

September 5, 2003

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Second Floor, Suite 250
Alameda, CA 94502

Alameda County
SEP 21 2003
Environmental Health

**Re: Third Quarter 2003 Groundwater Monitoring Report
ARCO Service Station #0276
10600 MacArthur Boulevard
Oakland, California
URS Project #38486308**

Dear Mr. Chan:

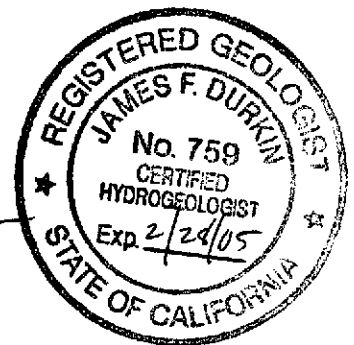
On behalf of Atlantic Richfield Company (ARCO-an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Third Quarter 2003 Groundwater Monitoring Report* for ARCO Service Station #0276, located at 10600 MacArthur Boulevard, Oakland, California.

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: Third Quarter 2003 Groundwater Monitoring Report

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



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 6549
Moraga, California 94570
Phone: (925) 299-8891
Fax: (925) 299-8872

Alameda County

SEP 11 2003

Environmental Health

September 5, 2003

Re: Third Quarter 2003 Groundwater Monitoring Report
ARCO Service Station #276
10600 MacArthur Boulevard
Oakland, CA
URS Project #38486308

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

Submitted by:

Paul Supple
Environmental Business Manager

R E P O R T

**THIRD QUARTER 2003
GROUNDWATER MONITORING**

ARCO SERVICE STATION #0276
10600 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Prepared for
Atlantic Richfield Company

September 5, 2003

URS

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

38486308

**ATLANTIC RICHFIELD COMPANY ANNUAL
GROUNDWATER MONITORING REPORT**

Date: September 5, 2003

Quarter: 3Q 03

Facility No.: 0276 Address: 10600 MacArthur Boulevard, Oakland, California

Atlantic Richfield Co. Environmental Engineer: Paul Supple

Consulting Co./Contact Person: URS Corporation / Scott Robinson

Consultant Project No.: 38486308

Primary Agency: Alameda County Health Care Services Agency (ACHCSA)

WORK PERFORMED THIS QUARTER (Third – 2003):

1. Performed third quarter 2003 groundwater monitoring event.
2. Prepared third quarter 2003 groundwater monitoring report.

WORK PROPOSED FOR NEXT QUARTER (Fourth – 2003):

1. Perform fourth quarter 2003 groundwater monitoring event.
2. Prepare and submit fourth quarter 2003 groundwater monitoring report.

Current Phase of Project: GW monitoring/sampling

Frequency of Groundwater Sampling: Quarterly: Wells MW-1, MW-3, MW-4, and MW-5

Frequency of Groundwater Monitoring: Quarterly beginning third quarter 2003

Is Free Product (FP) Present On-Site: No

Current Remediation Techniques: Natural Attenuation

Approximate Depth to Groundwater: 16.35 (MW-2) to 35.00 (MW-6) feet

Groundwater Gradient (direction): South

Groundwater Gradient (magnitude): 0.007 feet per foot

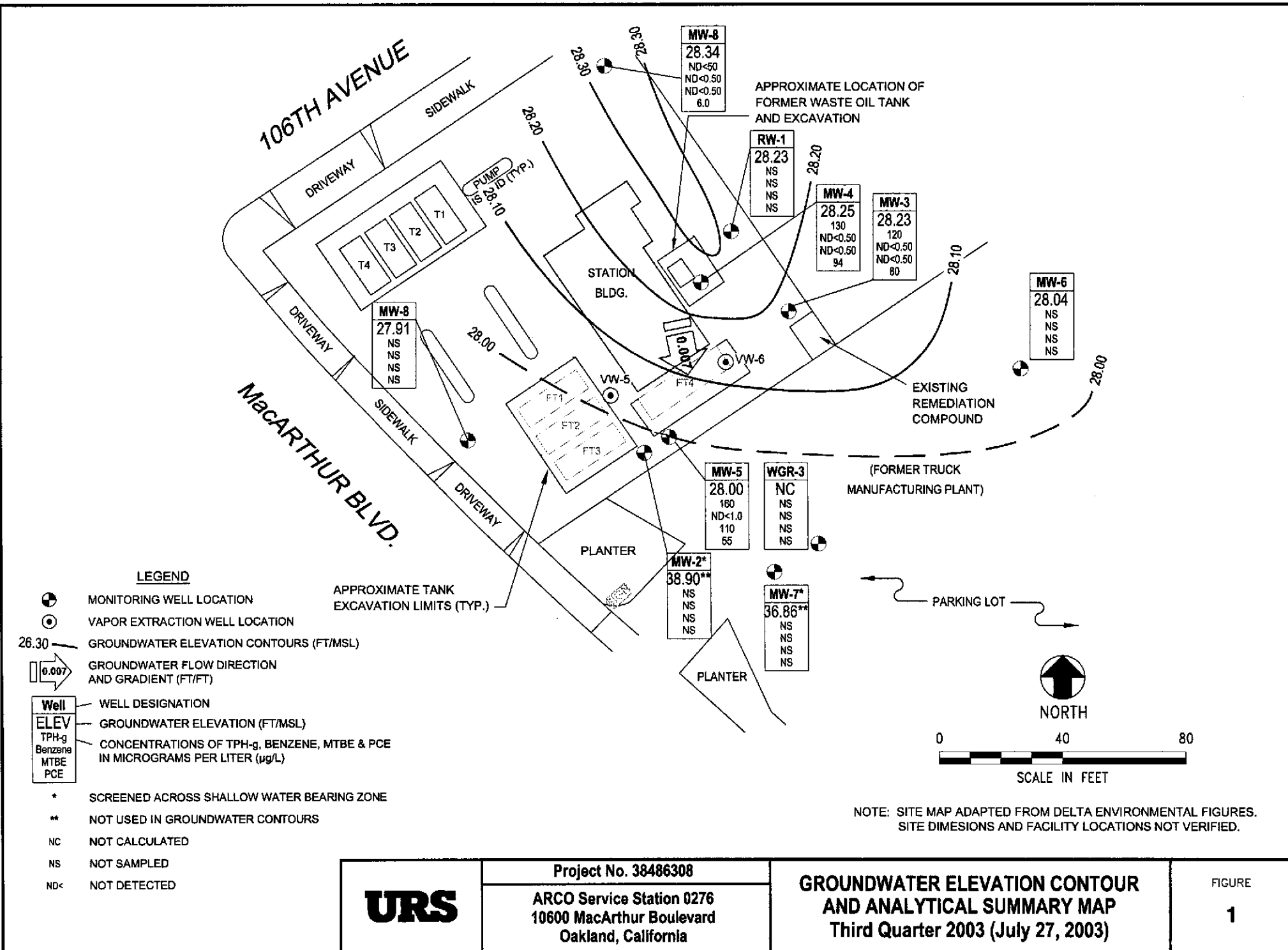
DISCUSSION:

This site was previously sampled on an annual basis for PCE only. However, due to a recent new release discovered during line up-grade work, this Site will now be monitored quarterly for TPH-g, BTEX, fuel oxygenates, 1,2-DCA, and EDB.

During this quarter, all groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, fuel oxygenates, 1,2-DCA, EDB, and PCE. TPH-g was detected in three of the four wells sampled at concentrations ranging from 120 µg/L (MW-3) to 160 µg/L (MW-5). BTEX was reported at non-detect levels in the four wells sampled. MTBE was detected in one well at a concentration of 110 µg/L (MW-5). Fuel oxygenates ethanol, TBA, DIPE, ETBA, and TAME were reported at non-detect levels in all wells sampled, except for 3.2 µg/L of TAME and 1.4 µg/L of DIPE detected in MW-5. 1,2-DCA and EDB were at non-detect concentrations in all four wells sampled, except for 12 µg/L of EDB detected in MW-5. PCE was detected in all four wells MW-1, MW-3, MW-4, and MW-5 at concentrations of 6.0 µg/L, 80 µg/L, 94 µg/L, and 55 µg/L, respectively.

ATTACHMENTS:

- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – July 22, 2003
- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Groundwater Flow Direction and Gradient
- 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



	Project No. 38486308	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP Third Quarter 2003 (July 27, 2003)	FIGURE 1
	ARCO Service Station 0276 10600 MacArthur Boulevard Oakland, California		

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #0276
10600 MacArthur Boulevard
Oakland, California

Well Number	Date Sampled	Well Elevation (ft-MSL)	Depth to Water (ft, TOC)	Groundwater Elevation (ft-MSL)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO ^d (mg/L)	pH ^d	
MW-1	12/17/00	55.92	29.16	26.76	5.09	ND	ND	ND	NA	NA	--	--	
	12/28/01		27.38	28.54	8.8	ND	ND	ND	NA	NA	--	--	
	11/27/02		NP	29.45	26.47	4.2	NA	NA	NA	NA	NA	2.3	6.7
	07/22/03		NP	27.58	28.34	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.1	6.7
MW-2	12/17/00	55.10	15.72	39.38	NS	NS	NS	NS	NS	NS	NS	NS	
	12/28/01		27.38	27.72	NS	NS	NS	NS	NS	NS	NS	NS	
	11/27/02		NP	16.35	38.75	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03		NP	16.20	38.90	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	12/17/00	56.55	29.78	26.77	158	ND	ND	ND	NA	NA	--	--	
	12/28/01		27.95	28.60	310	20	1.5	13	NA	NA	--	--	
	11/27/02		NP	30.10	26.45	110	NA	NA	NA	NA	NA	2.0	7.2
	07/22/03		NP	28.32	28.23	120	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	5.9
MW-4	12/17/00	55.98	29.22	26.76	225	ND	ND	ND	NA	NA	--	--	
	12/28/01		27.37	28.61	160	1.2	ND	ND	NA	NA	--	--	
	11/27/02		NP	29.55	26.43	95	NA	NA	NA	NA	NA	3.7	6.7
	07/22/03		NP	27.73	28.25	130	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.9	6.6
MW-5	12/17/00	55.43	28.82	26.61	1,040	ND	ND	ND	NA	NA	--	--	
	12/28/01		26.91	28.52	3,200	190	02-05-00	140	1.9 ^a , 3.2 ^b , 2.0 ^c	NA	NA	--	--
	11/27/02		P	29.15	26.28	110	NA	NA	NA	NA	NA	1.4	6.4
	07/22/03		P	27.43	28.00	160	ND<1.0	ND<1.0	ND<1.0	ND<1.0	110	1.5	6.6
MW-6	12/17/00	61.21	34.61	26.60	NS	NS	NS	NS	NS	NS	NS	NS	
	12/28/01		32.80	28.41	NS	NS	NS	NS	NS	NS	NS	NS	
	11/27/02		NP	35.00	26.21	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03		NP	33.17	28.04	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	12/17/00	58.22	19.94	38.28	NS	NS	NS	NS	NS	NS	NS	NS	
	12/28/01		17.29	40.93	NS	NS	NS	NS	NS	NS	NS	NS	
	11/27/02		NP	21.30	36.92	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03		NP	21.36	36.86	NS	NS	NS	NS	NS	NS	NS	NS

**Table 1
Groundwater Elevation and Analytical Data**

ARCO Service Station #0276
10600 MacArthur Boulevard
Oakland, California

Well Number	Date Sampled	Well Elevation (ft-MSL)	Depth to Water (ft, TOC)	Groundwater Elevation (ft-MSL)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO ^d (mg/L)	pH ^d
MW-8	12/17/00	53.65	27.02	26.63	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		24.99	28.66	NS	NS	NS	NS	NS	NS	NS	NS
	11/27/02		27.45	26.20	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03		25.74	27.91	NS	NS	NS	NS	NS	NS	NS	NS
RW-1	12/17/00	56.32	29.57	26.75	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01		27.64	28.68	NS	NS	NS	NS	NS	NS	NS	NS
	11/27/02		29.93	26.39	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03		28.09	28.23	NS	NS	NS	NS	NS	NS	NS	NS
WGR-3	12/17/00	NR	19.21	NR	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01	NR	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	11/27/02	NR	20.60	NR	NS	NS	NS	NS	NS	NS	NS	NS
	07/22/03	NR	20.77	NR	NS	NS	NS	NS	NS	NS	NS	NS

Note

- TOC = Top of Casing
- ft-MSL = Elevation in feet, relative to mean sea level
- µg/L = Micrograms per liter
- ND< = None detected
- NR = Not reported; data not available or not measurable
- NS = Not sampled
- P = Purged
- NP = Not purged
- mg/L = Milligrams per liter
- a = 1,1 DCE
- b = 1,2 DCA
- c = Chlorobenzene
- d = pH and DO levels are field measurements

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

Table 2
Fuel Oxygenate Analytical Data

ARCO Service Station #0276
10600 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)	PCE (µg/L)	TCE (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	trans-1,2-DCE (µg/L)	cis-1,2-DCE (µg/L)	VOCs (µg/L)
MW-1	12/17/00	NA	NA	NA	NA	NA	NA	5.09	ND	NA	NA	ND	ND	NA
	12/28/01	NA	NA	NA	NA	NA	NA	8.8	ND	NA	NA	ND	ND	NA
	11/27/02	NA	NA	NA	NA	NA	NA	4.2	NA	NA	NA	NA	NA	NA
	07/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.0	NA	ND<0.50	ND<0.50	NA	NA	NA
MW-3	12/17/00	NA	NA	NA	NA	NA	NA	158	ND	NA	NA	ND	ND	NA
	12/28/01	NA	NA	NA	NA	NA	NA	310	20	NA	NA	1.5	13	NA
	11/27/02	NA	NA	NA	NA	NA	NA	110	NA	NA	NA	NA	NA	NA
	07/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	80	NA	ND<0.50	ND<0.50	NA	NA	NA
MW-4	12/17/00	NA	NA	NA	NA	NA	NA	225	ND	NA	NA	ND	ND	NA
	12/28/01	NA	NA	NA	NA	NA	NA	160	1.2	NA	NA	ND	ND	NA
	11/27/02	NA	NA	NA	NA	NA	NA	95	NA	NA	NA	NA	NA	NA
	07/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	94	NA	ND<0.50	ND<0.50	NA	NA	NA
MW-5	12/17/00	NA	NA	NA	NA	NA	NA	1,040	ND	NA	NA	ND	ND	NA
	12/28/01	NA	NA	NA	NA	NA	NA	3,200	190	NA	NA	02-05-00	140	1.9 ^a , 3.2 ^b , 2.0 ^c
	11/27/02	NA	NA	NA	NA	NA	NA	110	NA	NA	NA	NA	NA	NA
	07/22/03	ND<200	ND<40	110	1.4	ND<1.0	3.2	55	NA	12	ND<1.0	NA	NA	NA

Note Tetrachloroethene analyzed using EPA Method 8260B
µg/L = Micrograms per liter
NA = Not analyzed
ND< = None detected
PCE = Tetra chloroethene
TCE = Trichloroethene
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
trans-1,2-DCE = trans 1,2-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
VOC = Volatile Organic Compounds
a = 1,1 DCE
b = 1,2 DCA
c = Chlorobenzene

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

Table 3
Groundwater Flow Direction and Gradient

ARCO Service Station #0276
10600 MacArthur Boulevard,
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
12/17/00	South-Southeast	0.003
12/28/01	Southeast	0.002
11/27/02	South-Southeast	0.003
07/22/03	South	0.007

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

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 # 030722-MG1 Date 7/22/03 Client URS

Site 10600 MacArthur Blvd., Oakland, CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-1	2					27.58	38.80	↓
* MW-2	4					16.20	27.60	
MW-3	2					28.32	38.60	
MW-4	2					27.73	48.30	
MW-5	4					27.43	47.00	
MW-6	2					33.17	54.10	
MW-7	2					21.36	55.00	
MW-8	4					25.74	47.70	
RW-1	6					28.09	48.90	
WGR-3	4					20.77	27.50	
* Gauged w/ ORCS in well.								

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030722-M61	Station # 276
Sampler: MF	Date: 7/22/03
Well I.D.: MW-1	Well Diameter: ② 3 4 6 8
Total Well Depth: 38.60	Depth to Water: 27.58
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

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

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

Top of Screen: 219' 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>No x Purge</u> = _____ Gals. 1 Case Volume (Gals.) Specified Volumes Calculated Volume
--

Time	Temp (°F)	pH	Conductivity (mS or μS)	Gals. Removed	Observations
12:19	70.1	6.7	1745	—	

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: 12:20 Sampling Date: 7/22/03

Sample I.D.: MW-1 Laboratory: Pace Sequoia Other _____

Analyzed for: TPH-G STEX MTBE TPH-D Other: Oxyquates, Ethanol, PCE

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	3.1	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030722-M6-1</u>	Station # <u>276</u>
Sampler: <u>Morgan G.</u>	Date: <u>07/22/03</u>
Well I.D.: <u>MW-3</u>	Well Diameter: <u>(2)</u> 3 4 6 8 ___
Total Well Depth: <u>38.60</u>	Depth to Water: <u>28.32</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 ² * 0.163

Purge Method: <u>Bailer</u> Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <u>(Disposable Bailer)</u> Extraction Port Other: _____
---	---

Top of Screen: 2.2' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

<u>No Purge</u>	=	_____ Gals.
1 Case Volume (Gals.)	Specified Volumes	Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>(µS)</u>)	Gals. Removed	Observations
<u>1109</u>	<u>67.3</u>	<u>5.9</u>	<u>656</u>	<u>—</u>	

Did well dewater? Yes <u>(No)</u>	Gallons actually evacuated: <u>—</u>
Sampling Time: <u>1110</u>	Sampling Date: <u>7/22/03</u>
Sample I.D.: <u>MW-3</u>	Laboratory: Pace <u>(Sequoia)</u> Other _____
Analyzed for: <u>(TPH-G)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>Oxygenates & Ethanol & PCE</u>	
D.O. (if req'd):	Pre-purge: _____ ^{mg/L}
	Post-purge: <u>(2.2)</u> ^{mg/L}
O.R.P. (if req'd):	Pre-purge: _____ mV
	Post-purge: _____ mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030722-MG1	Station # 276
Sampler: MG	Date: 7/22/03
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth: 48.30	Depth to Water: 27.73
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVO) Grade	D.O. Meter (if req'd): (YSI) HACH

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

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

Sampling Method: Bailer Disposable Bailer Extraction Port Other: _____

Top of Screen: 25' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

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

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1145	69.3	6.6	528	—	

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: 1146 Sampling Date: 7/22/03

Sample I.D.: MW-4 Laboratory: Pace (Sequoia) Other: _____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxidates, Ethanol & PCE

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.9	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030722-MG1	Station # 276
Sampler: MG	Date: 7/22/03
Well I.D.: MW-5	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 47.00	Depth to Water: 27.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>VSI</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 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: 12 _____ 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>12.7</u>	x	<u>3</u>	=	<u>38.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
13 ⁰²	71.4	6.7	838	13	
13 ⁰⁵	69.7	6.6	898	26	
13 ⁰⁸	70.0	6.6	930	39	

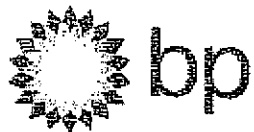
Did well dewater? Yes No Gallons actually evacuated: 39

Sampling Time: 1315 Sampling Date: 7/22/03

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: Oxygenates, Ethanol & PCE

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



Chain of Custody Record

Project Name 030722-MG1
 BP BU/GEM CO Portfolio: _____
 BP Laboratory Contract Number: _____

Date: 7/22/03 Requested Due Date (mm/dd/yy) _____

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: 10600 MacArthur Blvd, OAKLAND, CA	Address: 500 12th St., Ste. 200
Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 276	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #: T0600100082	Consultant/Contractor Project No.: J5-00000276.01 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 / 408-782-8308	Address: P.O. Box 6549	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDF Reports	Moraga, CA 94570	Invoice to: Consultant/Contractor of <u>BP/GEM</u> (Circle one)
BP/GEM Account No.:	Tele/Fax: 925-299-8891/925-299-8872	BP/GEM Work Release No: INTRIM -50353

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	Ali.			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	TPH-G/BTEX (8015-8019)	TPH-D (8015)	MTBE (8021)	MTBE (8260)	MTBE, TAME, ETBE, DIPE, TBA (8260)		1,2-DCA & EDB (8260)
1	MW-3	1110		X			5												
2	MW-4	1146					↓												
3	MW-1	1220					↓												
4	MW-5	1315					↓												
5																			
6																			
7																			
8																			
9																			
10																			

Sampler's Name: <u>Morgan Gillies</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date:	Time:	Accepted By / Affiliation: <u>[Signature]</u>	Date:	Time:
Sampler's Company: <u>Blaine 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

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:

Station #	
276	
Station Address	
10600 MacArthur Blvd, Oakland	
Total Gallons Collected From Groundwater Monitoring Wells:	
39	
added equip. rinse water	any other adjustments
1	
TOTAL GALS. RECOVERED	loaded onto BTS vehicle #
40	11
BTS event #	time date
030722-161	1330 7/22/03
signature	

REC'D AT	time date
BTS	1600 7/22/03
unloaded by signature	

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

LABORATORY PROCEDURES

Laboratory Procedures

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



7 August, 2003

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

RE: ARCO #276, Oakland, CA
Work Order: MMG0572

Enclosed are the results of analyses for samples received by the laboratory on 07/23/03 19:08. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Theresa Allen
Project Manager

CA ELAP Certificate #1210



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

Project: ARCO #276, Oakland, CA
Project Number: INTRIM -50353
Project Manager: Scott Robinson

MMG0572
Reported:
08/07/03 15:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-3	MMG0572-01	Water	07/22/03 11:10	07/23/03 19:08
MW-4	MMG0572-02	Water	07/22/03 11:46	07/23/03 19:08
MW-1	MMG0572-03	Water	07/22/03 12:20	07/23/03 19:08
MW-5	MMG0572-04	Water	07/22/03 13:15	07/23/03 19:08



URS Corporation [Arco] 500 12th Street, Suite 100 Oakland CA, 94607	Project: ARCO #276, Oakland, CA Project Number: INTRIM -50353 Project Manager: Scott Robinson	MMG0572 Reported: 08/07/03 15:54
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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
MW-3 (MMG0572-01) Water Sampled: 07/22/03 11:10 Received: 07/23/03 19:08									
Ethanol	ND	100	ug/l	1	3H05021	08/05/03	08/05/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	120	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>108 %</i>	<i>78-129</i>						
MW-4 (MMG0572-02) Water Sampled: 07/22/03 11:46 Received: 07/23/03 19:08									
Ethanol	ND	100	ug/l	1	3H05021	08/05/03	08/05/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	130	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>109 %</i>	<i>78-129</i>						

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

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

 Project: ARCO #276, Oakland, CA
 Project Number: INTRIM -50353
 Project Manager: Scott Robinson

 MMG0572
 Reported:
 08/07/03 15:54

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MMG0572-03) Water Sampled: 07/22/03 12:20 Received: 07/23/03 19:08									
Ethanol	ND	100	ug/l	1	3H01002	08/01/03	08/02/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		113 %	78-129	"	"	"	"	"	
MW-5 (MMG0572-04) Water Sampled: 07/22/03 13:15 Received: 07/23/03 19:08									
Ethanol	ND	200	ug/l	2	3H05021	08/05/03	08/05/03	EPA 8260B	
tert-Butyl alcohol	ND	40	"	"	"	"	"	"	
Methyl tert-butyl ether	110	1.0	"	"	"	"	"	"	
Di-isopropyl ether	1.4	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
tert-Amyl methyl ether	3.2	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	12	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	160	100	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	78-129	"	"	"	"	"	



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

Project: ARCO #276, Oakland, CA
Project Number: INTRIM -50353
Project Manager: Scott Robinson

MMG0572
Reported:
08/07/03 15:54

**EPA 8010 list Volatile Organic Compounds by EPA 8260B
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MMG0572-01) Water Sampled: 07/22/03 11:10 Received: 07/23/03 19:08									
Tetrachloroethene	80	2.5	ug/l	5	3H01043	08/01/03	08/01/03	EPA 8260B	
Surrogate: Dibromofluoromethane		108 %	73-130		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		109 %	78-129		"	"	"	"	
Surrogate: Toluene-d8		103 %	81-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	71-117		"	"	"	"	
MW-4 (MMG0572-02) Water Sampled: 07/22/03 11:46 Received: 07/23/03 19:08									
Tetrachloroethene	94	2.5	ug/l	5	3H01043	08/01/03	08/01/03	EPA 8260B	
Surrogate: Dibromofluoromethane		112 %	73-130		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		107 %	78-129		"	"	"	"	
Surrogate: Toluene-d8		105 %	81-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.4 %	71-117		"	"	"	"	
MW-1 (MMG0572-03) Water Sampled: 07/22/03 12:20 Received: 07/23/03 19:08									
Tetrachloroethene	6.0	0.50	ug/l	1	3H01043	08/01/03	08/01/03	EPA 8260B	
Surrogate: Dibromofluoromethane		104 %	73-130		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		112 %	78-129		"	"	"	"	
Surrogate: Toluene-d8		104 %	81-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	71-117		"	"	"	"	
MW-5 (MMG0572-04) Water Sampled: 07/22/03 13:15 Received: 07/23/03 19:08									
Tetrachloroethene	55	0.50	ug/l	1	3H01043	08/01/03	08/01/03	EPA 8260B	
Surrogate: Dibromofluoromethane		114 %	73-130		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		106 %	78-129		"	"	"	"	
Surrogate: Toluene-d8		103 %	81-116		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	71-117		"	"	"	"	

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

 Project: ARCO #276, Oakland, CA
 Project Number: INTRIM -50353
 Project Manager: Scott Robinson

 MMG0572
 Reported:
 08/07/03 15:54

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 3H01002 - EPA 5030B P/T										
Blank (3H01002-BLK1)										
Prepared & Analyzed: 08/01/03										
Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.73		"	5.00		115	78-129			
Laboratory Control Sample (3H01002-BS1)										
Prepared & Analyzed: 08/01/03										
Methyl tert-butyl ether	9.12	0.50	ug/l	10.0		91.2	63-137			
Benzene	7.45	0.50	"	10.0		74.5	78-124			Q-LIM
Toluene	9.28	0.50	"	10.0		92.8	78-129			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.32		"	5.00		106	78-129			
Laboratory Control Sample (3H01002-BS2)										
Prepared & Analyzed: 08/01/03										
Gasoline Range Organics (C6-C10)	434	50	ug/l	440		98.6	70-113			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.26		"	5.00		105	78-129			
Matrix Spike (3H01002-MS1)										
Source: MMG0728-06 Prepared: 08/01/03 Analyzed: 08/02/03										
Methyl tert-butyl ether	45400	500	ug/l	9920	37000	84.7	63-137			
Benzene	5010	500	"	6400	ND	78.3	78-124			
Toluene	29600	500	"	29700	160	99.1	78-129			
Gasoline Range Organics (C6-C10)	509000	50000	"	440000	29000	109	70-113			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.36		"	5.00		107	78-129			

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

 Project: ARCO #276, Oakland, CA
 Project Number: INTRIM -50353
 Project Manager: Scott Robinson

 MMG0572
Reported:
 08/07/03 15:54

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 3H01002 - EPA 5030B P/T										
Matrix Spike Dup (3H01002-MSD1)	Source: MMG0728-06			Prepared: 08/01/03		Analyzed: 08/02/03				
Methyl tert-butyl ether	43800	500	ug/l	9920	37000	68.5	63-137	3.59	13	
Benzene	4970	500	"	6400	ND	77.7	78-124	0.802	12	Q-LIM
Toluene	28900	500	"	29700	160	96.8	78-129	2.39	10	
Gasoline Range Organics (C6-C10)	490000	50000	"	440000	29000	105	70-113	3.80	9	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.30</i>		<i>"</i>	<i>5.00</i>		<i>106</i>	<i>78-129</i>			
Batch 3H05021 - EPA 5030B P/T										
Blank (3H05021-BLK1)	Prepared & Analyzed: 08/05/03									
Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.34</i>		<i>"</i>	<i>5.00</i>		<i>107</i>	<i>78-129</i>			
Laboratory Control Sample (3H05021-BS1)	Prepared & Analyzed: 08/05/03									
Methyl tert-butyl ether	12.3	0.50	ug/l	10.0		123	63-137			
Benzene	10.9	0.50	"	10.0		109	78-124			
Toluene	10.4	0.50	"	10.0		104	78-129			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.27</i>		<i>"</i>	<i>5.00</i>		<i>105</i>	<i>78-129</i>			

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

 Project: ARCO #276, Oakland, CA
 Project Number: INTRIM -50353
 Project Manager: Scott Robinson

 MMG0572
 Reported:
 08/07/03 15:54

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 3H05021 - EPA 5030B P/T										
Laboratory Control Sample (3H05021-BS2)					Prepared & Analyzed: 08/05/03					
Methyl tert-butyl ether	8.95	0.50	ug/l	9.92		90.2	63-137			
Benzene	5.13	0.50	"	6.40		80.2	78-124			
Toluene	29.8	0.50	"	29.7		100	78-129			
Gasoline Range Organics (C6-C10)	417	50	"	440		94.8	70-113			
Surrogate: 1,2-Dichloroethane-d4	5.29		"	5.00		106	78-129			
Matrix Spike (3H05021-MS1)					Source: MMG0572-04 Prepared & Analyzed: 08/05/03					
Methyl tert-butyl ether	146	1.0	ug/l	19.8	110	182	63-137			QM-4X
Benzene	11.8	1.0	"	12.8	0.24	90.3	78-124			
Toluene	66.8	1.0	"	59.4	0.24	112	78-129			
Gasoline Range Organics (C6-C10)	923	100	"	880	160	86.7	70-113			
Surrogate: 1,2-Dichloroethane-d4	5.60		"	5.00		112	78-129			
Matrix Spike Dup (3H05021-MSD1)					Source: MMG0572-04 Prepared & Analyzed: 08/05/03					
Methyl tert-butyl ether	145	1.0	ug/l	19.8	110	177	63-137	0.687	13	QM-4X
Benzene	11.1	1.0	"	12.8	0.24	84.8	78-124	6.11	12	
Toluene	63.5	1.0	"	59.4	0.24	106	78-129	5.07	10	
Gasoline Range Organics (C6-C10)	894	100	"	880	160	83.4	70-113	3.19	9	
Surrogate: 1,2-Dichloroethane-d4	5.42		"	5.00		108	78-129			



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

URS Corporation [Arco] 500 12th Street, Suite 100 Oakland CA, 94607	Project: ARCO #276, Oakland, CA Project Number: INTRIM -50353 Project Manager: Scott Robinson	MMG0572 Reported: 08/07/03 15:54
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EPA 8010 list Volatile Organic Compounds by EPA 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 3H01043 - EPA 5030B P/T

Blank (3H01043-BLK1) Prepared & Analyzed: 08/01/03

Bromochloromethane	ND	0.50	ug/l							
Bromodichloromethane	ND	0.50	"							
Bromoform	ND	0.50	"							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	0.50	"							
Chloroethane	ND	0.50	"							
Chloroform	ND	0.50	"							
Chloromethane	ND	0.50	"							
Dibromochloromethane	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.50	"							
1,4-Dichlorobenzene	ND	0.50	"							
1,2-Dichlorobenzene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,2-Dichloropropane	ND	0.50	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Methylene chloride	ND	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50	"							
1,1,2-Trichloroethane	ND	0.50	"							
Freon 113	ND	0.50	"							
Trichloroethene	ND	0.50	"							
Trichlorofluoromethane	ND	0.50	"							
Vinyl chloride	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Surrogate: Dibromofluoromethane	5.37		"	5.00		107	73-130			
Surrogate: 1,2-Dichloroethane-d4	5.42		"	5.00		108	78-129			
Surrogate: Toluene-d8	5.18		"	5.00		104	81-116			
Surrogate: 4-Bromofluorobenzene	4.78		"	5.00		95.6	71-117			

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

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

 Project: ARCO #276, Oakland, CA
 Project Number: INTRIM -50353
 Project Manager: Scott Robinson

 MMG0572
Reported:
 08/07/03 15:54

**EPA 8010 list Volatile Organic Compounds by EPA 8260B - Quality Control
Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3H01043 - EPA 5030B P/T										
Laboratory Control Sample (3H01043-BS1)				Prepared & Analyzed: 08/01/03						
Chlorobenzene	10.3	0.50	ug/l	10.0		103	80-127			
1,1-Dichloroethene	10.2	0.50	"	10.0		102	75-124			
Trichloroethene	10.4	0.50	"	10.0		104	75-133			
Surrogate: Dibromofluoromethane	5.39		"	5.00		108	73-130			
Surrogate: 1,2-Dichloroethane-d4	5.20		"	5.00		104	78-129			
Surrogate: Toluene-d8	5.40		"	5.00		108	81-116			
Surrogate: 4-Bromofluorobenzene	5.25		"	5.00		105	71-117			
Matrix Spike (3H01043-MS1)		Source: MMG0572-01		Prepared: 08/01/03 Analyzed: 08/02/03						
Chlorobenzene	46.9	2.5	ug/l	50.0	ND	93.8	80-127			
1,1-Dichloroethene	59.1	2.5	"	50.0	ND	118	75-124			
Trichloroethene	49.6	2.5	"	50.0	ND	99.2	75-133			
Surrogate: Dibromofluoromethane	5.74		"	5.00		115	73-130			
Surrogate: 1,2-Dichloroethane-d4	5.74		"	5.00		115	78-129			
Surrogate: Toluene-d8	5.42		"	5.00		108	81-116			
Surrogate: 4-Bromofluorobenzene	5.22		"	5.00		104	71-117			
Matrix Spike Dup (3H01043-MSD1)		Source: MMG0572-01		Prepared: 08/01/03 Analyzed: 08/02/03						
Chlorobenzene	51.7	2.5	ug/l	50.0	ND	103	80-127	9.74	10	
1,1-Dichloroethene	59.9	2.5	"	50.0	ND	120	75-124	1.34	16	
Trichloroethene	56.1	2.5	"	50.0	ND	112	75-133	12.3	16	
Surrogate: Dibromofluoromethane	5.69		"	5.00		114	73-130			
Surrogate: 1,2-Dichloroethane-d4	5.50		"	5.00		110	78-129			
Surrogate: Toluene-d8	5.35		"	5.00		107	81-116			
Surrogate: 4-Bromofluorobenzene	5.15		"	5.00		103	71-117			

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

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

Project: ARCO #276, Oakland, CA
Project Number: INTRIM -50353
Project Manager: Scott Robinson

MMG0572
Reported:
08/07/03 15:54

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.

QM-4X The spike recovery was outside of control limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

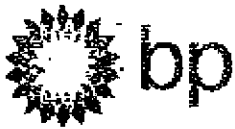
DET Analyte DETECTED

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

mm60572

Project Name 030722-161
 BP BU/GEM CO Portfolio: _____
 BP Laboratory Contract Number: _____

Date: 7/22/03 Requested Due Date (mm/dd/yy) STARTED

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: 10600 MacArthur Blvd, OAKLAND, CA	Address: 500 12th St, Ste. 200
Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 276	Oakland, CA 94609-4014
Lab PM: Latonya Pelt	Site Lat/Long:	e-mail HHD: syed_rehan@urscorp.com
Tele/Fax: 408-776-9600 / 408-782-6308	California Global ID #: T0600100082	Consultant/Contractor Project No.: J5-00000276.01 00427
Report Type & QC Level: Send EDF Reports	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-3280/510-874-3288
BP/GRM Account No.:	Address: P.O. Box 8549 Moraga, CA 94570	Consultant/Contractor PM: Scott Robinson
Lab Bottle Order No.:	Tele/Fax: 925-299-8881/925-299-8872	Invoice to: Consultant/Contractor of <u>BP/GEM</u> (Circle one)
		BP/GEM Work Release No: INTRIM -50353

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 (8260)	TPH-D (8015)	MTBE (8021)	MTBE (8260)		MTBE, TAME, ETBE, DIPE, TBA (8260)
1	MW-3	1110	X				01	3										
2	MW-4	0148					02	1										
3	MW-1	1220					03	1										
4	MW-5	1315					04	1										
5																		
6																		
7																		
8																		
9																		
10																		

Sampler's Name: <u>Morgan Gillies</u>	Relinquished By / Affiliation: <u>[Signature] / Blaine</u>	Date: <u>7/23</u>	Time: <u>12:20</u>	Accepted By / Affiliation: <u>[Signature] / Blaine</u>	Date: <u>7/23/03</u>	Time: <u>19:08</u>
Sampler's Company: <u>Blaine Tech</u>						
Equipment Date: _____						
Equipment Method: _____						
Tracking No: _____						

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

Place Yes No Temperature Blank Yes No Cooler Temperature on Receipt 36.0°C Trip Blank Yes No

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: URS
 REC. BY (PRINT): AS
 WORKORDER: MM60572

DATE REC'D AT LAB: 7-23-03
 TIME REC'D AT LAB: 1908
 DATE LOGGED IN: 7-24-03

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

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present / <input checked="" type="radio"/> Absent Intact / Broken*	01		MW-3	(6) 500s	HCl	L	7-22-03	107-B 3070060
2. Chain-of-Custody <input checked="" type="radio"/> Present / Absent*	02		MW-4	↓	↓	↓	↓	
3. Traffic Reports or Packing List: Present / <input checked="" type="radio"/> Absent	03		MW-1	↓	↓	↓	↓	
4. Airbill: Airbill / Sticker Present / <input checked="" type="radio"/> Absent	04		MW-5	↓	↓	↓	↓	
5. Airbill #:								
6. Sample Labels: <input checked="" type="radio"/> Present / Absent								
7. Sample IDs: <input checked="" type="radio"/> Listed / Not Listed on Chain-of-Custody								
8. Sample Condition: <input checked="" type="radio"/> Intact / Broken* / Leaking*								
9. Does information on custody reports, traffic reports and sample labels agree? <input checked="" type="radio"/> Yes / No*								
10. Sample received within hold time: <input checked="" type="radio"/> Yes / No*								
11. Proper Preservatives used: <input checked="" type="radio"/> Yes / No*								
12. Temp Rec. at Lab: <u>3.6°C</u> Is temp 4 +/- 2°C? <input checked="" type="radio"/> Yes / No*** <small>(Acceptance range for samples requiring thermal pres.)</small>								
Exception (if any): Metals / DEF (Direct From Field) Problem COC								

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

ATTACHMENT C

HISTORIC GROUNDWATER DATA

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (ft-MSL)	Groundwater Elevation (ft-MSL)	Date Sampled	Tetra-chloro-ethene (PCE) µg/L	Tetra-chloro-ethene (TCE) µg/L	trans-1,2-Dichloro-ethene µg/L	cis-1,2-Dichloro-ethene µg/L	Freon 12 µg/L	Dissolved Oxygen (mg/l)	Purged Not Purg (P/NP)
MW-1	03-10-95	55.92	26.26	ND	29.66	03-10-95	170	<1	--	<1	--		
MW-1	06-05-95	55.92	25.71	ND	30.21	06-05-95	210	<5	--	<5	--		
MW-1	08-29-95	55.92	28.44	ND	27.48	08-29-95	130	<1	--	<1	--		
MW-1	11-16-95	55.92	30.85	ND	25.07	11-16-95	45	<1	--	<1	<1		
MW-1	02-28-96	55.92	24.99	ND	30.93	02-28-96	97	<1	<1	<1	--		
MW-1	05-28-96	55.92	24.92	ND	31.00	05-28-96	160	<5	<5	<5	--		
MW-1	08-19-96	55.92	28.04	ND	27.88	08-19-96	77	<1	<1	<1	--		
MW-1	11-21-96	55.92	30.19	ND	25.73	11-21-96	30	<1	<1	<1	--		
MW-1	03-26-97	55.92	24.90	ND	31.02	03-26-97	66	<1	<1	<1	--		
MW-1	05-20-97	55.92	26.99	ND	28.93	05-20-97	36	<0.5	<0.5	<0.5	--		
MW-1	08-18-97	55.92	29.98	ND	25.94	08-18-97	11	<0.5	<0.5	<0.5	--		
MW-1	11-17-97	55.92	31.72	ND	24.20	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-1	12-02-99	55.92	Not surveyed			12-02-99	Not surveyed: well was inaccessible						
MW-2	03-10-95	55.10	13.98	ND	41.12	03-11-95	<1	<1	--	<1	--		
MW-2	06-05-95	55.10	15.65	ND	39.45	06-05-95	<1	<1	--	<1	--		
MW-2	08-29-95	55.10	17.14	ND	37.96	08-29-95	<5	<5	--	<5	--		
MW-2	11-16-95	55.10	Not surveyed			11-16-95	Not surveyed: well was inaccessible						
MW-2	02-28-96	55.10	12.46	ND	42.64	02-28-96	<1	<1	<1	<1	--		
MW-2	05-28-96	55.10	15.23	ND	39.87	05-28-96	<1	<1	<1	<1	--		
MW-2	08-19-96	55.10	16.84	ND	38.26	08-21-96	<1	<1	<1	<1	--		
MW-2	11-21-96	55.10	15.44	ND	39.66	11-21-96	<1	<1	<1	<1	--		
MW-2	03-26-97	55.10	15.73	ND	39.37	03-26-97	<10 [^]	<10 [^]	<10 [^]	<10 [^]	--		
MW-2	05-20-97	55.10	16.07	ND	39.03	05-20-97	<1 [^]	<1 [^]	<1 [^]	<1 [^]	--		
MW-2	08-18-97	55.10	17.28	ND	37.82	08-18-97	<5 [^]	<5 [^]	<5 [^]	<5 [^]	--		
MW-2	11-17-97	55.10	16.75	ND	38.35	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-2	12-02-99	55.10	Not surveyed			12-02-99	Not sampled: not on sampling schedule						

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 Recreated from electronic data provided by Pinnacle

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well	Date	TOC Elevation	Depth to Water	FP Thickness	Groundwater Elevation	Date	Tetra- chloro- ethene (PCE)	Tetra- chloro- ethene (TCE)	trans- 1,2- Dichloro- ethene	cis-1,2- Dichloro- ethene	Freon 12	Dissolved Oxygen	Purged Not Purged
Number	Gauged	(ft-MSL)	(feet)	(ft-MSL)	(ft-MSL)	Sampled	µg/L	µg/L	µg/L	µg/L	µg/L	(mg/l)	(P/NP)
MW-3	03-10-95	56.55	26.74	ND	29.81	03-11-95	1700	<10	--	<10	--		
MW-3	06-05-95	56.55	26.34	ND	30.21	06-05-95	2500	<20	--	<20	--		
MW-3	08-29-95	56.55	29.15	ND	27.40	08-29-95	1600	<20	--	<20	--		
MW-3	11-16-95	56.55	31.50	ND	25.05	11-16-95	1100	<20	--	<20	--		
MW-3	02-28-96	56.55	25.32	ND	31.23	02-28-96	1100	<10	<10	<10	<20		
MW-3	05-28-96	56.55	25.46	ND	31.09	05-28-96	1700	<20	<20	<20	--		
MW-3	08-19-96	56.55	28.71	ND	27.84	08-19-96	1200	<20	<20	<20	--		
MW-3	11-21-96	56.55	30.85	ND	25.70	11-21-96	710	<20 [^]	<20 [^]	<20 [^]	--		
MW-3	03-26-97	56.55	25.36	ND	31.19	03-26-97	710	<40 [^]	<40 [^]	<40 [^]	--		
MW-3	05-20-97	56.55	27.61	ND	28.94	05-20-97	800	<25 [^]	<25 [^]	<25 [^]	--		
MW-3	08-18-97	56.55	30.62	ND	25.93	08-18-97	420	<5 [^]	<5 [^]	<5 [^]	--		
MW-3	11-17-97	56.55	32.40	ND	24.15	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds					--	
MW-3	12-02-99	56.55	30.75	ND	25.80	12-02-99	210*	<0.5*	<0.5*	<0.5*	--	0.47	NP
MW-4	03-10-95	55.98	26.22	ND	29.76	03-11-95	2600	<20	--	<20	--		
MW-4	06-05-95	55.98	25.79	ND	30.19	06-05-95	3100	<20	--	<20	--		
MW-4	08-29-95	55.98	28.56	ND	27.42	08-29-95	2900	<20	--	<20	--		
MW-4	11-16-95	55.98	31.00	ND	24.98	11-16-95	2100	<20	--	<20	--		
MW-4	02-28-96	55.98	24.77	ND	31.21	02-28-96	2400	<20	<20	<20	<20		
MW-4	05-28-96	55.98	24.91	ND	31.07	05-28-96	2700	<20	<20	<20	--		
MW-4	08-19-96	55.98	28.17	ND	27.81	08-19-96	2600	<20	<20	<20	--		
MW-4	11-21-96	55.98	30.30	ND	25.68	11-21-96	1100	<20 [^]	<20 [^]	<20 [^]	--		
MW-4	03-26-97	55.98	24.80	ND	31.18	03-26-97	1900	<40 [^]	<40 [^]	<40 [^]	--		
MW-4	05-20-97	55.98	27.03	ND	28.95	05-20-97	1600	<50 [^]	<50 [^]	<50 [^]	--		
MW-4	08-18-97	55.98	30.10	ND	25.88	08-18-97	600	<125 [^]	<125 [^]	--	--		
MW-4	11-17-97	55.98	31.84	ND	24.14	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds					--	
MW-4	12-02-99	55.98	30.20	ND	25.78	12-02-99	320*	<0.5*	<0.5*	<0.5*	--	1.03	NP

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 Recreated from electronic data provided by Pinnacle

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well	Date	TOC Elevation	Depth to Water	FP Thickness	Groundwater Elevation	Date	Tetra- chloro- ethene (PCE)	Tetra- chloro- ethene (TCE)	trans- 1,2- Dichloro- ethene	cis-1,2- Dichloro- ethene	Freon 12	Dissolved Oxygen	Purged/ Not Purged
Number	Gauged	(ft-MSL)	(feet)	(ft-MSL)	(ft-MSL)	Sampled	µg/L	µg/L	µg/L	µg/L	µg/L	(mg/l)	(P/NP)
MW-5	03-10-95	55.43	25.62	ND	29.81	03-10-95	270	<5	--	<5	--		
MW-5	06-05-95	55.43	25.30	ND	30.13	06-05-95	310	<5	--	<5	--		
MW-5	08-29-95	55.43	28.21	ND	27.22	08-29-95	240	<5	--	<5	--		
MW-5	11-16-95	55.43	30.63	ND	24.80	11-16-95	940	<5	--	<5	<5		
MW-5	02-28-96	55.43	24.07	ND	31.36	02-28-96	1100	<10	<10	<10	--		
MW-5	05-28-96	55.43	24.42	ND	31.01	05-28-96	360	<5	<5	<5	--		
MW-5	08-19-96	55.43	27.82	ND	27.61	08-21-96	150	<1	<1	2	--		
MW-5	11-21-96	55.43	29.92	ND	25.51	11-21-96	1900	<20^	<20^	<20^	--		
MW-5	03-26-97	55.43	24.22	ND	31.21	03-26-97	270	<10^	<10^	<10^	--		
MW-5	05-20-97	55.43	26.60	ND	28.83	05-20-97	290	<5^	<5^	<5^	--		
MW-5	08-18-97	55.43	NR	ND	NR	08-18-97	--	--	--	--	--		
MW-5	11-17-97	55.43	Not surveyed			11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-5	12-02-99	55.43	29.84	ND	25.59	12-02-99	46*	<0.5*	<0.5*	<0.5*	--	0.53	P
MW-6	03-10-95	61.21	31.54	ND	29.67	03-11-95	1300	<20	--	<20	--		
MW-6	06-05-95	61.21	31.15	ND	30.06	06-05-95	2000	<20	--	<20	--		
MW-6	08-29-95	61.21	34.03	ND	27.18	08-29-95	1300	<20	--	<20	--		
MW-6	11-16-95	61.21	36.40	ND	24.81	11-16-95	1300	<20	--	<20	--		
MW-6	02-28-96	61.21	30.18	ND	31.03	02-28-96	960	<20	<20	<20	<20		
MW-6	05-28-96	61.21	30.29	ND	30.92	05-28-96	970	<20	<20	<20	--		
MW-6	08-19-96	61.21	33.54	ND	27.67	08-19-96	820	<20	<20	<20	--		
MW-6	11-21-96	61.21	35.70	ND	25.51	11-21-96	680	<20^	<20^	<20^	--		
MW-6	03-26-97	61.21	30.15	ND	31.06	03-26-97	830	<40^	<40^	<40^	--		
MW-6	05-20-97	61.21	32.40	ND	28.81	05-20-97	270	<5^	<5^	<5^	--		
MW-6	08-18-97	61.21	35.47	ND	25.74	08-18-97	420	<62.5^	<62.5^	--	--		
MW-6	11-17-97	61.21	37.25	ND	23.96	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-6	12-02-99	61.21	35.55	ND	25.66	12-02-99	Not sampled: not on sampling schedule						

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well	Date	TOC Elevation	Depth to Water	FP Thickness	Groundwater Elevation	Date	Tetra- chloro- ethene (PCE)	Tetra- chloro- ethene (TCE)	trans- 1,2- Dichloro- ethene	cis-1,2- Dichloro- ethene	Freon 12	Dissolved Oxygen	Purged/ Not Purge
Number	Gauged	(ft-MSL)	(feet)	(ft-MSL)	(ft-MSL)	Sampled	µg/L	µg/L	µg/L	µg/L	µg/L	(mg/l)	(P/NP)
MW-7	03-10-95	58.22	17.69	ND^^	40.53	03-11-95	Not sampled: floating product entered the well during purging						
MW-7	06-05-95	58.22	19.68	ND	38.54	06-05-95	<10	<10	--	<10	--		
MW-7	08-29-95	58.22	21.70	ND	36.52	08-29-95	<10	<10	--	<10	--		
MW-7	11-16-95	58.22	23.02	ND	35.20	11-16-95	<20	<20	--	<20	<20		
MW-7	02-28-96	58.22	16.54	ND	41.68	02-28-96	<10	<10	<10	<10	--		
MW-7	05-28-96	58.22	19.29	ND	38.93	05-28-96	<10	<10	<10	<10	--		
MW-7	08-19-96	58.22	21.84	ND	36.38	08-21-96	<1	<1	<1	<1	--		
MW-7	11-21-96	58.22	19.58	ND	38.64	11-21-96	<10^	<10^	<10^	<10^	--		
MW-7	03-26-97	58.22	19.67	ND	38.55	03-26-97	<20^	<20^	<20^	<20^	--		
MW-7	05-20-97	58.22	20.18	ND	38.04	05-20-97	<10^	<10^	<10^	<10^	--		
MW-7	08-18-97	58.22	22.21	ND	36.01	08-18-97	<10^	<10^	<10^	<10^	--		
MW-7	11-17-97	58.22	20.85	ND	37.37	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-7	12-02-99	58.22	20.92	ND	37.30	12-02-99	Not sampled: not on sampling schedule						
MW-8	03-10-95	53.65	23.60	ND	30.05	03-10-95	<1	<1	--	<1	--		
MW-8	06-05-95	53.65	23.48	ND	30.17	06-05-95	<1	<1	--	<1	--		
MW-8	08-29-95	53.65	26.44	ND	27.21	08-29-95	<1	<1	--	<1	--		
MW-8	11-16-95	53.65	28.90	ND	24.75	11-16-95	<1	<1	--	<1	--		
MW-8	02-28-96	53.65	22.16	ND	31.49	02-28-96	3	<1	<1	<1	<1		
MW-8	05-28-96	53.65	22.62	ND	31.03	05-28-96	<1	<1	<1	<1	--		
MW-8	08-19-96	53.65	26.70	ND	26.95	08-21-96	<1	<1	<1	<1	--		
MW-8	11-21-96	53.65	28.16	ND	25.49	11-21-96	7	<1	<1	<1	--		
MW-8	03-26-97	53.65	22.42	ND	31.23	03-26-97	<1	<1	<1	<1	--		
MW-8	05-20-97	53.65	24.84	ND	28.81	05-20-97	<0.5	<0.5	<1	<1	--		
MW-8	08-18-97	53.65	28.03	ND	25.62	08-18-97	<5	<5	<0.5	<0.5	--		
MW-8	11-17-97	53.65	29.16	ND	24.49	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
MW-8	12-02-99	53.65	28.07	ND	25.58	12-02-99	Not sampled: not on sampling schedule						

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well	Date	TOC Elevation	Depth to Water	FP Thickness	Groundwater Elevation	Date	Tetra- chloro- ethene (PCE)	Tetra- chloro- ethene (TCE)	trans- 1,2- Dichloro- ethene	cis-1,2- Dichloro- ethene	Freon 12	Dissolved Oxygen	Purged/ Not Purged
Number	Gauged	(ft-MSL)	(feet)	(ft-MSL)	(ft-MSL)	Sampled	µg/L	µg/L	µg/L	µg/L	µg/L	(mg/l)	(P/NP)
RW-1	03-10-95	56.32	26.48	Sheen	29.84	03-10-95	260	<5	--	<5	--		
RW-1	06-05-95	56.32	26.20	ND	30.12	06-05-95	59	<1	--	<1	--		
RW-1	08-29-95	56.32	28.98	ND	27.34	08-29-95	570	<5	--	<5	--		
RW-1	11-16-95	56.32	31.34	ND	24.98	11-16-95	140	<1	--	<1	<1		
RW-1	02-28-96	56.32	25.12	ND	31.20	02-28-96	6	<1	<1	<1	--		
RW-1	05-28-96	56.32	25.26	ND	31.06	05-28-96	12	<1	<1	<1	--		
RW-1	08-19-96	56.32	28.51	ND	27.81	08-21-96	100	<1	<1	<1	--		
RW-1	11-21-96	56.32	30.65	ND	25.67	11-21-96	190	1	<1	<1	--		
RW-1	03-26-97	56.32	25.15	ND	31.17	03-26-97	6	<1	<1	<1	--		
RW-1	05-20-97	56.32	27.44	ND	28.88	05-20-97	5.3	<0.5	<0.5	<0.5	--		
RW-1	08-18-97	56.32	30.46	ND	25.86	08-18-97	46	<5	<5	--	--		
RW-1	11-17-97	56.32	32.16	ND	24.16	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
RW-1	12-02-99	56.32	30.54	ND	25.78	12-02-99	Not sampled: not on sampling schedule						
WGR-3	03-10-95	NR	15.20	ND	NR	03-11-95	<1	<1	--	<1	--		
WGR-3	06-05-95	NR	19.25	ND	NR	06-05-95	<1	<1	--	<1	--		
WGR-3	08-29-95	NR	21.41	ND	NR	08-29-95	<1	<1	--	<1	--		
WGR-3	11-16-95	NR	22.50	ND	NR	11-16-95	<1	<1	--	<1	<1		
WGR-3	02-28-96	NR	14.90	ND	NR	02-28-96	<1	<1	<1	<1	--		
WGR-3	05-28-96	NR	18.33	ND	NR	05-28-96	<1	<1	<1	<1	--		
WGR-3	08-19-96	NR	21.38	ND	NR	08-19-96	<1	<1	<1	<1	--		
WGR-3	11-21-96	NR	18.70	ND	NR	11-21-96	<1	<1	<1	<1	--		
WGR-3	03-26-97	NR	18.98	ND	NR	03-26-97	<1	<1	<1	<1	--		
WGR-3	05-20-97	NR	19.70	ND	NR	05-20-97	<0.5	<0.5	<0.5	<0.5	--		

Table 1
Historical Groundwater Elevation and Analytical Data
Halogenated Volatile Organic Compounds (EPA method 8010 or 8240)
1995-Present**

ARCO Service Station 276
10600 MacArthur Boulevard, Oakland, California

Well	Date	TOC Elevation	Depth to Water	FP Thickness	Groundwater Elevation	Date	Tetra- chloro- ethene (PCE)	Tetra- chloro- ethene (TCE)	trans- 1,2- Dichloro- ethene	cis-1,2- Dichloro- ethene	Freon 12	Dissolved Oxygen	Purged/ Not Purged
Number	Gauged	(ft-MSL)	(feet)	(ft-MSL)	(ft-MSL)	Sampled	µg/L	µg/L	µg/L	µg/L	µg/L	(mg/l)	(P/NP)
WGR-3	08-18-97	NR	21.81	ND	NR	08-18-97	<5	<5	<5	--	--		
WGR-3	11-17-97	NR	20.42	ND	NR	11-17-97	Not analyzed for Halogenated Volatile Organic Compounds						
WGR-3	12-02-99	NR	20.58	ND	NR	12-02-99	Not sampled: not on sampling schedule						

TOC: Top of Casing

ft-MSL: elevation in feet, relative to mean sea level

µg/L: micrograms per liter

ND: none detected

NR: not reported; data not available or not measurable

--: not analyzed or not applicable

*: analyzed by EPA method 8021B

^: method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

^^: floating product entered the well during purging

***: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Results and Remediation System Performance Evaluation Report, Retail Service Station 10600 and 10700 MacArthur Boulevard, Oakland, California, (EMCON, March 22, 1996).*

ATTACHMENT D

EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

Error Summary Log

08/13/03

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #276, Oakland, CA
Work Order Number:	MMG0572
Global ID:	T0600100082
Lab Report Number:	MMG0572080720031554

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
MMG05720807200 MW-1 31554		MMG057203	W	CS	8260FAB	SW5030B	07/22/03	08/01/03	08/02/03	3H01002	1
MMG05720807200 MW-1 31554		MMG057203	W	CS	SW8260	SW5030B	07/22/03	08/01/03	08/01/03	3H01043	1
MMG05720807200 MW-3 31554		MMG057201	W	CS	8260FAB	SW5030B	07/22/03	08/05/03	08/05/03	3H05021	1
MMG05720807200 MW-3 31554		MMG057201	W	CS	SW8260	SW5030B	07/22/03	08/01/03	08/01/03	3H01043	1
MMG05720807200 MW-4 31554		MMG057202	W	CS	8260FAB	SW5030B	07/22/03	08/05/03	08/05/03	3H05021	1
MMG05720807200 MW-4 31554		MMG057202	W	CS	SW8260	SW5030B	07/22/03	08/01/03	08/01/03	3H01043	1
MMG05720807200 MW-5 31554		MMG057204	W	CS	8260FAB	SW5030B	07/22/03	08/05/03	08/05/03	3H05021	1
MMG05720807200 MW-5 31554		MMG057204	W	CS	SW8260	SW5030B	07/22/03	08/01/03	08/01/03	3H01043	1
		MMG057201	W	NC	SW8260	SW5030B	//	08/01/03	08/02/03	3H01043	2
		MMG072806	W	NC	8260FAB	SW5030B	//	08/01/03	08/02/03	3H01002	1
		3H01002BS1	WQ	BS1	8260FAB	SW5030B	//	08/01/03	08/01/03	3H01002	1
		3H01002BS2	WQ	BS2	8260FAB	SW5030B	//	08/01/03	08/01/03	3H01002	1
		3H01002BLK1	WQ	LB1	8260FAB	SW5030B	//	08/01/03	08/01/03	3H01002	1
		3H01002MS1	W	MS1	8260FAB	SW5030B	//	08/01/03	08/02/03	3H01002	1
		3H01002MSD1	W	SD1	8260FAB	SW5030B	//	08/01/03	08/02/03	3H01002	1
		3H01043BS1	WQ	BS1	SW8260	SW5030B	//	08/01/03	08/01/03	3H01043	1
		3H01043BLK1	WQ	LB1	SW8260	SW5030B	//	08/01/03	08/01/03	3H01043	1
		3H01043MS1	W	MS1	SW8260	SW5030B	//	08/01/03	08/02/03	3H01043	1
		3H01043MSD1	W	SD1	SW8260	SW5030B	//	08/01/03	08/02/03	3H01043	1
		3H05021BS1	WQ	BS1	8260FAB	SW5030B	//	08/05/03	08/05/03	3H05021	1
		3H05021BS2	WQ	BS2	8260FAB	SW5030B	//	08/05/03	08/05/03	3H05021	1
		3H05021BLK1	WQ	LB1	8260FAB	SW5030B	//	08/05/03	08/05/03	3H05021	1
		3H05021MS1	W	MS1	8260FAB	SW5030B	//	08/05/03	08/05/03	3H05021	1
		3H05021MSD1	W	SD1	8260FAB	SW5030B	//	08/05/03	08/05/03	3H05021	1

EDFSAMP: Error Summary Log

08/13/03

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

EDFTEST: Error Summary Log

08/13/03

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

EDFRES: Error Summary Log

08/13/03

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	3H01002MS1	MS1	W	8260FAB	PR	08/02/03	1	DCA12D4
Warning: extra parameter	3H01002MS1	MS1	W	8260FAB	PR	08/02/03	1	GROC6C10
Warning: extra parameter	3H01002MSD1	SD1	W	8260FAB	PR	08/02/03	1	DCA12D4
Warning: extra parameter	3H01002MSD1	SD1	W	8260FAB	PR	08/02/03	1	GROC6C10
Warning: extra parameter	3H05021MS1	MS1	W	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	3H05021MS1	MS1	W	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	3H05021MSD1	SD1	W	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	3H05021MSD1	SD1	W	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	MMG057201	CS	W	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	MMG057201	CS	W	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	MMG057202	CS	W	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	MMG057202	CS	W	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	MMG057203	CS	W	8260FAB	PR	08/02/03	1	DCA12D4
Warning: extra parameter	MMG057203	CS	W	8260FAB	PR	08/02/03	1	GROC6C10
Warning: extra parameter	MMG057204	CS	W	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	MMG057204	CS	W	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	MMG072806	NC	W	8260FAB	PR	08/02/03	1	DCA12D4
Warning: extra parameter	MMG072806	NC	W	8260FAB	PR	08/02/03	1	GROC6C10
Warning: extra parameter	3H01002BLK1	LB1	WQ	8260FAB	PR	08/01/03	1	DCA12D4
Warning: extra parameter	3H01002BLK1	LB1	WQ	8260FAB	PR	08/01/03	1	GROC6C10
Warning: extra parameter	3H01002BS1	BS1	WQ	8260FAB	PR	08/01/03	1	DCA12D4
Warning: extra parameter	3H01002BS2	BS2	WQ	8260FAB	PR	08/01/03	1	DCA12D4
Warning: extra parameter	3H01002BS2	BS2	WQ	8260FAB	PR	08/01/03	1	GROC6C10
Warning: extra parameter	3H01043BLK1	LB1	WQ	SW8260	PR	08/01/03	1	DCP13C
Warning: extra parameter	3H01043BLK1	LB1	WQ	SW8260	PR	08/01/03	1	DCP13T

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	3H01043BLK1	LB1	WQ	SW8260	PR	08/01/03	1	FC113
Warning: extra parameter	3H05021BLK1	LB1	WQ	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	3H05021BLK1	LB1	WQ	8260FAB	PR	08/05/03	1	GROC6C10
Warning: extra parameter	3H05021BS1	BS1	WQ	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	3H05021BS2	BS2	WQ	8260FAB	PR	08/05/03	1	DCA12D4
Warning: extra parameter	3H05021BS2	BS2	WQ	8260FAB	PR	08/05/03	1	GROC6C10

EDFQC: Error Summary Log

08/13/03

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

EDFCL: Error Summary Log

08/13/03

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

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Submittal Type: GW Monitoring Report

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