

March 5, 2004

Alameda County  
MAR 23 2004  
Environmental Health

Mr. Don Hwang  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Re: First Quarter 2004 Groundwater Monitoring Report  
ARCO Service Station #4931  
731 West MacArthur Boulevard  
Oakland, California  
URS Project #38486722**

Dear Mr. Hwang:

On behalf of Atlantic Richfield Company (ARCO – a BP affiliated company), URS Corporation (URS) is submitting the *First Quarter 2004 Groundwater Monitoring Report* for ARCO Service Station #4931, located at 731 West MacArthur Boulevard, Oakland, California.

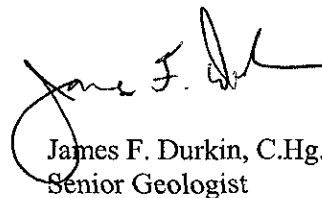
If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

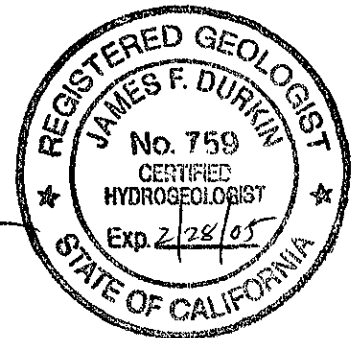
**URS CORPORATION**



Scott Robinson  
Project Manager



James F. Durkin, C.Hg.  
Senior Geologist



Enclosure: First Quarter 2004 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO (electronic copy uploaded to ENFOS)  
Mr. Chuck Headlee, Regional Water Quality Control Board - San Francisco Bay Region, 1515  
Clay Street, Suite 1400, Oakland, CA 94612

**REPORT**

Alameda County  
MAR 23 2004  
Environmental Health

**FIRST QUARTER 2004  
GROUNDWATER MONITORING**

ARCO SERVICE STATION #4931  
731 WEST MACARTHUR BOULEVARD  
OAKLAND, CALIFORNIA

*Prepared for*  
Atlantic Richfield Company

March 5, 2004

**URS**

URS Corporation  
1333 Broadway, Suite 800  
Oakland, California 94612

38486722

Date: March 5, 2004  
Quarter: 1Q 04

### ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 4931 Address: 731 West MacArthur Boulevard, Oakland, California  
ARCO Environmental Business Manager: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Consultant Project No.: 38486722  
Primary Agency: Alameda County Health Care Services Agency (ACHCSA)

#### WORK PERFORMED THIS QUARTER (First – 2004):

1. Performed fourth quarter 2003 groundwater monitoring event on February 2, 2004.
2. Prepared and submitted first quarter 2004 groundwater monitoring report.
3. Site surveyed on January 28, 2004 (see Attachment E)

#### WORK PROPOSED FOR NEXT QUARTER (Second – 2004):

1. Perform second quarter 2004 groundwater monitoring event.
2. Prepare and submit second quarter 2004 groundwater monitoring report.
3. Work to have well A-6 uncovered.

Current Phase of Project: Remediation/GW monitoring/sampling  
Frequency of Groundwater Sampling: Beginning this quarter:  
Annual (3<sup>rd</sup> Quarter): A-2, A-7, A-9, A-10, A-11, A-13  
Semi-Annual (1<sup>st</sup>/3<sup>rd</sup> Quarter): A-3, A-5, A-12  
Quarterly: A-4, A-6, A-8  
Frequency of Groundwater Monitoring: Quarterly  
Free Product (FP) Present On-Site: No  
Current Remediation Techniques: Intrinsic Bioremediation Enhancement using ORC in A-4, A-8, A-9,  
and AR-1  
Approximate Depth to Groundwater: 3.88 (AR-2) to 7.97 (AR-10) feet  
Groundwater Gradient (direction): West  
Groundwater Gradient (magnitude): 0.04 feet per foot

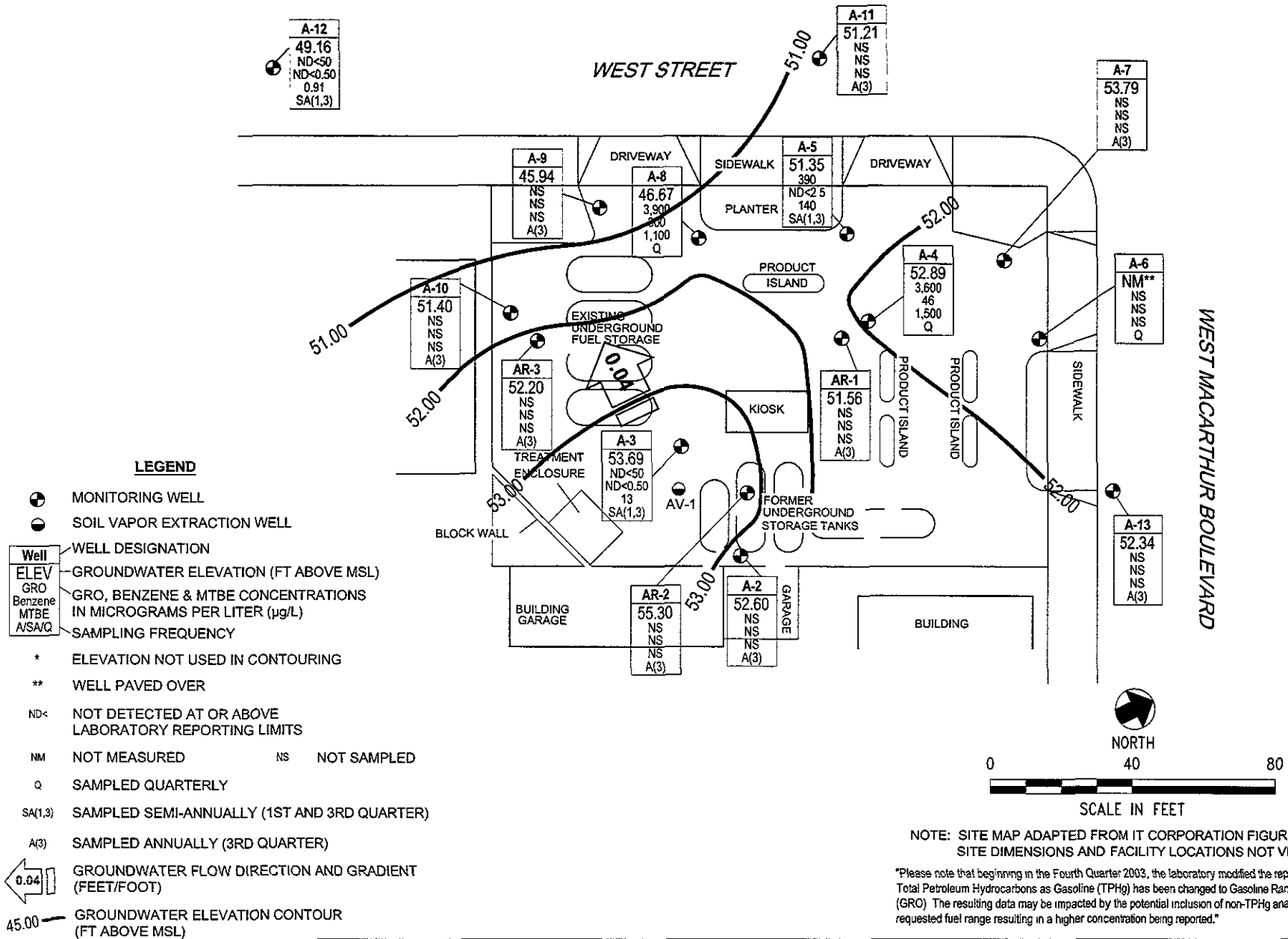
#### DISCUSSION:

GRO was detected above the laboratory reporting limit in three of the five wells sampled this quarter at concentrations ranging from 390 µg/L (A-5) to 3,900 µg/L (A-8). Benzene was detected above the laboratory reporting limit in two wells at concentrations of 46 µg/L (A-4) and 300 µg/L (A-8). MTBE was detected above the laboratory reporting limit in five wells at concentrations ranging from 0.91 µg/L (A-12) to 1,500 µg/L (A-4). TAME was detected above the laboratory reporting limit in four wells at concentrations ranging from 4.6 µg/L (A-3) to 380 µg/L (A-8). TBA was detected above laboratory reporting limits in one well at a concentration of 170

µg/L (A-5). Well A-6 was inaccessible for sampling as it appears to have been paved over.

**ATTACHMENTS:**

- Figure 1 -- Groundwater Elevation Contour and Analytical Summary Map -- February 2, 2004
- Table 1 -- Groundwater Elevation and Analytical Data
- Table 2 -- Groundwater Flow Direction and Gradient
- Table 3 -- 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
- Attachment E -- Survey Results



<b>URS</b>	Project No. 38486722	<b>GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP First Quarter 2004 (February 2, 2004)</b>	FIGURE <b>1</b>
	Arco Service Station #4931 731 West MacArthur Boulevard Oakland, California		

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

Well Number	Date Sampled	Purged/N of Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>e</sup> (mg/L)	pH <sup>f</sup>
A-2	06/21/00		55.48	5.0	19.0	6.85	48.63	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3.0	NA	NA
	09/20/00					10.45	45.03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/26/00					6.27	49.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01					4.57	50.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	06/12/01					9.27	46.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/23/01					10.75	44.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/31/01					4.13	51.35	ND<50	ND<0.5	ND<0.5	1	3.2	ND<2.5	NA	NA
	03/21/02					3.26	52.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02					3.72	51.76	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.1	NA	NA
	08/12/02	NP				9.95	45.53	ND<10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.50	3.1	7.7
	12/06/02	NP				10.01	45.47	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.0	3.1	6.1
	01/30/03*	NP				5.08	50.40	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.6	6.7
	05/28/03	NP				4.82	50.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	5.7	6.8
	08/06/03	NP				9.73	45.75	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.3	7.7
	11/14/03					9.36	46.12	-----Sampled Annually 3rd Quarted-----							
02/02/04			60.65		4.45	56.20	-----Sampled Annually 3rd Quarted-----								
A-3	06/21/00		54.66	5.0	19.3	9.48	45.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	46	NA	NA
	09/20/00					10.24	44.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	89.6	NA	NA
	12/26/00					9.58	45.08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.11	NA	NA
	03/20/01					6.34	48.32	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					9.76	44.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	86	NA	NA
	09/23/01					10.55	44.11	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					3.70	50.96	ND<50	ND<0.5	ND<0.5	ND<0.5	1	60	NA	NA
	03/21/02					5.75	48.91	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					7.27	47.39	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	45	NA	NA
	08/12/02					9.71	44.95	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02	P				9.55	45.11	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	150	2.4	6.6
	01/30/03*					6.05	48.61	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03	P				8.06	46.60	74	ND<0.50	ND<0.50	ND<0.50	ND<0.50	43	1.5	6.9
	08/06/03					9.91	44.75	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/03					9.52	45.14	NS	NS	NS	NS	NS	NS	NS	NS
02/02/04	P		59.32		5.63	53.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	13	1.2	7.1	

**Table 1**  
**Groundwater Elevation and Analytical Data**

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Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>e</sup> (mg/L)	pH <sup>f</sup>
A-4	06/21/00		54.73	5.0	19.6	9.49	45.24	2,100	110	2.1	11	5.9	2,000	NA	NA
	09/20/00					10.33	44.40	1,540	127	ND<5.0	9.07	7.42	1,940	NA	NA
	12/26/00					9.34	45.39	1,550	42.7	ND<5.0	11	10.9	1,210	NA	NA
	03/20/01					7.56	47.17	913	40.9	ND<5.0	15.5	14.6	ND<25	NA	NA
	06/12/01					9.83	44.90	2,000	230	ND<20	21	ND<20	4,700	NA	NA
	09/23/01					10.54	44.19	1,600	35	ND<10	ND<10	ND<10	3,000	NA	NA
	12/31/01					5.42	49.31	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	880	NA	NA
	03/21/02					6.18	48.55	ND<5,000	ND<50	ND<50	ND<50	ND<50	1,400	NA	NA
	04/17/02					7.34	47.39	1,300	79	31	17	55	2,200	NA	NA
	08/12/02	P				9.56	45.17	2,400 <sup>a</sup>	120	ND<5.0	ND<5.0	ND<5.0	2,100	2.0	7.2
	12/06/02	P				10.02	44.71	2,200	110	10	42	56	2,000	NA	6.7
	01/30/03*	P				7.55	47.18	6,000	180	ND<50	85	ND<50	2,100	1.8	6.8
	05/28/03	P				8.94	45.79	6,000	120	ND<50	ND<50	ND<50	2,500	1.5	6.7
	08/06/03	P				10.03	44.70	5,800	100	ND<25	ND<25	33	2,500	1.5	6.7
	11/14/03 <sup>f</sup>	P			SHEEN	10.37	44.36	1,000	17	ND<5.0	ND<5.0	ND<5.0	310	1.6	6.8
02/02/04 <sup>f</sup>	P		59.59		6.70	52.89	3,600	46	ND<25	ND<25	ND<25	1,500	1.0	7.1	
A-5	06/21/00		54.17	3.0	24.0	9.29	44.88	980	ND<0.5	ND<0.5	ND<0.5	ND<1.0	2,000	NA	NA
	09/20/00					10.23	43.94	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					9.65	44.52	525	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1,200	NA	NA
	03/20/01					8.05	46.12	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					9.81	44.36	830	ND<5.0	ND<5.0	ND<5.0	ND<5.0	3,200	NA	NA
	09/23/01					10.42	43.75	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					6.03	48.14	320	ND<0.5	ND<0.5	ND<0.5	ND<0.5	60	NA	NA
	03/21/02					6.71	47.46	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					8.01	46.16	1,600	ND<10	ND<10	ND<10	ND<10	3,200	NA	NA
	08/12/02					9.87	44.30	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02	P				9.66	44.51	310	ND<0.50	ND<0.50	ND<0.50	ND<0.50	330	1.9	6.6
	01/30/03*					7.67	46.50	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03	P				8.56	45.61	ND<5,000	ND<50	ND<50	ND<50	ND<50	1,500	1.6	6.6
	08/06/03					9.58	44.59	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/03	P				9.81	44.36	NS	NS	NS	NS	NS	NS	NS	NS
02/02/04	P		58.78		7.43	51.35	390	ND<2.5	9.2	ND<2.5	2.6	140	1.0	6.8	

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>c</sup> (mg/L)	pH <sup>c</sup>	
A-6	06/21/00		55.17	2.0	25.0	8.67	46.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3.0	NA	NA	
	09/20/00					9.34	45.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	12/26/00					8.65	46.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/20/01					6.84	48.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	06/12/01					8.93	46.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7	NA	NA	
	09/23/01					9.74	45.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	12/31/01					4.81	50.36	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.2	NA	NA	
	03/21/02					5.44	49.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	04/17/02					6.95	48.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.1	NA	NA	
	08/12/02	NP				8.90	46.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	4.3	7.9	
	12/06/02					Unable to Sample, Well Paved Over										
	01/30/03*					Unable to Sample, Well Paved Over										
	05/28/03					Unable to Sample, Well Paved Over										
	08/06/03					Unable to Sample, Well Paved Over										
	11/14/03					Unable to Sample, Well Paved Over										
	02/02/04					Unable to Sample, Well Paved Over										
A-7	06/21/00		54.71	4.8	22.6	8.58	46.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3.0	NA	NA	
	09/20/00					9.19	45.52	NS	NS	NS	NS	NS	NS	NS	NS	
	12/26/00					8.50	46.21	NS	NS	NS	NS	NS	NS	NS	NS	
	03/20/01					6.75	47.96	NS	NS	NS	NS	NS	NS	NS	NS	
	06/12/01					8.80	45.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	09/23/01					9.59	45.12	NS	NS	NS	NS	NS	NS	NS	NS	
	12/31/01					4.78	49.93	NS	NS	NS	NS	NS	NS	NS	NS	
	03/21/02					5.35	49.36	NS	NS	NS	NS	NS	NS	NS	NS	
	04/17/02					6.88	47.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.5	NA	NA	
	08/12/02					8.77	45.94	NS	NS	NS	NS	NS	NS	NS	NS	
	12/06/02					9.07	45.64	NS	NS	NS	NS	NS	NS	NS	NS	
	01/30/03*					6.65	48.06	NS	NS	NS	NS	NS	NS	NS	NS	
	05/28/03	P				7.63	47.08	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.8	2.3	6.7	
	08/06/03					8.90	45.81	-----Sampled Annually 3rd Quanted-----								
	11/14/03					9.08	45.63	-----Sampled Annually 3rd Quanted-----								
	02/02/04			59.75			5.96	53.79	-----Sampled Annually 3rd Quanted-----							



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Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>c</sup> (mg/L)	pH <sup>c</sup>
A-8	06/21/00		53.77	2.0	20.0	9.07	44.70	810	ND<0.5	ND<0.5	ND<0.5	810	1,500	NA	NA
	09/20/00					9.72	44.05	10,800	2,680	46	439	370	4,410	NA	NA
	12/26/00					9.20	44.57	7,700	1,440	ND<50	202	106	2,230	NA	NA
	03/20/01					7.51	46.26	ND<5,000	1,280	ND<50	53.9	ND<50	2,880	NA	NA
	06/12/01					9.53	44.24	5,600	1,700	ND<50	61	54	2,900	NA	NA
	09/23/01					10.08	43.69	10,000	3,500	ND<50	110	64	6,500	NA	NA
	12/31/01					4.34	49.43	4,300	610	ND<10	60	24	520	NA	NA
	03/21/02					6.67	47.10	6,600	1400	ND<50	130	ND<50	2,700	NA	NA
	04/17/02					7.72	46.05	3,800	540	ND<10	ND<10	12	3,100	NA	NA
	08/12/02	NP				9.64	44.13	9,400	1,800	ND<20	35	28	4,200	1.0	6.7
	12/06/02	NP				9.62	44.15	5,300	1,100	11	11	ND<10	2,200 <sup>b</sup>	1.4	6.7
	01/30/03*	NP				7.49	46.28	ND<10,000	1,100	ND<100	ND<100	ND<100	2,200	1.5	6.9
	05/28/03	NP				9.17	44.60	7,700	1,700	ND<50	ND<50	ND<50	2,100	1.0	6.8
	08/06/03	NP				9.67	44.10	13,000	2,400	ND<50	ND<50	ND<50	3,000	0.9	6.5
	11/14/03 <sup>f</sup>	NP				9.80	43.97	3,100	570	ND<5.0	ND<5.0	ND<5.0	850	2.3	6.2
02/02/04 <sup>f</sup>	NP		58.70		7.10	51.60	3,900	300	ND<25	ND<25	ND<25	1,100	1.1	6.8	
A-9	06/21/00		53.04	5.0	38.0	8.56	44.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	5.0	NA	NA
	09/20/00					9.05	43.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/26/00					8.49	44.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01					6.95	46.09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	06/12/01					8.67	44.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.8	NA	NA
	09/23/01					9.21	43.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/31/01					4.57	48.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02					5.60	47.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02					6.89	46.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/12/02	P				8.71	44.33	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	4.0	7.6
	12/06/02	P				8.77	44.27	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	1.1	6.7
	01/30/03*	P				6.88	46.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	0.9	6.8
	05/28/03	P				9.75	43.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.74	1.9	6.8
	08/06/03	P				9.00	44.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	2.2	6.7
	11/14/03 <sup>f</sup>					8.82	44.22								
02/02/04 <sup>f</sup>			57.73		7.10	50.63									

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>c</sup> (mg/L)	pH <sup>c</sup>
A-10	06/21/00		54.26	NA	NA	10.47	43.79	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00					10.76	43.50	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/20/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	08/12/02					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/03*					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	08/06/03					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/03						10.37	43.89	-----Sampled Annually 3rd Quarted-----						
02/02/04			59.37			7.97	51.40	-----Sampled Annually 3rd Quarted-----							
A-11	06/21/00		53.74	5.0	28.0	9.54	44.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	4.0	NA	NA
	09/20/00					10.62	43.12	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					10.03	43.71	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	ND<2.5	NA	NA
	03/20/01					8.49	45.25	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					10.21	43.53	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	ND<2.5	NA	NA
	09/23/01					10.77	42.97	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					6.06	47.68	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	ND<2.5	NA	NA
	03/21/02					7.14	46.60	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					8.41	45.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/12/02					10.25	43.49	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02	P				10.43	43.31	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	2.4	6.7
	01/30/03*					8.42	45.32	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03	P				9.30	44.44	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.53	1.8	7.0
	08/06/03					10.28	43.46	-----Sampled Annually 3rd Quarted-----							
11/14/03					10.40	43.34	-----Sampled Annually 3rd Quarted-----								
02/02/04			59.16			7.95	51.21	-----Sampled Annually 3rd Quarted-----							

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>e</sup> (mg/L)	pH <sup>f</sup>
A-12	06/21/00		52.05	5.0	30.0	9.28	42.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	18	NA	NA
	09/20/00					9.55	42.50	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					9.05	43.00	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	17.3	NA	NA
	03/20/01					7.92	44.13	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					9.26	42.79	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	25	NA	NA
	09/23/01					9.68	42.37	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					5.74	46.31	ND< 50	ND< 0.5	ND< 0.5	ND< 0.5	ND<0.5	9.5	NA	NA
	03/21/02					6.64	45.41	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					7.68	44.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	29	NA	NA
	08/12/02					9.30	42.75	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02 <sup>c</sup>	P				9.38	42.67	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	13	2.3	6.5
	01/30/03*					7.87	44.18	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03	P				8.51	43.54	50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	10	1.4	7.0
	08/06/03					9.28	42.77	NS	NS	NS	NS	NS	NS	NS	NS
11/14/03					9.37	42.68	NS	NS	NS	NS	NS	NS	NS	NS	
02/02/04			57.06		7.90	49.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.91	1.0	6.9	
A-13	06/21/00		55.11	10.0	29.5	NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/20/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02					6.70	48.41	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					7.95	47.16	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/12/02					10.11	45.00	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02					10.26	44.85	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/03*					7.81	47.30	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03	P				9.06	46.05	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.9	6.5
	08/06/03					10.22	44.89	-----Sampled Annually 3rd Quarted-----							
11/14/03					10.27	44.84	-----Sampled Annually 3rd Quarted-----								
02/02/04			60.26		7.92	52.34	-----Sampled Annually 3rd Quarted-----								

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

Well Number	Date Sampled	Purged/N of Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>e</sup> (mg/L)	pH <sup>f</sup>
AR-1	06/21/00		54.72	10.0	31.5	NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					9.95	44.77	NS	NS	NS	NS	NS	NS	NS	NS
	03/20/01					8.34	46.38	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					10.17	44.55	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01					10.72	44.00	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					5.91	48.81	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02					7.00	47.72	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					8.33	46.39	NS	NS	NS	NS	NS	NS	NS	NS
	08/12/02					10.18	44.54	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02					10.21	44.51	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/03*					8.22	46.50	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03					9.62	45.10	NS	NS	NS	NS	NS	NS	NS	NS
	08/06/03					10.47	44.25	NS	NS	NS	NS	NS	NS	NS	NS
11/14/03 <sup>f</sup>					10.40	44.32	NS	NS	NS	NS	NS	NS	NS	NS	
02/02/04 <sup>f</sup>			59.52		7.96	51.56	NS	NS	NS	NS	NS	NS	NS	NS	
AR-2	06/21/00		54.77	10.0	21.5	NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/20/01					3.13	51.64	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					4.51	50.26	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01					6.05	48.72	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					2.79	51.98	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02					7.75	47.02	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					2.24	52.53	NS	NS	NS	NS	NS	NS	NS	NS
	08/12/02					4.93	49.84	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02					6.09	48.68	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/03*					3.89	50.88	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03					3.33	51.44	NS	NS	NS	NS	NS	NS	NS	NS
	08/06/03					5.05	49.72	NS	NS	NS	NS	NS	NS	NS	NS
11/14/03					6.01	48.76	NS	NS	NS	NS	NS	NS	NS	NS	
02/02/04			59.18		3.88	55.30	NS	NS	NS	NS	NS	NS	NS	NS	

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
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Oakland, California

Well Number	Date Sampled	Purged/Not Purged (P/NP)	TOC Elevation (ft)	Top of Screen (ft. BGS)	Bottom of Casing (ft. BGS)	Depth to Groundwater (ft. BGS)	Groundwater Elevation (ft)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO <sup>c</sup> (mg/L)	pH <sup>c</sup>
AR-3	06/21/00		54.19	10.0	27.0	NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	12/26/00					9.70	44.49	NS	NS	NS	NS	NS	NS	NS	NS
	03/20/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/01					NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01					10.43	43.76	NS	NS	NS	NS	NS	NS	NS	NS
	12/31/01					5.18	49.01	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02					6.78	47.41	NS	NS	NS	NS	NS	NS	NS	NS
	04/17/02					8.06	46.13	NS	NS	NS	NS	NS	NS	NS	NS
	08/12/02					9.94	44.25	NS	NS	NS	NS	NS	NS	NS	NS
	12/06/02					9.99	44.20	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/03*					7.96	46.23	NS	NS	NS	NS	NS	NS	NS	NS
	05/28/03					8.94	45.25	NS	NS	NS	NS	NS	NS	NS	NS
	08/06/03					9.94	44.25	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/03					10.03	44.16	NS	NS	NS	NS	NS	NS	NS	NS
02/02/04			59.10		6.90	52.20	NS	NS	NS	NS	NS	NS	NS	NS	

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station #4931  
731 West Macarthur Boulevard  
Oakland, California

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Note: Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPH-g) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

Samples taken 12/06/02 analyzed using DHS LUFT

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BGS	= Below ground surface
DO	= Dissolved oxygen
ft	= feet
GRO	= Gasoline range organics (C4 - C12)
mg/L	= Milligrams per liter
MTBE	= Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted (before 1/30/03)
NA	= Not available
NC	= Not calculated
ND<	= Not detected at or above the specified laboratory reporting limit
NM	= Not measured
NP	= Not purged
NS	= Not sampled
P	= Purge
TOC	= Top of casing
TPH-g	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B modified (before 1/30/03)
µg/L	= Micrograms per liter
a	= Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
b	= The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
c	= This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
d	= The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.
e	= DO and pH are field measurements
f	= ORC sock in well
*	= Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel oxygenates.
Source:	The data within this table collected prior to August 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

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**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station #4931  
731 West MacArthur Boulevard  
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/21/00	West-Southwest	0.031
09/20/00	Southwest	0.013
12/26/00	West	0.028
03/20/01	West	0.046
06/12/01	West	0.014
09/23/01	West	0.012
12/31/01	West	0.024
03/21/02	West	0.047
04/17/02	West	0.03
08/12/02	West	0.016
12/06/02	West	0.015
01/30/03	West	Variable
05/28/03	Westward	0.022 <sup>a</sup>
08/06/03	West-Southwest	0.018
11/14/03	West	0.02
<b>02/02/04</b>	<b>West</b>	<b>0.04</b>

a = using wells AR-1 and A-9

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

**Table 3**  
**Fuel Oxygenate Analytical Data**

ARCO Service Station #4931  
731 West MacArthur Boulevard  
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)
A-2	01/30/03	ND<40	ND<20 <sup>a</sup>	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/28/03	ND<100	ND<20	1.1	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/06/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
A-3	05/28/03	ND<100	ND<20	43	ND<0.50	ND<0.50	24	NA	NA
	02/02/04	ND<100	ND<20	13	ND<0.50	ND<0.50	4.6	ND<0.50	ND<0.50
A-4	01/30/03	ND<4,000	ND<2,000 <sup>a</sup>	2,100	ND<50	ND<50	530	NA	NA
	05/28/03	ND<10,000	ND<2,000	2,500	ND<50	ND<50	590	NA	NA
	08/06/03	ND<5,000	ND<1,000	2,500	ND<25	ND<25	560	ND<25	ND<25
	11/14/03	ND<1,000	320	310	ND<5.0	ND<5.0	76	NA	NA
	02/02/04	ND<5,000	ND<1,000	1,500	ND<25	ND<25	350	ND<25	ND<25
A-5	05/28/03	ND<10,000	ND<2,000	1,500	ND<50	ND<50	620	NA	NA
	02/02/04	ND<500	170	140	ND<2.5	ND<2.5	54	ND<2.5	ND<2.5
A-7	05/28/03	ND<100	ND<20	3.8	ND<0.50	ND<0.50	0.94	NA	NA
A-8	01/30/03	ND<8,000	ND<4,000 <sup>a</sup>	2,200	ND<100	ND<100	900	NA	NA
	05/28/03	ND<10,000	ND<2,000	2,100	ND<50	ND<50	1,100	NA	NA
	08/06/03	ND<10,000	ND<2,000	3,000	ND<50	ND<50	1,200	ND<50	ND<50
	11/14/03	ND<1,000	ND<200	850	ND<5.0	ND<5.0	320	NA	NA
	02/02/04	ND<5,000	ND<1,000	1,100	ND<25	ND<25	380	ND<25	ND<25
A-9	01/30/03	ND<40	ND<20	1.1	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/28/03	ND<100	ND<20	0.74	ND<0.50	ND<0.50	ND<0.50	NA	NA
	08/06/03	ND<100	ND<20	1.8	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
A-11	05/28/03	ND<100	ND<20	0.53	ND<0.50	ND<0.50	ND<0.50	NA	NA
A-12	05/28/03	ND<100	ND<20	10	ND<0.50	ND<0.50	2.5	NA	NA
	02/02/04	ND<100	ND<20	0.91	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
A-13	05/28/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA



**Table 3**  
**Fuel Oxygenate Analytical Data**

ARCO Service Station #4931  
731 West MacArthur Boulevard  
Oakland, California

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Note = All fuel oxygenate compounds analyzed using EPA Method 8260B

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1,2-DCA	= 1,2-Dichloroethane
DIPE	= Di-isopropyl ether
EDB	= 1,2-Dibromoethane
ETBE	= Ethyl tert butyl ether
MTBE	= Methyl tert-butyl ether
NA	= Not analyzed
ND<	= Not detected at or above laboratory reporting limits
NS	= Not sampled
TAME	= tert-Amyl methyl ether
TBA	= tert-Butyl alcohol
$\mu\text{g/L}$	= micrograms per liter

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a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.

**ATTACHMENT A**

**FIELD PROCEDURES AND FIELD DATA SHEETS**

## **FIELD PROCEDURES**

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### **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 # 04D202-MTL Date 2-2-04 Client 4931

Site 731 W. MacArthur, 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 <u>OC</u>	
A-2	4					4.45	19.40		
A-3	4					5.63	18.20		
A-4	4					6.70	19.42		
A-5	3					7.43	24.59		
A-6	<del>3</del>					—	—		PAVED OVER
A-7	3					5.96	22.24		
A-8	3					7.10	16.80		
A-9	6					7.10	37.81		
A-10	3					7.97	29.73		
A-11	3					7.95	29.71		
A-12	3					7.90	29.79		
A-13	3					7.92	29.05		
AR-1	6					7.96	29.39 <del>20.28</del> WT		
AR-2	6					3.88	26.20		
AR-3	4					6.90	28.95	↓	







## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>040202-MTI</u>	Station # <u>4931</u>
Sampler: <u>M TIH</u>	Date: <u>2-2-04</u>
Well I.D.: <u>A-6</u>	Well Diameter: 2 3 4 6 8 <u>    </u>
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer Positive Air Displacement Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <del>Disposable Bailer</del> Extraction Port Other: _____
--	---

Top of Screen: 2'      If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

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

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
					<u>INACCESSIBLE: PAVED / CONCRETED OVER.</u>

Did well dewater? <u>Yes</u> <u>No</u>	Gallons actually evacuated: _____
Sampling Time: _____	Sampling Date: <u>2-2-04</u>
Sample I.D.: <u>A-6</u>	Laboratory: Pac <u>Sequoia</u> Other _____
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D Other: <u>PAHs &amp; ETHANOL</u> <u>V.Z.DCA</u> <u>EDR (9760)</u>	
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 #: <u>040202-MTI</u>	Station # <u>4931</u>
Sampler: <u>M-TII</u>	Date: <u>2-2-04</u>
Well I.D.: <u>A-B</u>	Well Diameter: 2 <u>(3)</u> 4 6 8 <u>   </u>
Total Well Depth: <u>1090</u>	Depth to Water: <u>7.10</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> FLACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer Positive Air Displacement Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <u>Disposable Bailer</u> Extraction Port Other: _____
--	---

Top of Screen: 2' 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	<u>NO Purge</u> Specified Volumes	Gals.	Calculated Volume
-----------------------	---	--------------------------------------	-------	-------------------

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
<u>1040</u>	<u>56.9</u>	<u>6.8</u>	<u>220</u>	—	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>   </u>
Sampling Time: <u>1040</u>	Sampling Date: <u>2-2-04</u>
Sample I.D.: <u>A-B</u>	Laboratory: Pace <u>(Sequoia)</u> Other _____

Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D Other: <u>DMS</u> <u>ETHANOL</u> <u>1,2 DCA</u> <u>EDR</u> <u>(G760)</u>			
D.O. (if req'd):	Pre-purge:	<u>   </u> mg/L	Post-purge: <u>1.1</u> mg/L
O.R.P. (if req'd):	Pre-purge:	<u>   </u> mV	Post-purge: <u>   </u> mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>040202-MTI</u>	Station # <u>4931</u>
Sampler: <u>M TH</u>	Date: <u>2-2-04</u>
Well I.D.: <u>A-12</u>	Well Diameter: 2 <input checked="" type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8 <input type="radio"/>
Total Well Depth: <u>29.79</u>	Depth to Water: <u>7.90</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer Positive Air Displacement <del>Electric Submersible</del> Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <del>Disposable Bailer</del> 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.

<u>8.1</u>	X	<u>3</u>	=	<u>24.3</u> Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
<u>1019</u>	<u>57.9</u>	<u>6.9</u>	<u>124</u>	<u>8.1</u>	
<u>1019</u>	<u>Dewatered</u>			<u>9</u>	

Did well dewater? <u>(Yes)</u> No	Gallons actually evacuated: <u>9</u>	
Sampling Time: <u>1030</u>	Sampling Date: <u>2-2-04</u>	
Sample I.D.: <u>A-12</u>	Laboratory: Pace <u>(Sequoia)</u> Other _____	
Analyzed for: <u>(TPH-G) (BTEX)</u> MTBE TPH-D Other: <u>Dioxin + Ethanol, 1,2 DCA + ENR (92160)</u>		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>1.0</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

**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 PLAINE 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:

4931

Station #

731 W. MacArthur Blvd, Oakland, CA

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

72

added equip.

rinse water

2

any other

adjustments

TOTAL GALS.

RECOVERED

74

loaded onto

BTS vehicle #

55

BTS event #

DAD202 - MT1

time

1215

date

2/2/04

signature

*[Signature]*

REC'D AT

BTS

time

date

2/2/04

unloaded by

signature

*[Signature]*

\*\*\*\*\*

**ATTACHMENT B**

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

## **LABORATORY PROCEDURES**

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### **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 Atlantic Richfield Company have been reviewed and verified by that laboratory.



17 February, 2004

Scott Robinson  
URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland, CA 94612

RE: ARCO #4931, Oakland, CA  
Work Order: MNB0089

Enclosed are the results of analyses for samples received by the laboratory on 02/03/04 12:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Race".

Lisa Race  
Senior Project Manager

CA ELAP Certificate #1210

URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #4931, Oakland, CA  
Project Number: N/P  
Project Manager: Scott Robinson

MNB0089  
Reported:  
02/17/04 12:00

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-3	MNB0089-01	Water	02/02/04 11:25	02/03/04 12:30
A-4	MNB0089-02	Water	02/02/04 11:55	02/03/04 12:30
A-5	MNB0089-03	Water	02/02/04 11:10	02/03/04 12:30
A-8	MNB0089-04	Water	02/02/04 10:40	02/03/04 12:30
A-12	MNB0089-05	Water	02/02/04 10:30	02/03/04 12:30

These samples were received with broken custody seals.

URS Corporation [Arco]  
 1333 Broadway, Suite 800  
 Oakland CA, 94612

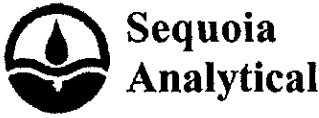
 Project: ARCO #4931, Oakland, CA  
 Project Number: N/P  
 Project Manager: Scott Robinson

 MNB0089  
 Reported:  
 02/17/04 12:00

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>A-3 (MNB0089-01) Water</b> <b>Sampled: 02/02/04 11:25</b> <b>Received: 02/03/04 12:30</b>										
Ethanol	ND	100		ug/l	1	4B11032	02/11/04	02/12/04	EPA 8260B	
tert-Butyl alcohol	ND	20		"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>13</b>	<b>0.50</b>		"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50		"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50		"	"	"	"	"	"	
<b>tert-Amyl methyl ether</b>	<b>4.6</b>	<b>0.50</b>		"	"	"	"	"	"	
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	ND	50		"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>101 %</i>		<i>78-129</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<b>A-4 (MNB0089-02) Water</b> <b>Sampled: 02/02/04 11:55</b> <b>Received: 02/03/04 12:30</b>										
Ethanol	ND	5000		ug/l	50	4B11032	02/11/04	02/12/04	EPA 8260B	
tert-Butyl alcohol	ND	1000		"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>1500</b>	<b>25</b>		"	"	"	"	"	"	
Di-isopropyl ether	ND	25		"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	25		"	"	"	"	"	"	
<b>tert-Amyl methyl ether</b>	<b>350</b>	<b>25</b>		"	"	"	"	"	"	
1,2-Dichloroethane	ND	25		"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	25		"	"	"	"	"	"	
<b>Benzene</b>	<b>46</b>	<b>25</b>		"	"	"	"	"	"	
Toluene	ND	25		"	"	"	"	"	"	
Ethylbenzene	ND	25		"	"	"	"	"	"	
Xylenes (total)	ND	25		"	"	"	"	"	"	
<b>Gasoline Range Organics</b>	<b>3600</b>	<b>2500</b>		"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>99.8 %</i>		<i>78-129</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	





URS Corporation [Arco]  
 1333 Broadway, Suite 800  
 Oakland CA, 94612

Project: ARCO #4931, Oakland, CA  
 Project Number: N/P  
 Project Manager: Scott Robinson

MNB0089  
 Reported:  
 02/17/04 12:00

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units							
<b>A-5 (MNB0089-03) Water    Sampled: 02/02/04 11:10    Received: 02/03/04 12:30</b>										
Ethanol	ND	500	ug/l	5	4B11032	02/11/04	02/12/04	EPA 8260B		
tert-Butyl alcohol	170	100	"	"	"	"	"	"		
Methyl tert-butyl ether	140	2.5	"	"	"	"	"	"		
Di-isopropyl ether	ND	2.5	"	"	"	"	"	"		
Ethyl tert-butyl ether	ND	2.5	"	"	"	"	"	"		
tert-Amyl methyl ether	54	2.5	"	"	"	"	"	"		
1,2-Dichloroethane	ND	2.5	"	"	"	"	"	"		
1,2-Dibromoethane (EDB)	ND	2.5	"	"	"	"	"	"		
Benzene	ND	2.5	"	"	"	"	"	"		
Toluene	9.2	2.5	"	"	"	"	"	"		
Ethylbenzene	ND	2.5	"	"	"	"	"	"		
Xylenes (total)	2.6	2.5	"	"	"	"	"	"		
<b>Gasoline Range Organics</b>	<b>390</b>	<b>250</b>	"	"	"	"	"	"		
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>97.4 %</i>	<i>78-129</i>	"	"	"	"	"		
<b>A-8 (MNB0089-04) Water    Sampled: 02/02/04 10:40    Received: 02/03/04 12:30</b>										
Ethanol	ND	5000	ug/l	50	4B11032	02/11/04	02/12/04	EPA 8260B		
tert-Butyl alcohol	ND	1000	"	"	"	"	"	"		
Methyl tert-butyl ether	1100	25	"	"	"	"	"	"		
Di-isopropyl ether	ND	25	"	"	"	"	"	"		
Ethyl tert-butyl ether	ND	25	"	"	"	"	"	"		
tert-Amyl methyl ether	380	25	"	"	"	"	"	"		
1,2-Dichloroethane	ND	25	"	"	"	"	"	"		
1,2-Dibromoethane (EDB)	ND	25	"	"	"	"	"	"		
Benzene	300	25	"	"	"	"	"	"		
Toluene	ND	25	"	"	"	"	"	"		
Ethylbenzene	ND	25	"	"	"	"	"	"		
Xylenes (total)	ND	25	"	"	"	"	"	"		
<b>Gasoline Range Organics</b>	<b>3900</b>	<b>2500</b>	"	"	"	"	"	"		
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>96.4 %</i>	<i>78-129</i>	"	"	"	"	"		



885 Jarvis Drive  
 Morgan Hill, CA 95037  
 (408) 776-9600  
 FAX (408) 782-6308  
 www.sequoialabs.com

URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4931, Oakland, CA Project Number: N/P Project Manager: Scott Robinson	MNB0089 Reported: 02/17/04 12:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>A-12 (MNB0089-05) Water    Sampled: 02/02/04 10:30    Received: 02/03/04 12:30</b>									
Ethanol	ND	100	ug/l	1	4B11032	02/11/04	02/12/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>0.91</b>	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	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.8 %		78-129	"	"	"	"	



URS Corporation (Arco) 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4931, Oakland, CA Project Number: N/P Project Manager: Scott Robinson	MNB0089 Reported: 02/17/04 12:00
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**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
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**Batch 4B11032 - EPA 5030B P/T**

**Blank (4B11032-BLK1)**

Prepared & Analyzed: 02/11/04

Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	5.0	"							
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	ND	50	"							

*Surrogate: 1,2-Dichloroethane-d4*      5.07      "      5.00      101      78-129

**Laboratory Control Sample (4B11032-BS1)**

Prepared & Analyzed: 02/11/04

Ethanol	231	100	ug/l	200		116	31-143			
tert-Butyl alcohol	48.3	5.0	"	50.0		96.6	56-131			
Methyl tert-butyl ether	10.0	0.50	"	10.0		100	63-137			
Di-isopropyl ether	9.81	0.50	"	10.0		98.1	76-130			
Ethyl tert-butyl ether	10.6	0.50	"	10.0		106	81-121			
tert-Amyl methyl ether	10.5	0.50	"	10.0		105	82-140			
1,2-Dichloroethane	10.0	0.50	"	10.0		100	77-136			
1,2-Dibromoethane (EDB)	11.1	0.50	"	10.0		111	77-132			
Benzene	10.1	0.50	"	10.0		101	78-124			
Toluene	10.1	0.50	"	10.0		101	78-129			
Ethylbenzene	10.3	0.50	"	10.0		103	84-117			
Xylenes (total)	31.9	0.50	"	30.0		106	83-125			

*Surrogate: 1,2-Dichloroethane-d4*      4.84      "      5.00      96.8      78-129



URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #4931, Oakland, CA Project Number: N/P Project Manager: Scott Robinson	MNB0089 Reported: 02/17/04 12:00
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**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 4B11032 - EPA 5030B P/T**

Laboratory Control Sample (4B11032-BS2)				Prepared & Analyzed: 02/11/04						
Methyl tert-butyl ether	8.12	0.50	ug/l	9.92		81.9	63-137			
Benzene	5.04	0.50	"	6.40		78.8	78-124			
Toluene	31.3	0.50	"	29.7		105	78-129			
Ethylbenzene	7.84	0.50	"	6.96		113	84-117			
Xylenes (total)	39.3	0.50	"	33.7		117	83-125			
Gasoline Range Organics	403	50	"	440		91.6	70-113			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.83</i>		<i>"</i>	<i>5.00</i>		<i>96.6</i>	<i>78-129</i>			

Laboratory Control Sample Dup (4B11032-BSD1)				Prepared: 02/11/04 Analyzed: 02/12/04						
Ethanol	264	100	ug/l	200		132	31-143	13.3	20	
tert-Butyl alcohol	47.7	5.0	"	50.0		95.4	56-131	1.25	20	
Methyl tert-butyl ether	9.66	0.50	"	10.0		96.6	63-137	3.46	13	
Di-isopropyl ether	9.55	0.50	"	10.0		95.5	76-130	2.69	9	
Ethyl tert-butyl ether	10.2	0.50	"	10.0		102	81-121	3.85	9	
tert-Amyl methyl ether	9.92	0.50	"	10.0		99.2	82-140	5.68	12	
1,2-Dichloroethane	9.80	0.50	"	10.0		98.0	77-136	2.02	13	
1,2-Dibromoethane (EDB)	10.4	0.50	"	10.0		104	77-132	6.51	9	
Benzene	9.66	0.50	"	10.0		96.6	78-124	4.45	12	
Toluene	9.56	0.50	"	10.0		95.6	78-129	5.49	10	
Ethylbenzene	10.1	0.50	"	10.0		101	84-117	1.96	10	
Xylenes (total)	31.0	0.50	"	30.0		103	83-125	2.86	11	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.78</i>		<i>"</i>	<i>5.00</i>		<i>95.6</i>	<i>78-129</i>			

Laboratory Control Sample Dup (4B11032-BSD2)				Prepared: 02/11/04 Analyzed: 02/12/04						
Methyl tert-butyl ether	7.63	0.50	ug/l	9.92		76.9	63-137	6.22	13	
Benzene	4.92	0.50	"	6.40		76.9	78-124	2.41	12	Q-LIM
Toluene	30.2	0.50	"	29.7		102	78-129	3.58	10	
Ethylbenzene	7.45	0.50	"	6.96		107	84-117	5.10	10	
Xylenes (total)	38.0	0.50	"	33.7		113	83-125	3.36	11	
Gasoline Range Organics	373	50	"	440		84.8	70-113	7.73	9	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.93</i>		<i>"</i>	<i>5.00</i>		<i>98.6</i>	<i>78-129</i>			

URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland CA, 94612

Project: ARCO #4931, Oakland, CA  
Project Number: N/P  
Project Manager: Scott Robinson

MNB0089  
**Reported:**  
02/17/04 12:00

### Notes and Definitions

- Q-LIM The percent recovery was outside of the control limits. The samples results may still be useful for their intended purpose.
- 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

Project Name Y931 GWM  
 BP BU/GEM CO Portfolio Retail 4931 MNB0089  
 BP Laboratory Contract Number: Atlantic Richfield Company

On-site Time: 0930 Temp: 58°  
 Off-site Time: 1215 Temp: 57°  
 Sky Conditions: Cloudy  
 Meteorological Events: Rain  
 Wind Speed: \_\_\_\_\_ Direction: \_\_\_\_\_

Date: 2-2-04

Requested Due Date (mm/dd/yy) 14 day TAT

Send To:	BP/GEM Facility No.: <u>ARCO 4931</u>	Consultant/Contractor: <u>URS</u>
Lab Name: <u>SEQUOIA</u>	BP/GEM Facility Address: <u>731 W. MACARTHUR BLVD, OAKLAND, CA</u>	Address: <u>500 12th St., Ste. 200</u>
Lab Address: <u>885 Jarvis Dr.</u>	Site ID No.: <u>ARCO 4831</u>	<u>Oakland, CA 94609-4014</u>
<u>Morgan Hill, CA 95037</u>	Site Lat/Long: _____	e-mail EDD: <u>donna.casper@URSCorp.com</u>
	California Global ID #: <u>T0600100107</u>	Consultant/Contractor Project No.: <u>J5-00004931.01 00427</u>
Lab PM <u>Theresa Allen</u>	BP/GEM PM Contact: <u>PAUL SUPPLE</u>	Consultant Tele/Fax: <u>510-893-3600/510-874-3268</u>
Tele/Fax: <u>408-776-9600 / 408-782-6308</u>	Address: <u>P.O. Box 6549</u>	Consultant/Contractor PM: <u>Scott Robinson</u>
Report Type & QC Level: <u>1 Send EDF Reports</u>	<u>Moraga, CA 94570</u>	Invoice to: Consultant/Contractor ok <u>BP/GEM</u> (Circle one)
BP/GEM Account No.:	Tele/Fax: <u>925-299-8891/925-299-8872</u>	BP/GEM Work Release No: _____

Item No.	Sample Description	Time	Matrix				Laboratory No.	No. of containers	Preservatives				Requested Analysis						Sample Point Lat/Long and Comments
			Soil/Solid	Water/Liquid	Sediments	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	TPH-G / BTEX E801, S8021, A8260	TPH-D (8015)	MTBE (8021)	MTBE (8260)	MTBE, TAME, ETBE DIPN, TBA (8260)	1,2-DCA & EDB (8260)	
1	A-3	1125	X				01	3					X			X	X		
2	A-4	1155	X				02	3					X			X	X		
3	A-5	1110	X				03	3					X			X	X		
4	A-8	1040	X				04	3					X			X	X		
5	A-12	1030	X				05	3					X			X	X		
6	1B-4931-02022004		X				04	2											"ON HAND"
7																			
8																			
9																			
10																			

Sampler's Name: <u>Michael Toll</u>	Relinquished By / Affiliation: <u>[Signature] BT3</u>	Date: <u>2/3/04</u>	Time: <u>1018</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>2/3/04</u>	Time: <u>1028</u>
Shipment Date: _____	Shipment Method: _____	Shipment Tracking No: _____	Instructions: <u>Address Invoice to BP/GEM but send to URS for approval</u>	Temperature Blank Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Cooler Temperature on Receipt <u>2</u> °F/C	Trip Blank Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

# SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: BP  
 REC. BY (PRINT) TL  
 WORKORDER: MNB0089

DATE REC'D AT LAB: 2/3/04  
 TIME REC'D AT LAB: 1230  
 DATE LOGGED IN: 2/7/04

DRINKING WATER for regulatory purposes: YES /  NO  
 WASTE WATER 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) <u>Present / Absent</u> <u>Bag</u> <u>Intact / Broken*</u>			<u>A-3</u>	<u>(2) Vials</u>	<u>HCl</u>	<u>L</u>	<u>2/2/04</u>	
2. Chain-of-Custody <u>Present / Absent*</u>			<u>-4</u>					
3. Traffic Reports or Packing List <u>Present / Absent</u>			<u>-5</u>					
4. Airbill: <u>Airbill / Sticker</u> <u>Present / Absent*</u>			<u>-8</u>					
5. Airbill #:			<u>-12</u>					
6. Sample Labels: <u>Present / Absent</u>			<u>TB</u>	<u>(2)</u>				
7. Sample IDs: <u>Listed / Not Listed</u> on Chain-of-Custody								
8. Sample Condition: <u>Intact / Broken*</u> <u>Leaking*</u>								
9. Does information on chain-of-custody, traffic reports and sample labels agree? <u>Yes / No*</u>								
10. Sample received within hold time: <u>Yes / No*</u>								
11. Adequate sample volume received? <u>Yes / No*</u>								
12. Proper Preservatives used: <u>Yes / No*</u>								
13. Temp Rec. at Lab: <u>2°C</u> Is temp $\pm 2^\circ\text{C}$ ? <u>Yes / No**</u>								
(Acceptance range for samples requiring thermal pres.)								
**Exception (if any): METALS / DFF ON ICE or Problem COC								

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

**ATTACHMENT C**

**HISTORIC GROUNDWATER DATA**



**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Ganged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-2	03/26/96	55.48	5.37	50.11	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	05/22/96	55.48	5.25	50.23	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	08/22/96	55.48	10.45	45.03	<50	1.1	1.8	<0.5	1.3	<2.5	NA	NM	
A-2	12/19/96	55.48	5.53	49.95	<50	<0.5	<0.5	<0.5	<0.5	2.7	NA	NM	
A-2	04/01/97	55.48	8.77	46.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-2	05/27/97	55.48	9.87	45.61	<50	<0.5	<0.5	<0.5	<0.5	4.6	NA	NM	
A-2	08/12/97	55.48	11.11	44.37	<50	<0.5	<0.5	<0.5	<0.5	5.6	NA	NM	
A-2	11/14/97	55.48	10.63	44.85	<50	0.9	2.8	<0.5	2.4	27	NA	2.6	
A-2	03/18/98	55.48	3.58	51.90	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	NM	
A-2	05/19/98	55.48	4.82	50.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	NM	
A-2	07/29/98	55.48	8.94	46.54	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.30	P
A-2	10/09/98	55.48	10.82	44.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.2	NP
A-2	02/19/99	55.48	4.46	51.02	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.5	NP
A-2	06/02/99	55.48	5.59	49.89	<50	<0.5	0.6	<0.5	<0.5	<3	NA	3.0	P
A-2	08/26/99	55.48	10.67	44.81	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	5.35	NP
A-2	10/26/99	55.48	4.61	50.87	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.79	NP
A-2	02/25/00	55.48	3.10	52.38	<50	<0.5	<0.5	<0.5	<1	<3	NA	2.14	P
A-3	03/26/96	54.66	7.20	47.46	Not Sampled: Well Sampled Semiannually							4.21	NP
A-3	05/22/96	54.66	7.70	46.96	<50	1.2	1.9	0.7	1.3	NA	NA		
A-3	08/22/96	54.66	10.88	43.78	Not Sampled: Well Sampled Semiannually							NM	
A-3	12/19/96	54.66	7.70	46.96	5,900	<25	<25	<25	<25	NA	5,300	NM	
A-3	04/01/97	54.66	9.78	44.88	Not Sampled: Well Sampled Semiannually								
A-3	05/27/97	54.66	10.55	44.11	2,300	<20	<20	<20	<20	3,800	NA	NM	
A-3	08/12/97	54.66	11.12	43.54	Not Sampled: Well Sampled Semiannually								
A-3	11/14/97	54.66	8.24	46.42	<1,000	<10	<10	<10	<10	1,500	NA	3.8	
A-3	03/18/98	54.66	5.05	49.61	Not Sampled: Well Sampled Semiannually								
A-3	05/19/98	54.66	9.00	45.66	<250	<2.5	<2.5	<2.5	<2.5	220	NA	4.60	P
A-3	07/29/98	54.66	9.86	44.80	Not Sampled: Well Sampled Semiannually								
A-3	10/09/98	54.66	11.36	43.30	<250	<2.5	<2.5	<2.5	<2.5	260	NA	1.0	NP
A-3	02/19/99	54.66	6.19	48.47	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.5	NP
A-3	06/02/99	54.66	10.82	43.84	120	<1	<1	<1	<1	160	NA	2.78	NP

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 Recasted from electronic data provided by IT Corporation.

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**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
A-3	08/26/99	54.66	10.73	43.93	Not Sampled: Well Sampled Semiannually								0.95	
A-3	10/26/99	54.66	6.58	48.08	<50	<0.5	<0.5	<0.5	<1	32	NA	2.06	NP	
A-3	02/25/00	54.66	5.41	49.25	Not Sampled: Well Sampled Semiannually									
A-4	03/26/96	54.73	7.95	46.78	8,900	1,200	21	200	220	NA	NA	NM		
A-4	05/22/96	54.73	8.35	46.38	5,300	700	<10	170	130	NA	NA	NM		
A-4	08/22/96	54.73	11.03	43.70	3,000	480	<5.0	75	26	150	NA	NM		
A-4	12/19/96	54.73	8.67	46.06	<2,000	<20	<20	<20	<20	NA	15,000	NM		
A-4	04/01/97	54.73	11.95	42.78	8,900	1,700	22	310	260	6,900	NA	NM		
A-4	05/27/97	54.73	10.80	43.93	7,100	960	<20	150	74	7,900	NA	NM		
A-4	08/12/97	54.73	11.38	43.35	4,300	670	12	51	27	2,800	NA	NM		
A-4	11/14/97	54.73	7.74	46.99	<20,000	300	500	<200	<200	27,000	NA	2.2		
A-4	03/18/98	54.73	6.80	47.93	4,700	600	<20	99	94	1,200	NA	1.0		
A-4	05/19/98	54.73	9.06	45.67	<2000	<20	<20	<20	720	2,000	NA	1.28	P	
A-4	07/29/98	54.73	10.05	44.68	8,400	1,300	<20	290	130	1,800	NA	0.7	NP	
A-4	10/09/98	54.73	11.20	43.53	3,500	400	<20	54	<20	1,700	NA	1.0	NP	
A-4	02/19/99	54.73	6.85	47.88	<1,000	<10	<10	<10	12	650	NA	0.1	NP	
A-4	06/02/99	54.73	11.00	43.73	6,100	760	16	260	89	2,300	NA	1.12	NP	
A-4	08/26/99	54.73	10.80	43.93	1,100	68	5	8	4	1,400	NA	1.15	NP	
A-4	10/26/99	54.73	10.11	44.62	1,500	39	2.3	9.0	5	1,700	NA	10.12	NP	
A-4	02/25/00	54.73	5.90	48.83	870	53	1.1	4.6	20	600	NA	1.72	NP	
A-5	03/26/96	54.17	7.93	46.24	Not Sampled: Well Sampled Semiannually									
A-5	05/22/96	54.17	8.20	45.97	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
A-5	08/22/96	54.17	10.70	43.47	Not Sampled: Well Sampled Semiannually									
A-5	12/19/96	54.17	8.39	45.78	9,900	1,100	330	230	700	NA	24	NM		
A-5	04/01/97	54.17	10.83	43.34	Not Sampled: Well Sampled Semiannually									
A-5	05/27/97	54.17	10.65	43.52	100	<0.5	<0.5	<0.5	<0.5	120	NA	NM		
A-5	08/12/97	54.17	11.05	43.12	Not Sampled: Well Sampled Semiannually									
A-5	11/14/97	54.17	10.51	43.66	<50	<0.5	<0.5	<0.5	<0.5	41	NA	4.8		
A-5	03/18/98	54.17	8.10	46.07	Not Sampled: Well Sampled Semiannually									
A-5	05/19/98	54.17	9.31	44.86	590	<5	<5	<5	<5	710	NA	2.48	P	

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 Recreated from electronic data provided by IT Corporation.

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**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-5	07/29/98	54.17	9.89	44.28	Not Sampled: Well Sampled Semiannually								
A-5	10/09/98	54.17	11.02	43.15	690	<5	<5	<5	<5	710	NA	1.0	NP
A-5	02/19/99	54.17	6.82	47.35	<2,000	<20	<20	<20	<20	2,300	NA	0.6	NP
A-5	06/02/99	54.17	10.82	43.35	1,500	<0.5	2.3	<0.5	<0.5	2,400	NA	2.81	NP
A-5	08/26/99	54.17	10.65	43.52	Not Sampled: Well Sampled Semiannually								
A-5	10/26/99	54.17	10.35	43.82	380	<0.5	<0.5	<0.5	<1	440	NA	0.49	NP
A-5	02/25/00	54.17	6.89	47.28	Not Sampled: Well Sampled Semiannually								
A-6	03/26/96	55.17	7.15	48.02	52	2.7	<0.5	1.1	2.0	NA	NA	NM	
A-6	05/22/96	55.17	7.35	47.82	<50	2.4	<0.5	0.88	1.7	NA	NA	NM	
A-6	08/22/96	55.17	10.12	45.05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	12/19/96	55.17	7.43	47.74	<50	1.7	<0.5	0.78	1.5	<2.5	NA	NM	
A-6	04/01/97	55.17	9.97	45.20	<50	4.7	<0.5	1.9	3.2	<2.5	NA	NM	
A-6	05/27/97	55.17	9.66	45.51	<50	0.69	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	08/12/97	55.17	10.43	44.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	11/14/97	55.17	9.76	45.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	03/18/98	55.17	7.00	48.17	<50	6.2	0.5	2.3	2.6	<3	NA	<1.0	
A-6	05/19/98	55.17	8.27	46.90	<50	<0.5	<0.5	1.3	4.7	<3	NA	3.0	
A-6	07/29/98	55.17	8.96	46.21	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.16	P
A-6	10/09/98	55.17	10.23	44.94	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.8	NP
A-6	02/19/99	55.17	5.79	49.38	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP
A-6	06/02/99	55.17	9.71	45.46	<50	<0.5	<0.5	<0.5	<0.5	5	NA	0.4	NP
A-6	08/26/99	55.17	9.79	45.38	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.00	NP
A-6	10/26/99	55.17	9.70	45.47	<50	<0.5	<0.5	<0.5	0.7	<3	NA	0.66	NP
A-6	02/25/00	55.17	5.68	49.49	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.66	NP
A-7	03/26/96	54.71	6.90	47.81	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.22	NP
A-7	05/22/96	54.71	8.27	46.44	Not Sampled: Well Sampled Semiannually								
A-7	08/22/96	54.71	9.80	44.91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-7	12/19/96	54.71	7.19	47.52	Not Sampled: Well Sampled Semiannually								
A-7	04/01/97	54.71	9.63	45.08	Not Sampled: Well Sampled Annually								
A-7	05/27/97	54.71	9.34	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	

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 Received from electronic data provided by IT Corporation.

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**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-7	08/12/97	54.71	10.10	44.61	Not Sampled: Well Sampled Annually								
A-7	11/14/97	54.71	9.35	45.36	Not Sampled: Well Sampled Annually								
A-7	03/18/98	54.71	6.75	47.96	Not Sampled: Well Sampled Annually								
A-7	05/19/98	54.71	8.85	45.86	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.82	P
A-7	07/29/98	54.71	8.84	45.87	Not Sampled: Well Sampled Annually								
A-7	10/09/98	54.71	10.05	44.66	Not Sampled: Well Sampled Annually								
A-7	02/19/99	54.71	5.57	49.14	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	4.7	NP
A-7	06/02/99	54.71	9.56	45.15	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.17	NP
A-7	08/26/99	54.71	9.66	45.05	Not Sampled: Well Sampled Annually								
A-7	10/26/99	54.71	9.54	45.17	Not Sampled: Well Sampled Annually								
A-7	02/25/00	54.71	5.60	49.11	Not Sampled: Well Sampled Annually								
A-8	03/26/96	53.77	7.10	46.67	48,000	2,600	<100	650	1,100	NA	NA	NM	
A-8	05/22/96	53.77	7.20	46.57	14,000	2,800	160	320	190	NA	NA	NM	
A-8	08/22/96	53.77	11.57	42.20	8,000	1,000	76	150	96	4,300	NA	NM	
A-8	12/19/96	53.77	8.04	45.73	12,000	450	110	210	230	<500	NA	NM	
A-8	04/01/97	53.77	9.98	43.79	Not Sampled: Well Sampled Semiannually								
A-8	05/27/97	53.77	11.45	42.32	11,000	1,600	100	220	210	2,300	NA	NM	
A-8	08/12/97	53.77	11.59	42.18	Not Sampled: Well Sampled Semiannually								
A-8	11/14/97	53.77	9.85	43.92	26,000	2,300	<200	400	400	4,100	NA	2.2	
A-8	03/18/98	53.77	7.80	45.97	Not Sampled: Well Sampled Semiannually								
A-8	05/19/98	53.77	8.78	44.99	88,000	4,200	150	640	600	6,700	NA	1.36	P
A-8	07/29/98	53.77	9.59	44.18	46,000	4,900	160	620	580	13,000	NA	0.5	NP
A-8	10/09/98	53.77	11.23	42.54	130,000	3,700	110	500	770	7,300	NA	1.0	NP
A-8	02/19/99	53.77	6.51	47.26	<1,000	39	<10	<10	<10	840	NA	0.2	NP
A-8	06/02/99	53.77	10.68	43.09	8,500	1,300	32	180	110	6,700	NA	1.31	NP
A-8	08/26/99	53.77	10.43	43.34	6,200	870	17	64	60	3,700	NA	0.69	NP
A-8	10/26/99	53.77	10.23	43.54	15,000	2,800	140	370	360	480	NA	0.62	NP
A-8	02/25/00	53.77	5.93	47.84	2,600	330	6.6	18	26	1,100	NA	1.43	NP
A-9	03/26/96	53.04	7.05	45.99	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-9	05/22/96	53.04	7.20	45.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	

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**Table 1**  
**Groundwater Elevation and Analytical Data**  
**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
A-9	08/22/96	53.04	9.68	43.36	<50	<0.5	<0.5	<0.5	<0.5	8.5	NA	NM		
A-9	12/19/96	53.04	7.43	45.61	<50	<0.5	<0.5	<0.5	<0.5	2.6	NA	NM		
A-9	04/01/97	53.04	9.95	43.09	Not Sampled: Well Sampled Semiannually									
A-9	05/27/97	53.04	9.56	43.48	<50	2.3	<0.5	<0.5	<0.5	45	NA	NM		
A-9	08/12/97	53.04	10.15	42.89	Not Sampled: Well Sampled Semiannually									
A-9	11/14/97	53.04	8.64	44.40	<200	<2.0	<2.0	<2.0	<2.0	190	NA	9.6		
A-9	03/18/98	53.04	6.45	46.59	Not Sampled: Well Sampled Semiannually									
A-9	05/19/98	53.04	8.35	44.69	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.27	P	
A-9	07/29/98	53.04	8.74	44.30	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.99	NP	
A-9	10/09/98	53.04	10.05	42.99	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP	
A-9	02/19/99	53.04	6.91	46.13	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP	
A-9	06/02/99	53.04	9.72	43.32	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.32	NP	
A-9	08/26/99	53.04	9.48	43.56	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.71	NP	
A-9	10/26/99	53.04	9.17	43.87	1,500	6.2	0.7	78	11	91	NA	2.15	NP	
A-9	02/25/00	53.04	5.84	47.20	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.55	NP	
A-10	03/26/96	54.26	8.28	45.98	Not Sampled: Well Removed from Sampling Program									
A-10	05/22/96	54.26	8.60	45.66	Not Sampled: Well Removed from Sampling Program									
A-10	08/22/96	54.26	10.98	43.28	Not Sampled: Well Removed from Sampling Program									
A-10	12/19/96	54.26	8.80	45.46	Not Sampled: Well Removed from Sampling Program									
A-10	04/01/97	54.26	11.15	43.11	Not Sampled: Well Removed from Sampling Program									
A-10	05/27/97	54.26	10.90	43.36	Not Sampled: Well Removed from Sampling Program									
A-10	08/12/97	54.26	11.30	42.96	Not Sampled: Well Removed from Sampling Program									
A-10	11/14/97	54.26	10.80	43.46	Not Sampled: Well Removed from Sampling Program									
A-10	03/18/98				Well Removed from Survey Program									
A-11	03/26/96	53.74	8.10	45.64	Not Sampled: Well Sampled Semiannually									
A-11	05/22/96	53.74	8.25	45.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
A-11	08/22/96	53.74	10.58	43.16	Not Sampled: Well Sampled Semiannually									
A-11	12/19/96	53.74	8.37	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM		
A-11	04/01/97	53.74	10.95	42.79	Not Sampled: Well Sampled Semiannually									
A-11	05/27/97	53.74	10.60	43.14	<50	<0.5	<0.5	<0.5	<0.5	3.1	NA	NM		

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**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-11	08/12/97	53.74	11.07	42.67	Not Sampled: Well Sampled Semiannually								
A-11	11/14/97	53.74	10.58	43.16	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.6	
A-11	03/18/98	53.74	8.14	45.60	Not Sampled: Well Sampled Semiannually								
A-11	05/19/98	53.74	9.40	44.34	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.13	P
A-11	07/29/98	53.74	10.32	43.42	Not Sampled: Well Sampled Semiannually								
A-11	10/09/98	53.74	10.91	42.83	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
A-11	02/19/99	53.74	6.77	46.97	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.8	NP
A-11	06/02/99	53.74	10.95	42.79	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.38	NP
A-11	08/26/99	53.74	11.05	42.69	Not Sampled: Well Sampled Semiannually								
A-11	10/26/99	53.74	10.81	42.93	<50	<0.5	<0.5	<0.5	<0.5	6	NA	0.49	NP
A-11	02/25/00	53.74	6.70	47.04	Not Sampled: Well Sampled Semiannually								
A-12	03/26/96	52.05	7.83	44.22	Not Sampled: Well Sampled Semiannually								
A-12	05/22/96	52.05	7.80	44.25	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-12	08/22/96	52.05	9.97	42.08	Not Sampled: Well Sampled Semiannually								
A-12	12/19/96	52.05	8.18	43.87	85	<0.5	<0.5	<0.5	<0.5	170	NA	NM	
A-12	04/01/97	52.05	10.30	41.75	Not Sampled: Well Sampled Semiannually								
A-12	05/27/97	52.05	10.05	42.00	50	12	<0.5	<0.5	<0.5	96	NA	NM	
A-12	08/12/97	52.05	10.46	41.59	Not Sampled: Well Sampled Semiannually								
A-12	11/14/97	52.05	9.70	42.35	<50	<0.5	<0.5	<0.5	<0.5	75	NA	7.0	
A-12	03/18/98	52.05	8.15	43.90	Not Sampled: Well Sampled Semiannually								
A-12	05/19/98	52.05	9.15	42.90	<50	<0.5	<0.5	<0.5	<0.5	29	NA	1.47	P
A-12	07/29/98	52.05	9.38	42.67	Not Sampled: Well Sampled Semiannually								
A-12	10/09/98	52.05	10.21	41.84	<50	<0.5	<0.5	<0.5	<0.5	7	NA	2.0	NP
A-12	02/19/99	52.05	6.96	45.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	5.2	NP
A-12	06/02/99	52.05	10.25	41.80	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.38	NP
A-12	08/26/99	52.05	9.91	42.14	Not Sampled: Well Sampled Semiannually								
A-12	10/26/99	52.05	9.73	42.32	<50	<0.5	<0.5	<0.5	<0.5	7	NA	0.51	NP
A-12	02/25/00	52.05	6.97	45.08	Not Sampled: Well Sampled Semiannually								
A-13	03/26/96	55.11			Well Inaccessible								
A-13	05/22/96	55.11			Well Inaccessible								

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**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzenes (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-13	08/22/96	55.11											
A-13	12/19/96	55.11											Well Inaccessible
A-13	04/01/97	55.11											Well Inaccessible
A-13	05/27/97	55.11											Well Inaccessible
A-13	08/12/97	55.11											Well Inaccessible
A-13	11/14/97	55.11											Well Inaccessible
A-13	03/18/98	55.11											Well Inaccessible
A-13	05/19/98	55.11											Well Inaccessible
A-13	07/29/98	55.11											Well Inaccessible
A-13	10/09/98	55.11											Well Inaccessible
A-13	02/19/99	55.11											Well Inaccessible
A-13	06/02/99	55.11											Well Inaccessible
A-13	08/26/99	55.11											Well Inaccessible
A-13	10/26/99	55.11											Well Inaccessible
A-13	02/25/00	55.11											Well Inaccessible
AR-1	03/26/96	54.72	8.13	46.59	6,200	110	64	38	520	NA	NA		
AR-1	05/22/96	54.72	8.57	46.15	NS	NS	NS	NS	NS	NA	NA		NM
AR-1	08/22/96	54.72	10.97	43.75	5,600	100	28	29	310	960	NA		NM
AR-1	12/19/96	54.72	8.93	45.79	Not Sampled: Well Removed from Sampling Program								
AR-1	04/01/97	54.72	11.78	42.94	Not Sampled: Well Removed from Sampling Program								
AR-1	05/27/97	54.72	10.76	43.96	Not Sampled: Well Removed from Sampling Program								
AR-1	08/12/97	54.72	11.40	43.32	Not Sampled: Well Removed from Sampling Program								
AR-1	11/14/97	54.72	10.80	43.92	Not Sampled: Well Removed from Sampling Program								
AR-1	03/18/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	05/19/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	07/29/98	54.72	10.17	44.55	Not Sampled: Well Removed from Sampling Program								
AR-1	10/09/98	54.72	11.25	43.47	Not Sampled: Well Removed from Sampling Program								
AR-1	02/19/99	54.72	7.02	47.70	Not Sampled: Well Removed from Sampling Program								
AR-1	06/02/99	54.72	11.00	43.72	Not Sampled: Well Removed from Sampling Program								
AR-1	08/26/99	54.72	10.96	43.76	Not Sampled: Well Removed from Sampling Program								
AR-1	10/26/99	54.72	10.68	44.04	Not Sampled: Well Removed from Sampling Program								0.39
													1.39

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
AR-1	02/25/00	54.72	7.15	47.57	Not Sampled: Well Removed from Sampling Program									
AR-2	03/26/96	54.77	4.93	49.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
AR-2	05/22/96	54.77	5.65	49.12	NS	NS	NS	NS	NS	NS	NS	NM		
AR-2	08/22/96	54.77	7.27	47.50	<50	<0.5	<0.5	<0.5	<0.5	200	NA	NM		
AR-2	12/19/96	54.77	7.78	46.99	Not Sampled: Well Removed from Sampling Program									
AR-2	04/01/97	54.77	6.80	47.97	Not Sampled: Well Removed from Sampling Program									
AR-2	05/27/97	54.77	6.32	48.45	Not Sampled: Well Removed from Sampling Program									
AR-2	08/12/97	54.77	7.43	47.34	Not Sampled: Well Removed from Sampling Program									
AR-2	11/14/97	54.77	8.95	45.82	Not Sampled: Well Removed from Sampling Program									
AR-2	03/18/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program									
AR-2	05/19/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program									
AR-2	07/29/98	54.77	4.47	50.30	Not Sampled: Well Removed from Sampling Program									
AR-2	10/09/98	54.77	6.90	47.87	Not Sampled: Well Removed from Sampling Program									
AR-2	02/19/99	54.77	3.80	50.97	Not Sampled: Well Removed from Sampling Program									
AR-2	06/02/99	54.77	4.61	50.16	Not Sampled: Well Removed from Sampling Program									
AR-2	08/26/99	54.77	5.22	49.55	Not Sampled: Well Removed from Sampling Program									
AR-2	10/26/99	54.77	3.20	51.57	Not Sampled: Well Removed from Sampling Program								0.44	
AR-2	02/25/00	54.77	2.33	52.44	Not Sampled: Well Removed from Sampling Program								1.79	
AR-3	03/26/96	54.19	7.95	46.24	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
AR-3	05/22/96	54.19	8.30	45.89	NS	NS	NS	NS	NS	NS	NS	NM		
AR-3	08/22/96	54.19	10.84	43.35	Not Sampled: Well Removed from Sampling Program									
AR-3	12/19/96	54.19	8.56	45.63	Not Sampled: Well Removed from Sampling Program									
AR-3	04/01/97	54.19	11.24	42.95	Not Sampled: Well Removed from Sampling Program									
AR-3	05/27/97	54.19	10.67	43.52	Not Sampled: Well Removed from Sampling Program									
AR-3	08/12/97	54.19	11.10	43.09	Not Sampled: Well Removed from Sampling Program									
AR-3	11/14/97	54.19	10.60	43.59	Not Sampled: Well Removed from Sampling Program									
AR-3	03/18/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program									
AR-3	05/19/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program									
AR-3	07/29/98	54.19	9.95	44.24	Not Sampled: Well Removed from Sampling Program									
AR-3	10/09/98	54.19	11.20	42.99	Not Sampled: Well Removed from Sampling Program									

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**Total Purgeable Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931**  
**731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
AR-3	02/19/99	54.19	6.98	47.21	Not Sampled: Well Removed from Sampling Program								
AR-3	06/02/99	54.19	10.80	43.39	Not Sampled: Well Removed from Sampling Program								
AR-3	08/26/99	54.19	10.69	43.50	Not Sampled: Well Removed from Sampling Program								
AR-3	10/26/99	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								0.40
AR-3	02/25/00	54.19	7.21	46.98	Not Sampled: Well Removed from Sampling Program								

TPH	= Total petroleum hydrocarbons by modified EPA method 8015
BTEX	= Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/26/99).
MTBE	= Methyl tert-butyl ether
*	= EPA method 8020 prior to 10/26/99
MSL	= Mean sea level
TOB	= Top of box
ppb	= Parts per billion
ppm	= Parts per million
<	= Less than laboratory detection limit stated to the right
NA	= Not analyzed
NM	= Not measured
NS	= Not sampled

**Table 2  
Groundwater Flow Direction and Gradient**

**ARCO Service Station 4931  
731 West MacArthur Boulevard, Oakland, California**

<b>Date Measured</b>	<b>Average Flow Direction</b>	<b>Average Hydraulic Gradient</b>
03/26/96	Southwest	0.03
05/22/96	Southwest	0.04
08/22/96	Southwest	0.02
12/19/96	Southwest	0.03
04/01/97	Southwest	0.03
05/27/97	Southwest	0.04
08/12/97	Southwest	0.02
11/14/97	Southwest	0.02
03/18/98	West	0.03
05/19/98	West-Southwest	0.02
07/29/98	West-Southwest	0.02
10/09/98	Southwest	0.007
02/19/99	Southwest	0.04
06/02/99	West	0.04
08/26/99	West-Southwest	0.02
10/26/99	West-Northwest	0.13
02/25/00	West-Southwest	0.05

**ATTACHMENT D**

**EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION**

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## Error Summary Log

02/23/04

EDF 1.2i All files present in deliverable.

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Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #4931, Oakland, CA
Work Order Number:	MNB0089
Global ID:	T0600100107
Lab Report Number:	MNB0089021720041200

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Labiocfl	Run Sub
MNB00890217200 A-12 41200		MNB008905	W	CS	8260TPH	SW5030B	02/02/04	02/11/04	02/12/04	4B11032	1
MNB00890217200 A-3 41200		MNB008901	W	CS	8260TPH	SW5030B	02/02/04	02/11/04	02/12/04	4B11032	1
MNB00890217200 A-4 41200		MNB008902	W	CS	8260TPH	SW5030B	02/02/04	02/11/04	02/12/04	4B11032	1
MNB00890217200 A-5 41200		MNB008903	W	CS	8260TPH	SW5030B	02/02/04	02/11/04	02/12/04	4B11032	1
MNB00890217200 A-8 41200		MNB008904	W	CS	8260TPH	SW5030B	02/02/04	02/11/04	02/12/04	4B11032	1
		4B11032BSD1	WQ	BD1	8260TPH	SW5030B	/ /	02/11/04	02/12/04	4B11032	1
		4B11032BSD2	WQ	BD2	8260TPH	SW5030B	/ /	02/11/04	02/12/04	4B11032	1
		4B11032BS1	WQ	BS1	8260TPH	SW5030B	/ /	02/11/04	02/11/04	4B11032	1
		4B11032BS2	WQ	BS2	8260TPH	SW5030B	/ /	02/11/04	02/11/04	4B11032	1
		4B11032BLK1	WQ	LB1	8260TPH	SW5030B	/ /	02/11/04	02/11/04	4B11032	1

# EDFSAMP: Error Summary Log

02/23/04

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

# EDFTEST: Error Summary Log

02/23/04

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

# EDFRES: Error Summary Log

02/23/04

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



# EDFQC: Error Summary Log

02/23/04

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

# EDFCL: Error Summary Log

02/23/04

Error type	Cirevdate	Anmcode	Exmcode	Parlabel	Cicode
There are no errors in this data file	//				

## AB2886 Electronic Delivery

[Main Menu](#) | [View/Add Facilities](#) | [Upload EDD](#) | [Check EDD](#)

Your EDF file has been successfully uploaded!

**Confirmation Number:** 5219087421

**Date/Time of Submittal:** 2/20/2004 4:14:32 PM

**Facility Global ID:** T0600100110

**Facility Name:** ARCO

**Submittal Title:** 1Q04-monitoring Report for site 4931

**Submittal Type:** GW Monitoring Report

Logged in as URSCORP-OAKLAND  
(CONTRACTOR)

CONTACT SITE [ADMINISTRATOR](#).

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### UPLOADING A GEO\_WELL FILE

Processing is complete. No errors were found!  
Your file has been successfully submitted!

**Submittal Title:** First Quarter 2004 Geowell Site  
#4931

**Submittal Date/Time:** 2/23/2004 3:02:04 PM

**Confirmation  
Number:** 1809620499

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(CONTRACTOR)

[CONTACT SITE ADMINISTRATOR.](#)

**ATTACHMENT E**

**SURVEY RESULTS**

GLOBAL_ID	FIELD_PT_NAME	FIELD_PT_CLASS	XY_SURVEY_DATE	LATITUDE	LONGITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	XY_SURVEY_ORG	GPS_EQUIP_TYPE	XY_SURVEY_DESC	SITE
	CP1	BM	1/28/2004	37.8274311	-122.2715234	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	CP2	BM	1/28/2004	37.8271608	-122.2716268	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A13	MW	1/28/2004	37.8274132	-122.2712478	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A9	MW	1/28/2004	37.8270625	-122.2716315	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A8	MW	1/28/2004	37.8271394	-122.2715845	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A10	MW	1/28/2004	37.8269829	-122.2715458	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A2	MW	1/28/2004	37.8271249	-122.2712595	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_AR2	MW	1/28/2004	37.8271392	-122.2713372	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_AR1	MW	1/28/2004	37.8272279	-122.2714645	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A4	MW	1/28/2004	37.8272538	-122.2714654	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A5	MW	1/28/2004	37.8272454	-122.2715640	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A7	MW	1/28/2004	37.8273625	-122.2714980	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A12	MW	1/28/2004	37.8268406	-122.2718281	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A11	MW	1/28/2004	37.8272451	-122.2717298	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_AR3	MW	1/28/2004	37.8270063	-122.2715149	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_A3	MW	1/28/2004	37.8270654	-122.2713937	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931
	MW_AV1	MW	1/28/2004	37.8270832	-122.2713427	CGPS	NAD83	0.02	URS	T48	0.0000000	BP4931

GLOBAL_ID	FIELD_PT_NAME	ELEV_SURVEY_DATE	ELEVATION ft	ELEV_METHOD	ELEV_DATUM	ELEV_ACC_VAL	ELEV_SURVEY_ORG	RISER_HT	ELEV_DESC	SITE
	CP1	1/28/2004	59.904	CGPS	88	0.02	URS	0.000		0'BP4931
	CP2	1/28/2004	58.848	CGPS	88	0.02	URS	0.000		0'BP4931
	MW,A13	1/28/2004	60.264	CGPS	88	0.02	URS	-0.330	4"PVC	BP4931
	MW,A9	1/28/2004	57.732	CGPS	88	0.02	URS	-0.800	6"PVC	BP4931
	MW,A8	1/28/2004	58.700	CGPS	88	0.02	URS	-0.550	4"PVC	BP4931
	MW,A10	1/28/2004	59.368	CGPS	88	0.02	URS	-0.420	3"PVC	BP4931
	MW,A2	1/28/2004	60.646	CGPS	88	0.02	URS	-0.360	4"PVC	BP4931
	MW,AR2	1/28/2004	59.179	CGPS	88	0.02	URS	-1.100	6"PVC	BP4931
	MW,AR1	1/28/2004	59.521	CGPS	88	0.02	URS	-0.720	6"PVC	BP4931
	MW,A4	1/28/2004	59.585	CGPS	88	0.02	URS	-0.710	4"PVC	BP4931
	MW,A5	1/28/2004	58.781	CGPS	88	0.02	URS	-0.860	4"PVC	BP4931
	MW,A7	1/28/2004	59.754	CGPS	88	0.02	URS	-0.450	3"PVC	BP4931
	MW,A12	1/28/2004	57.060	CGPS	88	0.02	URS	-0.600	4"PVC	BP4931
	MW,A11	1/28/2004	59.158	CGPS	88	0.02	URS	-0.180	4"PVC	BP4931
	MW,AR3	1/28/2004	59.100	CGPS	88	0.02	URS	-0.710	6"PVC	BP4931
	MW,A3	1/28/2004	59.322	CGPS	88	0.02	URS	-0.920	4"PVC	BP4931
	MW,AV1	1/28/2004	59.975	CGPS	88	0.02	URS	-0.500	2"PVC	BP4931