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Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 6549
Moraga, California 94570
Phone: (925) 299-8891
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Alameda County

SEP 0 3 2003

Environmental Health

August 22, 2003

Re: Third Quarter 2003 Groundwater Monitoring Report
ARCO Service Station #2169
[redacted] West Grand Avenue
Oakland, CA

880

I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by:

Paul Supple
Environmental Business Manager

URS

August 22, 2003

Mr. Barney Chen
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Third Quarter 2003 Groundwater Monitoring Report
ARCO Service Station #2169
889 West Grand Avenue
Oakland, California
URS Project #38486327

Dear Mr. Chen:

On behalf of Atlantic Richfield Company (ARCO – an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Third Quarter 2003 Groundwater Monitoring Report* for ARCO Service Station #2169, located at 889 West Grand Avenue, Oakland, California.

If you have any questions regarding this submission, please call at (510) 874-3280.

Sincerely,

URS CORPORATION

Scott Robinson
Project Manager

REGISTERED GEOLOGIST
JAMES F. DURKIN
No. 750
CERTIFIED HYDROGEOLOGIST
Exp. 2/28/05
STATE OF CALIFORNIA

James F. Durkin, C.Hg.
Senior Geologist

Enclosure: Third Quarter 2003 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO (electronic copy uploaded to ENFOS)

URS Corporation
500 12th Street, Suite 200
Oakland, CA 94607-4014
Tel: 510.893.3600
Fax: 510.874.3268

REPORT

THIRD QUARTER 2003 GROUNDWATER MONITORING

ARCO SERVICE STATION #2169
889 WEST GRAND AVENUE
OAKLAND, CALIFORNIA

Prepared for
Atlantic Richfield Company

August 22, 2003

URS
URS Corporation
500 12th Street, Suite 200
Oakland, California 94607

38486327

Date: August 22, 2003

Quarter: 3Q 03

ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.:	2169	Address:	889 West Grand Avenue, Oakland, California
Atlantic Richfield Co. Environmental Engineer:			Paul Supple
Consulting Co./Contact Person:			URS Corporation / Scott Robinson / (510) 874-3280
Consultant Project No.:			38486327
Primary Agency:			Alameda County Health Care Services Agency (ACHCSA)

WORK PERFORMED THIS QUARTER (Third – 2003):

1. Performed third quarter 2003 groundwater monitoring event on July 23, 2003.
2. Prepared and submitted third quarter 2003 groundwater monitoring report.

WORK PROPOSED FOR NEXT QUARTER (Fourth – 2003):

1. Perform fourth quarter 2003 groundwater monitoring event.
2. Prepare and submit fourth quarter 2003 groundwater monitoring report.
3. Replace oxygen releasing compounds (ORC) socks in wells A-1, A-5, A-6, ADR-1 & ADR-2.

Current Phase of Project:	GW monitoring/sampling
Frequency of Groundwater Sampling:	Annual (1st Quarter): A-3, A-4 Semi-annual (1st/3rd Quarter): A-2, AR-1, AR-2 Quarterly: A-1, A-5, A-6, ADR-1, ADR-2
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	4.8 gallons, wells ADR-1 and ADR-2
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	2,196 cubic yards of TPH impacted soil
Current Remediation Techniques:	Natural Attenuation / ORC: A-1, A-5, A-6, ADR-1, and ADR-2
Approximate Depth to Groundwater:	10.27 (A-6) to 12.00 (A-3) feet
Groundwater Gradient (direction):	Southwest to Northwest
Groundwater Gradient (magnitude):	0.004 to 0.005 feet per foot

DISCUSSION:

TPH-g was detected in four of the eight wells sampled this quarter, at concentrations ranging from 120 micrograms per liter (µg/L) in well A-6 to 900 µg/L in well A-5. Benzene was detected in four wells at concentrations ranging from 2.5 µg/L in well ADR-1 to 100 µg/L in well A-5. MTBE was detected in five wells at concentrations ranging from 2.6 µg/L in well A-2 to 14 µg/L in well A-6. TAME was detected in well A-6 at a concentration of 0.54 µg/L.

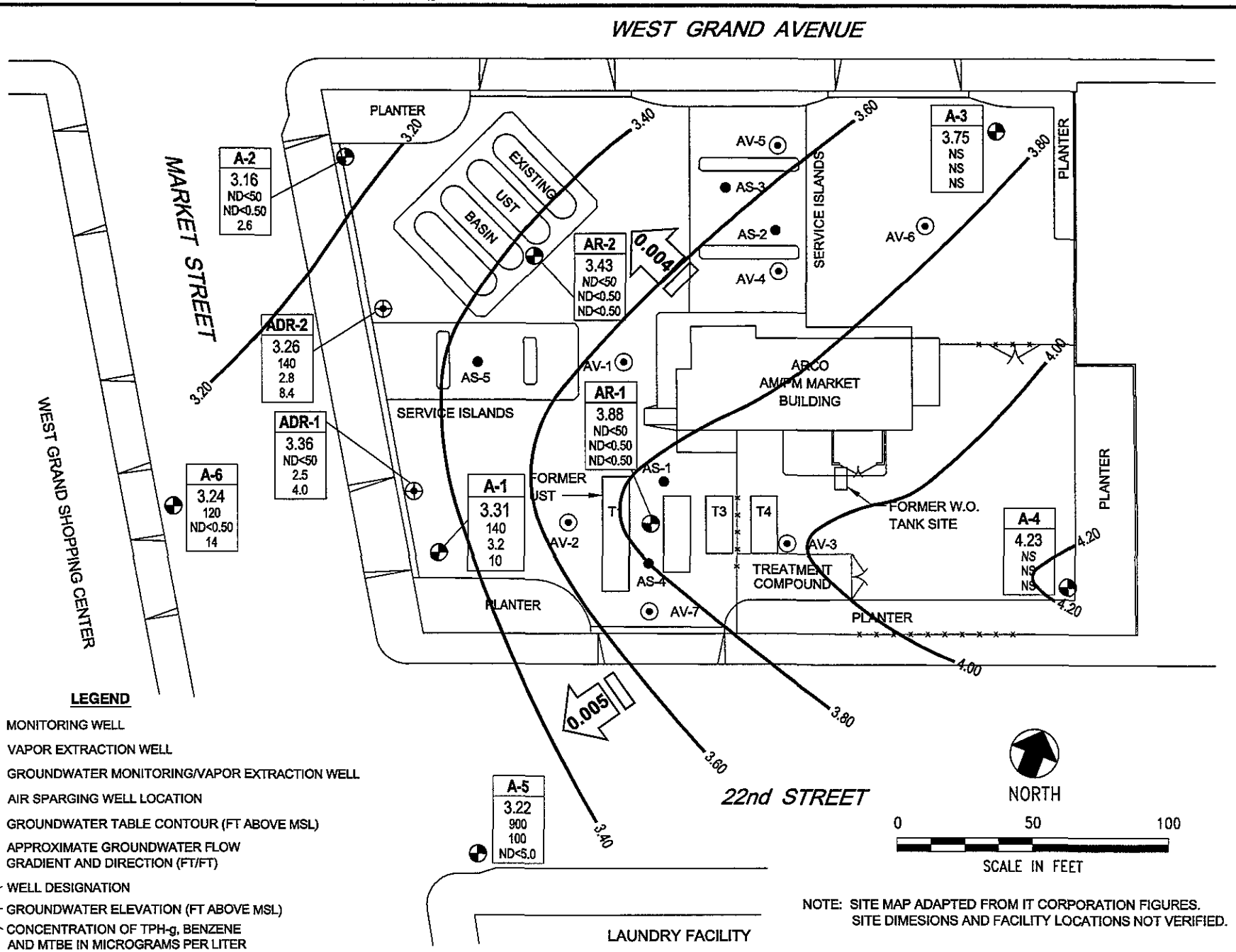
RECOMMENDATIONS:

We recommend removing upgradient wells A-3 and A-4 from the annual sampling schedule due to the consistent non-detect values for the constituents of concern. We further recommend reducing the sampling frequency of wells A-2, AR-1 and AR-2 from semi-annually to annually due to the consistently low to non-detect values for the constituents of concern. All of the wells would continue to be gauged quarterly for groundwater levels.

ATTACHMENTS:

- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – July 23, 2003
- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Groundwater Flow Direction and Gradient
- Table 3 - Fuel Oxygenate Analytical Data
- Attachment A - Field Procedures and Field Data Sheets
- Attachment B - Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C - Historic Groundwater Data
- Attachment D - EDCC and EDF/Geowell Submittal Confirmation

X:\x_env_waste\BP GEM\Sites\Scott Robinson\Paul Supple\2169\Monitoring\Qtr. 3, 2003\Drawings\GWEC-AS_7-23.dwg, 08/26/2003 02:27:56 PM



LEGEND

- MONITORING WELL
- VAPOR EXTRACTION WELL
- GROUNDWATER MONITORING/VAPOR EXTRACTION WELL
- AIR SPARGING WELL LOCATION
- 3.20 — GROUNDWATER TABLE CONTOUR (FT ABOVE MSL)
- 0.005 — APPROXIMATE GROUNDWATER FLOW GRADIENT AND DIRECTION (FT/FT)
- Well — WELL DESIGNATION
- ELEV — GROUNDWATER ELEVATION (FT ABOVE MSL)
- TPH-g, Benzene, MTBE — CONCENTRATION OF TPH-g, BENZENE AND MTBE IN MICROGRAMS PER LITER
- * NOT USED IN CONTOURING
- ND< NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- NS NOT SAMPLED

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES. SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

URS

Project No. 38486327

Arco Service Station 2169
889 West Grand Avenue
Oakland, California

GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP
Third Quarter 2003 (July 23, 2003)

FIGURE 1

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[e] (mg/L)	pH[e]
AR-1	06/26/00	15.61	11.59	4.02	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		12.06	3.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	6	NA	NA
	09/19/00		11.89	3.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3	NA	NA
	12/26/00		11.95	3.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01[a]		NM	NM	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01		11.87	3.74	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	17	NA	NA
	09/23/01		12.42	3.19	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		7.62	7.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02		9.37	6.24	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02		10.43	5.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/14/02		12.08	3.53	ND<50	ND<0.5	ND<0.5	ND<0.5	1.3	ND<2.5	2.2	7.9
	11/27/02		12.00	3.61	NS	NS	NS	NS	NS	NS	NS	NS
	02/12/03[d]		10.89	4.72	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	7.9
	05/22/03		11.18	4.43	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03		**11.73**	**3.88**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**1.3**	**7.7**
AR-2	06/26/00	15.28	11.79	3.49	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		12.07	3.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3	NA	NA
	09/19/00		12.08	3.2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3	NA	NA
	12/26/00		11.95	3.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01		10.50	4.78	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01		11.73	3.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	82	NA	NA
	09/23/01		12.43	2.85	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		8.60	6.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	30	NA	NA
	03/21/02		9.49	5.79	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02		10.37	4.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.2	NA	NA
	08/14/02		12.13	3.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	1.4	7.9
	11/27/02		12.08	3.20	NS	NS	NS	NS	NS	NS	NS	NS
	02/12/03[d]		11.15	4.13	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2	7.5
	05/22/03		11.18	4.10	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03		**11.85**	**3.43**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**1.3**	**8.2**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[c] (mg/L)	pH[c]
ADR-1	06/26/00	13.95	10.55	3.40	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		10.85	3.10	180	29	ND<0.5	0.8	ND<1.0	22	NA	NA
	09/19/00		11.08	2.87	120	7.4	ND<0.5	1.2	ND<1.0	22	NA	NA
	12/26/00		10.93	3.02	ND<50	1.29	ND<0.5	ND<0.5	ND<0.5	14.7	NA	NA
	03/20/01		9.32	4.63	225	23.4	ND<0.5	8.71	4.13	10.8	NA	NA
	06/12/01		10.65	3.30	250	23	0.5	13	4.2	7.5	NA	NA
	09/23/01		11.25	2.70	ND<50	1.4	ND<0.5	ND<0.5	0.57	2.8	NA	NA
	12/28/01		8.43	5.52	250	16	ND<0.5	1.2	4.1	6.8	NA	NA
	03/21/02		8.27	5.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02		9.17	4.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/14/02		11.88	2.07	ND<50	1.1	ND<0.5	ND<0.5	ND<0.5	ND<2.5	3.4	6.7
	11/27/02		10.91	3.04	ND<50	0.54	ND<0.5	ND<0.5	ND<0.5	1.1	1.8	6.8
	02/12/03 [d]		9.95	4.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0 50	0.73	1 9	7.2
	05/22/03		9.86	4.09	ND<50	0.96	ND<0.50	ND<0.50	ND<0.50	3.5	1.2	7.3
	07/23/03		**10.59**	**3.36**	**ND<50**	**2.5**	**ND<0.50**	**0.56**	**ND<0.50**	**4.0**	**>20**	**9.4**
ADR-2	06/26/00	14.64	11.22	3.42	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		11.60	3.04	12,000	410	2.5	540	720	23	NA	NA
	09/19/00		11.81	2.83	1,400	530	5	680	740	34	NA	NA
	12/26/00		11.52	3.12	901	26.6	ND<5.0	21.4	32.5	32.8	NA	NA
	03/20/01		10.10	4.54	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen
	06/12/01		11.41	3.23	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen
	09/23/01		11.98	2.66	5300	370	ND<5.0	550	96	60	NA	NA
	12/28/01		9.48	5.16	2,600	190	ND<5.0	160	29	61	NA	NA
	03/21/02		9.1	5.54	180	6	ND<0.5	4.5	3.2	15	NA	NA
	04/17/02		9.93	4.71	730	86	ND<0.5	13	ND<0.5	ND<25	NA	NA
	08/14/02		12.09	2.55	1,300 [b]	170	ND<10	100	47	ND<50	0.9	7.0
	11/27/02		11.66	2.98	1,800 [b]	240	3.1	120	14	74	0.6	6.9
	02/12/03 [d]		10.74	3.90	760	120	ND<5.0	15	5.2	22	1.3	7.1
	05/22/03		10.67	3.97	520	110	ND<5.0	7.1	ND<5.0	9.7	0.7	7.6
	07/23/03		**11.38**	**3.26**	**140**	**2.8**	**ND<0.50**	**5.0**	**0.98**	**8.4**	**>20**	**9.4**

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Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[e] (mg/L)	pH[e]
A-1	06/26/00	14.16	10.75	3.41	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		11.01	3.15	3,900	1,100	28	12	46	25	NA	NA
	09/19/00		11.26	2.90	4,800	2,400	27	20	57	32	NA	NA
	12/26/00		10.96	3.20	429	104	2.85	12.2	9.91	18.7	NA	NA
	03/20/01		9.59	4.57	ND<500	13.9	7.12	13 9	23.2	ND<25	NA	NA
	06/12/01		10.83	3.33	140	2.2	ND<0.5	8.7	9.2	25	NA	NA
	09/23/01		11.43	2.73	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.5	NA	NA
	12/28/01		8.66	5.50	930	250.0	7.6	21	13	ND<25	NA	NA
	03/21/02		8.43	5.73	ND<50	ND<0.5	ND<0.5	ND<0.5	1.2	ND<2.5	NA	NA
	04/17/02		9.36	4.80	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/14/02		11.12	3.04	170[b]	8.4	ND<0.5	ND<0.5	1.4	4.9	5.7	7.4
	11/27/02		11.11	3.05	98[b]	2.9	0.75	ND<0.5	ND<0.5	6.4	1.6	7.0
	02/12/03[d]		10.10	4.06	73	9.3	ND<0.50	1.0	0.53	2.9	2.1	7.2
	05/22/03		10.18	3.98	400	88	1.6	4.6	11	4.9	1.3	7.4
	07/23/03		**10.85**	**3.31**	**140**	**3.2**	**ND<0.50**	**ND<0.50**	**0.56**	**10**	**10.8**	**7.4**
A-2	06/26/00	14.55	11.27	3.28	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		11.52	3.03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3	NA	NA
	09/19/00		11.63	2.92	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00		11.44	3.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01		10.08	4.47	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01		11.35	3.2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/23/01		11.92	2.63	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		9.31	5.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02		9.05	5.5	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02		9.88	4.67	52	ND<0.5	ND<0.5	ND<0.5	ND<0.5	26	NA	NA
	08/14/02		11.62	2.93	ND<50	ND<0.5	ND<0.5	ND<0.5	1.2[c]	ND<2.5	3.7	7.2
	11/27/02		11.56	2.99	NS	NS	NS	NS	NS	NS	NS	NS
	02/12/03[d]		10.75	3.80	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	12	2.9	7.1
	05/22/03		10.72	3.83	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03		**11.39**	**3.16**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**2.6**	**1.3**	**6.8**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2169
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Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[e] (mg/L)	pH[e]
A-3	06/26/00	15.75	11.98	3.77	NS	NS	NS	NS	NS	NS	NS	NS
	07/20/00		12.21	3.54	NS	NS	NS	NS	NS	NS	NS	NS
	09/19/00		12.50	3.25	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00		12.17	3.58	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01		10.70	5.05	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01		12.09	3.66	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01		12.65	3.1	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		9.94	5.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02		9.69	6.06	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02		10.61	5.14	NS	NS	NS	NS	NS	NS	NS	NS
	08/14/02		12.27	3.48	NS	NS	NS	NS	NS	NS	NS	NS
	11/27/02		12.22	3.53	NS	NS	NS	NS	NS	NS	NS	NS
	02/12/03 [d]		11.40	4.35	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2	6.9
	05/22/03		11.42	4.33	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03		**12.00**	**3.75**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
A-4	06/26/00	15.25	10.99	4.26	NS	NS	NS	NS	NS	NS	NS	NS
	07/20/00		11.16	4.09	NS	NS	NS	NS	NS	NS	NS	NS
	09/19/00		11.97	3.28	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00		11.19	4.06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0 5	ND<2.5	NA	NA
	03/20/01		9.81	5.44	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01		11.12	4.13	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01		11.63	3.62	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		8.41	6.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02		8.63	6.62	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02		9.68	5.57	NS	NS	NS	NS	NS	NS	NS	NS
	08/14/02		11.31	3.94	NS	NS	NS	NS	NS	NS	NS	NS
	11/27/02		11.25	4.00	NS	NS	NS	NS	NS	NS	NS	NS
	02/12/03 [d]		10.37	4.88	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.9	7.1
	05/22/03		10.42	4.83	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03		**11.02**	**4.23**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[e] (mg/L)	pH[e]
A-5	06/26/00	13.51	10.04	3.47	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		10.31	3.20	730	140	11	ND<0.5	8.9	3	NA	NA
	09/19/00		10.55	2.96	160	13	ND<0.5	2.8	1.9	ND<3	NA	NA
	12/26/00		10.37	3.14	8,120	465	108	659	1,450	ND<250	NA	NA
	03/20/01		8.81	4.70	7,990	1110	473	611	1,580	ND<250	NA	NA
	06/12/01		10.13	3.38	450	91	18	35	95	ND<5 0	NA	NA
	09/23/01		10.80	2.71	110	20	ND<0.5	5.0	5.0	2.7	NA	NA
	12/28/01		8.17	5.34	320	24	2	20	27	5	NA	NA
	03/21/02		7.78	5.73	2,500	420	85	130	350	31	NA	NA
	04/17/02		8.68	4.83	1,300	190	36	67	210	ND<25	NA	NA
	08/14/02		10.41	3.10	840 [b]	150	ND<5.0	68	41	ND<25	1.4	6.8
	11/27/02		10.50	3.01	300 [b]	26	2.3	17	6	ND<0.5	1.2	7.2
	02/12/03 [d]		10.81	2.70	ND<500	74	7.0	34	45	ND<5.0	1.0	7.3
	05/22/03		9.46	4.05	500	100	9.0	28	47	ND<5.0	1.0	7.6
	07/23/03		**10.29**	**3.22**	**900**	**100**	**5.7**	**65**	**57**	**ND<5.0**	**4.5**	**8.4**
A-6	06/26/00	13.51	10.09	3.42	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00		10.91	2.60	170	ND<0.5	ND<0.5	0.6	2.0	6	NA	NA
	09/19/00		11.27	2.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	6	NA	NA
	12/26/00		10.65	2.86	56.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.17	NA	NA
	03/20/01		8.72	4.79	216	ND<0.5	ND<0.5	ND<0.5	1.8	19.9	NA	NA
	06/12/01		10.80	2.71	80	0.62	ND<0.5	ND<0.5	ND<0.5	15	NA	NA
	09/23/01		10.79	2.72	450	1.7	1.9	2.3	3.3	53	NA	NA
	12/28/01		8.05	5.46	270	0.98	3.5	0.77	1.4	26	NA	NA
	03/21/02		7.83	5.68	130	ND<0.5	ND<0.5	ND<0.5	ND<0.5	19	NA	NA
	04/17/02		8.73	4.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	16	NA	NA
	08/14/02		10.43	3.08	980 [b]	4.8	2.6	2.0	4.9	75	1.5	7.1
	11/27/02		10.47	3.04	280 [b]	ND<0.5	0.74	ND<0.5	ND<0.5	16	0.9	6.9
	02/12/03 [d]		10.44	3.07	51	ND<0.50	ND<0.50	ND<0.50	ND<0.50	9.9	0.8	7.1
	05/22/03		9.43	4.08	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0 50	11	1.2	8.2
	07/23/03		**10.27**	**3.24**	**120**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**14**	**>20**	**9.6**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

TPH	= Total Petroleum Hydrocarbons
MTBE	= Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted
µg/L	= Micrograms per liter
mg/L	= Milligrams per liter
NM	= Not measured
NC	= Not calculated
NA	= Not analyzed, not available, not applicable
NS	= Not sampled
ND<	= Not detected at or above specified laboratory method detection limit
a	= Well was covered by stockpiled soil and not accessible
b	= Chromatogram Pattern: Gasoline C6-C10
c	= Primary and confirmation results varied by greater than 40% RPD. The values may still be useful for their intended purpose
d	= TPH-g, BTEX, and MTBE analyzed using EPA Method 8260B starting first quarter 2003
e	= Dissolved oxygen and pH values are field measurements
Source.	The data within this table collected prior to August 2002 was provided to URS by Group Environmental Management Company and their previous consultants URS has not verified the accuracy of this information.

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
07/20/00	Northwest	0 004
09/19/00	West-Northwest	0 003
12/26/00	Northwest	0.004
03/20/01	Northwest	0.003
06/12/01	Northwest	0.004
09/23/01	Northwest	0.004
12/28/01	Variable	Variable
03/21/02	Northwest	0.004
04/17/02	Northwest	0.003
08/14/02	West	0 003
11/27/02	West	0.003
02/12/03	South	0.005
05/22/03	West to Northwest	0.002 to 0.003
07/23/03	**Southwest to Northwest**	**0.005 to 0.004**

Source: The data within this table collected prior to August 2002 was provided to URS by Group Environmental Management Company and their previous consultants. URS has not verified the accuracy of this information.

Table 3
Fuel Oxygenate Analytical Data

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
AR-1	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03	**ND<100**	**ND<20**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
AR-2	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03	**ND<100**	**ND<20**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
ADR-1	02/12/03	ND<40	ND<20	0.73	ND<0.50	ND<0.50	ND<0 50	NA	NA
	05/22/03	ND<100	ND<20	3.5	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/23/03	**ND<100**	**ND<20**	**4.0**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
ADR-2	02/12/03	ND<400	ND<200	22	ND<5.0	ND<5.0	ND<5.0	NA	NA
	05/22/03	ND<1,000	ND<200	9.7	ND<5.0	ND<5 0	ND<5.0	NA	NA
	07/23/03	**ND<100**	**ND<20**	**8.4**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
A-1	02/12/03	ND<40	ND<20	2.9	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	ND<100	ND<20	4.9	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/23/03	**ND<100**	**ND<20**	**10**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
A-2	02/12/03	ND<40	ND<20	12	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03	**ND<100**	**ND<20**	**2.6**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
A-3	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
A-4	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	07/23/03	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
A-5	02/12/03	ND<400	ND<200	ND<5.0	ND<5.0	ND<5.0	ND<5.0	NA	NA
	05/22/03	ND<1,000	ND<200	ND<5.0	ND<5.0	ND<5.0	ND<5.0	NA	NA
	07/23/03	**ND<1,000**	**ND<200**	**ND<5.0**	**ND<5.0**	**ND<5.0**	**ND<5.0**	**ND<5.0**	**ND<5.0**
A-6	02/12/03	ND<40	ND<20	9.9	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/22/03	ND<100	ND<20	11	ND<0.50	ND<0.50	0 60	NA	NA
	07/23/03	**ND<100**	**ND<20**	**14**	**ND<0.50**	**ND<0.50**	**0.54**	**ND<0.50**	**ND<0.50**

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B
TBA = tert-Butyl alcohol
MTBE = Methyl tert-Butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tert Butyl ether
TAME = tert-Amyl Methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
µg/L = micrograms per liter
ND< = Not detected at or above the laboratory detection limit
NS = Not sampled

ATTACHMENT A

FIELD PROCEDURES AND FIELD DATA SHEETS

FIELD PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

WELL GAUGING DATA

Project # 030723-MG1 Date 7/23/03 Client Arco 2169

Site 889 W. Grand Ave., Oakland, CA

	Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
L	A-1	3					10.85	23.72	TOC	
	A-2	3					11.39	24.56		
	A-3	3					12.00	28.35		
	A-4	3"					11.02	27.60		
*	A-5	2					10.29	24.12		
*	A-6	2					~~10.27~~ ~~11.07~~	26.97		
	AR-1	6					11.73	27.64		
	AR-2	4					11.85	28.59		
*	ADR-1	4					10.59	~~29.90~~		
*	ADR-2	4					11.38	~~26.30~~	↓	
		* Gauged w/ ORCs in well.								
		** Removed ORCs to gauge.								

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: A-1	Well Diameter: 2 (3) 4 6 8 ____
Total Well Depth: ~~23.70~~ 23.72	Depth to Water: 10.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- (X) Positive Air Displacement
- Electric Submersible
- Extraction Pump
- Other: _____

Sampling Method:
- Bailer
- (X) Disposable Bailer
- Extraction Port
- Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.8 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 14.3 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1458	70.5	8.2	1141	5	ORCs in well.
1505	70.7	7.6	1132	10	
1511	70.6	7.4	1125	15	

Did well dewater? Yes (No)

Gallons actually evacuated: 15

Sampling Time: 1520

Sampling Date: 7/23/03

Sample I.D.: A-1

Laboratory: Pace (Sequoia) Other _____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge):	10.8 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: ~~070337~~ 030723-MG1	Station # 2169
Sampler: MG	Date: ~~03/23/03~~ 07/23/03
Well I.D.: A-2	Well Diameter: 2 (3) 4 6 8 ____
Total Well Depth: 24.56	Depth to Water: 11.39
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- (Positive Air Displacement)
- Electric Submersible
- Extraction Pump
- Other: ____

Sampling Method:
- Bailer
- (Disposable Bailer)
- Extraction Port
- Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.9 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 14.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1150	70.2	6.5	1020	5	
1155	69.3	6.7	1023	10	
1200	69.3	6.8	1022	15	

Did well dewater? Yes (No) Gallons actually evacuated: 15

Sampling Time: 1210 Sampling Date: 7/23/03

Sample I.D.: A-2 Laboratory: Pace (Sequoia) Other____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge):	1.3 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: A-5	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 24,12	Depth to Water: 10,29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Other: ___

Top of Screen: 5'

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

1 Case Volume (Gals.)		Specified Volumes	=	Calculated Volume Gals.
N/A	x	Purge	=	

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1429	69,1	9,4	1039	—	* ORCs in well

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1430 Sampling Date: 7/23/03

Sample I.D.: A-5 Laboratory: Pace (Sequoia) Other ___

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	4,5 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG-1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: A-6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 26.17	Depth to Water: 10.27
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (X) Disposable Bailer / Extraction Port / Other: ____

Top of Screen: 5.1

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

NO (1 Case Volume (Gals.)) x Purge (Specified Volumes) = ____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1409	71.1	9.6	1024	—	* ORCs in well

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1410 Sampling Date: 7/23/03

Sample I.D.: A-6 Laboratory: Pace (Sequoia) Other ____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge)	>20 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: AR-1	Well Diameter: 2 3 4 (6) 8 ____
Total Well Depth: 27.64	Depth to Water: 11.73
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- Positive Air Displacement
- X Electric Submersible
- Extraction Pump
- Other: _____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

23.4 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 70.2 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1238	71.4	6.5	440	24	~~24~~
1243	71.7	7.2	750	48	
1248	71.7	7.6	~~8.35~~ 831	71	
1256	71.3	7.7	841	95	

Did well dewater? Yes (No) Gallons actually evacuated: 95

Sampling Time: 1305 Sampling Date: 7/23/03

Sample I.D.: AR-1 Laboratory: Pace (Sequoia) Other _____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.3 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: ~~0705~~ 030723-MG1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: AR-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 28.59	Depth to Water: 11.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / ~~Disposable Bailer~~ / Extraction Port / Other: ___

Top of Screen: 8.5

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

~~10.9~~ (1 Case Volume (Gals.)) * ~~3~~ (Specified Volumes) = ~~32.6~~ No Purge Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1334	70.7	8.2	930	—	

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1335 Sampling Date: 7/23/03

Sample I.D.: AR-2 Laboratory: Pace (Sequoia) Other ___

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:		mg/L	Post-purge:	1.3 mg/L
O.R.P. (if req'd):	Pre-purge:		mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG-1	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: ADR-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: ~~[illegible]~~ 21.90	Depth to Water: 10.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / ~~Disposable Bailer~~ / Extraction Port / Other: ___

Top of Screen: 5'

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

No x Purge = ___ Gals.
1 Case Volume (Gals.) | Specified Volumes | Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or (uS))	Gals. Removed	Observations
1349	72.5	9.4	1514	—	ORCs in well

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1350 Sampling Date: 7/23/03

Sample I.D.: ADR-1 Laboratory: Pace (Sequoia) Other ___

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	>20	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030723-MG1 :	Station # 2169
Sampler: MG	Date: 07/23/03
Well I.D.: ADR-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: ~~blank~~ 26.30	Depth to Water: 11.39
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Other: ___

Top of Screen: 5'

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

1 Case Volume (Gals.)	X Specified Volumes	= Calculated Volume
___	___	___ Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
~~1540~~ 1539	70.5	9.14	2847	—	~~X~~ORC's in well.

Did well dewater? Yes (No) Gallons actually evacuated: —

Sampling Time: 1540 Sampling Date: 7/23/03

Sample I.D.: ADR-2 Laboratory: Pace (Sequoia) Other ___

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxygenates & Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge:)	>20 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030619-DW-2	Station # 2169
Sampler: Dave Walter	Date: 6-19-03
Well I.D.: A-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

1 Case Volume (Gals.)	X	Specified Volumes	=	Calculated Volume Gals.
_____	X	_____	=	_____

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
	Replaced	ORC's	in well		

Did well dewater? Yes No	Gallons actually evacuated:		
Sampling Time:	Sampling Date:		
Sample I.D.:	Laboratory: Pace Sequoia Other		
Analyzed for: TPH-G BTEX MTBE TPH-D Other:			
D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030619-DW-2	Station # 2169
Sampler: Dave Walter	Date: 6-19-03
Well I.D.: ADE-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

_____ (1 Case Volume (Gals.)) X _____ (Specified Volumes) = _____ (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
	Replaced		ORC's in	well	

Did well dewater? Yes No Gallons actually evacuated:

Sampling Time: Sampling Date:

Sample I.D.: Laboratory: Pace Sequoia Other: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030619-DW-2	Station # 2169
Sampler: Dave Walter	Date: 6-19-03
Well I.D.: ADR-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 25.70	Depth to Water: 11.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method: Bailer / Disposable Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

_____ (1 Case Volume (Gals.)) X _____ (Specified Volumes) = _____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
	Replaced	ORC's in	well		
	Aquifred	well			

Did well dewater? Yes No Gallons actually evacuated:

Sampling Time: Sampling Date:

Sample I.D.: Laboratory: Pace Sequoia Other: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELLHEAD INSPECTION CHECKLIST

Client Arco 2169 Date 7/23/03

Site Address 889 W. Grand Ave., Oakland, CA

Job Number 030723-MG1 Technician Morgan G

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
A-1								X
A-2						X		X
A-3						X		X
A-4						X		X
A-5								X
A-6	X							
ADR AR-1						X		X
AR-2						X		X
ADR-1						X		X
ADR-2						X		X

NOTES: A-5, A-6 - Christy Box

A-2, A-3, A-4 3" threaded PVC cap - Need very Modified (4" caps + tabs

AR-1, AR-2, ADR-1, ADR-2 - Need to have casing cut down so expansion cap will seal well (threaded PVC @ top. AR-1 = 6", AR-2, ADR-1, ADR-2 = 4"

BP GEM OIL COMPANY TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING** FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

~~2196~~ 2169

Station #

889 W. Grand Ave.

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

125

added equip. rinse water 5

any other adjustments

TOTAL GALS. RECOVERED 130

loaded onto BTS vehicle # 11

BTS event # ~~070~~ 030723-MG1 time 1600 date 07/23/03

signature

* *

REC'D AT BTS time 1715 date 7/23/03

unloaded by signature

ATTACHMENT B

LABORATORY PROCEDURES, CERTIFIED ANALYTICAL REPORTS, AND CHAIN-OF-CUSTODY RECORDS

LABORATORY PROCEDURES

Laboratory Procedures

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by Group Environmental Management Company have been reviewed and verified by that laboratory.

Sequoia
Analytical

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8 August, 2003

Scott Robinson
URS Corporation [Arco]
500 12th Street, Suite 100
Oakland, CA 94607

RE: ARCO #2169, Oakland, CA
Work Order: MMG0592

Enclosed are the results of analyses for samples received by the laboratory on 07/24/03 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Theresa Allen

Theresa Allen
Project Manager

CA ELAP Certificate #1210

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-1	MMG0592-01	Water	07/23/03 15:20	07/24/03 16:25
A-2	MMG0592-02	Water	07/23/03 12:10	07/24/03 16:25
A-5	MMG0592-03	Water	07/23/03 14:30	07/24/03 16:25
A-6	MMG0592-04	Water	07/23/03 14:10	07/24/03 16:25
AR-1	MMG0592-05	Water	07/23/03 13:05	07/24/03 16:25
AR-2	MMG0592-06	Water	07/23/03 13:35	07/24/03 16:25
ADR-1	MMG0592-07	Water	07/23/03 13:50	07/24/03 16:25
ADR-2	MMG0592-08	Water	07/23/03 15:40	07/24/03 16:25

There were no custody seals that were received with this project.

Sequoia Analytical

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-1 (MMG0592-01) Water Sampled: 07/23/03 15:20 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	**10**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	**3.2**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	**0.56**	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**140**	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*	*78-129*		"	"	"	"	
A-2 (MMG0592-02) Water Sampled: 07/23/03 12:10 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	**2.6**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*114 %*	*78-129*		"	"	"	"	

Sequoia Analytical

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-5 (MMG0592-03) Water Sampled: 07/23/03 14:30 Received: 07/24/03 16:25									
Ethanol	ND	1000	ug/l	10	3G26006	07/26/03	07/26/03	EPA 8260B	
tert-Butyl alcohol	ND	200	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Benzene	**100**	5.0	"	"	"	"	"	"	
Toluene	**5.7**	5.0	"	"	"	"	"	"	
Ethylbenzene	**65**	5.0	"	"	"	"	"	"	
Xylenes (total)	**57**	5.0	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**900**	500	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*78-129*		"	"	"	"	
A-6 (MMG0592-04) Water Sampled: 07/23/03 14:10 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	**14**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	**0.54**	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**120**	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*78-129*		"	"	"	"	

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AR-1 (MMG0592-05) Water Sampled: 07/23/03 13:05 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*	*78-129*		"	"	"	"	
AR-2 (MMG0592-06) Water Sampled: 07/23/03 13:35 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/27/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*78-129*		"	"	"	"	

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
ADR-1 (MMG0592-07) Water Sampled: 07/23/03 13:50 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/27/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	**4.0**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	**2.5**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**0.56**	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*78-129*		"	"	"	"	
ADR-2 (MMG0592-08) Water Sampled: 07/23/03 15:40 Received: 07/24/03 16:25									
Ethanol	ND	100	ug/l	1	3G26006	07/26/03	07/27/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	O-09
Methyl tert-butyl ether	**8.4**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	**2.8**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**5.0**	0.50	"	"	"	"	"	"	
Xylenes (total)	**0.98**	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**140**	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*78-129*		"	"	"	"	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 766-9600
FAX (408) 782-6308
www.sequoialabs.com

URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3G26006 - EPA 5030B P/T										
Blank (3G26006-BLK1)				Prepared & Analyzed: 07/26/03						
Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							O-09
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*5.69*		"	*5.00*		*114*	*78-129*			
Laboratory Control Sample (3G26006-BS1)				Prepared & Analyzed: 07/26/03						
Methyl tert-butyl ether	12.3	0.50	ug/l	10.0		123	63-137			
Benzene	10.1	0.50	"	10.0		101	78-124			
Toluene	10.2	0.50	"	10.0		102	78-129			
Surrogate: 1,2-Dichloroethane-d4	*5.55*		"	*5.00*		*111*	*78-129*			
Laboratory Control Sample (3G26006-BS2)				Prepared & Analyzed: 07/26/03						
Methyl tert-butyl ether	7.64	0.50	ug/l	9.92		77.0	63-137			
Benzene	5.06	0.50	"	6.40		79.1	78-124			
Toluene	29.8	0.50	"	29.7		100	78-129			
Gasoline Range Organics (C6-C10)	464	50	"	440		105	70-113			
Surrogate: 1,2-Dichloroethane-d4	*5.77*		"	*5.00*		*115*	*78-129*			

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3G26006 - EPA 5030B P/T										
Matrix Spike (3G26006-MS1)	**Source: MMG0592-03**			Prepared: 07/26/03		Analyzed: 07/27/03				
Methyl tert-butyl ether	93.2	5.0	ug/l	99.2	1.6	92.3	63-137			
Benzene	150	5.0	"	64.0	100	78.1	78-124			
Toluene	287	5.0	"	297	5.7	94.7	78-129			
Gasoline Range Organics (C6-C10)	5420	500	"	4400	900	103	70-113			
Surrogate: 1,2-Dichloroethane-d4	*5.51*		"	*5.00*		*110*	*78-129*			
Matrix Spike Dup (3G26006-MSD1)	**Source: MMG0592-03**			Prepared: 07/26/03		Analyzed: 07/27/03				
Methyl tert-butyl ether	92.5	5.0	ug/l	99.2	1.6	91.6	63-137	0.754	13	
Benzene	152	5.0	"	64.0	100	81.2	78-124	1.32	12	
Toluene	296	5.0	"	297	5.7	97.7	78-129	3.09	10	
Gasoline Range Organics (C6-C10)	5520	500	"	4400	900	105	70-113	1.83	9	
Surrogate: 1,2-Dichloroethane-d4	*5.38*		"	*5.00*		*108*	*78-129*			

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URS Corporation [Arco]	Project: ARCO #2169, Oakland, CA	MMG0592
500 12th Street, Suite 100	Project Number: INTRIM-50325	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	08/08/03 11:47

Notes and Definitions

O-09	The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Chain of Custody Record

bp

Project Name 030723-MG1

BP BU/GEM CO Portfolio:

BP Laboratory Contract Number:

Date: 7/23/03

Requested Due Date (mm/dd/yy) STANDARD — MHG0592

On-site Time:	Temp:
Off- site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Send To:		BP/GEM Facility No.:	Consultant/Contractor: URS
Lab Name:	SEQUOIA	BP/GEM Facility Address: 889 W. GRAND AVE, OAKLAND, CA	Address: 500 12th St., Ste. 200
Lab Address:	885 Jarvis Dr.	Site ID No. ARCO 2169	Oakland, CA 94609-4014
	Morgan Hill, CA 95037	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
		California Global ID #: T0600100112	Consultant/Contractor Project No.: 35-00002169.01 00427
Lab PM:	Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-3280/510-874-3268
Tele/Fax:	408-776-9600 / 408-782-6308	Address: P.O. Box 6549	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level:	Send EDF Reports	Moraga, CA 94570	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:		Tele/Fax: 925-299-8891/925-299-8872	BP/GEM Work Release No: INTRIM -50325

Lab Bottle Order No:

Item No.	Sample Description	Time	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Sediments	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	Preservatives: H_2SO_4	Preservatives: HNO_3	Preservatives: HCl	Requested Analysis: TPH-D & BTEX (8015/8260)	Requested Analysis: TPH-D (8015)	Requested Analysis: MTBE (8021)	Requested Analysis: MTBE (8260)	Requested Analysis: MTBE, TAME, ETBE DIPE, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Requested Analysis: Ethanol (8260)	Sample Point Lat/Long and Comments
1	✓A-1	1520		X			01	3				X	X				X		X	
2	✓A-2	1210		X			02	3				X	X				X		X	
3	A-3																			
4	A-4																			
5	✓A-5	1430		X			03	3				X	X				X		X	
6	✓A-6	1410		X			04	3				X	X				X		X	
7	✓AR-1	1305		X			05	3				X	X				X		X	
8	✓AR-2	1335		X			06	3				X	X				X		X	
9	✓AOR-1	1350		X			07	3				X	X				X		X	
10	✓AOR-2	1540		X			08	3				X	X				X		X	

Sampler's Name:	Morgan Gibbs	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	Blaine Tech Services	Morgan Gibbs / BTS	7/24	15:35	DON 5085	7/24	15:35
Shipment Date:		[illegible] BTS	7/24	15:35			
Shipment Method:		DON 5085	7/24	4:25	[signature]	7/24/03	1625
Shipment Tracking No:							

Special Instructions: Address Invoice to BP/GEM but send to URS for approval

Custody Seals In Place Yes ___ No ✓ Temperature Blank Yes ___ No ✓ Cooler Temperature on Receipt (°F/C Trip Blank Yes ___ No ✓

Distribution: White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

BP COC Rev. 1 2/5/02

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: IRS
REC. BY (PRINT): TL
WORKORDER: 307G0592

DATE REC'D AT LAB: 7/24/03
TIME REC'D AT LAB: 1625
DATE LOGGED IN: 7-25-03

Drinking water for regulatory purposes: YES / (NO)
Wastewater for regulatory purposes: YES / (NO)

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present / (Absent) Intact / Broken*	01	A-C	A-1	(3) Vbay	HCl	L	7/23/03	
2. Chain-of-Custody (Present) / Absent*	02		A-2					
3. Traffic Reports or Packing List: Present (Absent)	03		A-5					
4. Airbill: Airbill / Sticker Present / (Absent)	04		A-6					
5. Airbill #:	05		AR-1					
6. Sample Labels: (Present) / Absent	06		AR-2					
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody	07		ADR-1					
8. Sample Condition: (Intact) / Broken* / Leaking*	08	↓	ADR-2	↓	↓	↓	↓	
9. Does information on custody reports, traffic reports and sample labels agree? (Yes) / No*				7/24/03				
10. Sample received within hold time: (Yes) / No*								
11. Proper Preservatives used: (Yes) / No*								
12. Temp Rec. at Lab: 5°C Is temp 4 +/-2°C? (Yes) / No**								

(Acceptance range for samples requiring thermal pres.)
**Exception (if any): Metals / DFF (Direct From Field) or Problem COC

*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.

ATTACHMENT C

HISTORIC GROUNDWATER DATA

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
A-1	03-24-95	14.16	8.10	ND	6.06	03-24-95	1,200	230	39	34	66	--	--	160		
A-1	06-05-95	14.16	11.13	ND	3.03	06-05-95	1,500	310	27	36	76	--	--	710		
A-1	08-17-95	14.16	11.71	ND	2.45	08-18-95	1,600	470	35	48	110	120	--	240		
A-1	12-04-95	14.16	12.28	ND	1.88	12-04-95	1,200	240	17	25	56	--	120	--		
A-1	03-01-96	14.16	8.78	ND	5.38	03-13-96	1,300	300	74	29	73	100	--	--		
A-1	05-29-96	14.16	9.85	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-29-96	14.16	11.08	ND	3.08	08-29-96	1,200	320	5.9	25	27	110	--	--		
A-1	11-21-96	14.16	10.54	ND	3.62	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	03-26-97	14.16	10.55	ND	3.61	03-26-97	<50	0.8	<0.5	<0.5	<0.5	64	--	--		
A-1	05-21-97	14.16	11.10	ND	3.06	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-08-97	14.16	11.32	ND	2.84	08-08-97	91	7	<0.5	0.5	3.9	<60	--	--		
A-1	11-18-97	14.16	3.46	ND	10.70	11-18-97	54	<0.5	<0.5	<0.5	0.6	27	--	--		
A-1	02-20-98	14.16	7.10	ND	7.06	02-23-98	590	160	22	15	28	70	--	--		
A-1	05-11-98	14.16	9.87	ND	4.29	05-11-98	280	26	<0.5	0.8	2.3	6	--	--		
A-1	07-30-98	14.16	10.73	ND	3.43	07-30-98	1,000	210	5	<5	38	<30	--	--		
A-1	10-08-98	14.16	11.15	ND	3.01	10-08-98	3,100	740	11	<10	24	<60	--	--		
A-1	02-18-99	14.16	8.00	ND	6.16	02-18-99	510	87	7.1	6.4	13	52	--	--		
A-1	05-26-99	14.16	10.60	ND	3.56	05-26-99	240	26	<0.5	1.2	6.2	34	--	--		
A-1	08-23-99	14.16	11.22	ND	2.94	08-23-99	79	3.9	0.6	<0.5	1.7	38	--	--	0.68	NP
A-1	10-27-99	14.16	11.37	ND	2.79	10-27-99	110	2.2	<0.5	<0.5	<1	25	--	--	0.80	NP
A-1	01-31-00	14.16	9.44	ND	4.72	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP

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Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
A-2	03-24-95	14.55	8.64	ND	5.91	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	06-05-95	14.55	11.72	ND	2.83	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	08-17-95	14.55	12.35	ND	2.20	08-17-95	<50	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-2	12-04-95	14.55	12.74	ND	1.81	12-04-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	03-01-96	14.55	9.34	ND	5.21	03-13-96	<50	<0.5	0.6	<0.5	1.3	<9	--	--		
A-2	05-29-96	14.55	10.40	ND	4.15	05-29-96	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	08-29-96	14.55	11.50	ND	3.05	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	<39	--	--		
A-2	11-21-96	14.55	11.06	ND	3.49	11-21-96	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--		
A-2	03-26-97	14.55	11.12	ND	3.43	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	05-21-97	14.55	11.58	ND	2.97	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	08-08-97	14.55	11.82	ND	2.73	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	11-18-97	14.55	3.33	ND	11.22	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	02-20-98	14.55	7.68	ND	6.87	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-2	05-11-98	14.55	10.45	ND	4.10	05-11-98	Not sampled									
A-2	07-30-98	14.55	11.23	ND	3.32	07-30-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	10-08-98	14.55	11.62	ND	2.93	10-08-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	02-18-99	14.55	8.62	ND	5.93	02-18-99	93	<0.5	<0.5	<0.5	<1	26	--	--		
A-2	05-26-99	14.55	11.16	ND	3.39	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-2	08-23-99	14.55	11.69	ND	2.86	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.59	
A-2	10-27-99	14.55	11.88	ND	2.67	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.59	
A-2	01-31-00	14.55	10.17	ND	4.38	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP

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Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - *Present****

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
A-3	03-24-95	15.75	8.83	ND	6.92	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-3	06-05-95	15.75	12.44	ND	3.31	06-05-95	Not sampled: well sampled annually									
A-3	08-17-95	15.75	13.04	ND	2.71	08-17-95	Not sampled: well sampled annually									
A-3	12-04-95	15.75	13.57	ND	2.18	12-04-95	Not sampled: well sampled annually									
A-3	03-01-96	15.75	9.90	ND	5.85	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-29-96	15.75	11.08	ND	4.67	05-29-96	Not sampled: well sampled annually									
A-3	08-29-96	15.75	12.38	ND	3.37	08-29-96	Not sampled: well sampled annually									
A-3	11-21-96	15.75	11.86	ND	3.89	11-21-96	Not sampled: well sampled annually									
A-3	03-26-97	15.75	11.81	ND	3.94	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-21-97	15.75	12.35	ND	3.40	05-21-97	Not sampled: well sampled annually									
A-3	08-08-97	15.75	12.62	ND	3.13	08-08-97	Not sampled: well sampled annually									
A-3	11-18-97	15.75	3.75	ND	12.00	11-18-97	Not sampled: well sampled annually									
A-3	02-20-98	15.75	8.06	ND	7.69	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-11-98	15.75	11.19	ND	4.56	05-11-98	Not sampled: well sampled annually									
A-3	07-30-98	15.75	12.05	ND	3.70	07-30-98	Not sampled: well sampled annually									
A-3	10-08-98	15.75	12.43	ND	3.32	10-08-98	Not sampled: well sampled annually									
A-3	02-18-99	15.75	9.05	ND	6.70	02-18-99	Not sampled: well sampled annually									
A-3	05-26-99	15.75	11.93	ND	3.82	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	08-23-99	15.75	12.57	ND	3.18	08-23-99	Not sampled: well sampled annually									
A-3	10-27-99	15.75	12.65	ND	3.10	10-27-99	Not sampled: well sampled annually								0.88	
A-3	01-31-00	15.75	9.55	ND	6.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP

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Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

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A-4	03-24-95	15.25	7.20	ND	8.05	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-4	06-05-95	15.25	11.70	ND	3.55	06-05-95	Not sampled: well sampled annually									
A-4	08-17-95	15.25	12.28	ND	2.97	08-17-95	Not sampled: well sampled annually									
A-4	12-04-95	15.25	12.63	ND	2.62	12-04-95	Not sampled: well sampled annually									
A-4	03-01-96	15.25	8.55	ND	6.70	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-29-96	15.25	10.32	ND	4.93	05-29-96	Not sampled: well sampled annually									
A-4	08-29-96	15.25	11.55	ND	3.70	08-29-96	Not sampled: well sampled annually									
A-4	11-21-96	15.25	10.83	ND	4.42	11-21-96	Not sampled: well sampled annually									
A-4	03-26-97	15.25	10.97	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-21-97	15.25	11.51	ND	3.74	05-21-97	Not sampled: well sampled annually									
A-4	08-08-97	15.25	11.73	ND	3.52	08-08-97	Not sampled: well sampled annually									
A-4	11-18-97	15.25	4.37	ND	10.88	11-18-97	Not sampled: well sampled annually									
A-4	02-20-98	15.25	6.25	ND	9.00	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-11-98	15.25	10.33	ND	4.92	05-11-98	Not sampled: well sampled annually									
A-4	07-30-98	15.25	11.25	ND	4.00	07-30-98	Not sampled: well sampled annually									
A-4	10-08-98	15.25	11.62	ND	3.63	10-08-98	Not sampled: well sampled annually									
A-4	02-18-99	15.25	7.12	ND	8.13	02-18-99	Not sampled: well sampled annually									
A-4	05-26-99	15.25	11.12	ND	4.13	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	08-23-99	15.25	11.62	ND	3.63	08-23-99	Not sampled: well sampled annually									
A-4	10-27-99	15.25	11.74	ND	3.51	10-27-99	Not sampled: well sampled annually								0.54	
A-4	01-31-00	15.25	9.45	ND	5.80	01-31-00	<50	<0.5	<0.5	<0.5	<1	4	--	--	1.0	NP

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A-5	03-24-95	13.51	7.40	ND	6.11	03-24-95	3,300	200	310	130	460	--	--	--		
A-5	06-05-95	13.51	10.43	ND	3.08	06-05-95	57,000	2,700	4,600	1,500	6,800	--	--	--		
A-5	08-17-95	13.51	11.15	ND	2.36	08-18-95	34,000	1,600	2,700	1,100	5,100	<28	--	--		
A-5	12-04-95	13.51	11.42	ND	2.09	12-04-95	61	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-5	03-01-96	13.51	8.11	ND	5.40	03-13-96	11,000	860	960	380	1,600	<100	--	--		
A-5	05-29-96	13.51	9.30	ND	4.21	05-29-96	19,000	1,600	1,900	880	3,300	<100	--	--		
A-5	08-29-96	13.51	10.60	ND	2.91	08-29-96	7,700	490	450	260	990	<30	--	--		
A-5	11-21-96	13.51	10.05	ND	3.46	11-21-96	8,000	450	550	340	1,100	<30	--	--		
A-5	03-26-97	13.51	9.87	ND	3.64	03-26-97	3,100	190	140	130	340	<30	--	--		
A-5	05-21-97	13.51	10.25	ND	3.26	05-21-97	16,000	1,500	900	700	2,700	<120	--	--		
A-5	08-08-97	13.51	10.42	ND	3.09	08-08-97	9,000	690	240	440	1,300	<30	--	--		
A-5	11-18-97	13.51	Not surveyed: well inaccessible													
A-5	02-20-98	13.51	Not surveyed: well inaccessible													
A-5	05-11-98	13.51	Not surveyed: well inaccessible													
A-5	07-30-98	13.51	Not surveyed: well inaccessible													
A-5	10-08-98	13.51	Not surveyed: well inaccessible													
A-5	02-18-99	13.51	7.63	ND	5.88	02-18-99	<50	0.8	<0.5	<0.5	1.5	<10	--	--		
A-5	05-26-99	13.51	9.85	ND	3.66	05-26-99	1,700	240	41	110	330	<12	--	--		
A-5	08-23-99	13.51	10.60	ND	2.91	08-23-99	560	65	3	30	52	<6	--	--	0.73	NP
A-5	10-27-99	13.51	10.72	ND	2.79	10-27-99	480	93	1.0	16	19	<3	--	--	0.65	NP
A-5	01-31-00	13.51	9.37	ND	4.14	01-31-00	Not sampled: well was inaccessible									

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A-6	03-24-95	13.51	7.89	ND	5.62	03-24-95	120	<0.5	<1	<0.5	<1.5	--	--	--		
A-6	06-05-95	13.51	10.06	ND	3.45	06-05-95	160	<0.5	<0.6	<0.5	<0.5	--	--	--		
A-6	08-17-95	13.51	11.10	ND	2.41	08-18-95	530	<0.5	<0.5	<2.4	<4.2	6	--	--		
A-6	12-04-95	13.51	11.52	ND	1.99	12-04-95	28,000	1,600	1,800	880	3,600	--	--	--		
A-6	03-01-96	13.51	8.21	ND	5.30	03-13-96	1,400	<3	<15	<7	<10	<20	--	--		
A-6	05-29-96	13.51	9.25	ND	4.26	05-29-96	410	<2	<2	<2	<2	3	--	--		
A-6	08-29-96	13.51	10.52	ND	2.99	08-29-96	80	<0.5	<0.5	<0.5	<0.5	6	--	--		
A-6	11-21-96	13.51	10.54	ND	2.97	11-21-96	62	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-6	03-26-97	13.51	9.93	ND	3.58	03-26-97	110	<0.5	0.8	1	1.4	15	--	--		
A-6	05-21-97	13.51	10.54	ND	2.97	05-21-97	600	0.6	0.6	<2	2.7	<3	--	--		
A-6	08-08-97	13.51	10.77	ND	2.74	08-08-97	850	<0.5	<0.5	6.1	<0.5	<4	--	--		
A-6	11-18-97	13.51	3.41	ND	10.10	11-18-97	690	<1	<1	3	2	7	--	--		
A-6	02-20-98	13.51	6.73	ND	6.78	02-20-98	60	<0.5	0.6	1.3	0.5	4	--	--		
A-6	05-11-98	13.51	9.26	ND	4.25	05-11-98	140	<0.5	0.7	0.6	<0.5	6	--	--		
A-6	07-30-98	13.51	10.12	ND	3.39	07-30-98	910	<2	<2	3	7	34	--	--		
A-6	10-08-98	13.51	10.53	ND	2.98	10-08-98	1,300	<2	4	3	4	21	--	--		
A-6	02-18-99	13.51	7.50	ND	6.01	02-18-99	150	<0.5	<0.5	1.4	1.7	35	--	--		
A-6	05-26-99	13.51	10.00	ND	3.51	05-26-99	100	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-6	08-23-99	13.51	10.70	ND	2.81	08-23-99	98	0.6	<0.5	1.1	4.3	13	--	--	2.42	NP
A-6	10-27-99	13.51	11.00	ND	2.51	10-27-99	<50	<0.5	<0.5	<0.5	<1	7	--	--	13.23	NP
A-6	01-31-00	13.51	9.31	ND	4.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP

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AR-1	03-24-95	15.61	7.25	ND	8.36	03-24-95	270	14	0.6	2.5	2.1	--	--	130		
AR-1	06-05-95	15.61	11.37	ND	4.24	06-05-95	190	10	<0.5	0.8	0.5	--	--	580		
AR-1	08-17-95	15.61	12.40	ND	3.21	08-17-95	960	110	12	4.5	150	14	--	<50		
AR-1	12-04-95	15.61	12.90	ND	2.71	12-04-95	<50	1.5	<0.5	<0.5	0.8	--	--	--		
AR-1	03-01-96	15.61	8.19	ND	7.42	03-13-96	150	3.8	0.5	1.4	1.3	<3	--	--		
AR-1	05-29-96	15.61	10.41	ND	5.20	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-29-96	15.61	12.12	ND	3.49	08-29-96	<50	<0.5	<0.5	<0.5	0.8	<3	--	--		
AR-1	11-21-96	15.61	11.52	ND	4.09	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	03-26-97	15.61	11.33	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	05-21-97	15.61	12.02	ND	3.59	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-08-97	15.61	12.31	ND	3.30	08-08-97	<50	0.7	<0.5	1	<0.5	<3	--	--		
AR-1	11-18-97	15.61	3.97	ND	11.64	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	02-20-98	15.61	6.42	ND	9.19	02-23-98	<200	<2	<2	<2	<2	160	--	--		
AR-1	05-11-98	15.61	10.93	ND	4.68	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	4	--	--		
AR-1	07-30-98	15.61	11.82	ND	3.79	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	10-08-98	15.61	12.24	ND	3.37	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	02-18-99	15.61	7.75	ND	7.86	02-18-99	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--		
AR-1	05-26-99	15.61	11.62	ND	3.99	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	08-23-99	15.61	9.32	ND	6.29	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	10-27-99	15.61	12.14	ND	3.47	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	01-31-00	15.61	Not surveyed: well inaccessible													

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AR-2	03-24-95	15.28	9.13	ND	6.15	03-24-95	<50	6.2	<0.5	<0.5	0.6	--	--	<50		
AR-2	06-05-95	15.28	12.09	ND	3.19	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	<50		
AR-2	08-17-95	15.28	12.78	ND	2.50	08-18-95	<50	<0.5	<0.5	<0.5	<0.5	4	--	<50		
AR-2	12-04-95	15.28	11.44	ND	3.84	12-13-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
AR-2	03-01-96	15.28	9.83	ND	5.45	03-13-96	190	26	2.6	3.3	13	200	--	--		
AR-2	05-29-96	15.28	10.97	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	08-29-96	15.28	12.20	ND	3.08	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	95	--	--		
AR-2	11-21-96	15.28	11.57	ND	3.71	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	03-26-97	15.28	11.60	ND	3.68	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	9	--	--		
AR-2	05-21-97	15.28	12.12	ND	3.16	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	08-08-97	15.28	12.35	ND	2.93	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	11-18-97	15.28	3.48	ND	11.80	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-2	02-20-98	15.28	8.00	ND	7.28	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	43	--	--		
AR-2	05-11-98	15.28	10.97	ND	4.31	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	07-30-98	15.28	11.76	ND	3.52	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	10-08-98	15.28	12.17	ND	3.11	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	02-18-99	15.28	9.17	ND	6.11	02-18-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-2	05-26-99	15.28	11.72	ND	3.56	05-26-99	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--		
AR-2	08-23-99	15.28	12.31	ND	2.97	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-2	10-27-99	15.28	12.42	ND	2.86	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters								0.61	
AR-2	01-31-00	15.28	10.31	ND	4.97	01-31-00	Not sampled									

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ADR-1	03-24-95	13.95	8.04	0.01	** 5.92	03-24-95	Not sampled: well contained floating product									
ADR-1	06-05-95	13.95	11.02	ND	2.93	06-05-95	23,000	310	420	300	1,900	--	--	13,000		
ADR-1	08-17-95	13.95	11.86	ND	2.09	08-18-95	4,400	150	120	95	620	120	--	4,500		
ADR-1	12-04-95	13.95	10.05	ND	3.90	12-13-95	8,800	100	130	120	990	--	--	--		
ADR-1	03-01-96	13.95	8.76	ND	5.19	03-13-96	89,000	370	1,000	840	8,100	<500	--	--		
ADR-1	05-29-96	13.95	9.74	ND	4.21	05-30-96	27,000	230	380	370	2,700	<100	--	--		
ADR-1	08-29-96	13.95	10.77	ND	3.18	08-29-96	5,300	190	58	76	470	85	--	--		
ADR-1	11-21-96	13.95	10.49	ND	3.46	11-21-96	1,900	82	21	32	270	110	--	--		
ADR-1	03-26-97	13.95	10.37	ND	3.58	03-26-97	1,300	260	6	39	27	95	--	--		
ADR-1	05-21-97	13.95	10.90	ND	3.05	05-21-97	2,100	300	18	37	200	79	--	--		
ADR-1	08-08-97	13.95	11.12	ND	2.83	08-08-97	3,900	620	49	110	470	<200	--	--		
ADR-1	11-18-97	13.95	3.47	ND	10.48	11-18-97	18,000	900	140	360	2,700	<60	--	--		
ADR-1	02-20-98	13.95	Not surveyed: well inaccessible													
ADR-1	05-11-98	13.95	Not surveyed: well inaccessible													
ADR-1	07-30-98	13.95	Not surveyed: well inaccessible													
ADR-1	10-08-98	13.95	Not surveyed: well inaccessible													
ADR-1	02-18-99	13.95	7.80	ND	6.15	02-18-99	200	4.4	<0.5	1.3	1.3	43	--	--		
ADR-1	05-26-99	13.95	10.40	ND	3.55	05-26-99	160	10	<0.5	1.7	1.8	43	--	--		
ADR-1	08-23-99	13.95	10.70	ND	3.25	08-23-99	7,400	310	16	210	970	18	--	--	0.37	NP
ADR-1	10-27-99	13.95	10.82	ND	3.13	10-27-99	5,000	210	6.3	180	490	5	--	--	0.73	NP
ADR-1	01-31-00	13.95	9.21	ND	4.74	01-31-00	290	3.6	<0.5	1.1	<1	26	--	--	1.0	NP

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ADR-2	03-24-95	14.64	8.41	>3.00	NR[1]	03-24-95	Not sampled: well contained floating product									
ADR-2	06-05-95	14.64	11.45	>3.00	NR[1]	06-05-95	Not sampled: well contained floating product									
ADR-2	08-17-95	14.64	12.10	0.03	** 2.56	08-17-95	Not sampled: well contained floating product									
ADR-2	12-04-95	14.64	10.93	0.03	** 3.73	12-13-95	Not sampled: well contained floating product									
ADR-2	03-01-96	14.64	8.74	ND	5.90	03-13-96	29,000	1,100	1,200	710	3,800	<500	--	--		
ADR-2	05-29-96	14.64	10.43	ND	4.21	05-29-96	33,000	510	500	470	2,300	120	--	--		
ADR-2	08-29-96	14.64	11.64	ND	3.00	08-29-96	8,000	230	180	150	730	53	--	--		
ADR-2	11-21-96	14.64	11.23	ND	3.41	11-21-96	15,000	630	440	390	2,100	75	--	--		
ADR-2	03-26-97	14.64	11.13	ND	3.51	03-26-97	6,100	320	23	180	400	32	--	--		
ADR-2	05-21-97	14.64	11.64	ND	3.00	05-21-97	6,100	380	22	210	320	<30	--	--		
ADR-2	08-08-97	14.64	11.85	ND	2.79	08-08-97	8,400	380	35	230	910	<30	--	--		
ADR-2	11-18-97	14.64	3.33	ND	11.31	11-18-97	11,000	230	29	300	1,200	<60	--	--		
ADR-2	02-20-98	14.64	7.67	ND	6.97	02-20-98	4,700	320	30	130	360	20	--	--		
ADR-2	05-11-98	14.64	10.47	ND	4.17	05-11-98	Not sampled									
ADR-2	07-30-98	14.64	Not surveyed: well inaccessible													
ADR-2	10-08-98	14.64	11.67	ND	2.97	10-08-98	Not sampled									
ADR-2	02-18-99	14.64	Not surveyed: well inaccessible													
ADR-2	05-26-99	14.64	11.02	ND	3.62	05-26-99	5,900	670	5	340	104	16	--	--		
ADR-2	08-23-99	14.64	9.82	ND	4.82	08-23-99	9,100	570	12	410	1,000	28	--	--	0.50	NP
ADR-2	10-27-99	14.64	9.85	Sheen	4.79	10-27-99	Not sampled: sheen present									
ADR-2	01-31-00	14.64	10.15	ND	4.49	01-31-00	7,700	280	3.4	370	390	23	--	--	0.65	NP
															2.0	NP

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present***

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level
TPH: total petroleum hydrocarbons, California DHS LUFT Method
BTEX: benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/27/99).
MTBE: Methyl tert-butyl ether
µg/L: micrograms per liter
mg/L: milligrams per liter
ND: none detected
NR: not reported; data not available or not measurable
- -: not analyzed or not applicable
<: denotes concentration not present at or above laboratory detection limit stated to the right.
[1]. well contained more than 3 feet of floating product, exact product thickness and groundwater elevation could not be measured
*: EPA method 8020 prior to 10/27/99
**: [corrected elevation (Z')] = Z + (h * 0.73) where Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water
***: For previous historical groundwater elevation data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 2169, 889 West Grand Avenue, Oakland, California, (EMCON, March 4, 1996).*

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station 2169
889 West Grand Avenue, Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03-24-95	Northwest	0.009
06-05-95	Northwest	0.002
08-17-95	West	0.001
12-04-95	North-Northwest	0.002
03-01-96	Northwest	0.003
05-29-96	Northwest	0.002
08-29-96	West	0.002
11-21-96	West-Northwest	0.002
03-26-97	Northwest	0.002
05-21-97	North-Northwest	0.002
08-08-97	North-Northwest	0.002
11-18-97	North-Northwest	0.003
02-20-98	North	0.013
05-11-98	North	0.03
07-30-98	North	0.002
10-08-98	North-Northwest	0.002
02-18-99	Northwest	0.008
05-26-99	North-Northwest	0.003
08-23-99	Variable	Variable
10-27-99	Variable	Variable
01-31-00	**West-Northwest**	**0.006**

ATTACHMENT D

EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

Error Summary Log

08/13/03

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #2169, Oakland, CA
Work Order Number:	MMG0592
Global ID:	T0600100112
Lab Report Number:	MMG0592080820031147

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
MMG05920808200	A-1	MMG059201	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/26/03	3G26006	1	
31147												
MMG05920808200	A-2	MMG059202	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/26/03	3G26006	1	
31147												
MMG05920808200	A-5	MMG059203	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/26/03	3G26006	1	
31147												
MMG05920808200	A-6	MMG059204	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/26/03	3G26006	1	
31147												
MMG05920808200	ADR-1	MMG059207	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/27/03	3G26006	1	
31147												
MMG05920808200	ADR-2	MMG059208	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/27/03	3G26006	1	
31147												
MMG05920808200	AR-1	MMG059205	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/26/03	3G26006	1	
31147												
MMG05920808200	AR-2	MMG059206	W	CS	8260FAB	SW5030B	07/23/03	07/26/03	07/27/03	3G26006	1	
31147												
		3G26006BS1	WQ	BS1	8260FAB	SW5030B	/ /	07/26/03	07/26/03	3G26006	1	
		3G26006BS2	WQ	BS2	8260FAB	SW5030B	/ /	07/26/03	07/26/03	3G26006	1	
		3G26006BLK1	WQ	LB1	8260FAB	SW5030B	/ /	07/26/03	07/26/03	3G26006	1	
		3G26006MS1	W	MS1	8260FAB	SW5030B	/ /	07/26/03	07/27/03	3G26006	1	
		3G26006MSD1	W	SD1	8260FAB	SW5030B	/ /	07/26/03	07/27/03	3G26006	1	

EDFSAMP: Error Summary Log

08/13/03

Error type	Logcode	Projname	Npdlwo	Sampid	Matrix
There are no errors in this data file					

EDFTEST: Error Summary Log

08/13/03

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					/ /	0

EDFRES: Error Summary Log

08/13/03

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	3G26006MS1	MS1	W	8260FAB	PR	07/27/03	1	DCA12D4
Warning: extra parameter	3G26006MS1	MS1	W	8260FAB	PR	07/27/03	1	GROC6C10
Warning: extra parameter	3G26006MSD1	SD1	W	8260FAB	PR	07/27/03	1	DCA12D4
Warning. extra parameter	3G26006MSD1	SD1	W	8260FAB	PR	07/27/03	1	GROC6C10
Warning: extra parameter	MMG059201	CS	W	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	MMG059201	CS	W	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	MMG059202	CS	W	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	MMG059202	CS	W	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	MMG059203	CS	W	8260FAB	PR	07/26/03	1	DCA12D4
Warning. extra parameter	MMG059203	CS	W	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	MMG059204	CS	W	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	MMG059204	CS	W	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	MMG059205	CS	W	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	MMG059205	CS	W	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	MMG059206	CS	W	8260FAB	PR	07/27/03	1	DCA12D4
Warning: extra parameter	MMG059206	CS	W	8260FAB	PR	07/27/03	1	GROC6C10
Warning: extra parameter	MMG059207	CS	W	8260FAB	PR	07/27/03	1	DCA12D4
Warning. extra parameter	MMG059207	CS	W	8260FAB	PR	07/27/03	1	GROC6C10
Warning: extra parameter	MMG059208	CS	W	8260FAB	PR	07/27/03	1	DCA12D4
Warning: extra parameter	MMG059208	CS	W	8260FAB	PR	07/27/03	1	GROC6C10
Warning: extra parameter	3G26006BLK1	LB1	WQ	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	3G26006BLK1	LB1	WQ	8260FAB	PR	07/26/03	1	GROC6C10
Warning: extra parameter	3G26006BS1	BS1	WQ	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	3G26006BS2	BS2	WQ	8260FAB	PR	07/26/03	1	DCA12D4
Warning: extra parameter	3G26006BS2	BS2	WQ	8260FAB	PR	07/26/03	1	GROC6C10

EDFQC: Error Summary Log

08/13/03

Error type	Lablotctl	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					

EDFCL: Error Summary Log

08/13/03

Error type	Clrevdate	Anmcode	Exmcode	Parlabel	Clcode
There are no errors in this data file	/ /				

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Facility Name: ARCO # 02169
Submittal Title: 3rd Qtr 2003 Monitoring Report
Submittal Type: GW Monitoring Report

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