<0.30
	07/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-5	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
(cont.)	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	<50	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	NS	NS	NS	NS	NS
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-6	03/21/86	<10	NA	NA	NA	NA
	01/07/88	390	54	89	NA	110
	03/20/89	220	33	21	9	39
	05/24/89	110	13	6	3	13
	08/18/89	<50	2.1	1	<1	<3
	10/27/89	55	3.8	1.6	1.7	6
	01/15/90	100	12	2.5	5.5	18
	04/04/90	100	17	7.1	5.5	18
	07/30/90	<50	2.6	<0.5	<0.5	1.2
	10/29/90	<50	0.7	<0.5	<0.5	<0.5
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	430	24	5.1	9.4	32
	07/10/91	<30	1.4	0.39	0.47	1.5
	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
	02/01/92	<30	2.0	0 40	0.58	1.7
	04/29/92	---------- Well Inaccessible ----------				
	07/30/92	<50	0.64	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	1,600	4.8	1.2	14	46
	04/01/93	310	4.8	0.74	3.3	8.7
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	140	2.8	<0.5	2.4	5.6
	05/06/94	61	1.7	<0.5	0.6	1.4
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	53	<0.5	<0.5	<0.5	<0.5
	02/09/95	90	17	0.8	1.2	6.0
	05/08/95	100	7.9	<0.50	4.1	8.6
	08/08/95	<50	<0.50	<0.50	<0.50	<0.50
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-7	01/07/88	<50	<0.5	1	NA	4
	03/20/89	<50	0.9	<1	<1	<3
	05/24/89	<50	<0.5	<1	<1	<3
	08/18/89	<50	<0.5	<1	<1	<3
	10/27/89	<50	<0.5	<0.5	<0.5	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	<50	<0.5	<0.5	<0.5	<1
	07/30/90	<50	<0.5	<0.5	<0.5	<0.5
	10/29/90	<50	2.7	7.6	1.1	3.0
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	<30	<0.30	<0.30	<0.30	0.48
	07/10/91	<30	<0.30	0.49	<0.30	1.2
	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
	02/01/92	<30	<0.30	<0.30	<0.30	<0.30
	04/29/92	<30	<0.30	<0.30	<0.30	<0.30
	07/29/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0 50	<0.50	<0.50	<0.50

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-7	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
(cont.)	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	<50	3.7	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	NS	NS	NS	NS	NS
	11/03/95	---------- Well Sampled Annually ----------				
A-8	03/21/86	---------- Well Inaccessible ----------				
	01/07/88	---------- Well Inaccessible ----------				
	03/20/89	--------- 0.66 foot of Separate-Phase Hydrocarbons ---------				
	05/24/89	--------- 1.20 feet of Separate-Phase Hydrocarbons ---------				
	08/18/89	--------- 0.77 foot of Separate-Phase Hydrocarbons ---------				
	10/27/89	--------- 1.31 feet of Separate-Phase Hydrocarbons ---------				
	01/15/90	--------- 0.87 foot of Separate-Phase Hydrocarbons ---------				
	04/04/90	--------- 0.25 foot of Separate-Phase Hydrocarbons ---------				
	07/30/90	--------- 1.75 feet of Separate-Phase Hydrocarbons ---------				
	10/29/90	--------- 0.10 foot of Separate-Phase Hydrocarbons ---------				
	01/16/91	--------- 0.01 foot of Separate-Phase Hydrocarbons ---------				
	04/12/91	--------- 0.01 foot of Separate-Phase Hydrocarbons ---------				
	07/10/91	--------- 0.01 foot of Separate-Phase Hydrocarbons ---------				
	10/21/91	--------- 0.11 foot of Separate-Phase Hydrocarbons ---------				
	02/01/92	--------- 1.40 feet of Separate-Phase Hydrocarbons ---------				
	04/29/92	--------- 1.30 feet of Separate-Phase Hydrocarbons ---------				
	07/29/92	--------- 0.06 foot of Separate-Phase Hydrocarbons ---------				
	10/28/92	---------- Well Dry ----------				
	01/26/93	---------- Well Dry ----------				
	04/01/93	---------- Well Inaccessible ----------				
	08/06/93	---------- Well Dry ----------				
	10/14/93	---------- Well Inaccessible ----------				
	12/10/93	29,000,000	16,000	12,000	19,000	99,000
	02/10/94	NS	NS	NS	NS	NS
	05/06/94	NS	NS	NS	NS	NS
	08/09/94	--------- 0.33 foot of Separate-Phase Hydrocarbons ---------				
	11/17/94	--------- 0.32 foot of Separate-Phase Hydrocarbons ---------				
	02/09/95	68,000	2,400	500	960	5,000
	05/08/95	23,000	3,600	560	520	2,100
	08/08/95	20,000	2,700	140	730	1,600
	11/03/95	--------- 0.01 foot of Separate-Phase Hydrocarbons ---------				
A-9	01/07/88	300	45	14	NA	43
	03/21/89	50	2.8	1	1	3
	05/24/89	120	26	12	4	79
	08/18/89	14,000	400	800	400	2,000
	10/27/89	1,700	150	36	30	110
	01/15/90	860	140	58	38	140
	04/04/90	620	36	13	9.4	32
	07/30/90	180	77	1.6	2.1	4.2
	10/29/90	110	30	3.7	4.1	8.3
	01/16/91	<50	15	<0.5	<0.5	0.6
	04/12/91	130	52	0.83	5.3	6.0
	07/10/91	<30	7.8	<0.30	<0.30	<0.30
	09/20/91	NA	21	<2.0	<2.0	<0.20
	10/21/91	240	63	0.65	5.1	1.6
	02/01/92	320	77	0.95	11	6.5
	04/29/92	170	52	<0.30	5.6	1.4

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-9	07/30/92	<50	14	<0.50	1.7	6.0
(cont.)	10/28/92	---------- Well Inaccessible ----------				
	01/26/93	---------- Well Inaccessible ----------				
	04/01/93	---------- Well Inaccessible ----------				
	08/06/93	---------- Well Inaccessible ----------				
	10/14/93	---------- Well Inaccessible ----------				
	12/10/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	---------- Well Inaccessible ----------				
	03/21/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	2.5	<0.5	0.9	3.3
	02/09/95	<50	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	80	2.6	<0.50	<0.50	<0.50
	11/03/95	NS	NS	NS	NS	NS
A-10	01/07/88	<50	0.6	11	NA	4
	03/20/89	<50	<0.5	<1	<1	<3
	05/24/89	<50	<0.5	<1	<1	<3
	08/18/89	<50	<0.5	<1	<1	<3
	10/27/89	<50	<0.5	<0.5	<0.5	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	---------- Well Inaccessible ----------				
	07/30/90	<50	<0.5	<0.5	<0.5	<0.5
	10/29/90	<50	2.3	6.9	1.2	3.0
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	<30	0.67	0.55	<0.30	0.90
	07/10/91	<30	<0.30	<0.30	<0.30	<0.30
	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
	02/02/92	---------- Well Inaccessible ----------				
	04/29/92	<30	<0.30	<0.30	<0.30	<0.30
	07/29/92	<50	25	<0.50	<0.50	1.8
	10/28/92	<50	<0.50	<0.50	<05.0	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	60	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	---------- Well Removed from Sampling Program ----------				
A-11	01/07/88	<50	1.1	2	NA	5
	03/20/89	<50	<0.5	<1	<1	<3
	05/24/89	<50	<0.5	<1	<1	<3
	08/18/89	<50	<0.5	<1	<1	<3
	10/27/89	<50	<0.5	<0.5	<0.5	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	<50	<0.5	<0.5	<0.5	<1
	07/30/90	<50	<0.5	0.6	<0.5	0.5
	10/29/90	<50	0.6	2.4	0.6	1.5
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	<30	<0.30	0.37	<0.30	<0.30
	07/10/91	<30	0.61	0.46	<0.30	1.0

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-11	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
(cont.)	02/01/92	<30	<0.30	<0.30	<0.30	<0.30
	04/29/92	<30	<0.30	<0.30	<0.30	<0.30
	07/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	01/04/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	<50	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	NS	NS	NS	NS	NS
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-12	01/07/88	<50	<0.5	2	NA	<4
	03/20/89	<50	<0.5	<1	<1	<3
	05/24/89	<50	<0.5	<1	<1	<3
	08/18/89	<50	<0.5	<1	<1	<3
	10/27/89	<50	<0.5	<0.5	<0.5	<1
	01/15/90	<50	<0.5	<0.5	<0.5	<1
	04/04/90	<50	<0.5	<0.5	<0.5	<1
	07/30/90	<50	<0.5	<0.5	<0.5	<0.5
	10/29/90	<50	<0.5	<0.5	<0.5	<0.5
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5
	04/12/91	<30	<0.30	<0.30	<0.30	<0.30
	07/10/91	<30	<0.30	<0.30	<0.30	<0.30
	10/21/91	<30	<0.30	<0.30	<0.30	<0.30
	02/01/92	<30	<0.30	<0.30	<0.30	<0.30
	04/29/92	<30	<0.30	<0.30	<0.30	<0.30
	07/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	<50	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	NS	NS	NS	NS	NS
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
A-13	07/01/92	<50	<0.50	<0.50	<0.50	<0.50
	07/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/28/92	<50	<0.50	<0.50	<0.50	<0.50
	01/26/93	<50	<0.50	<0.50	<0.50	<0.50
	04/01/93	<50	<0.50	<0.50	<0.50	<0.50
	08/06/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
A-13	02/09/95	<50	<0.5	<0.5	<0.5	<0.5
(cont.)	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	Well Inaccessible				
	11/03/95	Well Inaccessible				
AR-1	07/01/92	2,300	260	150	38	470
	07/29/92	1,600	340	180	52	320
	10/28/92	Well Inaccessible				
	01/26/93	Well Inaccessible				
	04/01/93	Well Inaccessible				
	08/06/93	Well Inaccessible				
	10/14/93	Well Inaccessible				
	12/10/93	3,400	<25	<25	<25	250
	02/10/94	Well Inaccessible				
	03/21/94	NS	NS	NS	NS	NS
	05/06/94	NS	NS	NS	NS	NS
	08/09/94	0.08 foot of Separate-Phase Hydrocarbons				
	11/17/94	Sheen of Separate-Phase Hydrocarbons				
	02/09/95	670	1.5	1.0	0.7	33
	05/08/95	3,700	19	<2.5 b	5.7	47
	08/08/95	12,000	560	180	82	1,000
	11/03/95	7,400	130	41	18	370
AR-2	07/01/92	<50	<0.50	<0.50	<0.50	<0.50
	07/29/92	350	130	8.5	<10	<10
	10/28/92	Well Inaccessible				
	01/26/93	Well Inaccessible				
	04/01/93	Well Inaccessible				
	08/06/93	Well Inaccessible				
	10/14/93	Well Inaccessible				
	12/10/93	<50	<0.5	<0.5	<0.5	<0.5
	02/10/94	Well Inaccessible				
	03/21/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5
	02/09/95	60	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50
	08/08/95	<50	<0.50	<0.50	<0.50	<0.50
	11/03/95	<50	<0.50	<0.50	<0.50	<0.50
AR-3	07/01/92	<50	1.8	0.86	<0.50	2.2
	07/29/92	<50	1.6	<0.50	<0.50	<0.50
	10/28/92	Well Inaccessible				
	01/26/93	Well Inaccessible				
	04/01/93	Well Inaccessible				
	08/06/93	Well Inaccessible				
	10/14/93	Well Inaccessible				
	12/10/93	<50	<0.5	<0.50	<0.50	<0.50
	02/10/94	Well Inaccessible				
	03/21/94	<50	<0.5	<0.5	<0.5	<0.5
	05/06/94	<50	<0.5	<0.5	<0.5	<0.5
	08/09/94	<50	<0.5	<0.5	<0.5	<0.5
	11/17/94	<50	<1.3 a	<0.5	<0.5	<0.5
	02/09/95	50	<0.5	<0.5	<0.5	<0.5
	05/08/95	<50	<0.50	<0.50	<0.50	<0.50

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
AR-3	08/08/95	<50	<0.50	<0.50	<0.50	<0.50
(cont.)	11/03/95	<50	<0.50	<0.50	<0.50	<0.50

ppb = Parts per billion
NA = Not analyzed
NS = Not sampled
a. = Laboratory raised MRL due to matrix interference
b. = Laboratory raised MRL due to high analyte concentration requiring sample dilution.
Prior to June 1995, TPPH as gasoline was reported as TPH as gasoline.

Table A-3
Historical Groundwater Analytical Data
Total Methyl t-Butyl Ether

ARCO Service Station 4931
731 West MacArtur Boulevard at West Street
Oakland, California

Well I.D.	Date Sampled	Methyl t-Butyl Ether (ppb)
A-2	08/08/95	<2.5
	11/03/95	NS
A-3	08/08/95	NS
	11/03/95	<2.5
A-4	08/08/95	210
	11/03/95	NS
A-5	08/08/95	NS
	11/03/95	<2.5
A-6	08/08/95	<2.5
	11/03/95	NS
A-7	08/08/95	NS
	11/03/95	NS
A-8	08/08/95	1,200
	11/03/95	NS
A-9	08/08/95	17
	11/03/95	NS
A-10	08/08/95	NS
	11/03/95	NS
A-11	08/08/95	NS
	11/03/95	<2.5
A-12	08/08/95	NS
	11/03/95	<2.5
A-13	08/08/95	NS
	11/03/95	NS
AR-1	08/08/95	220
	11/03/95	NS
AR-2	08/08/95	<2.5
	11/03/95	NS
AR-3	08/08/95	<2.5
	11/03/95	NS

ppb = Parts per billion
NS = Not sampled

ATTACHMENT B

FIELD AND LABORATORY PROCEDURES

ATTACHMENT B
FIELD AND LABORATORY PROCEDURES

Sampling Procedures

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

Laboratory Procedures

The groundwater samples were analyzed for the presence of total purgeable petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, and xylenes. The analyses were performed according to EPA Methods 8015 (modified), 8020, and 5030 utilizing a purge-and-trap extraction technique. Final detection was by gas chromatography using flame- and photo-ionization detectors. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment C.

ATTACHMENT C

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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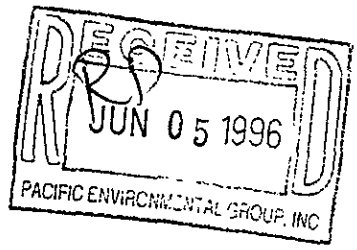

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Kelly Brown

Project: 330-109.2I/4931,Oakland

Enclosed are the results from samples received at Sequoia Analytical on May 23, 1996. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9605F28 -01	LIQUID, A-2	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -02	LIQUID, A-3	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -03	LIQUID, A-4	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -04	LIQUID, A-5	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -05	LIQUID, A-6	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -06	LIQUID, A-7	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -06	LIQUID, A-7	05/22/96	Nitrite as Nitrite
9605F28 -06	LIQUID, A-7	05/22/96	Nitrate as Nitrate
9605F28 -07	LIQUID, A-8	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -07	LIQUID, A-8	05/22/96	Nitrite as Nitrite

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SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9605F28 -07	LIQUID, A-8	05/22/96	Nitrate as Nitrate
9605F28 -08	LIQUID, A-9	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -08	LIQUID, A-9	05/22/96	Nitrate as Nitrate
9605F28 -08	LIQUID, A-9	05/22/96	Nitrite as Nitrite
9605F28 -09	LIQUID, A-11	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -10	LIQUID, A-12	05/22/96	TPHGBW Purgeable TPH/BTEX
9605F28 -11	LIQUID, TB-1	05/22/96	TPHGBW Purgeable TPH/BTEX

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

Very truly yours,

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Quality Assurance Department

Sequoia Analytical

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-01

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	104

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-02

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**1.2**
Toluene	**0.50**	**1.9**
Ethyl Benzene	**0.50**	**0.70**
Xylenes (Total)	**0.50**	**1.3**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	108

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

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-03

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	5300
Benzene	10	700
Toluene	10	N.D.
Ethyl Benzene	10	170
Xylenes (Total)	10	130
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	107

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
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San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-5
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-04

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	104

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-6
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-05

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**2.4**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**0.88**
Xylenes (Total)	**0.50**	**1.7**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103

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

SEQUOIA ANALYTICAL - ELAP #1210

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-7
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-06

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	101

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

SEQUOIA ANALYTICAL - ELAP #1210

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Pacific Environmental Group	Client Proj. ID: 330-109.2I/4931,Oakland	Sampled: 05/22/96
2025 Gateway Place, Suite 440	Sample Descript: A-8	Received: 05/23/96
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/24/96
Attention: Kelly Brown	Lab Number: 9605F28-07	Reported: 06/03/96

QC Batch Number: GC052496BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	14000
Benzene	50	2800
Toluene	50	160
Ethyl Benzene	50	320
Xylenes (Total)	50	190
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110

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

SEQUOIA ANALYTICAL - ELAP #1210

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2i/4931,Oakland
Sample Descript: A-9
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-08

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	103

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

SEQUOIA ANALYTICAL - ELAP #1210

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

Attention: Kelly Brown

Client Proj. ID: 330-109.21/4931,Oakland
Sample Descript: A-11
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-09

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	100

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: A-12
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-10

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	94

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland
Sample Descript: TB-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9605F28-11

Sampled: 05/22/96
Received: 05/23/96

Analyzed: 05/24/96
Reported: 06/03/96

QC Batch Number: GC052496BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	99

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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

Pacific Environmental Group	Client Project ID:	330-109-21/4931, Oakland		
2025 Gateway Place, Suite 440	Matrix:	Liquid		
San Jose, CA 95110				
Attention: Kelly Brown	Work Order #:	9605F28	-01, 2, 4-6, 8-10	Reported: Jun 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC052496BTEX21A	GC052496BTEX21A	GC052496BTEX21A	GC052496BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	960597804	960597804	960597804	960597804
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	13	12	12	38
MS % Recovery:	130	120	120	127
Dup. Result:	12	12	11	35
MSD % Recov.:	120	120	110	117
RPD:	8.0	0.0	8.7	8.2
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK052496A	BLK052496A	BLK052496A	BLK052496A
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	13	13	13	39
LCS % Recov.:	130	130	130	130

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

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

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

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

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

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Kelly Brown

Client Project ID: 330-109-2I/4931, Oakland
Matrix: Liquid
Work Order #: 9605F28-03

Reported: Jun 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC052496BTEX17A	GC052496BTEX17A	GC052496BTEX17A	GC052496BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	960597802	960597802	960597802	960597802
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	11	11	32
MS % Recovery:	100	110	110	107
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	0.0	9.5	9.5	6.5
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK052496A	BLK052496A	BLK052496A	BLK052496A
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	11	12	35
LCS % Recov.:	100	110	120	117
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

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

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Please Note:
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Pacific Environmental Group	Client Project ID:	330-109-2I/4931, Oakland	
2025 Gateway Place, Suite 440	Matrix:	Liquid	
San Jose, CA 95110			
Attention: Kelly Brown	Work Order #:	9605F28-07, 11	Reported: Jun 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC052496BTEX03A	GC052496BTEX03A	GC052496BTEX03A	GC052496BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	960597802	960597802	960597802	960597802
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.7	9.6	9.5	28
MS % Recovery:	97	96	95	93
Dup. Result:	9.9	9.9	9.8	29
MSD % Recov.:	99	99	98	97
RPD:	2.0	3.1	3.1	3.5
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK052496A	BLK052496A	BLK052496A	BLK052496A
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	9.9	9.8	30
LCS % Recov.:	100	99	98	100

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

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

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Please Note:
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Sequoia Analytical

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

Pacific Environmental Group	Client Project ID:	330-109-2I/4931, Oakland
2025 Gateway Place, Suite 440	Matrix:	Liquid
San Jose, CA 95110		
Attention: Kelly Brown	Work Order #:	9605F28-06-8

Reported: Jun 3, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Nitrate as NO3	Nitrite as NO2
QC Batch#:	IN052496300011C	IN052496300011C
Analy. Method:	EPA 300.0	EPA 300.0
Prep. Method:	EPA 300.0	EPA 300.0
Analyst:	R. Salinas	R. Salinas
MS/MSD #:	6052002	6052002
Sample Conc.:	21	0.17
Prepared Date:	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96
Instrument I.D.#:	INIC1	INIC1
Conc. Spiked:	10 mg/L	2.5 mg/L
Result:	31	3.1
MS % Recovery:	100	117
Dup. Result:	31	3.1
MSD % Recov.:	100	117
RPD:	0.0	0.0
RPD Limit:	0-20	0-20

LCS #:	BLK052496	BLK052496
Prepared Date:	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96
Instrument I.D.#:	INIC1	INIC1
Conc. Spiked:	10 mg/L	2.5 mg/L
LCS Result:	11	3.0
LCS % Recov.:	110	120

MS/MSD LCS Control Limits	80-120	80-120

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

SEQUOIA ANALYTICAL
Elap #1271

Claudia Hirotsu
Project Manager

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

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

WORKORDER: 9605F28
DATE OF LOG-IN: 5·23·96

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal(s): Present / (Absent)
   Intact / Broken*
2. Custody Seal Nos.: Put in Remarks Section
3. Chain-of-Custody Records: (Present) / Absent*
4. Traffic Reports or Packing List: Present / (Absent)
5. Airbill: Airbill / Sticker
   Present / (Absent)
6. Airbill No.:
7. Sample Tags: (Present) / Absent*
   Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody
8. Sample Condition: (Intact) / Broken* / Leaking*
9. Does information on custody reports, traffic reports and sample tags agree? (Yes) / No*
10. Proper preservatives used: (Yes) / No*
11. Date Rec. at Lab: 5/23/96
12. Temp. Rec. at Lab: 14 °C
13. Time Rec. at Lab: 1300

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1	A-C	A-2	3VOA	L	5/22/96	
2		B				
3		4				
4		5				
5	↓	6	↓			
6	A-C	A-7	3VOA			
7	D	↓	PL-1L			
8	A-C	A-8	3 VOA			
9	D-E	↓	PL-½LX2			
10	A-E	A-9	5 AMC			
11	A-C	A-11	3VOA			
12	A-C	A-12	↓			
13	A-B	TB-1	2VOA			

CB

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

ARCO Products Company ◆ Division of AtlanticRichfieldCompany — 330 [illegible] St — **Task Order No.** [illegible]

Chain of Custody

ARCO Facility no. 7131	City (Facility) Mathew Bl Oakland	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) [illegible]	Fax no. (Consultant) (408) 441 7539
Consultant name [illegible] Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Nitrate	Nitrite
H-2		3		X		X	X	5/23	10:25		X											
H-3		1							10:40						1	6025	F	28				
H-4									11:45													
H-5									12:55													
H-6		↓							12:30													
H-7		4							13:20												X	X
H-8		5							13:0												X	X
H-9		5							14:05												X	X
H-11		3							14:10													
H-12		3		↓		↓	↓		13:45													
TB-1		2		↓		↓	↓	↓	14:??		↓											

Special detection Limit/reporting

Special QA/QC

Remarks

1 of 1

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 [illegible]	5/23/96	7:00	Received by [illegible]
Relinquished by [illegible]	5/23/96	10:10	Received by [illegible]
Relinquished by [illegible]	5/23/96		Received by laboratory [illegible] Date 5/23/96 Time 1700

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

APC-3292 (2-91)

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

Project #:330-109.2I

Station #:4931

Site Address:731 McArthur Bl
Oakland, California

County: Alameda

Project Manager: Kelly Brown

Requestor: Kelly Romero

Client: Arco

Prefield contacts:

☐ **1st time visit**

☐ **1st** ☒ **2nd** ☐ **3rd** ☐ **4th**

☐ **Monthly**

☐ **Semi-Monthly**

☐ **Weekly**

☐ **One time Event**

☐ **Other.**_____

Client P.O.C.: Mike Whelan

Date of Request: 6/96

Ideal Field Date:

Budget Hrs._____

Actual Hrs. 8 hrs

Mob de Mob 3 hrs

Total Purge = 292.5 Gal.

Field Tasks: For General Description

Second Quarter 1996 groundwater sampling event: DTW/DTL from TOB/TOC; sample all wells for GAS/BTEX.

WA# 19348 00

Comments, remarks, from Field Staff (include problems encountered

AR-1 / AR-2 / AR-3 were not sampled by request of project manager

Completed by: C Reed Date: 5 22 96

Checked by:_____

WELL SAMPLING REQUEST

SAMPLING PROTOCOL								
Project No.	Station #	Project Name	SEQUENCE	Project Manager	Approval	Date/s	Laboratory:	Client Engineer:
330-109.2I	4931	731 McArthur BL Oakland	2Q96	Kelly Brown	3/28/96		Sequoia	Mike Whelan

Well Number	Ideal Sampling Order	Sample I.D.	Sampling Frequency	Analyses	TOB TOC	Well Depth	Casing Diameter	Well goes Dry?	Comments
A-2			QLY	GAS/BTEX	TOB/TOC	20	4"	yes	
A-3			Semiannual	GAS/BTEX	TOB/TOC	17	4"	yes	
A-4			QLY	GAS/BTEX	TOB/TOC	20	4"	yes	
A-5			Semiannual	GAS/BTEX	TOB/TOC	24.5	3"	no	
A-6			QLY	GAS/BTEX	TOB/TOC	25.5	3"	no	
A-7			Annual	GAS/BTEX	TOB/TOC	23	3"	no	
A-8			QLY	GAS/BTEX	TOB/TOC	18	3"	no	
A-9			QLY	GAS/BTEX	TOB/TOC	19	6"	no	
A-10			REMOVED	DTW ONLY	TOB/TOC	?	?	?	
A-11			Semiannual	GAS/BTEX	TOB/TOC	28	3"	no	
A-12			Semiannual	GAS/BTEX	TOB/TOC	30	3"	no	
A-13			Annual	GAS/BTEX	TOB/TOC	29.5	3"	no	
AR-1			QLY	GAS/BTEX	TOB/TOC	31.5	6"	no	
AR-2			QLY	GAS/BTEX	TOB/TOC	27.5	6"	no	
AR-3			QLY	GAS/BTEX	TOB/TOC	27	6"	no	
TB-1			QLY	GAS/BTEX					

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330 109 21 LOCATION: 731 McArthur Blvd DATE: 5/22/96

CLIENT/STATION NO.: Arco 4931 FIELD TECHNICIAN: (J). Peck DAY OF WEEK: Wed

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

Casing Size	Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	TOC Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH): SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	COLOR: Fresh	COLOR: Weathered	COLOR: Gas	COLOR: Oil	VISCOSITY: Lite	VISCOSITY: Medium	VISCOSITY: Heavy	LIQUID REMOVED (gallons) SPH / H_2O
4"	10	A-2	11:20	X	Y		Y		19.45	4.85 / 4.85	5.25 / 5.25										
4"	4	A-3	10:50	Y	Y		Y	Y	16.13	6.70 / 6.70	7.70 / 7.70										
4"	19	A-4	11:25						19.10	720 / 720	835 / 835										
3"	7	A-5	1:05	Y	Y		Y		24.50	7.50 / 7.50	8.20 / 8.20										
3"	5	A-6	10:55	Y	Y				24.80	6.62 / 6.62	7.35 / 7.35										
3"	6	A-7	11:00	Y	Y		Y		22.25	7.70 / 7.70	8.27 / 8.27										
3"	13	A-8	11:35	Y	Y					6.31 / 6.31	7.20 / 7.20										
6"	3	A-9	10:45	Y	Y	Y		Y	31.83	6.31 / 6.31	7.20 / 7.20										
3"	1	A-10	10:35	X	Y		Y		29.60	8.10 / 8.10	8.60 / 8.60										

Comments: _____

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330 109 21 LOCATION: 731 McArthur Blvd DATE: 5/22/96

CLIENT/STATION NO.: Arco 4931 FIELD TECHNICIAN: (W. Peck DAY OF WEEK: Wed

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

Casing Size	Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	TOC Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SERARATE-PHASE HYDROCARBONS (SPH): SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons): SPH	H_2O
3"	8	A-11	11:10						29.7	8.10 / 8.10	8.25 / 8.25											
3"	9	A-12	11:15						29.75	7.15 / 7.15	7.80 / 7.80											
		A-13			Well				covered	W/	As Fau	lt										
	12	AR-1	1:30						29.45	7.87 / 7.87	8.57 / 8.57											
	5	AR-2	11:07						26.55	4.70 / 4.70	5.65 / 5.65											
4"	2	AR-3	10:40	Y	Y	Y		-1	~~28.35~~ 26.35	7.62 / 7.62	8.30 / 8.30											

Comments: _____

FIELD DATA SHEET

ATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.: Oakland WELL ID #: A-2

CLIENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: — TOB — TOC
Total depth: — TOB — TOC
Date: 5/22/96 Time (2400): 14.20

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 19.45 - DTW 4.85 = 14.6 x Gal/Linear Foot .66 = 9.64 x Number of Casings 3 = Calculated Purge 29

DATE PURGED: 5/22/96 START: 14:15 END (2400 hr): 14:23 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 10:30 END (2400 hr): 10:35 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR
14:20	9.5	6.25	493	67.1	Brown	Mod	None
~~14:15~~	~~10~~						
~~14:23~~	~~19~~		DRY AT 9.5 Gal				

Pumped dry (Yes) / No @ 9.5 / 14:23

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: 17.50 TOB/TOC 6.77 500 70.0 Brown Heavy None

PURGING EQUIPMENT/I.D.

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

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer: 29.7
- ☐ Dedicated:
- ☐ Other:

AP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-2	5/22/96	1635	3	40ml	VOA	HCL	Gas/BTEX

ARKS:

IATURE:

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-109.21 LOCATION: 731 McArthur Blvd., Oakland WELL ID #: A3

CLIENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 7.70 TOB 6.70 TOC
Total depth: — TOB 16.13 TOC
Date: 5/22/96 Time (2400): 10:50

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

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

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

TD 16.13 - DTW 6.70 = 9.43 x Gal/Linear Foot .66 = 6.22 x Number of Casings 3 = Calculated Purge 18.67

DATE PURGED: 5/22/96 START: 11:45 END (2400 hr): 11:53 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 12:00 END (2400 hr): 12:05 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
11:50	6.25	6.70	470	74.0	Brown	Mod	None
11:53	8.25	6.25	460	72.9	Brown	Mod	None
			DRY AT 8.25 Gal.				

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: 13.00 TOB/TOC 6.42 590 69.5 Brown Heavy None

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

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

MP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-3	5/22/96	12:05	3	40ml	VOA	HCL	Gas/Btex

REMARKS: DRY AT 8.25 Gal.

SIGNATURE: Walter Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-4

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

epth to Liquid: — TOB — TOC
epth to water: — TOB — TOC
otal depth: — TOB — TOC
ate: 5/22/96 Time (2400):

obe 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 19.10 - DTW 7.20 = 11.9 x Gal/Linear Foot 0.66 = 7.85 x Number of Casings 3 = Calculated Purge 24

DATE PURGED: 5/22/96 START: 1423 END (2400 hr): PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 1440 END (2400 hr): 1445 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
1428	8	6.48	589	70.0	Brown	MOD	Faint
1433	~~12~~	6.72	715	72.1	Brown	MOD	MOD
~~1437~~	~~16~~				~~Brown~~		

Pumped dry (Yes) No @ 12 Gal / 1433

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: 6.88 TOB/TOC 6.66 980 71.2 Brown MOD Heavy

PURGING EQUIPMENT/I.D.

- ☐ Bailer:
- ☐ Centrifugal Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer: ~~29A~~ 298
- ☐ Dedicated:
- ☐ Other:

P. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-4	5/22/96	1445	3	40ml	VOA	HCL	Gas/BTEX

ARKS: * Cap/Coupling Comes OFF of Well Casing.
* Faint Sheen

ATURE: Walter J. Peck

PACIFIC ENVIRONMENTAL GROUP INC.

FIELD DATA SHEET

TER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-5

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 9.50 TOB 7.20 TOC
otal depth: — TOB 24.50 TOC
ate: 5/22/96 Time (2400): 11:05

robe 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 24.50 - DTW 7.20 = 17.3 x Gal/Linear Foot .38 = 6.57 x Number of Casings 3 = Calculated Purge 19.72

DATE PURGED: 5/22/96 START: 12:35 END (2400 hr): 12:50 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 12:50 END (2400 hr): 12:55 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:40	6.75	6.46	930	66.1	Brown	Mod	None
12:45	13.50	6.50	790	67.5	Brown	Mod	None
12:50	20.25	6.52	850	67.0	Brown	Mod	None

Pumped dry Yes (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-10
- ☐ Dedicated:
- ☐ Other:

SMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-5	5/22/96	12:55	3	40ml	VOA	HCL	Gas/Btex

MARKS:

SIGNATURE: Walter J Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

TER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd., Oakland WELL ID #: A6

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 7.35 TOB 6.62 TOC
otal depth: — TOB 24.80 TOC
Date: 5/22/96 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 24.80 - DTW 6.62 = 18.18 x Gal/Linear Foot .38 = 6.90 x Number of Casings 3 = Calculated Purge 20.72

DATE PURGED: 5/22/96 START: 12:10 END (2400 hr): 12:25 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 12:25 END (2400 hr): 12:30 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:15	7.0	6.97	570	68.6	Brown	Mod	None
12:20	14.0	6.73	520	68.9	Brown	Mod	None
12:25	25.0	6.69	670	67.9	Brown	Mod	None

Pumped dry Yes (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: — TOB/TOC —

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

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

MP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-6	5/22/96	12:30	3	40ml	VOA	HCl	Gas/BTEX

ARKS:

NATURE: Walter J Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-7

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.27 TOB 7.70 TOC
otal depth: — TOB 22.25 TOC
ate: 5/22/96 Time (2400): 1100

robe 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 22.25 - DTW 7.70 = 14.55 x Gal/Linear Foot 0.38 = 5.52 x Number of Casings 3 = Calculated Purge 16.58

DATE PURGED: 5/22/96 START: 1200 END (2400 hr): 1315 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 1315 END (2400 hr): 1320 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
1305	5.50	7.24	930 343	67.4	Brown	MOD	none
1310	11	6.75	464	67.0	Brown	Mod	none
1315	16.50	6.75	631	67.2	Brown	Mod	none

Pumped dry Yes / No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ✓ TOB/TOC

PURGING EQUIPMENT/I.D.

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

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer: G-6
- ☐ Dedicated:
- ☐ Other:

MP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-7	5/22/96	1320	3	40ml	VOA	HCL	Gas/Btex
A7	5/22/96	1320	1	1000ml	Plastic	HP	Nitrate/Nitrate

MARKS:

NATURE: Walter J Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-8

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Rich

WELL INFORMATION

epth to Liquid: — TOB — TOC
epth to water: 7.20 TOB 6.31 TOC
otal depth: — TOB 21.20 TOC
ate: 5/22/96 Time (2400): 1135

robe 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 21.20 - DTW 6.31 = 14.99 x Gal/Linear Foot .38 = 5.7 x Number of Casings 3 = Calculated Purge 17

DATE PURGED: 5/22/96 START: 14:55 END (2400 hr): 1505 PURGED BY: W Rich

DATE SAMPLED: 5/22/96 START: 1505 END (2400 hr): 1510 SAMPLED BY: W Rich

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR
1459	6	6.48	863	68.3	Brown	Moderate	Strong
1505	12	6.46	1045	71.1	Brown	Heavy	Strong
~~1510~~	~~17~~		DRY	AT 12°	Gal		

Pumped dry ~~Yes~~ / No @ 1501 1505

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: 13.70 TOB/TOC

PURGING EQUIPMENT/I.D.

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

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer: G15
- ☐ Dedicated:
- ☐ Other:

IP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-8	5/22/96	1510	3	40ml	VOA	HCL	Gas/BTEX

ARKS: DRY AT 12°

IATURE: W. Rich

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-9

CLIENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 7.00 TOB 6.31 TOC
Total depth: — TOB 37.83 TOC
Date: 5/22/96 Time (2400): 10145

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 37.83 - DTW 6.31 = 31.52 x Gal/Linear Foot 1.5 = 47.28 x Number of Casings 3 = Calculated Purge 141.8

DATE PURGED: 5/22/96 START: 15:30 END (2400 hr): 16:00 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 16:00 END (2400 hr): 16:05 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
~~15:40~~	47.50	6.65	740	75.6	Cloudy	Light	None
15:50	95.0	6.75	710	77.0	Clear	Trace	None
16:00	142.50	6.69	720	76.0	Clear	Trace	None

Pumped dry Yes / (No)

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: — TOB/TOC —

PURGING EQUIPMENT/I.D.

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

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer:
- ☐ Dedicated:
- ☐ Other:

MP, CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-9	5/22/96	16:05	3	40ml	VOA	HCL	Gas/Btex
A-9	5/22/96	16:05	2	500ml	Plastic	NP	Nitrate/Nitrites

MARKS:

ATURE: Walter L Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

TER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.: Oakland WELL ID #: A-11

IENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Beck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: — TOB — TOC
otal depth: — TOB — TOC
ate: 5/22/96 Time (2400): —

robe 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 29.7 - DTW 8.10 = 21.6 x Gal/Linear Foot .38 = 8.2 x Number of Casings 3 = Calculated Purge 24.6

DATE PURGED: 5/22/96 START: 1350 END (2400 hr): 1405 PURGED BY: W Beck

DATE SAMPLED: 5/22/96 START: 1405 END (2400 hr): 1410 SAMPLED BY: W Beck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
1355	8.2	6.70	722	76.2	Brown	mod	none
1400	16	6.70	727	68.0	cloudy	light	none
1405	25	6.70	725	68.6	cloudy	light	none

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 Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D.

- ☒ Bailer: G-1
- ☐ Dedicated:
- ☐ Other:

MP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-11	5/22/96	1410	3	40ml	VOA	HCL	Gas/BTEX

MARKS:

ATURE: Walter Beck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: A-12

ENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Peck

WELL INFORMATION

epth to Liquid: — TOB — TOC
epth to water: ~~7.15~~ 7.80 TOB 7.15 TOC
tal depth: TOB 29.75 TOC
ite: 5/22/96 Time (2400): 11:15

obe 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 29.75 - DTW 7.15 = 22.6 x Gal/Linear Foot .38 = 8.59 x Number of Casings 3 = Calculated Purge 25.76

DATE PURGED: 5/22/96 START: 13:25 END (2400 hr): 13:40 PURGED BY: W Peck

DATE SAMPLED: 5/22/96 START: 13:40 END (2400 hr): 13:45 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:30	8.75	6.64	692	68.8	Brown	Mod	None
13:35	17.5	6.66	710	68.4	Cloudy	Light	None
13:40	25.2	6.71	718	68.1	Clear	Trace	None

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 Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

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

P. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
A-12	5/22/96	13:45	3	40ml	VOA	HCL	Gas/BTEX

MARKS:

ATURE: Walter J Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

OJECT No.: 330-109-21 LOCATION: 731 McArthur Blvd.; Oakland WELL ID #: TB-1

ENT/STATION No.: Arco 4931 FIELD TECHNICIAN: W Rech

WELL INFORMATION

pth to Liquid: — TOB — TOC
pth to water: TOB TOC
tal depth: TOB TOC
te: 5/22/96 Time (2400):

be 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: 5/22/96 START: END (2400 hr): PURGED BY: W Rech

DATE SAMPLED: 5/22/96 START: END (2400 hr): SAMPLED BY: W Rech

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

umped dry Yes / No

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

IELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

TW: TOB/TOC

URGING EQUIPMENT/I.D. #
-] Bailer:
- ☐ Airlift Pump:
-] Centrifugal Pump:
- ☐ Dedicated:
-] Other:

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

P. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
B-1	5/22/96	N/A	3	40ml	VOA	HCL	Gas/BTEX

ARKS:

ATURE: Walter Rech

PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO Products Company Division of AtlanticRichfieldCompany — 330 109 21 — **Task Order No.** 1934800 — **Chain of Custody**

ARCO Facility no. 4931	City (Facility) 731 McArthur Bl Oakland	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408) 441 7500	Fax no. (Consultant) (408) 441 7539
Consultant name Pacific Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid HCL	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH (Gas) EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Nitrate	Nitrite
A-2		3		X		X	X	5/22/96	16:35		X											
A-3		1							12:05													
A-4									14:45													
A-5									12:55													
A-6		↓							12:30													
A-7		4							13:20												X	X
A-8		5							15:10												X	X
A-9		5							16:05												X	X
A-11		3							14:10													
A-12		3		↓		↓	↓		13:45													
TB-1		2		↓		↓	↓	↓	11/11		↓											

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

Method of shipment

Condition of sample:

Temperature received:

Relinquished by sampler: Walter Hess	Date 5/22/96	Time 7:00
Relinquished by	Date	Time
Relinquished by	Date	Time

Received by		
Received by		
Received by laboratory	Date	Time

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

ATTACHMENT D

REMEDIAL SYSTEM PERFORMANCE EVALUATION

ATTACHMENT D
REMEDIAL SYSTEM PERFORMANCE EVALUATION

Groundwater extraction (GWE) was initiated on November 10, 1992. At the request of ARCO, PACIFIC initiated an in-situ bioremediation enhancement program at Well A-9 on November 17, 1995 and at Well A-8 on May 22, 1996. Brief descriptions and performance evaluations of the remedial system and bioremediation enhancement program between March 31 and June 31, 1996, are presented below.

GWE System

The GWE system is comprised of electric GWE pumps in Wells A-9, AR-1, AR-2, and AR-3, and three 1,500-pound granular activated carbon vessels arranged in series. The GWE system is permitted by East Bay Municipal Utility District Permit Account No. 502-62131, which expires November 1, 1997.

As indicated in PACIFIC's second quarter 1995 report, the GWE was deactivated on July 5, 1995, and remained inactive during the reporting period. No evidence of plume migration has been observed since system deactivation. To date, 4.6 million gallons of groundwater have been extracted and less than 0.01 gallon of benzene removed.

Historical GWE system performance and analytical data are presented in Tables D-1 and D-2. Graphical presentations of total purgeable petroleum hydrocarbons calculated as gasoline (TPPH-g) and benzene mass removal and concentration data are shown on Figures D-1 and D-2, respectively.

Bioremediation Enhancement Program

The in-situ bioremediation enhancement program utilizes oxygen releasing compound (ORC) manufactured by Regenesis Bioremediation Products, Inc. Eight 2-inch diameter ORC socks were installed below the groundwater surface in Well A-9 on November 17, 1995. Due to diminishing dissolved oxygen concentrations the ORCs were replaced with the same number of new ORCs on May 22, 1996. On the same date thirteen 2-inch diameter ORC socks were installed below the groundwater surface in Well A-8. ORC is a formulation of very fine,

Table D-1
Groundwater Extraction System Performance Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Sample I.D.	Date Sampled	Totalizer Reading (gallons)	Net Volume (gallons)	Average Flow Rate (gpm)	TPPH as Gasoline: Influent Concentration (µg/L)	TPPH as Gasoline: Net Removed (lbs)	TPPH as Gasoline: Removed to Date (lbs)	Benzene: Influent Concentration (µg/L)	Benzene: Net Removed (lbs)	Benzene: Removed to Date (lbs)	Primary Carbon Loading (percent)
INFL	06/28/94 a	4,120,050	N/A	0.9	740	0.000	1.61	38	0.000	0.38	2.0
INFL	07/15/94	4,143,150	23,100	0.9	ND	0.071	1.68	ND	0.004	0.38	2.1
INFL	08/18/94	4,175,310	32,160	0.7	NS	0.099	1.78	NS	0.005	0.39	2.2
INFL	09/30/94	4,243,295 b	67,985	1.1	NS	0.210	1.99	NS	0.011	0.40	2.5
INFL	10/31/94 c	4,311,280	67,985	1.5	ND	0.000	1.99	ND	0.000	0.40	2.5
INFL	11/04/94	4,330,500	19,220	3.3	56	0.004	2.00	ND	0.000	0.40	2.5
INFL	12/16/94	4,352,780	22,280	0.4	NS d	0.005	2.00	NS d	0.000	0.40	2.5
INFL	01/05/95	4,382,610	29,830	1.0	1,000	0.131	2.13	87	0.011	0.41	2.7
INFL	02/07/95	4,430,130 e	47,520	1.0 e	NS d	0.209	2.34	NS d	0.017	0.43	2.9
INFL	03/03/95	4,464,690 e	34,560	1.0 e	NS d	0.152	2.49	NS d	0.013	0.44	3.1
INFL	04/13/95	23 f	59,040	1.0 e	ND	0.246	2.74	ND	0.021	0.46	3.4
INFL	05/01/95	12,138	12,115	0.5	ND	0.000	2.74	ND	0.000	0.46	3.4
INFL	06/09/95	36,412	24,274	0.4	ND	0.000	2.74	ND	0.000	0.46	3.4
INFL	07/05/95 g	121,199	84,787	2.3	ND	0.000	2.74	0.59	0.000	0.46	3.4
REPORTING PERIOD: 03/31/96 - 06/31/96 (g)											
TOTAL POUNDS REMOVED:							**2.74**			**0.46**	
TOTAL GALLONS REMOVED:							**0.45**			**0.06**	
PERIOD POUNDS REMOVED:						**0.00**			**0.00**		
PERIOD GALLONS REMOVED:						**0.00**			**0.00**		
TOTAL GALLONS EXTRACTED:					**4,643,696 (e)**						
PERIOD GALLONS EXTRACTED:					**N/A**						
PERIOD AVERAGE FLOW RATE (gpm):					**N/A**						
PRIMARY BED CAPACITY REMAINING (%):					**96.6**						

TPPH = Total purgeable petroleum hydrocarbons
gpm = Gallons per minute
µg/L = Micrograms per liter
lbs = Pounds
N/A = Not available
ND = Not detected
NS = Not sampled

a. Data prior to October 1, 1994 provided by prior consultant.
b. No operational or analytical data available; totalizer reading, flow rate, and sample estimated from prior event July 15, 1994.
c. Pacific Environmental Group, Inc. became consultant for the site as of October 1, 1994.
d. Sampled quarterly; concentrations assumed from prior sampling event.
e. Totalizer broken; volume estimated using 1.0 gpm based on prior sampling event.
f. Totalizer replaced and recalibrated on April 13, 1995.
g. System shut down on 07/05/95 for review, due to low concentrations and removal rates.

Carbon loading assumes an 8% isotherm.
Mass removed is an approximation calculated using averaged concentrations.
Pounds of hydrocarbons removed to date provided by prior consultant.
Prior to June 1995, TPPH as gasoline was reported as TPH calculated as gasoline.
See certified analytical reports for detection limits.

Table D-2
Groundwater Extraction System Analytical Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

Sample I.D.	Date Sampled	TPPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)
INFL	10/31/94	ND	ND	ND	ND	ND
	11/09/94	56	ND	ND	ND	2.7
	01/05/95	1,000	87	9	ND	160
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
	07/05/95	ND	0.59	ND	ND	ND
MID-1	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
MID-2	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
	07/05/95	ND	ND	ND	ND	ND
EFFL	10/31/94	ND	ND	ND	ND	ND
	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
	07/05/95	ND	ND	ND	ND	ND

TPPH = Total purgeable petroleum hydrocarbons
µg/L = Micrograms per liter
ND = Not detected above detection limits
Pacific Environmental Group, Inc. became consultant to site 10/01/94.
Prior to June 1995, TPPH as gasoline was reported as TPH calculated as gasoline.
GWE system was deactivated on 07/05/95.
See certified analytical reports for detection limits.

Table D-3
Groundwater Biodegradation Study Field and Laboratory Data

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

		Field Analyses				Laboratory Analyses			
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	DO (mg/L)	Nitrite as Nitrite (mg/L)	Nitrate as Nitrate (mg/L)	TPPH as Gasoline (µg/L)	Total BTEX (µg/L)
A-7	05/22/96	67.2	6 75	631	1.2	<1.0	18	ND	ND
A-8	05/22/96	71.1	6.46	1045	0.3	0.17	18	14,000	3,470
A-9	11/17/95	69.3	6.39	560	0.7	<1.0	22	NS	NS
	05/22/96	76.0	6.69	720	3.8	<1.0	41	ND	ND

deg F = Degrees Fahrenheit
µmhos = Microhmos
DO = Dissolved oxygen
TPPH = Total purgeable petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, and xylenes
mg/L = Milligrams per liter
µg/L = Micrograms per liter
ND = Not detected above the method detection limit
NS = Not sampled

Figure D-1
Groundwater Extraction System Mass Removal Trend

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California

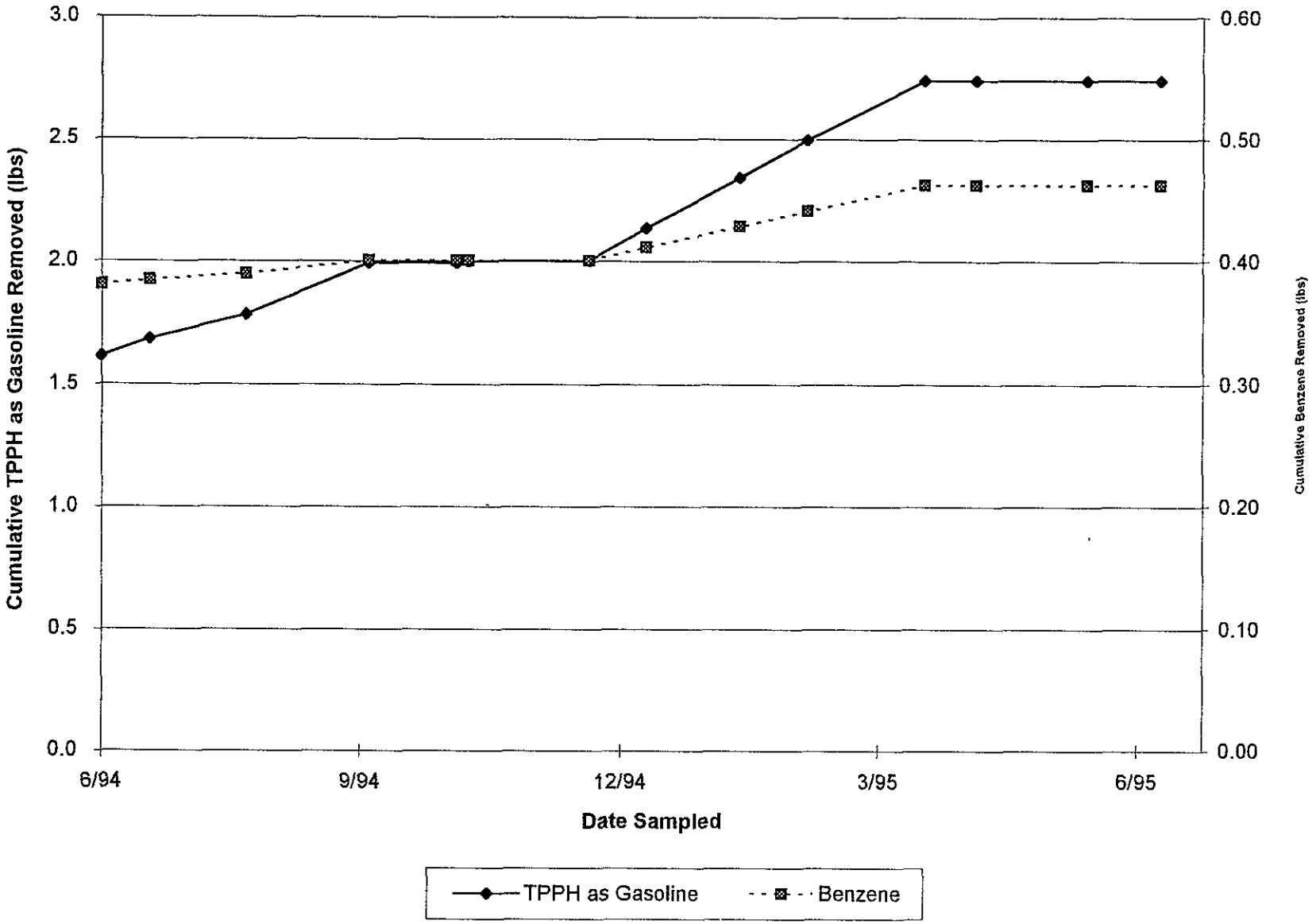
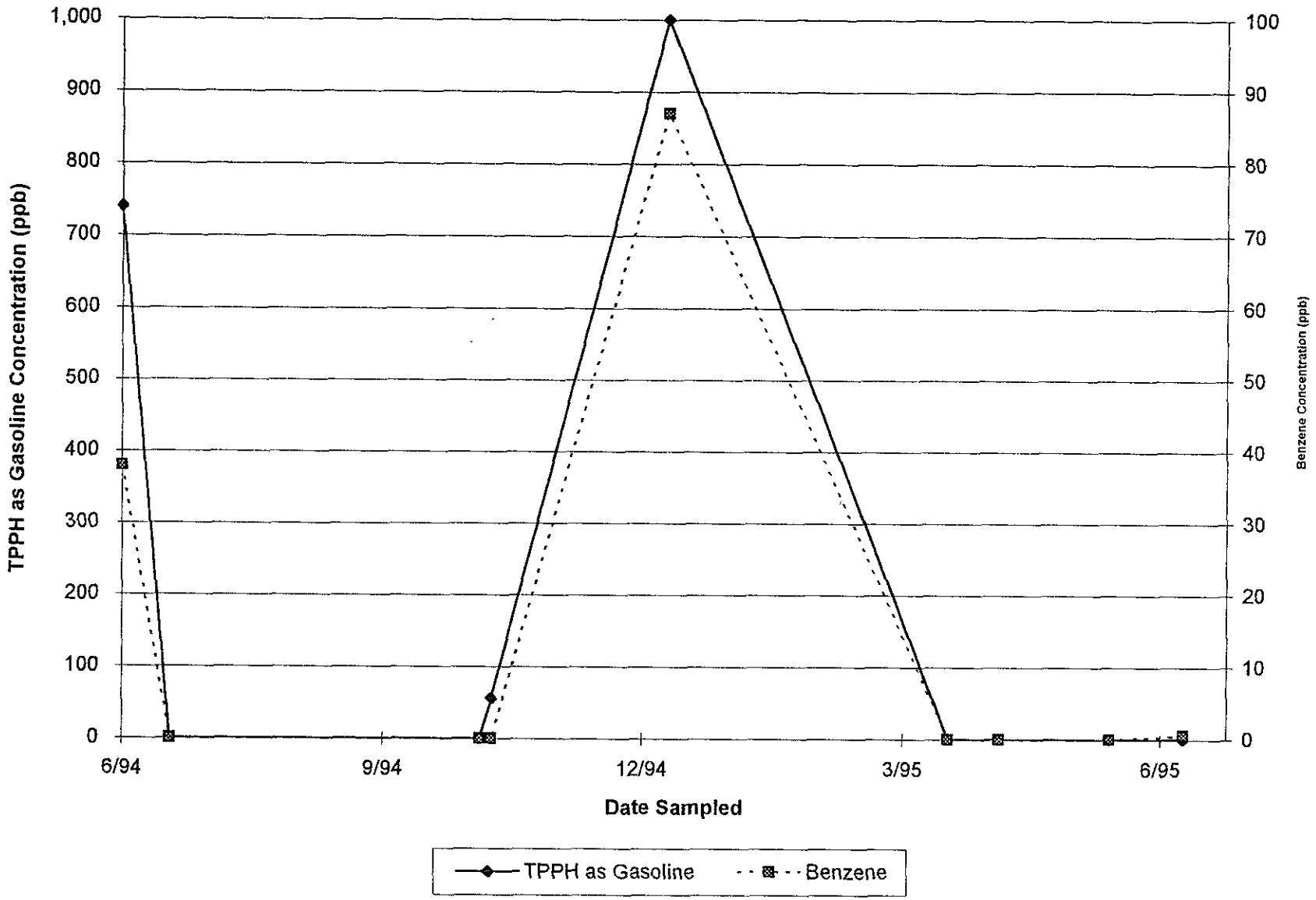


Figure D-2
Groundwater Extraction System Hydrocarbon Concentrations

ARCO Service Station 4931
731 West MacArthur Boulevard at West Street
Oakland, California



ATTACHMENT D-A

BIOREMEDIATION ENHANCEMENT CERTIFIED ANALYTICAL RESULTS, AND FIELD DATA SHEETS

Sequoia Analytical

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

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland

Lab Proj. ID: 9605F28

Sampled: 05/22/96
Received: 05/23/96
Analyzed: see below

Reported: 06/03/96

LABORATORY ANALYSIS

Analyte		Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9605F28-06					
Sample Desc : LIQUID,A-7					
#1271	**Nitrate as Nitrate**	**mg/L**	**05/24/96**	**0.10**	**18**
#1271	Nitrite as Nitrite	mg/L	05/24/96	0.10	N.D.

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

ELAP Number
SEQUOIA ANALYTICAL - ELAP # 1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland

Lab Proj. ID: 9605F28

Sampled: 05/22/96
Received: 05/23/96
Analyzed: see below

Reported: 06/03/96

LABORATORY ANALYSIS

Analyte		Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9605F28-07					
Sample Desc : LIQUID,A-8					
#1271	Nitrate as Nitrate	mg/L	05/24/96	0.10	18
#1271	Nitrite as Nitrite	mg/L	05/24/96	0.10	0.17

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

ELAP Number
SEQUOIA ANALYTICAL - ELAP # 1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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

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

Attention: Kelly Brown

Client Proj. ID: 330-109.2I/4931,Oakland

Lab Proj. ID: 9605F28

Sampled: 05/22/96
Received: 05/23/96
Analyzed: see below

Reported: 06/03/96

LABORATORY ANALYSIS

	Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9605F28-08					
Sample Desc : LIQUID,A-9					
#1271	**Nitrate as Nitrate**	mg/L	05/24/96	0.10	41
#1271	Nitrite as Nitrite	mg/L	05/24/96	0.10	N.D.

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

ELAP Number
SEQUOIA ANALYTICAL - ELAP # 1210

Claudia Hirotsu
Project Manager

FIELD SERVICES REQUEST

SITE INFORMATION FORM

Identification

Project # 330-109.5B
Station ID #4931
Site Address: 731 MacArthur Blvd./Oakland
Lab: Sequoia
County:
Project Manager: Shaw Garakani
Requester: David S. Nanstad
Client: ARCO
Client P.O.C: MIKE WHELAN
Date of Request: May 21, 1996

Project Type

☒ Operation & Maintenance
☐ Sampling
☐ 1st time visit
☐ Quarterly
☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
X Monthly
☐ Semi-Monthly
☐ Weekly
☐ One time event
☐ Other:

Started = 8:30
arrived = 10:25
depart = 16:45

Ideal field date: May 22, 1996

Check Appropriate Category

X In Budget Site Visit
☐ Out of Budget Site Visit

Budget Hours: 2
Actual Hours: 4.5
Mob de Mob:

Site Safety Concerns

STANDARD

Field Tasks General Description

OBJECTIVE: (1) Perform the attached bio remediation monitoring according to the schedule indicated in conjunction with the 2Q96 monitoring event, Then.....

(2) Remove and replace the 8. 4" ORC's in well A-9. Place the removed ORC's in a bucket and leave on-site in the enclosure to dry out. They are to be disposed of during the next quarterly event. Install 13 2" ORC's in well A-8. Review the attached ORC installation instructions and take great care in lacing the ORC's together. They harden to a cement like consistancy and could be difficult to pull out if not correctly laced up.

IMPORTANT: This event should occur after the quarterly event, on the same day.

Charge time to 3300845c.

Comments, remarks from field staff

also assisted with Quarterly Sampling event.

split total hrs. ~~4~~ 4.5 between 3300845C ~~3301095B~~ 3301092I

Completed By: MS Date: 5/22/96

Pacific Environmental Group, Inc.

DATE: 5/22/96 TECHNICIAN: MC

Dissolved Oxygen Meter Checklist and Data Sheet

PART A: WELL DATA
MATERIALS

DO METER	✓	PROBE AND REEL	✓
CALIBRATION BOTTLE	✓	KCL SOLUTION	✓
SPARE MEMBRANES	✓	6 SPARE D BATTERIES	✓
BUCKET	✓	PAPER TOWEL	✓
INSTRUCTION BINDER	✓	SPARE O-RINGS	N/A
SCISSORS	✓	SPARE DATA SHEETS	✓
ALCONOX	✓	STICK	✓
WATER BOTTLE	✓	WATER LEVEL INDICATOR	✓

BEFORE MEASUREMENTS

INSPECT MEMBRANE (DAMAGED OR 1/8"BUBBLES)?	YES	WARM UP UNIT FOR 20 MINUTES?	YES

CALIBRATION

INSPECT MEMBRANE (DAMAGED OR 1/8"BUBBLES)?	YES	CALIBRATE UNIT?	YES
4a. CALIBRATION TEMPERATURE (C)	22.3	4b. CALIBRATION DO READING (mg/L)	8.68

COMPARED TO CALIBRATION DO TABLE VALUE?	YES	4d. CALIBRATION BOTTLE READINING (mg/L)	6.59

FIELD MEASUREMENTS

WELL A-9

DISSOLVED OXYGEN (mg/L)

Allow 2 minute minumum stabilization time

2' From top	B.P. 6.12 / 3.8 (10.20)	A.P.
PROBE & CORD RINSED?	YES	

12:27

DATE: 5/22/96 TECHNICIAN: MG

WELL A-8

DISSOLVED OXYGEN (mg/L)
Allow 2 minute minumum stabilization time

2' From top	Before Purge / After Purge
	.07 / .34
PROBE & CORD RINSED?	Yes

12:41 15:35

WELL A-7

DISSOLVED OXYGEN (mg/L)
Allow 2 minute minumum stabilization time

2' From top	13:15 / 15:44
	3.18 / 1.15
PROBE & CORD RINSED?	Yes

* Damaged/Repaired membrane 12:55 - 13:15

* Batteries failed between first/sec. set of data.

WELL ___

DISSOLVED OXYGEN (mg/L)
Allow 2 minute minumum stabilization time

2' From top	
PROBE & CORD RINSED?	

WELL ___

DISSOLVED OXYGEN (mg/L)
Allow 2 minute minumum stabilization time

2' From top	
PROBE & CORD RINSED?	

WELL ___

DISSOLVED OXYGEN (mg/L)
Allow 2 minute minumum stabilization time

2' From top	
PROBE & CORD RINSED?	