

Alameda County
FEB 11 2003
Environmental Health

January 28, 2003

Mr. John Kaiser
California Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

**Re: Third Quarter 2002 Groundwater Monitoring Report
Former ARCO Service Station #0374
6407 Telegraph Avenue
Oakland, California
URS Project #38465869**

Dear Mr. Kaiser:

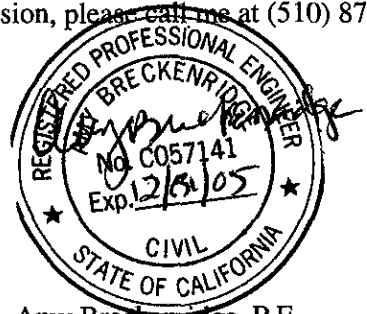
On behalf of Atlantic Richfield Company (ARCO - an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Third Quarter 2002 Groundwater Monitoring Report* for the former ARCO Service Station #0374, located at 6407 Telegraph Avenue, Oakland, California.

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

Sincerely,

URS CORPORATION

Scott Robinson
Project Manager



Amy Breckenridge, P.E.
Portfolio Manger

Enclosure: Third Quarter 2002 Groundwater Monitoring Report

cc: Ms. Susan Hugo, Alameda County Health Care Services, 1131 Harbor Bay Parkway, 2nd Floor, Alameda, CA 94502
Mr. Paul Supple, ARCO, PO Box 6549, Moraga, CA 94570

ARCO Products Company

4 Centerpointe Drive
La Palma, California 90623-1066
Telephone 714 670 5300

Mailing Address: P.O. Box 6549
Moraga, California 94549



January 31, 2003

Re: ARCO Station # 0374 • 6407 Telegraph Avenue • Oakland, CA
Third Quarter 2002 Quarterly Monitoring Report

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

Submitted by:

A handwritten signature in black ink, appearing to read "Paul Supple". The signature is written in a cursive, flowing style.

Paul Supple
Environmental Engineer

R E P O R T

**THIRD QUARTER 2002
GROUNDWATER MONITORING**

**FORMER ARCO SERVICE STATION #0374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA**

Prepared for
Atlantic Richfield Company

January 28, 2003

URS

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

38465869

Date: January 28, 2003
Quarter: 3Q 02

ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 0374 Address: 6407 Telegraph Avenue, Oakland CA
Atlantic Richfield Co. Environmental Engineer: Paul Supple
Consulting Co./Contact Person: URS Corporation/ Scott Robinson
Consultant Project No.: 38465869
Primary Agency Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER (Third – 2002):

1. Performed third quarter 2002 groundwater monitoring event.
2. Prepared second quarter 2002 groundwater monitoring report.

WORK PROPOSED FOR NEXT QUARTER (Fourth – 2002):

1. Perform fourth quarter 2002 groundwater monitoring event.
2. Prepare third quarter 2002 groundwater monitoring report.

Current Phase of Project: GW monitoring/sampling
Frequency of Groundwater Sampling: Quarterly: M-5
Semi Annually: M-3, M-4, M-5 (2nd & 4th)
Annually: M-1 – M-6 (4th)
Frequency of Groundwater Monitoring: Quarterly
Is Free Product (FP) Present On-Site: No
Current Remediation Techniques: ORC Socks
Approximate Depth to Groundwater: 5.23 (MW-6) to 8.24 (MW-4) feet
Groundwater Gradient (direction): Southwest
Groundwater Gradient (magnitude): 0.032 feet per foot

DISCUSSION:

TPH-g, benzene, toluene, ethylbenzene, xylene and MTBE were not detected at or above specified laboratory method detection limits in the one well sampled this quarter (M-5). The groundwater flow direction was consistent with historical data.

ATTACHMENTS:

- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Groundwater Flow Direction and Gradient
- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – August 12, 2002
- 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 Report and EDF/Geowell Submittal Confirmation

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND ANALYTICAL DATA

Former ARCO Service Station 374
6407 Telegraph Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	TPH as Gasoline (mg/L)	MTBE (mg/L)
MW-1	06/20/2000	158.91	6.86	152.05	NS	NS	NS	NS	NS	NS
	09/28/2000		7.50	151.41	NS	NS	NS	NS	NS	NS
	12/17/2000		7.49	151.42	NS	NS	NS	NS	NS	NS
	03/23/2001		5.90	153.01	<0.5	<0.5	<0.5	<0.5	<50	2,710
	06/21/2001		7.45	151.46	NS	NS	NS	NS	NS	NS
	09/23/2001		8.46	150.45	NS	NS	NS	NS	NS	NS
	12/31/2001		5.50	153.41	NS	NS	NS	NS	NS	NS
	03/21/2002		4.71	154.2	<50	<50	<50	<50	<5,000	2000
	04/17/2002		5.54	153.37	NS	NS	NS	NS	NS	NS
	08/12/2002		7.77	151.14	NS	NS	NS	NS	NS	NS
MW-2	06/20/2000	157.92	7.67	150.25	NS	NS	NS	NS	NS	NS
	09/28/2000		8.51	149.41	NS	NS	NS	NS	NS	NS
	12/17/2000		8.14	149.78	NS	NS	NS	NS	NS	NS
	03/23/2001		7.21	150.71	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/2001		7.99	149.93	NS	NS	NS	NS	NS	NS
	09/23/2001		8.52	149.4	NS	NS	NS	NS	NS	NS
	12/31/2001		6.01	151.91	NS	NS	NS	NS	NS	NS
	03/21/2002		5.95	151.97	<0.5	<0.5	<0.5	<0.5	<50	45
	04/17/2002		6.45	151.47	NS	NS	NS	NS	NS	NS
	08/12/2002		8.08	149.84	NS	NS	NS	NS	NS	NS

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND ANALYTICAL DATA

Former ARCO Service Station 374
6407 Telegraph Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	TPH as Gasoline (mg/L)	MTBE (mg/L)
MW-3	06/20/2000	153.64	6.42	147.22	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/2000		7.31	146.33	NS	NS	NS	NS	NS	NS
	12/17/2000		6.45	147.19	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/23/2001		6.01	147.63	NS	NS	NS	NS	NS	NS
	06/21/2001		6.80	146.84	5.5	<0.5	5.4	4.1	110	2.5
	09/23/2001		7.32	146.32	NS	NS	NS	NS	NS	NS
	12/31/2001		4.48	149.16	<0.5	<0.5	<0.5	<0.5	<50	4.9
	03/21/2002		4.36	149.28	NS	NS	NS	NS	NS	NS
	04/17/2002		5.31	148.33	<0.5	<0.5	<0.5	<0.5	<50	8.7
	08/12/2002			7.00	146.64	NS	NS	NS	NS	NS
MW-4	06/20/2000	156.53	7.50	149.03	5,100	440	1,000	1,700	20,000	<250
	09/28/2000		8.20	148.33	NS	NS	NS	NS	NS	NS
	12/17/2000		8.11	148.42	1240	<20	27.2	249	4,320	<100
	03/23/2001		6.69	149.84	NS	NS	NS	NS	NS	NS
	06/21/2001		8.01	148.52	470	16	19	160	2,800	130
	09/23/2001		8.91	147.62	NS	NS	NS	NS	NS	NS
	12/31/2001		4.42	152.11	1,500	100	160	210	4,600	160
	03/21/2002		4.98	151.55	NS	NS	NS	NS	NS	NS
	04/17/2002		6.23	150.30	2200	110	290	450	7100	<250
	08/12/2002			8.24	148.29	NS	NS	NS	NS	NS

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND ANALYTICAL DATA

Former ARCO Service Station 374
6407 Telegraph Avenue
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	TPH as Gasoline (mg/L)	MTBE (mg/L)
MW-5	06/20/2000	151.33	7.84	143.49	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/2000		8.37	142.96	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/17/2000		8.36	142.97	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/23/2001		7.55	143.78	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/2001		8.20	143.13	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/2001		8.68	142.65	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/2001		7.57	143.76	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/21/2002		6.12	145.21	<0.5	<0.5	<0.5	<0.5	<50	3.2
	04/17/2002		6.61	144.72	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	08/12/2002		8.14	143.19	<0.5	<0.5	<0.5	<0.5	<0.5	<50
MW-6	06/20/2000	153.84	4.79	149.05	NS	NS	NS	NS	NS	NS
	09/28/2000		5.39	148.45	NS	NS	NS	NS	NS	NS
	12/17/2000		4.71	149.13	NS	NS	NS	NS	NS	NS
	03/23/2001		4.69	149.15	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/2001		5.22	148.62	NS	NS	NS	NS	NS	NS
	09/23/2001		5.40	148.44	NS	NS	NS	NS	NS	NS
	12/31/2001		3.95	149.89	NS	NS	NS	NS	NS	NS
	03/21/2002		2.94	150.9	<0.5	<0.5	<0.5	<0.5	<50	5.2
	04/17/2002		5.11	148.73	NS	NS	NS	NS	NS	NS
	08/12/2002		5.23	148.61	NS	NS	NS	NS	NS	NS

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted

mg/L = Micrograms per liter

NM = Not measured

NC = Not calculated

NS = Not sampled

< = less than laboratory detection limit stated to the right

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

TABLE 2

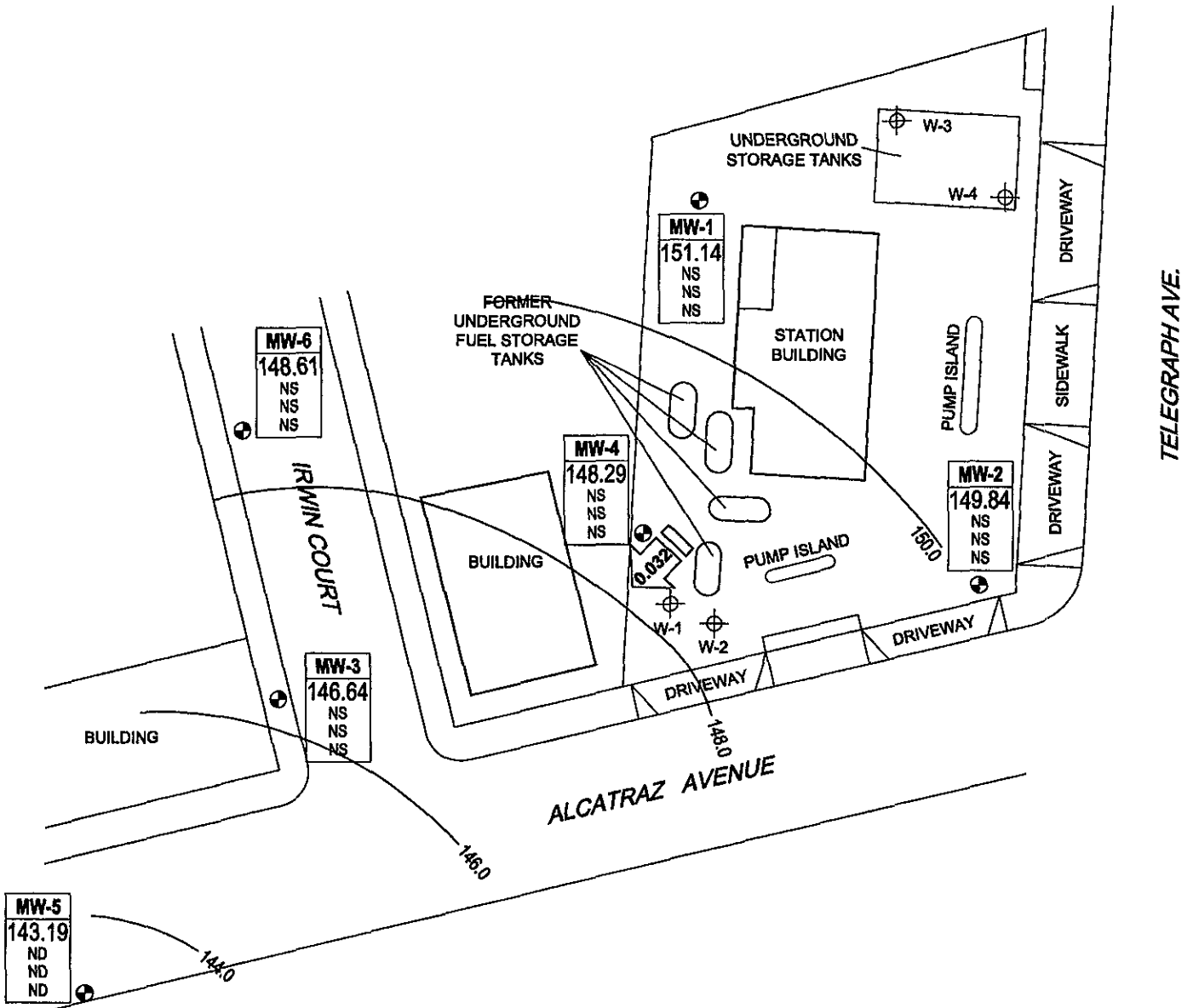
GROUNDWATER FLOW DIRECTION AND GRADIENT

Former ARCO Service Station #0374
 6407 Telegraph Avenue
 Oakland, California



Date Measured	Average Flow Direction	Average Hydraulic Gradient
01/31/1996	Southwest	0.04
04/10/1996	Southwest	0.04
07/16/1996	Southwest	0.03
10/14/1996	Southwest	0.03
03/27/1997	Southwest	0.04
05/27/1997	Southwest	0.03
08/12/1997	Southwest	0.04
11/17/1997	Southwest	0.03
03/16/1998	Southwest	0.03
05/12/1998	Southwest	0.04
07/27/98	Southwest	0.04
10/15/98	Southwest	0.02
02/18/99	Southwest	0.05
05/24/99	Southwest	0.03
08/27/99	Southwest	0.03
10/26/99	Southwest	0.03
02/03/00	Southwest	0.047
06/20/00	Southwest	0.035
09/28/00	Southwest	0.034
12/17/00	Southwest	0.032
03/23/01	Southwest	0.034
06/21/01	Southwest	0.032
09/23/01	Southwest	0.029
12/31/01	Southwest	0.043
03/21/02	Southwest	0.038
04/17/02	Southwest	0.031
08/12/02	Southwest	0.032

Note:

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




LEGEND

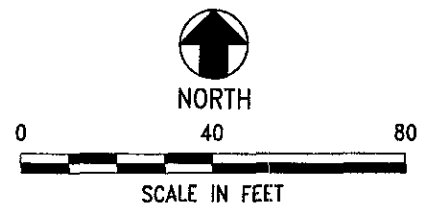
-  MW-1 MONITORING WELL LOCATION
-  W-1 TANK PIT MONITORING WELL LOCATION
- | |
|---------|
| Well |
| ELEV |
| TPH-g |
| Benzene |
| MTBE |

 WELL DESIGNATION
- | |
|---------|
| ELEV |
| TPH-g |
| Benzene |
| MTBE |

 GROUNDWATER ELEVATION
- | |
|---------|
| TPH-g |
| Benzene |
| MTBE |

 TPH-g, BENZENE & MTBE CONCENTRATIONS IN GROUNDWATER (µg/L)
- ND NOT DETECTED AT OR ABOVE LABORATORY LIMITS
- NS NOT SAMPLED
-  0.032 APPROXIMATE GROUNDWATER FLOW AND DIRECTION

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



Project No. 38465869
Arco Service Station 0374
6407 Telegraph Avenue
Oakland, California

**GROUNDWATER ELEVATION CONTOUR
AND ANALYTICAL SUMMARY MAP**
Third Quarter 2002 (August 12, 2002)

FIGURE
1

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 # 020812-BA1 Date 8/12/02 Client ARCO 374

Site 6407 TELEGRAPH AVE, OAKLAND

2cc Hex
2cc Hex
1cc Hex
3/4"
5/16"
9/16"

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	
MW-1	4					7.77	26.72	ToC	
MW-2	4					8.08	26.29	 	
MW-3	4					7.00 *	26.76 *		ORCS
MW-4	4					8.24 *	26.95 *		ORCS VALVE
MW-5	4					8.14	23.04		
MW-6	4					5.23	14.58		
* Gauged w/ORCS in well									

ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>020812-BA1</u>	Station # <u>374</u>
Sampler: <u>BRIAN ALORD</u>	Date: <u>8/12/02</u>
Well I.D.: <u>MW-5</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>23.04</u>	Depth to Water: <u>8.14</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"	<u>(0.65)</u>
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: N/A If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

$$\frac{9.7}{1 \text{ Case Volume (Gals.)}} \times \frac{3}{\text{Specified Volumes}} = \frac{29.1}{\text{Calculated Volume}} \text{ Gals.}$$

Time	Temp (°F)	pH	Conductivity (mS or <u>(μS)</u>)	Gals. Removed	Observations
0951	69.3	7.3	595	10	clear
0953	68.3	7.2	594	20	" "
<u>DEWATERED</u>				<u>@ 25</u>	<u>DTW 20.60</u>
1005	67.8	7.6	605	<u>GRAB SAMPLE @ DEPARTURE</u>	<u>DTW 18.52</u>

Did well dewater? (Yes) No Gallons actually evacuated: 25

Sampling Time: 1005 Sampling Date: 8/12/02

Sample I.D.: MW-5 Laboratory: Pace (Sequoia) Other _____

Analyzed for: (TPH-G BTEX MTBE TPH-D) Other: _____

D.O. (if req'd):	Pre-purge:	<u>mg/L</u>	Post-purge: <u>(4.1)</u>	<u>mg/L</u>
O.R.P. (if req'd):	Pre-purge:	<u>mV</u>	Post-purge:	<u>mV</u>

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Arco Inspection Date 8/12/02

Site Address 6407 TELEGRAPH AVE, OAKLAND Inspected By BRIAN ALLORN

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected
MW-5	(4/11) Bolts Don't Tighten (5/19) Unknown Lock Bad Cap	BTS can make corrections if requested		
MW-6	(4/11) Bolts Don't Tighten (5/19) Unknown Lock Bad Cap			
MW-2	(3) No Bolts (Sector) (5/19) Unknown Lock (16) Yes Bad Cap			
MW-3	(3) One Bolt (Sector) (19) Unknown Lock (16) Yes			
MW-1	(3) No Bolts (Sector) (18) No Lock (15) Broken (16) Cap Yes			
MW-4	(15/19) Bad cap No Lock			

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:

374		
Station #		
6407 Telegraph Oakland		
Station Address		
Total Gallons Collected From Groundwater Monitoring Wells:		
25		
added equip. rinse water	2	any other adjustments
TOTAL GALS. RECOVERED	27	loaded onto BTS vehicle # 14
BTS event #	020812-BW1	time 10:15
signature	date 8/12/02	

REC'D AT	time	date
unloaded by signature		1/1

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.



**Sequoia
Analytical**

885 Jarvis Drive
Menlo Park, CA 94027
(408) 776-9600
FAX (408) 782-6808
www.sequoialabs.com

21 August, 2002

Scott Robinson
URS Corporation
600 12th Street, Suite 100
Oakland, CA 94607

RE: ARCO #374, Oakland, Ca
Sequoia Report: MLH0323

Enclosed are the results of analyses for samples received by the laboratory on 08/13/02 19:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya Pelt
Project Manager

CA ELAP Certificate #1210



URS Corporation
500 12th Street, Suite 100
Oakland, CA, 94607

Project: ARCO #374, Oakland, Ca
Project Number: ARCO #374, Oakland, CA
Project Manager: Scott Robinson

Reported:
08/21/02 10:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-5	MLH0325-01	Water	08/12/02 10:05	08/13/02 19:45

Sequoia Analytical - Morgan Hill

Latonya K. Pelt

Latonya Pelt, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



URS Corporation
500 12th Street, Suite 100
Oakland CA, 94607

Project: ARCO #374, Oakland, Ca
Project Number: ARCO #374, Oakland, CA
Project Manager: Scott Robinson

Reported:
08/21/02 10:50

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (MLH0323-01) Water Sampled: 08/12/02 10:05 Received: 08/13/02 19:45									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2H19017	08/19/02	08/20/02	8015Bm/8021B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
Surrogate: <i>n,n,d-Tribromotoluene</i>		92.7 %		70-130	"	"	"	"	



URS Corporation
500 12th Street, Suite 100
Oakland CA, 94607

Project: ARCO #374, Oakland, Ca
Project Number: ARCO #374, Oakland, CA
Project Manager: Scott Robinson

Reported:
08/21/02 10:50

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 2H19017 - EPA 5030B [P/T]									
Blank (2H19017-BLK1)					Prepared & Analyzed: 08/19/02				
Gasoline Range Organics (C6-C10)	ND	50	ug/l						
Benzene	ND	0.50	"						
Toluene	ND	0.50	"						
Ethylbenzene	ND	0.50	"						
Xylenes (total)	ND	0.50	"						
Methyl tert-butyl ether	ND	2.5	"						
Surrogate: <i>a,a,a</i> -Trifluorotoluene	9.75		"	10.0		97.5	70-130		
LCS (2H19017-BS1)					Prepared & Analyzed: 08/19/02				
Benzene	10.3	0.50	ug/l	10.0		103	70-130		
Toluene	10.5	0.50	"	10.0		105	70-130		
Ethylbenzene	10.0	0.50	"	10.0		100	70-130		
Xylenes (total)	32.3	0.50	"	30.0		108	70-130		
Surrogate: <i>a,a,a</i> -Trifluorotoluene	9.88		"	10.0		98.8	70-130		
LCS (2H19017-BS2)					Prepared & Analyzed: 08/19/02				
Gasoline Range Organics (C6-C10)	228	50	ug/l	250		91.2	70-130		
Surrogate: <i>a,a,a</i> -Trifluorotoluene	10.7		"	10.0		107	70-130		
Matrix Spike (2H19017-MS1)					Source: MLH0242-03 Prepared & Analyzed: 08/19/02				
Gasoline Range Organics (C6-C10)	418	50	ug/l	550	ND	76.0	60-140		
Benzene	8.54	0.50	"	6.60	ND	129	60-140		
Toluene	39.9	0.50	"	39.7	ND	101	60-140		
Ethylbenzene	9.07	0.50	"	9.20	ND	96.7	60-140		
Xylenes (total)	46.6	0.50	"	46.1	ND	101	60-140		
Surrogate: <i>a,a,a</i> -Trifluorotoluene	11.5		"	10.0		115	70-130		
Matrix Spike Dup (2H19017-MSD1)					Source: MLH0242-03 Prepared & Analyzed: 08/19/02				
Gasoline Range Organics (C6-C10)	452	50	ug/l	550	ND	82.2	60-140	7.82	25
Benzene	8.97	0.50	"	6.60	ND	136	60-140	4.91	25
Toluene	42.4	0.50	"	39.7	ND	107	60-140	6.08	25
Ethylbenzene	9.63	0.50	"	9.20	ND	103	60-140	5.99	25
Xylenes (total)	49.6	0.50	"	46.7	ND	108	60-140	6.24	25
Surrogate: <i>a,a,a</i> -Trifluorotoluene	11.7		"	10.0		117	70-130		



URS Corporation
500 12th Street, Suite 100
Oakland CA, 94607

Project: ARCO #374, Oakland, Ca
Project Number: ARCO #374, Oakland, CA
Project Manager: Scott Robinson

Reported:
08/21/02 10:50

Notes and Definitions

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 _____
 BP BU/GEM CO Portfolio: _____
 BP Laboratory Contract Number: _____

Date: 8/12/05 Requested Due Date (mm/dd/yy) Standard

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

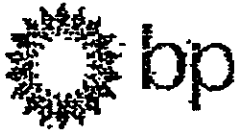
Send To:	BP/GEM Facility No.:	Consultant/Contractor: URS
Lab Name: SEQUOIA	BP/GEM Facility Address: 6407 TELEGRAPH AVE, OAKLAND, CA	Address: 529 12th St, Ste. 200
Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 374	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #: T0600100106	Consultant/Contractor Project No.: J5-00000374.01 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:	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDF Reports	Tele/Fax:	Invoice to: Consultant/Contractor or (BP/GEM) (circle one)
BP/GEM Account No.:		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 ₂ SO ₄	HNO ₃	HCl	TPH-G / BTEX (8015 / 8021)	TPH -D (8015)	MTBE (8021)	MTBE, TAME, ETBE DIPE, TBA (8260)	1,2-DCA & EDB (8260)	
1	MW-5	1005	X				3				X	X						
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Sampler's Name: <u>Brian Alcorn</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date: <u>8/13/05</u>	Time: <u>11:11</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>8/13/05</u>	Time: <u>1425</u>
Sampler's Company: <u>Blue Line Tech</u>						
Shipment Date:						
Shipment Method:						
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



Chain of Custody Record

Project Name
 BP BU/GEM CO Portfolio:
 BP Laboratory Contract Number:

MUMD323

Date: 8/12/02

Requested Due Date (month/day) Standard

On-site Time:	Temp:
Off-site Time:	Temp:
Site Conditions:	
Metereological Events:	
Wind Speed:	Direction:

Send To: Lab Name: SEQUOIA Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	BP/GEM Facility No.: BP/GEM Facility Address: 5407 TELEGRAPH AVE, OAKLAND, CA Site ID No. ARCO 374 Site Lat/Long: California Global ID #: T0500100108	Consultant/Contractor: URS Address: 529 12th St, Ste. 200 Oakland, CA 94609-4074 e-mail KDD: syad_rehan@urscorp.com Consultant/Contractor Project No.: JS-0000374.01 00427 Consultant Tele/Fax: 510-874-8280/510-874-3288 Consultant/Contractor PM: Scott Robinson Invoice to: Consultant/Contractor or (BP/GEM Global?) BP/GEM Work Release No:
Lab PM: Lelanya Piek Tele/Fax: 408-776-9600 / 408-782-6308 Report Type & QC Level: Send EDF Reports BP/GEM Account No.:	BP/GEM PM Contact: PAUL SUPPLE Address: Tele/Fax:	

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	H2SO4	HNO3	HCl	TYPE OF BTEX (GOL/SOIL)	TEH-D (GOL/S)	MTBE (GOL/S)	MSGH, TAME, ETHB, DIBP, TBA (GOL)	
1	MUMD-5	1005	X			01	1					X	X				
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler's Name: Brian Piek	Relinquished By / Affiliation:	Date:	Time:	Accepted By / Affiliation:	Date:	Time:
Sampler's Company: BROWN TECH		8/12/02	1945		8/12/02	1945
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

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

Seals In Place Yes No Temperature Blank Yes No Cooler Temperature on Receipt Trip Blank Yes No

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 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	01/31/96	158.91	6.34	152.57	Not Sampled: Well Sampled Annually							
MW-1	04/10/96	158.91	5.82	153.09	Not Sampled: Well Sampled Annually							
MW-1	07/16/96	158.91	7.23	151.68	<50	<0.5	<0.5	<0.5	<0.5	340	NM	
MW-1	10/14/96	158.91	8.34	150.57	Not Sampled: Well Sampled Annually							
MW-1	03/27/97	158.91	6.37	152.54	Not Sampled: Well Sampled Annually							
MW-1	05/27/97	158.91	7.30	151.61	Not Sampled: Well Sampled Annually							
MW-1	08/12/97	158.91	8.22	150.69	<50	<0.5	<0.5	<0.5	<0.5	620	NM	
MW-1	11/17/97	158.91	7.98	150.93	Not Sampled: Well Sampled Annually							
MW-1	03/16/98	158.91	4.94	153.97	Not Sampled: Well Sampled Annually							
MW-1	05/12/98	158.91	5.28	153.63	Not Sampled: Well Sampled Annually							
MW-1	07/27/98	158.91	6.84	152.07	<500	<5	<5	<5	<5	580	0.6	P
MW-1	10/15/98	158.91	7.32	151.59	Not Sampled: Well Sampled Annually							
MW-1	02/18/99	158.91	6.28	152.63	Not Sampled: Well Sampled Annually							
MW-1	05/24/99	158.91	6.45	152.46	<50	<0.5	<0.5	<0.5	<0.5	1,300	2.0	NP
MW-1	08/27/99	158.91	7.86	151.05	<50	<0.5	<0.5	<0.5	<0.5	1,500	1.65	NP
MW-1	10/26/99	158.91	8.43	150.48	Not Sampled: Well Sampled Annually							
MW-1	02/03/00	158.91	7.28	151.63	<50	<0.5	<0.5	<0.5	<1	4,000	1.0	NP
MW-2	01/31/96	157.92	6.51	151.41	Not Sampled: Well Sampled Annually							
MW-2	04/10/96	157.92	6.94	150.98	Not Sampled: Well Sampled Annually							
MW-2	07/16/96	157.92	7.73	150.19	<50	1.2	<0.5	<0.5	<0.5	33	NM	
MW-2	10/14/96	157.92	8.35	149.57	Not Sampled: Well Sampled Annually							
MW-2	03/27/97	157.92	7.40	150.52	Not Sampled: Well Sampled Annually							
MW-2	05/27/97	157.92	7.82	150.10	Not Sampled: Well Sampled Annually							
MW-2	08/12/97	157.92	8.29	149.63	<50	<0.5	<0.5	<0.5	<0.5	23	NM	
MW-2	11/17/97	157.92	8.05	149.87	Not Sampled: Well Sampled Annually							
MW-2	03/16/98	157.92	6.45	151.47	Not Sampled: Well Sampled Annually							

Table 1
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Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-2	05/12/98	157.92	6.93	150.99	Not Sampled: Well Sampled Annually							
MW-2	07/27/98	157.92	7.39	150.53	<50	<0.5	<0.5	<0.5	<0.5	<3	0.85	NP
MW-2	10/15/98	157.92	7.67	150.25	Not Sampled: Well Sampled Annually							
MW-2	02/18/99	157.92	6.63	151.29	Not Sampled: Well Sampled Annually							
MW-2	05/24/99	157.92	7.43	150.49	<50	6.3	<0.5	0.7	<0.5	29	3.0	P
MW-2	08/27/99	157.92	8.22	149.70	<50	<0.5	<0.5	<0.5	<0.5	<3	0.95	NP
MW-2	10/26/99	157.92	8.46	149.46	Not Sampled: Well Sampled Annually						1.71	
MW-2	02/03/00	157.92	7.75	150.17	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP
MW-3 *	01/31/96	153.64	7.02	146.62	140	20	0.87	11	14	NA	NM	
MW-3 *	04/10/96	153.64	7.82	145.82	84	2.4	<0.5	1.9	1.1	NA	NM	
MW-3 *	07/16/96	153.64	6.80	146.84	<50	2.2	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	10/14/96	153.64	7.67	145.97	<50	1.2	<0.5	<0.5	0.81	2.9	NM	
MW-3 *	03/27/97	153.64	7.62	146.02	<50	0.94	<0.5	0.9	0.63	<2.5	NM	
MW-3 *	05/27/97	153.64	6.72	146.92	Not Sampled: Well Sampled Semiannually							
MW-3 *	08/12/97	153.64	8.20	145.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	11/17/97	153.64	7.64	146.00	Not Sampled: Well Sampled Semiannually						12.0	
MW-3 *	03/18/98	153.64	5.14	148.50	<50	<0.5	<0.5	<0.5	<0.5	<3	4.0	P
MW-3 *	05/12/98	153.64	5.53	148.11	Not Sampled: Well Sampled Semiannually							
MW-3 *	07/27/98	153.64	7.63	146.01	74	<0.5	<0.5	<0.5	<0.5	<3	1.7	NP
MW-3 *	10/15/98	153.64	7.46	146.18	Not Sampled: Well Sampled Semiannually							
MW-3 *	02/18/99	153.64	5.85	147.79	Not Sampled							
MW-3 *	05/24/99	153.64	7.00	146.64	<50	<0.5	<0.5	<0.5	<0.5	4	6.0	NP
MW-3 *	08/27/99	153.64	7.16	146.48	<50	<0.5	<0.5	<0.5	<0.5	<3	16.57	NP
MW-3 *	10/26/99	153.64	7.79	145.85	<50	<0.5	<0.5	<0.5	<1	<3	14.86	NP
MW-3 *	02/03/00	153.64	7.11	146.53	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
MW-4	01/31/96	156.53	5.64	150.89	230	23	2.2	3.7	32	NA	NM		
MW-4	04/10/96	156.53	6.66	149.87	7,300	1,600	350	350	830	NA	NM		
MW-4	07/16/96	156.53	7.73	148.80	5,600	1,100	160	240	520	150	NM		
MW-4	10/14/96	156.53	8.55	147.98	4,500	860	72	160	340	<62	NM		
MW-4	03/27/97	156.53	7.15	149.38	25,000	5,200	760	850	2,600	<250	NM		
MW-4	05/27/97	156.53	7.75	148.78	Not Sampled: Well Sampled Semiannually								
MW-4	08/12/97	156.53	8.46	148.07	4,800	950	40	140	210	170	NM		
MW-4	11/17/97	156.53	8.24	148.29	Not Sampled: Well Sampled Semiannually								
MW-4	03/16/98	156.53	5.32	151.21	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P	
MW-4	05/12/98	156.53	6.38	150.15	Not Sampled: Well Sampled Semiannually								
MW-4	07/27/98	156.53	7.36	149.17	21,000	6,100	390	810	1,600	<300	0.5	NP	
MW-4 *	10/15/98	156.53	8.30	148.23	Not Sampled: Well Sampled Semiannually								
MW-4 *	02/18/99	156.53	4.39	152.14	Not Sampled								
MW-4 *	05/24/99	156.53	7.45	149.08	18,000	5,600	350	410	1,300	<300	1.0	NP	
MW-4 *	08/27/99	156.53	8.07	148.46	12,000	3,200	170	490	810	65	1.32	NP	
MW-4 *	10/26/99	156.53	8.72	147.81	12,000	3,100	130	450	680	12	1.39	NP	
MW-4 *	02/03/00	156.53	7.41	149.12	9,300	2,800	96	330	400	73	1.0	NP	
MW-5	01/31/96	151.33	8.64	142.69	<50	<0.5	<0.5	<0.5	<0.5	NA	NM		
MW-5	04/10/96	151.33	N/A	--	<50	<0.5	<0.5	<0.5	<0.5	NA	NM		
MW-5	07/16/96	151.33	8.15	143.18	<50	0.79	1.3	<0.5	<0.5	<2.5	NM		
MW-5	10/14/96	151.33	7.92	143.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM		
MW-5	03/27/97	151.33	7.75	143.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM		
MW-5	05/27/97	151.33	8.16	143.17	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM		
MW-5	08/12/97	151.33	----- Well Inaccessible -----										
MW-5	11/17/97	151.33	8.75	142.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.0	NP	
MW-5	03/16/98	151.33	6.90	144.43	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P	

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
MW-5	05/12/98	151.33	7.24	144.09	<50	<0.5	<0.5	<0.5	<0.5	<3	2.2	P	
MW-5	07/27/98	151.33	7.91	143.42	<50	<0.5	<0.5	<0.5	<0.5	<3	1.3	P	
MW-5	10/15/98	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	0.6	<3	3.0	P	
MW-5	02/18/99	151.33	7.25	144.08	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	P	
MW-5	05/24/99	151.33	7.52	143.81	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	NP	
MW-5	08/27/99	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	<0.5	<3	2.28	P	
MW-5	10/26/99	151.33	8.61	142.72	<50	<0.5	<0.5	<0.5	<1	<3	1.99	P	
MW-5	02/03/00	151.33	10.09	141.24	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP	
MW-6	01/31/96	153.84	5.15	148.69	Not Sampled: Well Sampled Annually								
MW-6	04/10/96	153.84	4.58	149.26	Not Sampled: Well Sampled Annually								
MW-6	07/16/96	153.84	4.96	148.88	<50	<0.5	<0.5	<0.5	<0.5	150	NM		
MW-6	10/14/96	153.84	6.15	147.69	Not Sampled: Well Sampled Annually								
MW-6	03/27/97	153.84	4.40	149.44	Not Sampled: Well Sampled Annually								
MW-6	05/27/97	153.84	4.90	148.94	Not Sampled: Well Sampled Annually								
MW-6	08/12/97	153.84	5.43	148.41	<50	<0.5	<0.5	<0.5	<0.5	39	NM		
MW-6	11/17/97	153.84	5.87	147.97	Not Sampled: Well Sampled Annually								
MW-6	03/16/98	153.84	4.52	149.32	Not Sampled: Well Sampled Annually								
MW-6	05/12/98	153.84	4.42	149.42	Not Sampled: Well Sampled Annually								
MW-6	07/27/98	153.84	4.75	149.09	<50	<0.5	<0.5	<0.5	<0.5	18	0.9	P	
MW-6	10/15/98	153.84	5.75	148.09	Not Sampled: Well Sampled Annually								
MW-6	02/18/99	153.84	3.93	149.91	Not Sampled: Well Sampled Annually								
MW-6	05/24/99	153.84	4.32	149.52	<50	<0.5	<0.5	<0.5	<0.5	6	2.0	NP	
MW-6	08/27/99	153.84	5.72	148.12	<50	<0.5	<0.5	<0.5	<0.5	8	1.02	NP	
MW-6	10/26/99	153.84	5.94	147.90	Not Sampled: Well Sampled Annually								
MW-6	02/03/00	153.84	5.44	148.40	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP	

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

**ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MSL	= Mean sea level.											
TOC	= Top of casing.											
TPPH	= Total purgeable 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 by EPA method 8021B. (EPA method 8020 prior to 10/26/99).											
ppb	= Parts per billion.											
ppm	= Parts per million.											
<	= Less than laboratory detection limit stated to the right.											
NA	= Not analyzed.											
NM	= Not measured.											
N/A	= Not available.											
*	= ORCs installed in well MW-3 beginning 11/14/95 and in well MW-4 beginning 09/29/98. Please refer to Appendix D for details.											

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well	Date Sampled	Field Analyses					Laboratory Analyses											
		Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)		
MW-3	11/14/95	**	65.5*	6.76*	508*	7.17	N/A	NS	NS	NS	NS	NS	6.6	<1.0	NS	140	46	
MW-3	06/06/96	**	66.2	7.38	700	12.28	N/A	NS	NS	NS	NS	NS	NS	NS	NS	84†	5.4†	
MW-3	07/16/96		67.8	7.08	1,010	8.73	0.0	280	1.8	270	44	<0.020	<1.0	NS	78	<50	2.2	
MW-3	01/21/97	**	59	N/A	N/A	11.15	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MW-3	08/12/97	**	74.4	6.65	600	6.7	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MW-3	11/17/97		N/A	N/A	N/A	12.0	0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
MW-3	03/16/98		68.5	7.75	806	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-3	05/12/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-3	07/27/98		68.1	6.81	904	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	74	ND	
MW-3	09/29/98	**	ORC installed															
MW-3	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	05/24/99		66.2	7.24	799	6.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-3	07/26/99	**	ORC installed															
MW-3	08/27/99		69.0	7.97	782	16.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-3	10/26/99		66.5	5.93	794	14.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-3	02/03/00		62.0	7.42	7,877	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-4	07/16/96		69.5	6.72	1,370	3.20	4.20	420	NS	470	NS	0.11	<1.0	NS	18	5,600	2,020	
MW-4	03/16/98		66.2	6.89	1,411	1.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	
MW-4	05/12/98		NM	NM	NM	NM	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-4	07/27/98		70.5	6.34	1,434	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21,000	8,900	
MW-4	09/29/98	**	ORC installed															
MW-4	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	05/24/99		67.6	6.72	1,509	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18,000	7,660	
MW-4	07/26/99	**	ORC installed															

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well	Date Sampled	<u>Field Analyses</u>					<u>Laboratory Analyses</u>									
		Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO ₃ /L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)
MW-4	08/27/99	70.5	7.09	1,469	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,670
MW-4	10/26/99	66.8	7.05	1,565	1.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,360
MW-4	02/03/00	64.1	7.27	1,506	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,300	3,626
MW-5	07/16/96	70.4	6.85	690	6.80	0.0	170	NS	180	NS	<0.020	<1.0	NS	35	<50	1.1
MW-5	03/16/98	69.5	7.19	584	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/12/98	65.9	7.04	619	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	07/27/98	73.6	7.39	569	1.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/15/98	65.8	6.88	626	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	0.6
MW-5	02/18/99	63.4	6.98	616	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/24/99	66.7	6.70	591	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	08/27/99	72.6	7.10	624	2.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/26/99	70.4	5.95	601	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	02/03/00	62.1	7.31	6,072	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	06/06/96	N/A	N/A	N/A	3.47	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	03/16/98	N/A	N/A	N/A	N/A	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/12/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	07/27/98	70.3	6.67	638	0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/15/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/18/99	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/24/99	65.5	6.62	713	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	08/27/99	73.0	7.12	589	1.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/26/99	NM	NM	NM	2.51	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/03/00	61.7	7.32	5,091	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND

**Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data**

**ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California**

Well	Date Sampled	<u>Field Analyses</u>					<u>Laboratory Analyses</u>										
		Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)	
D.O. = Dissolved oxygen							µg/L	= Micrograms per liter									
B.O.D. = Biochemical oxygen demand							NM	= not measured									
C.O.D. = Chemical oxygen demand							NS	= Not sampled									
TPPH = Total purgeable petroleum hydrocarbons							ND	= Not detected									
BTEX = Benzene, toluene, ethylbenzene, and xylenes							N/A	= Not available									
deg F = Degrees Fahrenheit							*	Field measurements collected on November 2, 1995.									
µmhos = Micromhos							**	ORC installed									
mg/L = Milligrams per liter							†	From April 10, 1996 groundwater monitoring event.									

ATTACHMENT D

EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

Error Summary Log

11/12/02

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #374, Oakland, Ca
Work Order Number:	MLH0323
Global ID:	T0600100106
Lab Report Number:	MLH0323082120021050

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
MLH03230821200	MW-5	MLH032301	W	CS	SW8020F	SW5030B	08/12/02	08/19/02	08/20/02	2H19017	1
21050		MLH024203	W	NC	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1
		2H19017BS1	WQ	BS1	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1
		2H19017BS2	WQ	BS2	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1
		2H19017BLK1	WQ	LB1	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1
		2H19017MS1	W	MS1	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1
		2H19017MSD1	W	SD1	SW8020F	SW5030B	//	08/19/02	08/19/02	2H19017	1

EDFSAMP: Error Summary Log

11/12/02

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

EDFTEST: Error Summary Log

11/12/02

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

EDFRES: Error Summary Log

11/12/02

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Pariabel
Warning: extra parameter	2H19017MS1	MS1	W	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	2H19017MS1	MS1	W	SW8020F	PR	08/19/02	1	GROC6C10
Warning: extra parameter	2H19017MSD1	SD1	W	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	2H19017MSD1	SD1	W	SW8020F	PR	08/19/02	1	GROC6C10
Warning: extra parameter	MLH024203	NC	W	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	MLH024203	NC	W	SW8020F	PR	08/19/02	1	GROC6C10
Warning: extra parameter	MLH032301	CS	W	SW8020F	PR	08/20/02	1	AAATFBZME
Warning: extra parameter	MLH032301	CS	W	SW8020F	PR	08/20/02	1	GROC6C10
Warning: extra parameter	MLH032301	CS	W	SW8020F	PR	08/20/02	1	MTBE
Warning: extra parameter	2H19017BLK1	LB1	WQ	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	2H19017BLK1	LB1	WQ	SW8020F	PR	08/19/02	1	GROC6C10
Warning: extra parameter	2H19017BLK1	LB1	WQ	SW8020F	PR	08/19/02	1	MTBE
Warning: extra parameter	2H19017BS1	BS1	WQ	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	2H19017BS2	BS2	WQ	SW8020F	PR	08/19/02	1	AAATFBZME
Warning: extra parameter	2H19017BS2	BS2	WQ	SW8020F	PR	08/19/02	1	GROC6C10

EDFQC: Error Summary Log

11/12/02

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

EDFCL: Error Summary Log

11/12/02

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

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Submittal Title: Third Quarter Groundwater Monitoring Report for Site #0374
Submittal Date/Time: 11/12/2002 5:07:02 PM
Confirmation Number: 7780003190

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Date/Time of Submittal: 11/12/2002 5:05:23 PM

Facility Global ID: T0600100106

Facility Name: ARCO

Submittal Title: Third Quarter Groundwater Monitoring Report for Site #0374

Submittal Type: GW Monitoring Report

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