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San Diego, CA 92108
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April 15, 2005
PN08BP.U6021.05

Mr. Danny Martinez
San Diego County
Department of Environmental Health, Land and Water Quality Division
Site Assessment and Mitigation Program
P.O. Box 129261
San Diego, California 92112-9261

SUBJECT: First 2005 Semi-Annual Groundwater Monitoring Report
ARCO Facility 06021
1801 South Coast Highway
Oceanside, California
SAM Case No. H20616-002

Dear Mr. Martinez:

Attached please find the First 2005 Semi-Annual Groundwater Monitoring Report prepared by SECOR International Incorporated on behalf of Atlantic Richfield Company. Should you have any questions regarding the contents of this report, please call Mr. Brad Eisenberg at (619) 296-6195.

Respectfully submitted,
SECOR International Incorporated

Prepared by:

Melissa Garrett
for Arthur E. Gunter
Staff Geologist

Approved by:

Bradley G. Eisenberg, RG# 6872
Senior Geologist

Enclosure

cc: Mr. Roy Thun, Atlantic Richfield Company

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DATE: April 15, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Station No:	06021	Address:	1801 South Coast Highway, Oceanside, California

Atlantic Richfield Cotact / Phone No.:	Mr. Roy Thun / (661) 287-3855
Consultant / Contact / Phone No.:	SECOR / Mr. Brad Eisenberg / (619) 296-6195
SECOR Project No.:	14BP.U6021.05. 3L58
Primary Agency / Regulatory ID No.:	County of San Diego – Site Assessment and Mitigation Program / SAM Case No. H20616-002
Other Agencies to Receive Copies:	None

WORK PERFORMED THIS QUARTER [First Quarter - 2005]:

1. Submit the Fourth Quarter 2004 Quarterly Monitoring Report.
2. Performed the first 2005 semi-annual groundwater monitoring event.
3. Submitted well destruction permit, and pursued traffic control permits.

REGISTERED GEOLOGIST
BRADLEY G. EISENBERG
No. 6372
Exp 11/05
STATE OF CALIFORNIA

WORK PROPOSED NEXT QUARTER [Second Quarter - 2005]:

1. Destroy wells pending permit acquisition and receipt of a "No Further Action" letter from the SAM.

Current Phase of Project:	Monitoring	(Assmnt, Remed. etc.)
Frequency of Sampling:	Bi-Annually	(Quarterly, etc.)
Frequency of Monitoring:	Bi-Annually	(Monthly, etc.)
Is Liquid Phase Hydrocarbon Present On-site:	No	(Yes/No)
Cumulative LPH Recovered to Date:	141.5	(gallons)
LPH Recovered This Quarter:	0	(gallons)
Total Soil Removed to Date:	Unknown	(cubic yards)
Total Soil Removed This Quarter:	None	(cubic yards)
Water Wells or Surface Waters within a 2000' Radius & Their Respective Directions:	Pacific Ocean (approx. 1,400 feet / southwest)	(Distance and Direction)
Current Remediation Techniques:	Natural Attenuation	(SVES, LPH Removal, etc.)
Permits for Discharge:	County of San Diego Air Pollution Control District Control No. 205892 and Permit No. 961084	(NPDES, POTW, etc.)

DATE: April 15, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT
ARCO #6021 (Continued)

Approximate Depth to Groundwater	16.79-20.83	(Measured Feet bgs)
Groundwater Gradient:	West-Southwest	(Direction)
	0.01 feet/foot	(Magnitude)
Groundwater Use	Non-Beneficial	(Beneficial / Non-Beneficial)
Summary of Unusual Activity:	None	
Agency Directive Requirements:	Perform Semi-Annual groundwater monitoring (1st and 3rd Quarters)	

DISCUSSION: On March 18, 2005, SECOR International Incorporated (SECOR) personnel performed the biannual groundwater monitoring activities of 11 groundwater monitoring wells associated with the site (Figure 1), in accordance with the semi-annual sampling program (Table 1). Depth to groundwater varied across the site (and off-site) from 16.79 feet below ground surface (bgs) in well MW-10 to 20.83 feet bgs in well MW-5; groundwater elevations varied between 17.55 and 22.05 feet above mean sea level. The calculated groundwater flow direction was to the west-southwest with an approximate hydraulic gradient of 0.01 feet per foot. Depth to groundwater measurements and estimated groundwater elevations are presented in Table 2 and on Figure 2, and field data logs are attached.

During the first 2005 semi-annual groundwater sampling event, groundwater samples were analyzed for gasoline range organics (GRO including C_6 - C_{12}) by Environmental Protection Agency (EPA) Method 8015M; for benzene, toluene, ethyl benzene, and xylenes (collectively BTEX), and for the fuel oxygenates methyl-tert-butyl ether (MTBE), ethyl tert-butyl ether (ETBE), di-isopropyl ether (DIPE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), and ethanol by EPA Method 8260B. Analytical results are summarized in Tables 2 and 3, and copies of laboratory and chain-of-custody documentation are attached. The dissolved GRO, benzene and MTB analytical results distribution is shown on Figure 3. Isoconcentration maps are provided as Figures 4 and 5 for the reported dissolved benzene and MTBE concentrations, respectively. Hydrographs presenting groundwater elevation, benzene, and MTBE concentrations are also attached.

CONCLUSIONS AND RECOMMENDATIONS: In general, calculated groundwater elevations from the first 2005 semi-annual monitoring increased by several feet in comparison to the previous several years of historical gauging data. Dissolved benzene concentrations were similar to the previous sampling event (Fourth Quarter 2004). Dissolved MTBE concentrations increased in several wells by an order of magnitude or more, in comparison with the previous sampling event (Fourth Quarter 2005), but remained within the range of concentrations for the past several years of historical sampling data. SECOR recommends the October 29, 2004 Addendum to the 1996 CAP be implemented and the SAM consider the site for "no further action" status.

ATTACHMENTS:

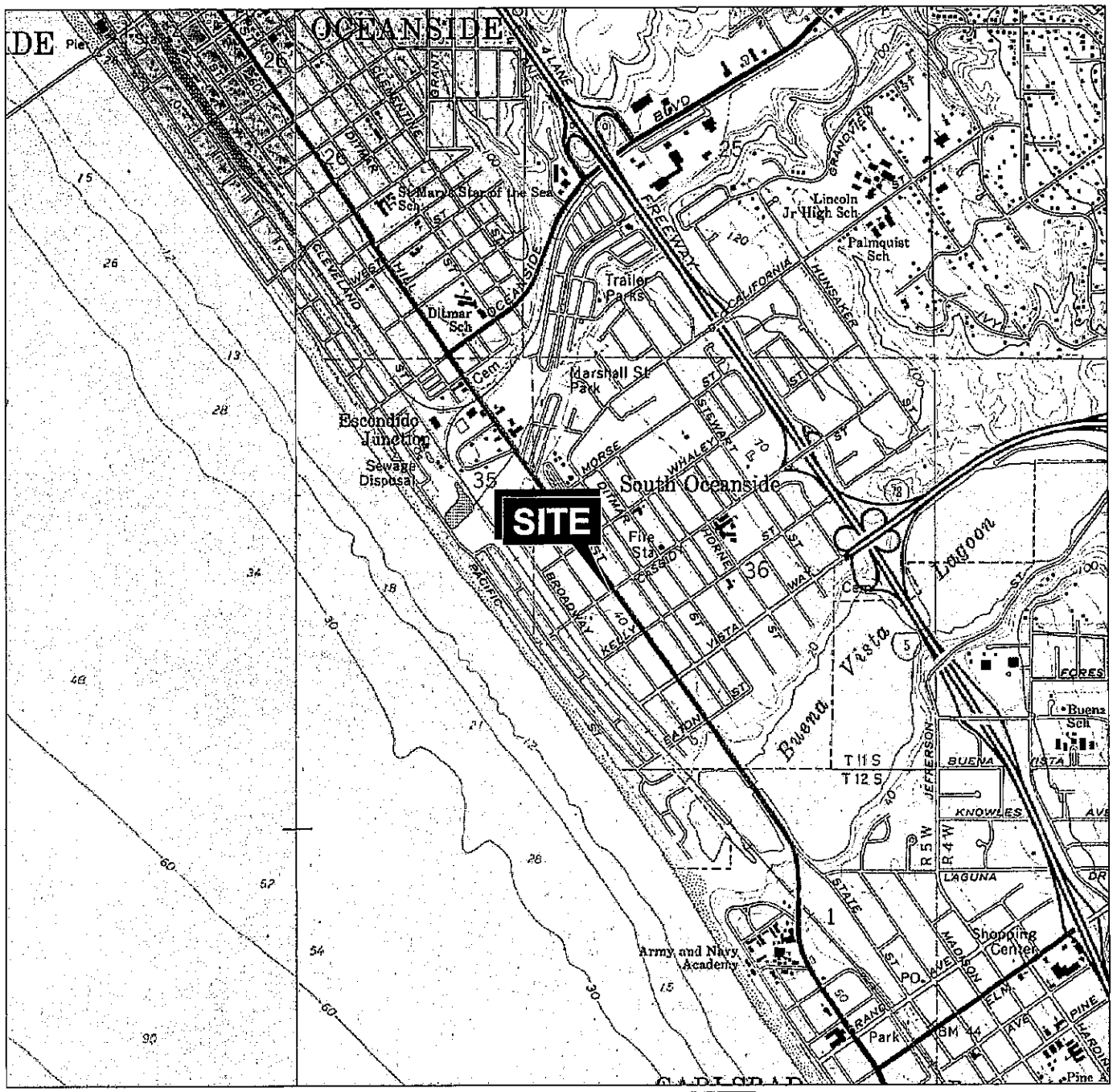
- Site Location Map (Figure 1)
- Groundwater Elevation Contour Map (Figure 2)
- Hydrocarbon Concentration in Groundwater Map (Figure 3)
- Benzene Isoconcentration Contour Map (Figure 4)

DATE: April 15, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT
ARCO #6021 (Continued)

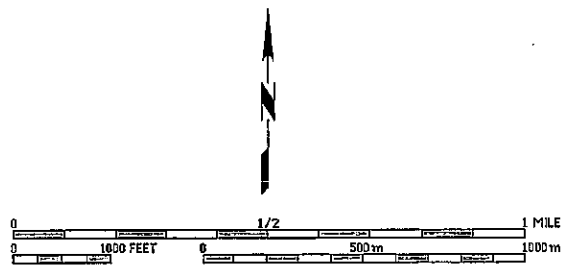
- MTBE Isoconcentration Contour Map (Figure 5)
- Groundwater Sampling Schedule (Table 1)
- Groundwater Elevation and Analytical Data (Table 2)
- Natural Biodegradation Analytical Data (Table 3)
- Hydrographs
- Groundwater Sampling Data Sheets
- Laboratory Analytical Reports and Chain of Custody

cc: Roy Thun, Atlantic Richfield



TOPO! map printed on 06/18/02 from "SanDiego.tpo"

REFERENCE: TOPO! CD-ROM; OCEANSIDE, CALIFORNIA



SECOR 11085 KNOTT AVENUE, SUITE B CYPRESS, CALIFORNIA PHONE: (714)379-3366/FAX: (714)379-3375	FOR: ATLANTIC RICHFIELD COMPANY ARCO FACILITY 06021 1801 SOUTH COAST HIGHWAY OCEANSIDE, CALIFORNIA		**SITE LOCATION MAP**		FIGURE: **1**
	JOB NUMBER: 08BP.06021.05	DRAWN BY: L. RAMIREZ	CHECKED BY: E. YOUNG	APPROVED BY: J. VALDEZ	DATE: NOVEMBER 2004

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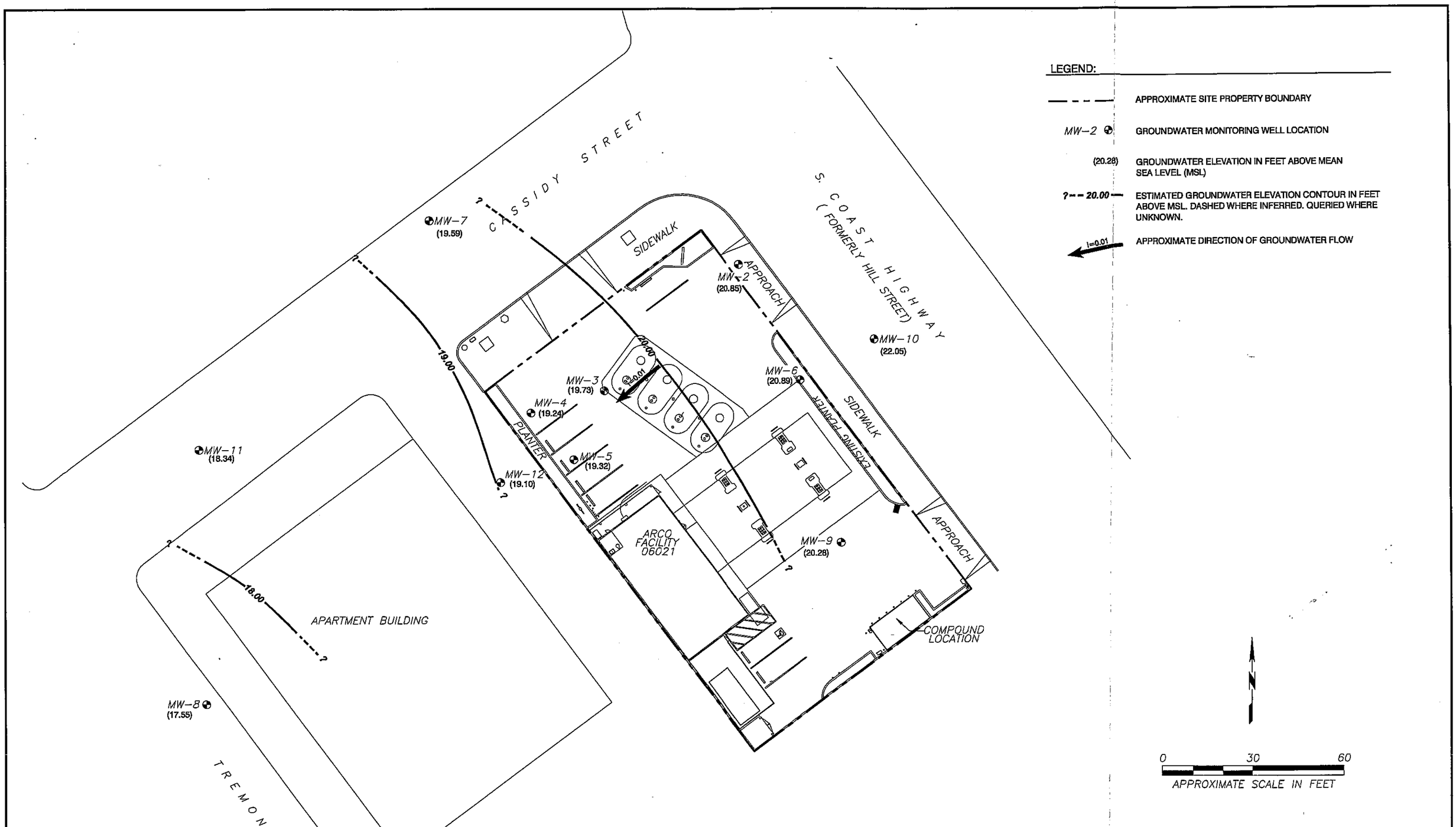
A6021_4Q04



SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619)296-6195/FAX: (619)296-6199	FOR: ATLANTIC RICHFIELD COMPANY ARCO FACILITY 06021 1801 SOUTH COAST HIGHWAY OCEANSIDE, CALIFORNIA		GROUNDWATER ELEVATION CONTOUR MAP - MARCH 18, 2005	FIGURE: 2
	JOB NUMBER: 08BP.U6021.05	DRAWN BY: LR	CHECKED BY: AG	APPROVED BY: BGE	DATE: MARCH 2005

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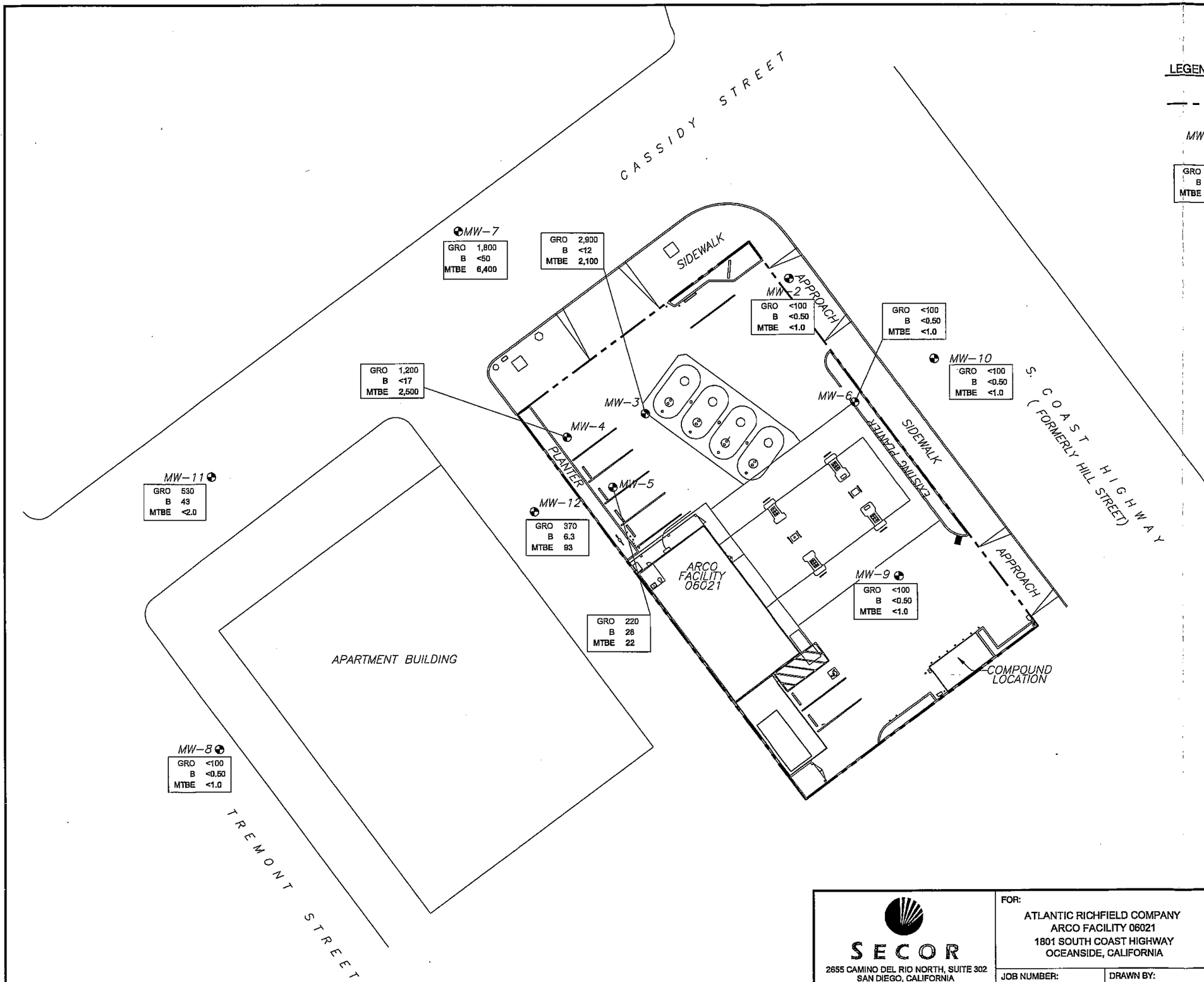

LEGEND:

— — —	APPROXIMATE SITE PROPERTY BOUNDARY
MW-2 ⊕	GROUNDWATER MONITORING WELL LOCATION
GRO <100 B 230 MTBE 230	TPHg/BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER SAMPLES. CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (μg/L)
GRO	GASOLINE RANGE ORGANICS
B	BENZENE
MTBE	METHYL TERT-BUTYL ETHER
<	LESS THAN LABORATORY REPORTING LIMIT INDICATED

N

0 30 60

APPROXIMATE SCALE IN FEET

SECOR

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SAN DIEGO, CALIFORNIA
PHONE: (619)296-6195/FAX: (619)296-6199

FOR:
ATLANTIC RICHFIELD COMPANY
ARCO FACILITY 06021
1801 SOUTH COAST HIGHWAY
OCEANSIDE, CALIFORNIA

HYDROCARBON CONCENTRATION IN GROUNDWATER - MARCH 18, 2005

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
08BP.U6021.05	LR	AG	BGE	MARCH 2005

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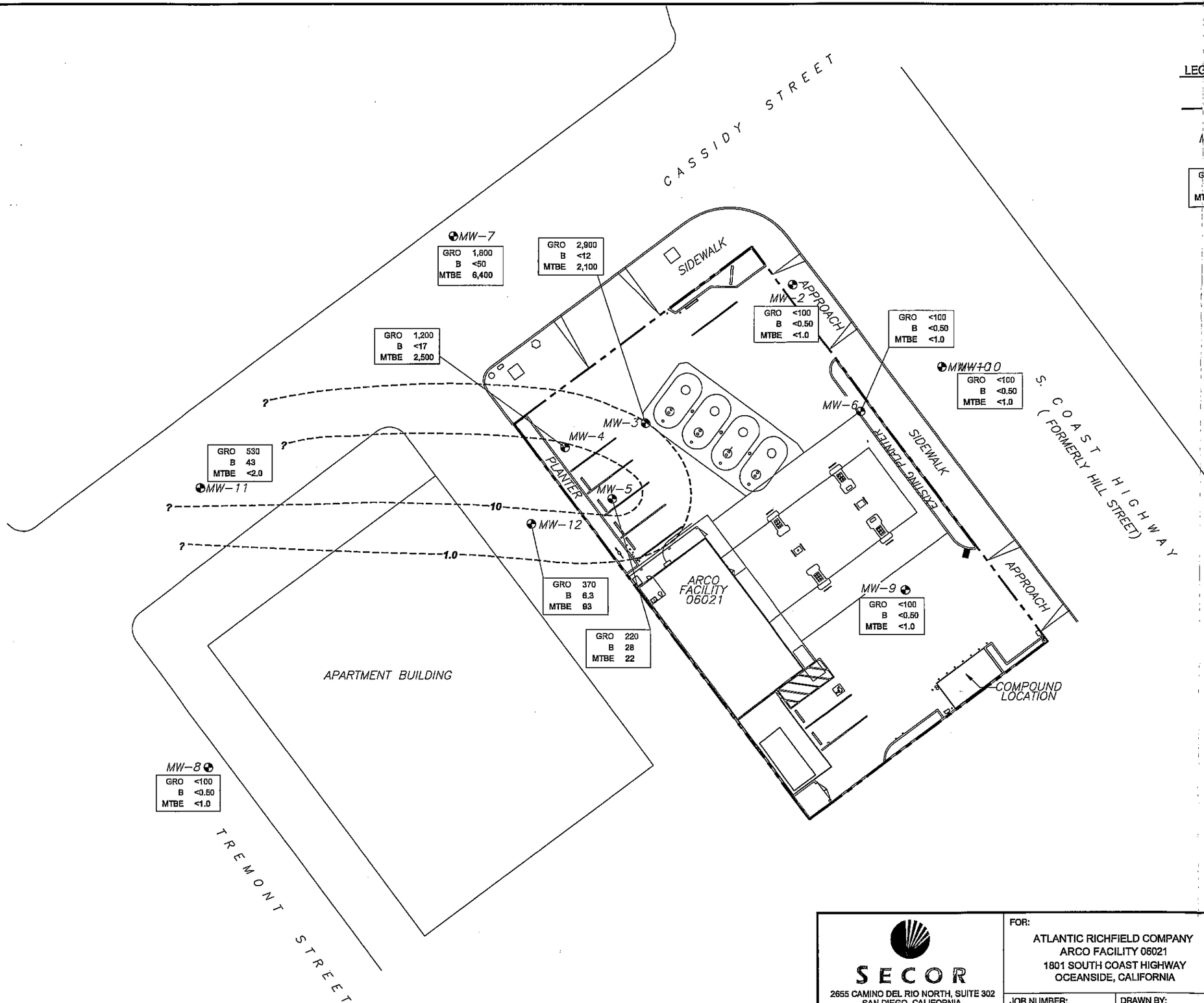

LEGEND:

— — —	APPROXIMATE SITE PROPERTY BOUNDARY
MW-2 ◐	GROUNDWATER MONITORING WELL LOCATION
GRO <100 / B 230 / MTBE 230	TPHg/BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER SAMPLES. CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)
GRO	GASOLINE RANGE ORGANICS
B	BENZENE
MTBE	METHYL TERT-BUTYL ETHER
<	LESS THAN LABORATORY REPORTING LIMIT INDICATED
10 / ?	ESTIMATED BENZENE ISOCONCENTRATION CONTOUR IN µg/L, QUERIED WHERE UNKNOWN

0 30 60

APPROXIMATE SCALE IN FEET

SECOR

2655 CAMINO DEL RIO NORTH, SUITE 302
SAN DIEGO, CALIFORNIA
PHONE: (619)296-6195/FAX: (619)296-6199

FOR:
ATLANTIC RICHFIELD COMPANY
ARCO FACILITY 06021
1801 SOUTH COAST HIGHWAY
OCEANSIDE, CALIFORNIA

BENZENE ISOCONCENTRATION CONTOUR MAP - MARCH 18, 2005

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
08BP.U6021.05	LR	AG	BGE	MARCH 2005

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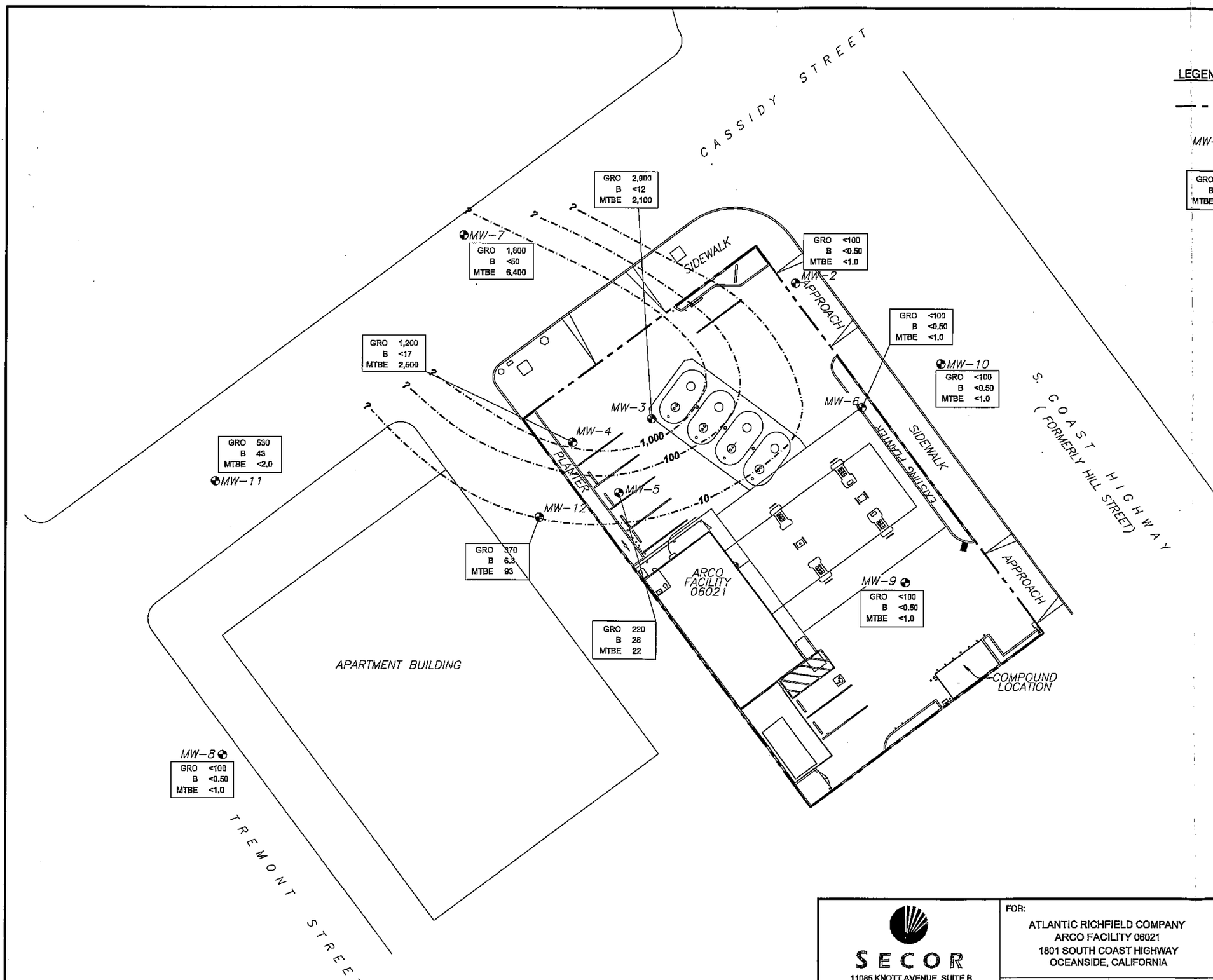

LEGEND:

— — —	APPROXIMATE SITE PROPERTY BOUNDARY
MW-2 ⊕	GROUNDWATER MONITORING WELL LOCATION
GRO <100 / B 230 / MTBE 230	TPHg/BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER SAMPLES. CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (μg/L)
GRO	GASOLINE RANGE ORGANICS
B	BENZENE
MTBE	METHYL TERT-BUTYL ETHER
<	LESS THAN LABORATORY REPORTING LIMIT INDICATED
10 ?	ESTIMATED MTBE ISOCONCENTRATION CONTOUR IN μg/L, QUERIED WHERE UNKNOWN

SECOR
11085 KNOTT AVENUE, SUITE B
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FOR:
ATLANTIC RICHFIELD COMPANY
ARCO FACILITY 06021
1801 SOUTH COAST HIGHWAY
OCEANSIDE, CALIFORNIA

MTBE ISOCONCENTRATION CONTOUR MAP - MARCH 18, 2005

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
08BP.U6021.05	LR	AG	BGE	MARCH 2005

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A6021MTBE1Q-05

TABLE 1

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well Number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
MW-2	d	a,c	d	a,c
MW-3	d	a,c	d	a,b,c
MW-4	d	a,c	d	a,b,c
MW-5	d	a,c	d	a,c
MW-6	d	a,c	d	a,c
MW-7	d	a,c	d	a,c
MW-8	d	a,c	d	a,b,c
MW-9	d	a,c	d	a,b,c
MW-10	d	a,c	d	a,c
MW-11	d	a,c	d	a,c
MW-12	d	a,c	d	a,b,c

Notes:

a = Gasoline Range Organics (also described as GRO including C_6-C_{12}) by EPA 8015m, BTEX, MTBE, TAME, DIPE, ETBE, TBA, and ethanol by 8260B

b = natural attenuation parameters including hardness, nitrate, sulfate, sulfide, manganese, chemical oxidation demand (COD), and bacteria by a heterotropic plate count (HPC).

c = gauge and purge

d = Site bi-annually (twice per year) sampled as approved in SAM's May 6, 2002 *Changes To Groundwater Monitoring* correspondance.

FIELD ANALYSIS = DO, ORP, ferrous iron, conductivity, pH and temp.

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-2	WHE = 100.61 ft msl													
6/16/93	21.13	79.48	0.00	41,000	3,200	7,300	1,400	7,300	NA	NA	NA	NA	NA	NA
3/2/94	21.95	78.66	0.00	150	6	8	5	18	NA	NA	NA	NA	NA	NA
3/1/1995	NM	NA	0.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3/10/95	22.22	78.39	0.00	<50	1.6	1.4	0.92	2.6	NA	NA	NA	NA	NA	NA
6/9/95	20.80	79.81	0.00	1,600	240	260	42	190	NA	NA	NA	NA	NA	NA
	WHE = 39.35 ft msl													
8/31/95	20.28	19.07	0.00	2,800	420	490	78	270	NA	NA	NA	NA	NA	NA
11/30/1995	20.53	18.82	0.00	8,900	1,400	1,500	260	820	NA	NA	NA	NA	NA	NA
3/1/96	21.50	17.85	0.00	4,800	750	890	140	440	NA	NA	NA	NA	NA	NA
6/5/1996	22.12	17.23	0.00	2,300	490	780	100	370	NA	NA	NA	NA	NA	NA
8/14/1996	22.68	16.67	0.00	260	48	78	10	37	<10	NA	NA	NA	NA	NA
11/6/1996	22.94	16.41	0.00	<500	50	99	12	54	<35	NA	NA	NA	NA	NA
3/26/97 NP	22.23	17.12	0.00	<500	0.90	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/16/97 NP	22.24	17.11	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
8/20/97 NP	22.60	16.75	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 NP	22.86	16.49	0.00	<500	0.97	2.3	<0.50	2.6	11	NA	NA	NA	NA	NA
3/24/98 NP	22.01	17.34	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
6/24/98 NP	19.63	19.72	0.00	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	NA	NA	NA	NA
9/16/98 NP	19.43	19.92	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 NP	19.71	19.64	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 NP	20.33	19.02	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 NP	20.80	18.55	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/17/99 NP	21.08	18.27	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 NP	21.63	17.72	0.00	<500	<0.50	12	1.9	23	<10	NA	NA	NA	NA	NA
2/18/00 NP	22.16	17.19	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 NP	22.41	16.94	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
7/27/00 NP	22.10	17.25	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
11/20/00 NP	22.32	17.03	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	NA	NA	NA	NA	NA
1/30/01 NP	22.15	17.2	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
5/16/01 NP	21.99	17.36	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
8/2/01 NP	21.46	17.89	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
12/19/01 NP	20.53	18.82	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
3/7/02	20.45	18.90	0.00	4,300	94^{M}	840^{M}	310^{M}	1,300^{M}	240^{M}	<50^{M}	<50^{M}	<50^{M}	<250^{M}	NA
4/16/02 NP	20.67	18.68	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	21.00	18.35	0.00	Well not sampled, reported dry										
6/2/2003	21.28	18.07	0.00	Well not sampled, reported dry										
12/11/03	NM	NM	NM	Well not sampled, reported dry										
6/11/2004	21.57	17.78	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
10/5/2004	NM	NM	NM	Well not sampled, reported dry										
3/18/2005	18.50	20.85	0.00	<100	<0.50	<0.50	<0.50	1.3	<1.0	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-3	WHE = 100.86 ft msl													
6/16/93	22.25	78.61	0.00	48,000	3,100	8,900	1,200	9,100	NA	NA	NA	NA	NA	NA
3/2/94	23.29	77.57	0.00	39,000	4,800	7,500	1,300	4,600	NA	NA	NA	NA	NA	NA
3/1/95	23.57	77.29	0.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3/10/95	23.43	77.43	0.00	17,000	2,000	4,700	560	4,100	NA	NA	NA	NA	NA	NA
6/9/95	22.06	78.80	0.00	25,000	2,400	5,100	900	3,600	NA	NA	NA	NA	NA	NA
	WHE = 39.64 ft msl													
8/31/95	21.62	18.02	0.00	22,000	2,000	4,100	650	3,300	NA	NA	NA	NA	NA	NA
11/30/1995	21.92	17.72	0.00	21,000	1,700	3,400	560	3,000	NA	NA	NA	NA	NA	NA
3/1/96	22.89	16.75	0.00	27,000	2,400	4,900	710	4,200	NA	NA	NA	NA	NA	NA
6/5/1996	23.60	16.04	0.00	7,300	1,300	1,900	470	1,800	NA	NA	NA	NA	NA	NA
8/14/1996	24.04	15.60	0.00	6,500	930	1,300	340	1,400	<400	NA	NA	NA	NA	NA
11/6/1996	24.17	15.47	0.00	7,800	1,200	960	410	1,400	1,300	NA	NA	NA	NA	NA
3/26/97 [NP]	23.45	16.19	0.00	8,600	2,200	910	470	2,600	5,900	NA	NA	NA	NA	NA
5/16/97 [NP]	23.51	16.13	0.00	9,200	2,400	810	660	2,000	4,900	NA	NA	NA	NA	NA
8/20/1997	23.85	15.80	0.01	Not Sampled due to presence of LPH										
11/13/1997	24.11	15.54	0.02	Not Sampled due to presence of LPH										
3/24/1998	23.85	16.23	0.60	Not Sampled due to presence of LPH										
6/24/1998	20.93	18.74	0.04	Not Sampled due to presence of LPH										
9/16/1998	20.71	18.97	0.06	Not Sampled due to presence of LPH										
12/4/98 [NP]	21.12	18.52	0.00	42,000	1,400	580	690	14,000	<2,000	NA	NA	NA	NA	NA
2/23/1999	21.81	17.84	0.01	Not Sampled due to presence of LPH										
5/13/99 [NP]	22.22	17.42	0.00	21,000	1,400	820	150	5,100	790	NA	NA	NA	NA	NA
8/17/99 [NP]	22.56	17.08	0.00	51,000	840	9,800	450	12,000	<2,000	NA	NA	NA	NA	NA
11/18/1999	25.57	14.07	Trace	Not Sampled due to presence of LPH										
2/18/2000	23.45	16.19	Sheen	Not Sampled due to presence of LPH										
5/12/2000	23.68	15.96	Sheen	Not Sampled due to presence of LPH										
7/27/2000	23.40	16.24	Sheen	Not Sampled due to presence of LPH										
11/20/2000	23.19	16.45	Sheen	Not Sampled due to presence of LPH										
1/30/2001	23.01	16.63	Sheen	Not Sampled due to presence of LPH										
5/16/2001	23.15	16.49	Sheen	Not Sampled due to presence of LPH										
8/2/01 [NP]	22.58	17.06	0.00	2,100	32[M]	49[M]	9.1[M]	410[M]	110[M]	<5.0[M]	<5.0[M]	<5.0[M]	55[M]	NA
12/19/01 [NP]	21.54	18.10	0.00	<500	8.8[M]	13[M]	4.4[M]	130[M]	100[M]	<5.0[M]	<5.0[M]	<5.0[M]	26[M]	NA
3/7/02	21.32	18.32	0.00	2,300	19[M]	<5.0[M]	490[M]	400[M]	1,100[M]	<50[M]	<50[M]	<50[M]	<250[M]	NA
4/16/02 [NP]	21.56	18.08	0.00	<500	<0.50	<0.50	<0.50	<1.5	2.3	<5.0	<5.0	<5.0	<25	NA
11/8/2002	23.30	16.34	0.00	910	6.2 J	1.3 J	200	110	590	<50	<50	<50	110 J	NA
6/2/2003	22.37	17.27	0.00	280	1.9 J	<8.0	21	14 J	190	<20	<20	<20	73 J	<600
12/11/2003	22.03	17.61	0.00	1,200	3.2 J	9.7	160	340	170	<20	<20	<20	84 J	<600
6/11/2004	23.03	16.61	0.00	31 J	<2.0	<2.0	0.85 J	1.4 J	90	<5.0	<5.0	<5.0	35 J	<150
10/5/2004	23.14	16.50	0.00	1,700	<2.0	2.2	99	670	360	<5.0	<5.0	<5.0	64	<150
3/18/2005	19.91	19.73	0.00	2,900	<12	<12	640	1,600	2,100	<50	<50	<50	<620	<12,000

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-4	**WHE = 100.38 ft msl**													
6/16/93	22.12	78.26	0.00	14,000	1,400	2,700	400	2,300	NA	NA	NA	NA	NA	NA
3/2/94	23.24	77.14	0.00	24,000	3,300	4,400	810	2,600	NA	NA	NA	NA	NA	NA
3/1/95	24.12	76.96	0.95	Not Sampled due to presence of LPH										
3/10/95	24.36	76.37	0.47	Not Sampled due to presence of LPH										
6/9/95	22.05	78.33	0.00	66,000	5,600	12,000	1,500	11,000	NA	NA	NA	NA	NA	NA
	WHE = 39.10 ft msl													
8/31/95	21.58	17.52	0.00	23,000	3,100	4,700	880	3,900	NA	NA	NA	NA	NA	NA
11/30/1995	21.85	17.25	0.00	31,000	3,000	5,200	880	4,400	NA	NA	NA	NA	NA	NA
3/1/96	22.86	16.24	0.00	41,000	4,000	5,500	1,400	5,700	NA	NA	NA	NA	NA	NA
6/5/1996	23.63	15.47	0.00	24,000	3,700	5,000	1,300	6,200	NA	NA	NA	NA	NA	NA
8/14/1996	25.15	15.02	1.45	Not Sampled due to presence of LPH										
11/6/1996	25.10	14.96	1.30	Not Sampled due to presence of LPH										
3/26/97 [P]	23.70	15.77	0.50	Not Sampled due to presence of LPH										
5/16/97 [NP]	23.76	15.74	0.54	Not Sampled due to presence of LPH										
8/20/1997	24.70	15.29	1.20	Not Sampled due to presence of LPH										
11/13/1997	25.70	14.99	2.15	Not Sampled due to presence of LPH										
3/24/98 [NP]	23.00	16.10	0.00	36,000	3,000	6,700	1,100	7,600	1,600	NA	NA	NA	NA	NA
6/24/1998	20.80	18.31	0.02	Not Sampled due to presence of LPH										
9/16/98 [NP]	20.62	18.48	0.00	44,000	4,600	3,700	1,100	10,000	5,500	NA	NA	NA	NA	NA
12/4/98 [NP]	21.04	18.06	0.00	58,000	5,800	9,400	1,500	14,000	13,000	NA	NA	NA	NA	NA
2/23/1999	21.77	17.33	Sheen	Not Sampled due to presence of LPH										
5/13/99 [NP]	21.12	17.98	0.00	82,000	9,700	15,000	2,400	21,000	12,000	NA	NA	NA	NA	NA
8/17/99 [NP]	22.52	16.58	0.00	1,500	5.8	19	4.3	180	53	NA	NA	NA	NA	NA
11/18/1999	23.40	15.70	Trace	Not Sampled due to presence of LPH										
2/18/2000	23.40	15.70	Sheen	Not Sampled due to presence of LPH										
5/12/2000	23.60	15.50	Sheen	Not Sampled due to presence of LPH										
7/27/2000	23.25	15.85	Sheen	Not Sampled due to presence of LPH										
11/20/2000	23.05	16.05	Sheen	Not Sampled due to presence of LPH										
1/30/2001	23.00	16.10	Sheen	Not Sampled due to presence of LPH										
5/16/2001	23.18	15.92	Sheen	Not Sampled due to presence of LPH										
8/2/01 [NP]	22.46	16.64	0.00	560	41[M]	3.2[M]	1.1[M]	98[M]	7.3[M]	<5.0[M]	<5.0[M]	<5.0[M]	200[M]	NA
12/19/01 [NP]	21.30	17.80	0.00	8,200	130[M]	300[M]	62[M]	3,200[M]	48[M]	<100[M]	<100[M]	<100[M]	3000[M]	NA
3/7/02	21.07	18.03	0.00	19,000	570[M]	1,000[M]	470[M]	5,400[M]	210[M]	<100[M]	<100[M]	<100[M]	1700[M]	NA
4/16/02 [NP]	22.29	16.81	0.00	9,300	82	32	<10	3,700	72	<100	<100	<100	4,500	NA
11/8/2002	23.24	15.86	0.00	22,000	1,000	920	800	7,900	480 J	<500	<500	<500	830 J	NA
6/2/2003	22.39	16.71	0.00	20,000	420	1,800	520	10,000	320	<250	<250	<250	1700 J	<7500
12/11/03	21.99	17.11	0.00	5,300	25	6.4 J	29	460	100	<25	<25	<25	960	<750
6/11/2004	23.01	16.09	0.00	<10,000	17	1.9 J	33	530	3.5 J	<25	<25	<25	<250	<750
10/5/2004	23.15	15.95	0.00	700	9.9	6.0	16	200	180	<12	<12	<12	160	<380
3/18/2005	19.86	19.24	0.00	1,200	<17	<17	79	56	2,500	<67	<67	<67	<830	<17,000

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-5	WHE = 101.43 ft msl													
6/16/93	23.15	78.28	0.00	24,000	5,600	3,500	760	2,500	NA	NA	NA	NA	NA	NA
3/2/94	24.21	77.22	0.00	21,000	4,600	3,800	620	1,800	NA	NA	NA	NA	NA	NA
3/1/95	24.45	76.98	0.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3/10/95	24.27	77.16	0.00	7,900	2,000	1,800	470	1,400	NA	NA	NA	NA	NA	NA
6/9/95	23.04	78.39	0.00	7,200	1,300	630	270	610	NA	NA	NA	NA	NA	NA
	WHE = 40.15 ft msl													
8/31/95	22.55	17.60	0.00	6,900	1,100	510	290	770	NA	NA	NA	NA	NA	NA
11/30/1995	22.82	17.33	0.00	6,300	900	570	280	820	NA	NA	NA	NA	NA	NA
3/1/96	23.85	16.30	0.00	16,000	1,900	740	800	2,400	NA	NA	NA	NA	NA	NA
6/5/1996	24.48	15.67	0.00	5,700	840	690	450	1,500	NA	NA	NA	NA	NA	NA
8/14/1996	24.88	15.27	0.00	4,000	550	450	260	920	15	NA	NA	NA	NA	NA
11/696	25.01	15.14	0.00	8,100	1,400	740	400	1,200	700	NA	NA	NA	NA	NA
3/26/97 NP	24.33	15.82	0.00	12,000	3,900	980	490	1,500	2,700	NA	NA	NA	NA	NA
5/16/97 NP	24.50	15.65	0.00	33,000	9,100	3,700	1,500	4,500	5,100	NA	NA	NA	NA	NA
8/20/1997	24.88	15.42	0.20	Not Sampled due to presence of LPH										
11/13/1997	25.15	15.19	0.25	Not Sampled due to presence of LPH										
3/24/1998	24.16	16.18	0.26	Not Sampled due to presence of LPH										
6/24/1998	21.81	18.36	0.03	Not Sampled due to presence of LPH										
9/16/98 NP	21.61	18.54	0.00	710	16	7.0	1.4	110	150	NA	NA	NA	NA	NA
12/4/98 NP	22.02	18.13	0.00	640	73	7.5	1.0	95	360	NA	NA	NA	NA	NA
2/23/99 NP	22.73	17.42	0.00	230,000	2,000	2,200	1,700	13,000	1,100	NA	NA	NA	NA	NA
5/13/99 NP	23.17	16.98	0.00	23,000	3,500	830	170	4,900	<2,000	NA	NA	NA	NA	NA
8/17/1999	23.78	16.47	0.13	Not Sampled due to presence of LPH										
11/18/1999	26.13	14.02	Trace	Not Sampled due to presence of LPH										
2/18/2000	24.41	15.74	Sheen	Not Sampled due to presence of LPH										
5/12/2000	24.53	15.62	Sheen	Not Sampled due to presence of LPH										
7/27/2000	24.19	15.96	Sheen	Not Sampled due to presence of LPH										
11/20/2000	24.00	16.15	Sheen	Not Sampled due to presence of LPH										
1/30/2001	23.96	16.19	Sheen	Not Sampled due to presence of LPH										
5/16/2001	24.06	16.09	Sheen	Not Sampled due to presence of LPH										
8/2/01 NP	23.42	16.73	0.00	940	0.51[M]	8.7[M]	11[M]	270[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
12/19/01 NP	22.31	17.84	0.00	<500	<0.50[M]	2.5[M]	<0.50[M]	53[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
3/7/02	22.10	18.05	0.00	<500	4.7[M]	<0.50[M]	8.1[M]	19[M]	49[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
4/16/02 NP	22.32	17.83	0.00	<500	<0.50	<0.50	<0.50	<1.5	8.5	<5.0	<5.0	<5.0	<25	NA
11/8/2002	24.13	16.02	0.00	310	32	1.0 J	44	12	130	<5.0	<5.0	<5.0	24 J	NA
6/2/2003	23.36	16.79	0.00	200	29	1.0 J	2.0	37	59	<5.0	<5.0	<5.0	130	<150
12/11/2003	23.11	17.04	0.00	2,400	480	5.2 J	300	140	570	<25	<25	1.8 J	480	<750
6/11/2004	23.94	16.21	0.00	47 J	7.9	<2.0	<2.0	0.60 J	68	<5.0	<5.0	<5.0	47 J	<150
10/5/2004	23.89	16.26	0.00	<500	56	<2.0	18	6.2	110	<5.0	<5.0	<5.0	51	<150
10/5/2004dup	23.89	16.26	0.00	<500	59	<2.0	20	6.7	140	<5.0	<5.0	<5.0	54	<150
3/18/2005	20.83	19.32	0.00	220	28	<0.50	59	6.9	22	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-6	**WHE = 101.40 ft msl**													
	MW-6, MW-7 and MW-8 installed February 1994													
3/2/94	21.99	79.41	0.00	110	4	3	3	10	NA	NA	NA	NA	NA	NA
3/10/95	22.31	79.09	0.00	310	16	2	9.2	5.9	NA	NA	NA	NA	NA	NA
6/9/95	21.06	80.34	0.00	72	1.8	0.67	0.68	2.3	NA	NA	NA	NA	NA	NA
	WHE = 39.90 ft msl													
8/31/95	20.59	19.31	0.00	<50	0.75	<0.30	0.33	<0.60	NA	NA	NA	NA	NA	NA
11/30/1995	20.90	19.00	0.00	130	6.4	2.4	6.8	9.5	NA	NA	NA	NA	NA	NA
3/1/96	21.74	18.16	0.00	<500	<0.5	<0.5	<0.5	<1.5	NA	NA	NA	NA	NA	NA
6/5/1996	22.33	17.57	0.00	<500	1.1	<0.50	1.3	2.2	NA	NA	NA	NA	NA	NA
8/14/1996	22.87	17.03	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/6/1996	23.19	16.71	0.00	<500	<0.50	<0.50	<0.50	<1.5	<35	NA	NA	NA	NA	NA
3/26/97 [NP]	22.54	17.36	0.00	<500	<0.50	0.50	<0.50	1.7	<10	NA	NA	NA	NA	NA
5/16/97 [NP]	22.51	17.39	0.00	<500	<0.50	0.50	<0.50	1.5	<10	NA	NA	NA	NA	NA
8/20/97 [NP]	22.88	17.02	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 [NP]	23.13	16.77	0.00	<500	0.71	2.1	<0.50	2.7	<10	NA	NA	NA	NA	NA
3/24/98 [NP]	22.39	17.51	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
6/24/98 [NP]	20.06	19.84	0.00	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	NA	NA	NA	NA
9/16/98 [NP]	19.80	20.10	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 [NP]	20.06	19.84	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 [NP]	20.67	19.23	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 [NP]	21.02	18.88	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/17/99 [NP]	21.30	18.60	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 [NP]	21.46	18.44	0.00	1,600	<1.5	54	27	280	48[M]	NA	NA	NA	NA	NA
2/18/00 [NP]	22.35	17.55	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 [NP]	22.52	17.38	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
7/27/00 [NP]	22.35	17.55	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
11/20/00 [NP]	21.70	18.20	0.00	<500	<0.50	<0.50	<0.50	<1.5	7.0[M]	NA	NA	NA	NA	NA
1/30/01 [NP]	21.65	18.25	0.00	14,000	<13[M]	110[M]	1,700[M]	2,000[M]	4,500[M]	<130[M]	<130[M]	<130[M]	1,300[M]	NA
5/16/01 [NP]	22.30	17.60	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
8/2/01 [NP]	21.83	18.07	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
12/19/01 [NP]	21.04	18.86	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
3/7/02	20.95	18.95	0.00	<500	<0.50[M]	<0.50[M]	1.9[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
4/16/02 [NP]	21.15	18.75	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<0.50	<0.50	<0.50	<25	NA
11/8/2002	22.50	17.40	0.00	5,000	<20	5.1 J	590	390	640	<50	<50	<50	<500	NA
6/2/2003	21.50	18.40	0.00	87	<2.0	<2.0	0.71 J	2.9 J	72	<5.0	<5.0	<5.0	40 J	<150
12/11/03	21.20	18.70	0.00	53	<2.0	<2.0	0.25 J	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
6/11/2004	21.91	17.99	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
10/5/2004	22.15	17.75	0.00	2,600	<8.0	<8.0	430	<16	190	<20	<20	<20	<200	<600
3/18/2005	19.01	20.89	0.00	<100	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-7	WHE = 98.88 ft msl													
3/2/94	21.54	77.34	0.00	<50	<0.5	2	<0.5	2	NA	NA	NA	NA	NA	NA
3/10/95	21.56	77.32	0.00	73	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
6/9/95	20.21	78.67	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
	WHE = 37.73 ft msl													
8/31/95	19.97	17.76	0.00	51	0.34	0.34	<0.30	0.91	NA	NA	NA	NA	NA	NA
11/30/1995	20.35	17.38	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
3/1/96	21.26	16.47	0.00	<500	<0.5	<0.5	<0.5	<1.5	NA	NA	NA	NA	NA	NA
6/5/1996	21.90	15.83	0.00	<500	<0.50	<0.50	<0.50	<1.5	NA	NA	NA	NA	NA	NA
8/14/1996	22.33	15.40	0.00	<500	<0.50	<0.50	<0.50	<1.5	26	NA	NA	NA	NA	NA
11/6/1996	22.43	15.30	0.00	<500	<0.50	<0.50	<0.50	<1.5	47	NA	NA	NA	NA	NA
3/26/97 NP	21.68	16.05	0.00	<500	<0.50	0.52	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/16/97 NP	21.76	15.97	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
8/20/97 NP	22.11	15.62	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 NP	22.36	15.37	0.00	<500	<0.50	1.7	<0.50	<1.5	27	NA	NA	NA	NA	NA
3/24/98 NP	21.21	16.52	0.00	<500	<0.50	<0.50	<0.50	<1.5	680	NA	NA	NA	NA	NA
6/24/98 NP	19.21	18.52	0.00	<50	<0.30	<0.30	<0.30	<0.60	800	NA	NA	NA	NA	NA
9/16/98 NP	19.15	18.58	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 NP	19.50	18.23	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 NP	20.25	17.48	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 NP	20.80	16.93	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/17/99 NP	21.11	16.62	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 NP	21.21	16.52	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/18/00 NP	21.92	15.81	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 NP	22.05	15.68	0.00	3,200	<10	<10	<10	<30	4,200^{M}	NA	NA	NA	NA	NA
7/27/00 NP	21.77	15.96	0.00	<500	<13^{M}	<13^{M}	<13^{M}	<38^{M}	4,200^{M}	<25^{M}	<25^{M}	<25^{M}	<25^{M}	NA
11/20/00 NP	21.55	16.18	0.00	<500	<5.0	<5.0	<5.0	<15	5,700^{M}	NA	NA	NA	NA	NA
1/30/01 NP	21.47	16.26	0.00	<500	<13^{M}	<13^{M}	<13^{M}	<38^{M}	4,100^{M}	<130^{M}	<130^{M}	<130^{M}	920^{M}	NA
5/16/01 NP	21.50	16.23	0.00	<500	<25^{M}	<25^{M}	<25^{M}	<75^{M}	8,300^{M}	<250^{M}	<250^{M}	<250^{M}	<1300^{M}	NA
8/2/01 NP	20.83	16.90	0.00	<500	<50^{M}	<50^{M}	<50^{M}	<150^{M}	6,500^{M}	<500^{M}	<500^{M}	<500^{M}	<2500^{M}	NA
12/19/01 NP	19.70	18.03	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
3/7/02 NP	19.54	18.19	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
4/16/02 NP	19.74	17.99	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	21.72	16.01	0.00	18 J	0.13 J	<2.0	0.33 J	<4.0	0.46 J	<5.0	<5.0	<5.0	<50	NA
6/2/2003	20.73	17.00	0.00	16 J	<2.0	<2.0	<2.0	<4.0	19	<5.0	<5.0	<5.0	<50	<150
12/11/2003	20.65	17.08	0.00	150	<20	<20	<20	<40	480	<50	<50	<50	<500	<1500
6/11/2004	21.54	16.19	0.00	<500	<20	<20	<20	<40	760	<50	<50	<50	94 J	<1500
10/5/2004	21.50	16.23	0.00	<500	<20	<20	<20	<40	1,000	<50	<50	<50	<500	<1500
3/18/2005	18.14	19.59	0.00	1,800	<50	<50	<50	<100	6,400	<200	<200	<200	<2,500	<50,000

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-8	WHE = 99.04 ft msl													
3/2/94	23.99	75.05	0.00	<50	<0.5	5	<0.5	3	NA	NA	NA	NA	NA	NA
3/10/95	23.59	75.45	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
6/9/95	22.6	76.44	0.00	<50	<0.30	0.37	<0.30	<0.60	NA	NA	NA	NA	NA	NA
	WHE = 37.90 ft msl													
8/31/95	22.47	15.43	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
11/30/1995	22.84	15.06	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
3/1/96	23.85	14.05	0.00	<500	<0.5	<0.5	<0.5	<1.5	NA	NA	NA	NA	NA	NA
6/5/1996	24.52	13.38	0.00	<500	<0.50	<0.50	<0.50	<1.5	NA	NA	NA	NA	NA	NA
8/14/1996	24.26	13.64	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/6/1996	24.64	13.26	0.00	<500	<0.50	<0.50	<0.50	<1.5	<35	NA	NA	NA	NA	NA
3/26/97 NP	23.89	14.01	0.00	<500	<0.50	0.64	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/16/97 NP	24.08	13.82	0.00	<500	<0.50	0.71	<0.50	<1.5	<10	NA	NA	NA	NA	NA
8/20/97 NP	24.55	13.35	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 NP	24.75	13.15	0.00	<500	<0.50	1.4	<0.50	<1.5	<10	NA	NA	NA	NA	NA
3/24/98 NP	23.47	14.43	0.00	<500	0.87	0.41	<0.50	0.70	<10	NA	NA	NA	NA	NA
6/24/98 NP	21.66	16.24	0.00	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	NA	NA	NA	NA
9/16/98 NP	21.61	16.29	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 NP	22.10	15.80	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 NP	22.90	15.00	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 NP	23.46	14.44	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/17/99 NP	23.78	14.12	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 NP	23.91	13.99	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/18/00 NP	24.51	13.39	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 NP	24.37	13.53	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0[M]	NA	NA	NA	NA	NA
7/27/00 NP	23.85	14.05	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
11/20/00 NP	23.40	14.50	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	NA	NA	NA	NA	NA
1/30/01 NP	23.36	14.54	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
5/16/01 NP	23.82	14.08	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
8/2/01 NP	23.07	14.83	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
12/19/01 NP	21.47	16.43	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
3/7/02 NP	21.19	16.71	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
4/16/02 NP	21.37	16.53	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	24.07	13.83	0.00	10 J	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	NA
6/2/2003	23.15	14.75	0.00	8.3 J	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
12/11/2003	NM	NM	NM	Not Sampled due to truck parked on the well										
6/11/2004	24.03	13.87	0.00	Not Sampled due to truck parked on the well										
10/5/2004	NM	NM	NM	Not Sampled due to truck parked on the well										
3/18/2005	20.35	17.55	0.00	<100	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-9	WHE = NM													
						MW-9 installed March 1995								
6/9/95	21.95	NA	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
	WHE = 40.13 ft msl													
8/31/95	21.34	18.79	0.00	<50	0.49	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
11/30/1995	21.53	18.60	0.00	<50	0.45	0.31	<0.30	1.7	NA	NA	NA	NA	NA	NA
3/1/96	22.38	17.75	0.00	<500	<0.5	<0.5	<0.5	<1.5	NA	NA	NA	NA	NA	NA
6/5/1996	22.93	17.20	0.00	<500	<0.50	<0.50	<0.50	<1.5	NA	NA	NA	NA	NA	NA
8/14/1996	23.35	16.78	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/6/1996	23.66	16.47	0.00	<500	<0.50	<0.50	<0.50	<1.5	<35	NA	NA	NA	NA	NA
3/26/97 NP	23.23	16.90	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/16/97 NP	23.11	17.02	0.00	<500	<0.50	0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
8/20/97 NP	23.50	16.63	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 NP	23.78	16.35	0.00	<500	<0.50	2.5	<0.50	1.6	<10	NA	NA	NA	NA	NA
3/24/98 NP	23.28	16.85	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
6/24/98 NP	20.80	19.33	0.00	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	NA	NA	NA	NA
9/16/98 NP	20.47	19.66	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 NP	20.73	19.40	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 NP	21.30	18.83	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 NP	21.68	18.45	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/17/99 NP	21.92	18.21	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 NP	22.02	18.11	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/18/00 NP	22.97	17.16	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 NP	23.20	16.93	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
7/27/00 NP	23.02	17.11	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
11/20/00 NP	23.00	17.13	0.00	<500	<0.50	<0.50	<0.50	23	<1.0	NA	NA	NA	NA	NA
1/30/01 NP	22.93	17.20	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
5/16/01 NP	23.09	17.04	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
8/2/01 NP	22.50	17.63	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
12/19/01 NP	21.71	18.42	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
3/7/02	21.58	18.55	0.00	<500	<0.50^{M}	<0.50^{M}	<0.50^{M}	<1.5^{M}	<1.0^{M}	<5.0^{M}	<5.0^{M}	<5.0^{M}	<25^{M}	NA
4/16/02 NP	21.74	18.39	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	22.93	17.20	0.00	16 J	0.12 J	0.23 J	0.14 J	0.27 J	<5.0	<5.0	<5.0	<5.0	<50	NA
6/2/2003	21.96	18.17	0.00	7.5 J	<2.0	7.5	0.87 J	4.6	<5.0	<5.0	<5.0	<5.0	<50	<150
12/11/2003	21.60	18.53	0.00	<50	0.69 J	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
6/11/2004	22.52	17.61	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
10/5/2004	22.53	17.60	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
3/18/2005	19.85	20.28	0.00	<100	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-10	WHE = 38.84 ft msl													
						MW-10 installed June 1995								
6/9/95	19.00	19.84	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
8/31/95	18.53	20.31	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
11/30/1995	18.85	19.99	0.00	<50	<0.30	<0.30	<0.30	<0.60	NA	NA	NA	NA	NA	NA
3/1/96	19.64	19.20	0.00	<500	<0.5	<0.5	<0.5	<1.5	NA	NA	NA	NA	NA	NA
6/5/1996	20.27	18.57	0.00	<500	<0.50	<0.50	<0.50	<1.5	NA	NA	NA	NA	NA	NA
8/14/1996	20.84	18.00	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/6/1996	21.21	17.63	0.00	<500	<0.50	<0.50	<0.50	<1.5	<35	NA	NA	NA	NA	NA
3/26/97 NP	20.50	18.34	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/16/97 NP	20.47	18.37	0.00	<500	<0.50	0.51	<0.50	<1.5	<10	NA	NA	NA	NA	NA
8/20/97 NP	20.83	18.01	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
11/13/97 NP	21.10	17.74	0.00	<500	1.1	2.2	<0.50	1.6	<10	NA	NA	NA	NA	NA
3/24/1998	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/24/98 NP	18.03	20.81	0.00	<50	<0.30	<0.30	<0.30	<0.60	51	NA	NA	NA	NA	NA
9/16/98 NP	17.02	21.82	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
12/4/98 NP	16.55	22.29	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 NP	17.81	21.03	0.00	<500	<0.50	<0.50	<0.50	<1.5	<10	NA	NA	NA	NA	NA
5/13/99 NP	18.55	20.29	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
8/26/99 NP	NM	NM	0.00	<500	<0.50	<0.50	<0.50	<1.5	<20	NA	NA	NA	NA	NA
11/18/99 NP	18.91	19.93	0.00	<500	<0.50	5.2	6.0	43	47^{M}	NA	NA	NA	NA	NA
2/18/00 NP	19.97	18.87	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
5/12/00 NP	20.26	18.58	0.00	<500	<0.50	<0.50	<0.50	<1.5	<5.0	NA	NA	NA	NA	NA
7/27/00 NP	20.17	18.67	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	$<1.0^{M}$	NA	NA	NA	NA	NA
11/20/00 NP	20.05	18.79	0.00	<500	<0.50	<0.50	<0.50	<1.5	2.5^{M}	NA	NA	NA	NA	NA
1/30/01 NP	19.97	18.87	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	9.6^{M}	$<5.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<25^{M}$	NA
5/16/01 NP	19.60	19.24	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	1.1^{M}	$<5.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<25^{M}$	NA
8/2/01 NP	19.70	19.14	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	$<1.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<25^{M}$	NA
12/19/01 NP	19.05	19.79	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	$<1.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<25^{M}$	NA
3/7/02 NP	19.11	19.73	0.00	<500	$<0.50^{M}$	$<0.50^{M}$	$<0.50^{M}$	$<1.5^{M}$	$<1.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<5.0^{M}$	$<25^{M}$	NA
4/16/02 NP	18.42	20.42	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	20.14	18.70	0.00	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	NA
6/2/2003	19.11	19.73	0.00	9.7 J	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
12/11/2003	18.61	20.23	0.00	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
6/11/2004	19.52	19.32	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
10/5/2004	19.81	19.03	0.00	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
3/18/2005	16.79	22.05	0.00	<100	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	<2.0	<2.0	<25	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-11	**WHE = 37.78 ft msl**													
						MW-11 installed August 1995								
8/31/95	21.39	16.39	0.00	5,000	270	220	690	330	NA	NA	NA	NA	NA	NA
11/30/1995	21.78	16.00	0.00	5,400	300	260	1,100	330	NA	NA	NA	NA	NA	NA
3/1/96	22.77	15.01	0.00	6,900	240	250	1,300	270	NA	NA	NA	NA	NA	NA
6/5/1996	23.40	14.38	0.00	2,200	180	410	1,300	340	NA	NA	NA	NA	NA	NA
8/14/1996	23.63	14.15	0.00	3,100	92	180	840	280	19	NA	NA	NA	NA	NA
11/6/1996	23.87	13.91	0.00	4,900	170	460	920	550	1,200	NA	NA	NA	NA	NA
3/26/97 [NP]	22.99	14.79	0.00	<500	3.6	2.0	9.1	3.4	36	NA	NA	NA	NA	NA
5/16/97 [NP]	23.14	14.64	0.00	3,000	120	78	830	110	<200	NA	NA	NA	NA	NA
8/20/97 [NP]	23.52	14.26	0.00	3,100	160	17	810	49	<400	NA	NA	NA	NA	NA
11/13/97 [NP]	23.71	14.07	0.00	3,000	140	18	680	31	<200	NA	NA	NA	NA	NA
3/24/1998	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/24/98 [NP]	20.70	17.08	0.00	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	NA	NA	NA	NA
9/16/98 [NP]	20.60	17.18	0.00	2,000	25	9.0	310	120	<100	NA	NA	NA	NA	NA
12/4/98 [NP]	21.02	16.76	0.00	<500	0.72	<0.50	11	<1.5	<10	NA	NA	NA	NA	NA
2/23/99 [NP]	21.83	15.95	0.00	1,400	32	13	280	19	<100	NA	NA	NA	NA	NA
5/13/99 [NP]	22.31	15.47	0.00	1,900	16	34	280	58	<5.0[M]	NA	NA	NA	NA	NA
8/17/99 [NP]	22.70	15.08	0.00	1,900	15	14	300	28	<100	NA	NA	NA	NA	NA
11/18/99 [NP]	22.85	14.93	0.00	1,600	26	8.1	330	27	<100	NA	NA	NA	NA	NA
2/18/00 [NP]	23.50	14.28	0.00	1,700	88	12	450	<6.0	<50	NA	NA	NA	NA	NA
5/12/00 [NP]	23.50	14.28	0.00	690	60	<1.0	63	<3.0	1.3[M]	NA	NA	NA	NA	NA
7/27/00 [NP]	23.00	14.78	0.00	1,800	84[M]	<1.0[M]	43[M]	<3.0[M]	<2.0[M]	<10[M]	<10[M]	<10[M]	<50[M]	NA
11/20/00 [NP]	22.87	14.91	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	NA	NA	NA	NA	NA
1/30/01 [NP]	22.76	15.02	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
5/16/01 [NP]	22.45	15.33	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
8/2/01 [NP]	21.08	16.70	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
12/19/01 [NP]	19.17	18.61	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
3/7/02 [NP]	18.66	19.12	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	<1.0[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
4/16/02 [NP]	18.67	19.11	0.00	<500	<0.50	<0.50	<0.50	<1.5	<1.0	<5.0	<5.0	<5.0	<25	NA
11/8/2002	23.21	14.57	0.00	1,500	85	6.0 J	230	260	<20	<20	<20	<20	<200	NA
6/2/2003	22.20	15.58	0.00	1,000	19	1.2 J	140	1.3 J	<10	<10	<10	<10	<100	<300
12/11/2003	23.11	14.67	0.00	6,000	160	480	710	1,000	<50	<50	<50	<50	<500	<1500
6/11/2004	22.92	14.86	0.00	1,200	85	<8.0	280	2.4 J	18 J	<20	<20	<20	<200	<600
10/5/2004	22.90	14.88	0.00	1,900	380	<8.0	680	<16	24	<20	<20	<20	<200	<600
3/18/2005	19.44	18.34	0.00	530	43	<1.0	140	<2.0	<2.0	<4.0	<4.0	<4.0	<50	<1000

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet msl)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
MW-12	WHE = 39.40 ft msl													
				MW-12 installed March 1997										
3/26/1997	24.15	15.44	0.25	Not Sampled due to presence of LPH										
5/16/1997	25.05	15.39	1.40	Not Sampled due to presence of LPH										
8/20/1997	26.35	14.90	2.50	Not Sampled due to presence of LPH										
11/13/1997	26.90	14.72	3.00	Not Sampled due to presence of LPH										
3/24/1998	25.15	14.55	0.41	Not Sampled due to presence of LPH										
6/24/1998	21.57	17.99	0.22	Not Sampled due to presence of LPH										
9/16/1998	21.76	17.77	0.18	Not Sampled due to presence of LPH										
12/4/1998	22.41	17.33	0.46	Not Sampled due to presence of LPH										
2/23/1999	22.30	17.10	Sheen	Not Sampled due to presence of LPH										
5/13/1999	23.66	16.39	0.88	Not Sampled due to presence of LPH										
8/17/99 [NP]	22.90	16.50	0.00	17,000	260	1,100	270	2,800	<500	NA	NA	NA	NA	NA
11/18/1999	26.83	12.73	0.22	Not Sampled due to presence of LPH										
2/18/2000	24.02	15.38	Sheen	Not Sampled due to presence of LPH										
5/12/2000	23.88	15.56	0.06	Not Sampled due to presence of LPH										
7/27/2000	23.48	15.92	Trace	Not Sampled due to presence of LPH										
11/20/2000	23.19	16.21	Trace	Not Sampled due to presence of LPH										
1/30/2001	23.04	16.36	Sheen	Not Sampled due to presence of LPH										
5/16/2001	23.17	16.23	Sheen	Not Sampled due to presence of LPH										
8/2/2001	23.02	16.38	Sheen	Not Sampled due to presence of LPH										
12/19/01 [NP]	21.63	17.77	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	<1.5[M]	2.3[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
3/7/02	21.63	21.34	0.00	<500	<0.50[M]	<0.50[M]	<0.50[M]	0.68[M]	3.3[M]	<5.0[M]	<5.0[M]	<5.0[M]	<25[M]	NA
4/16/02 [NP]	20.70	18.70	0.00	<500	<0.50	<0.50	<0.50	<1.5	1.4	<5.0	<5.0	<5.0	<25	NA
11/8/2002	23.75	15.65	0.00	1,400	4.6	2.8	53	62	45	<5.0	<5.0	<5.0	100	NA
6/2/2003	22.92	16.48	0.00	2,000	1.3 J	3.1	15	1,200	13	<5.0	<5.0	<5.0	<50	<150
12/11/2003	22.60	16.80	0.00	70	0.31 J	<2.0	0.89 J	1.7 J	4.7 J	<5.0	<5.0	<5.0	11 J	<150
6/11/2004	23.55	15.85	0.00	970 J	0.61 J	0.41 J	2.4	88	2.8 J	<5.0	<5.0	<5.0	<50	<150
10/5/2004	23.54	15.86	0.00	<500	<2.0	<2.0	<2.0	8.6	<5.0	<5.0	<5.0	<5.0	<50	<150
3/18/2005	20.30	19.10	0.00	370	6.3	1.3	49	76	93	<2.0	<2.0	<2.0	980	<500

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA

ARCO Facility 6021
1801 South Coast Highway
Oceanside, California

Well No./ Date	Depth to Groundwater (Feet)	Groundwater Elevation (Feet)	Product Thickness (Feet)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	DIPE (mg/L)	ETBE (mg/L)	TAME (mg/L)	TBA (mg/L)	Ethanol (mg/L)
QCTB														
11/8/2002	NA	NA	NA	10 J	<2.0	0.23 J	<2.0	0.38 J	<5.0	<5.0	<5.0	<5.0	<50	NA
6/2/2003	NA	NA	NA	8.3 J	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
12/11/2003	NA	NA	NA	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
6/11/2004	NA	NA	NA	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
10/5/2004	NA	NA	NA	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
EB-1														
11/8/2002	NA	NA	NA	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	NA
12/11/2003	NA	NA	NA	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150
6/11/2004	NA	NA	NA	<500	<2.0	<2.0	<2.0	<4.0	<5.0	<5.0	<5.0	<5.0	<50	<150

NOTES:
- Groundwater samples collected on and after December 19, 2001 were analyzed for GRO by EPA Method 8015 and BTEX compounds, MTBE, DIPE, ETBE, TAME, TBA, and ethanol by EPA Method 8260.
- Wells MW-2 through MW-9, well head elevations prior to August 1995 referenced an assumed benchmark of 100 feet above mean sea level. The wells were resurveyed to an existing benchmark in August 1995.
- For wells with measurable floating product, the groundwater elevation was corrected using a density of 0.74 g/cm^3
- Site sampled biannually, as approved in SAM's May 6, 2002 *Changes to Groundwater Monitoring* correspondence.

NM - Not measured
WHE - Well Head Elevation
GRO - Gasoline Range Organics
MTBE - Methyl-Tert-Butyl Ether
mg/L - Micrograms per Liter
< - Reported less than the method limit of detection
M - Analyzed by EPA Method 8260
J - Concentrations are estimated values at or above the method detection limit but below the reporting limit
NA - Not analyzed/applicable
NS - Not sampled
LPH - No groundwater sample collected due to presence of liquid phase hydrocarbons
P - Monitoring well purged prior to sampling.
NP - Monitoring well not purged prior to sampling.
Dup - Duplicate sample

TABLE 3
NATURAL BIODEGRADATION ANALYTICAL DATA

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California

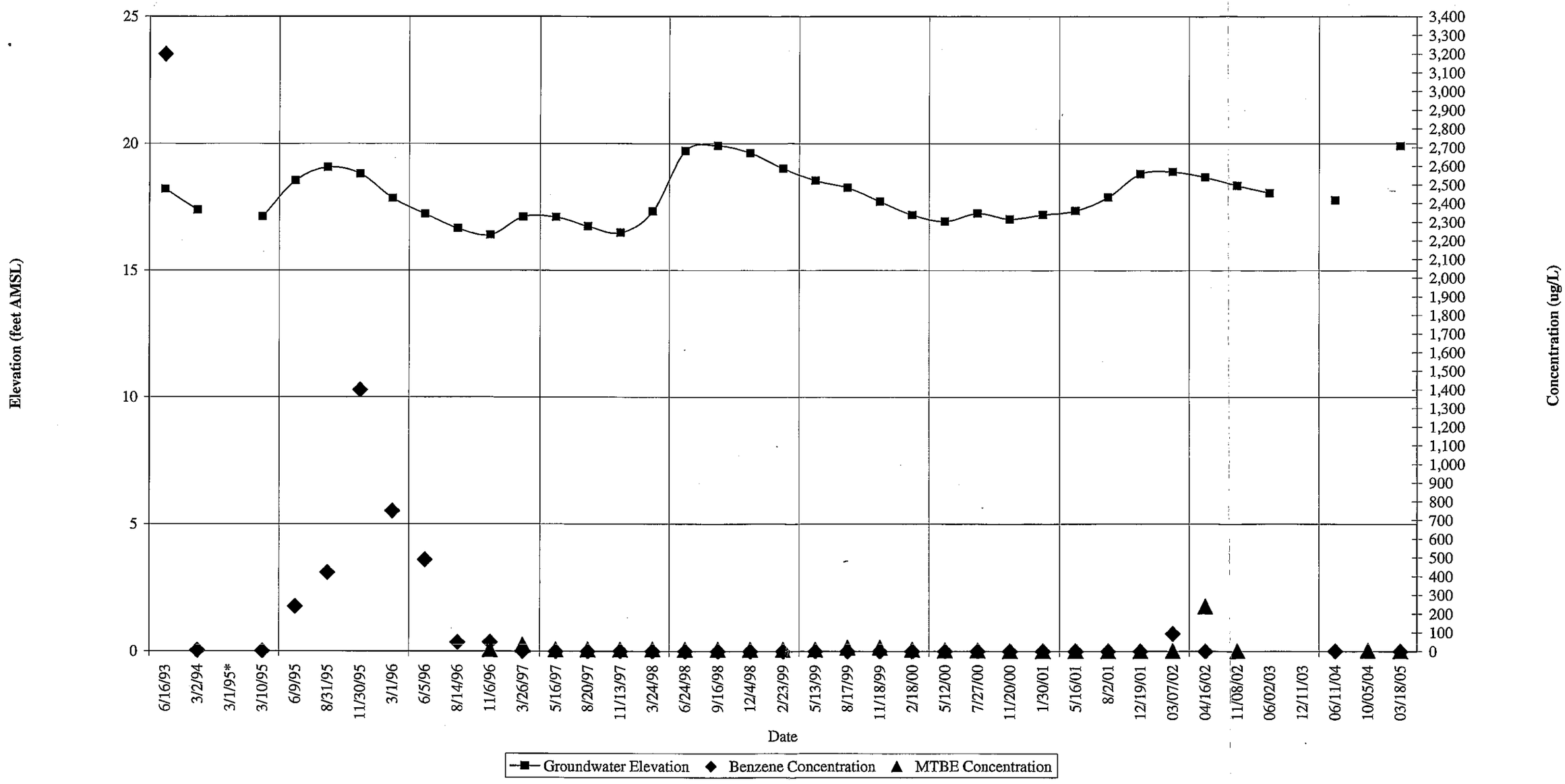
Well I.D.	Date Sampled	Alkalinity SM2320B (mg/l)	Nitrate-N EPA 300.0 (mg/l)	Sulfate EPA 300.0 (mg/l)	Sulfide EPA 376.2 (mg/l)	Hardness EPA 130.2 (mg/l)	COD EPA 410.4 (mg/l)	Ferrous Iron EPA 6010B (mg/l)	Ferrous Iron Field Reading (mg/l)	ORP Field Reading mV	Manganese EPA 6010B (mg/l)	Plate Count SM9215B CFU/ml	DO Field Reading (mg/l)	pH Field Reading
MW-3	06/02/03	NA	8.8	310	<0.10	490	<20	NA	2.2	80	0.76	19,000	0.68	6.94
	12/11/03	NA	8.8	360	<0.10	480	220	NA	0	21	0.24	47,000	2.14	7.28
	06/11/04	NA	6.5	360	0.013	360	17	NA	0	132	0.19	NA	0.49	8.31
	06/11/04	NA	6.5	360	0.013	360	17	NA	0	132	0.19	NA	0.49	8.31
	10/05/04	NA	7.4	260	<0.10	270	<20	NA	0	79	0.45	520	NA	7.60
MW-4	11/08/02	720	0.76	110	2.1	250	270	0.78	NA	NA	0.65	550	NA	NA
	06/02/03	NA	<0.22	110	<0.10	300	290	NA	3.0	30	0.66	120,000	0.81	6.84
	12/11/03	NA	<0.22	51	3.8	250	290	NA	0	-91	0.42	2,600	1.18	7.08
	06/11/04	NA	0.81	240	0.061	250	49	NA	3.6	62	0.86	24,000	0.84	7.30
	10/05/04	NA	3.9	160	0.18	230	50	NA	0.40	60	0.22	1,100	NA	7.61
MW-5	11/08/02	330	13	300	<0.10	250	<20	<0.040	NA	NA	0.13	17,000	NA	NA
	06/11/04	NA	NA	NA	NA	NA	NA	NA	0	62	NA	NA	NA	7.81
	10/05/04	NA	NA	NA	NA	NA	NA	NA	0.20	15	NA	NA	NA	7.20
MW-6	11/08/02	560	8.0	250	2.3	410	39	<0.040	NA	NA	0.88	20,000	NA	NA
	06/11/04	NA	NA	NA	NA	NA	NA	NA	0	145	NA	NA	0.59	7.98
	10/05/04	NA	NA	NA	NA	NA	NA	NA	0	74	NA	NA	NA	7.07
MW-8	11/08/02	210	<0.11	200	<0.10	22	<20	<0.040	NA	NA	0.37	7,000	NA	NA
	06/02/03	NA	<0.11	190	<0.10	30	<20	NA	1.2	86	0.16	5,000	0.71	7.08
	10/05/04	NA	NA	NA	NA	NA	NA	NA	0	76	NA	NA	NA	7.41
MW-9	06/02/03	NA	14	390	<0.10	380	<20	NA	0	40	0.50	160	0.57	7.15
	12/11/03	NA	13	410	<0.10	360	<20	NA	0	130	0.036	54	NA	7.39
	06/11/04	NA	10	400	0.035	320	<20	NA	0	48	0.040	1,100	0.57	7.77
	10/05/04	NA	12	450	<0.10	350	<20	NA	0	87	<0.020	140	NA	7.61
MW-12	11/08/02	550	<0.22	310	0.15	180	35	0.070	NA	NA	1.2	45,000	NA	NA
	06/02/03	NA	0.63	270	<0.10	160	<20	NA	1.4	91	0.51	18,000	0.92	7.04
	12/11/03	NA	0.15	150	0.063 J	150	130	NA	0	124	0.90	47,000	NA	7.93
	06/11/04	NA	0.49	290	2.4	900	1,400	NA	0	121	1.7	66,000	0.72	8.07
	10/05/04	NA	1.8	260	<0.10	400	310	NA	0	84	6.3	43,000	NA	7.53

NOTES:

EPA	= Environmental protection agency
SM	= Standard Method
mg/l	= Milligrams per liter
mV	= Millivolts
COD	= Chemical oxygen demand
ORP	= Oxidation reduction potential
CFU/ml	= Colony-forming units per milliliter
DO	= Dissolved oxygen
NA	= Not analyzed

Hydrograph for MW-2

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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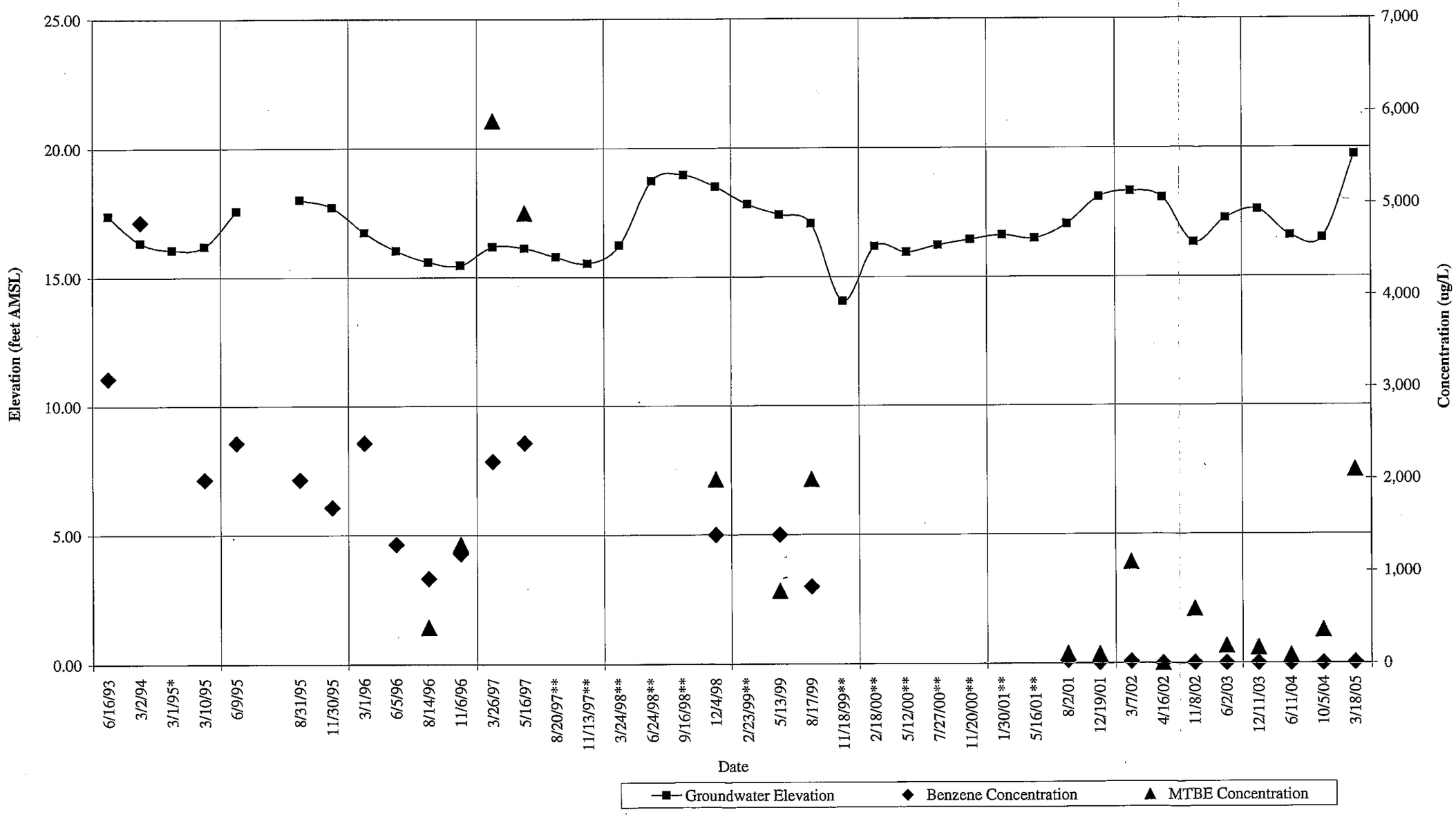
Hydrograph for MW-3

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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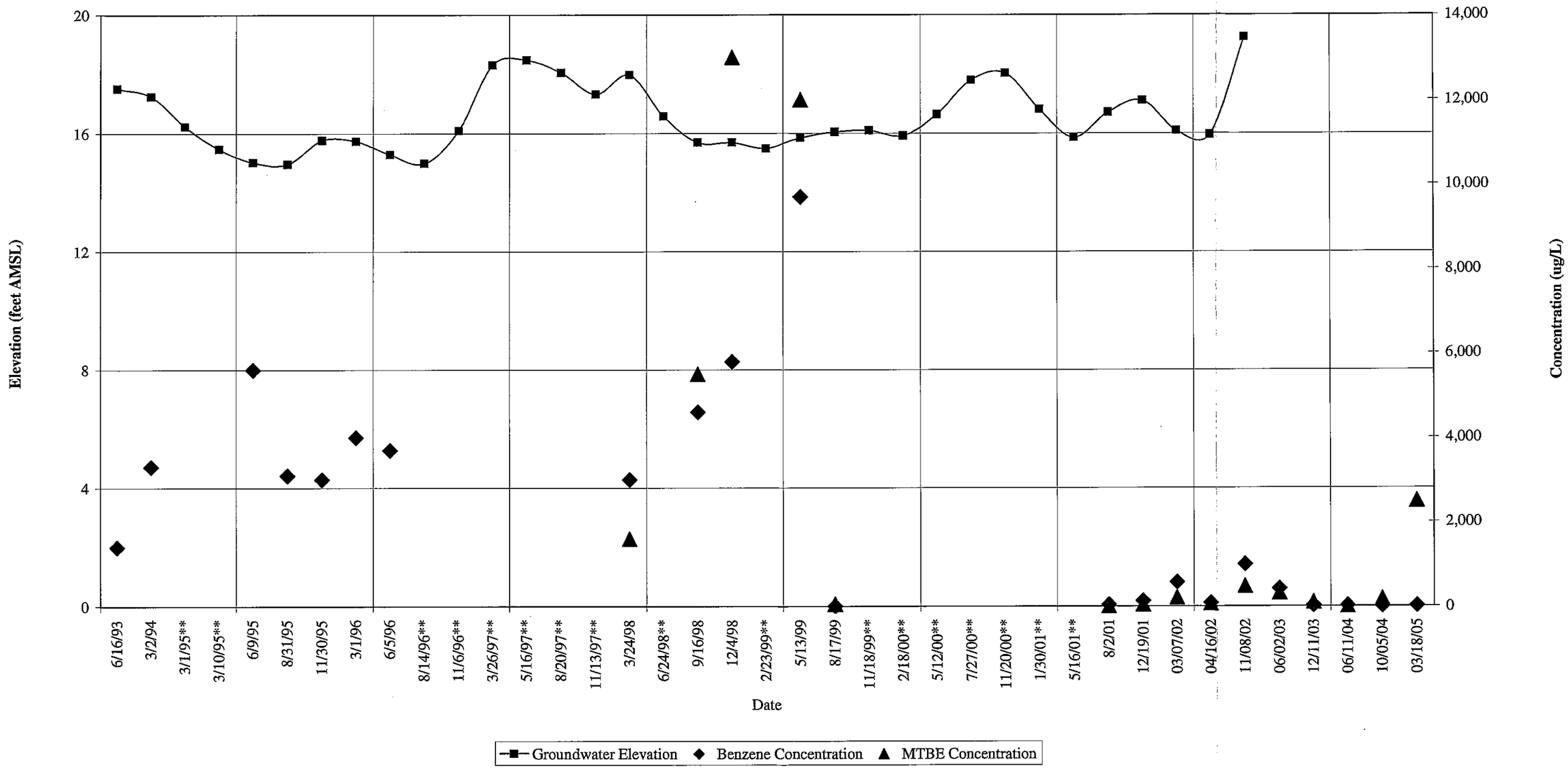
Hydrograph for MW-4

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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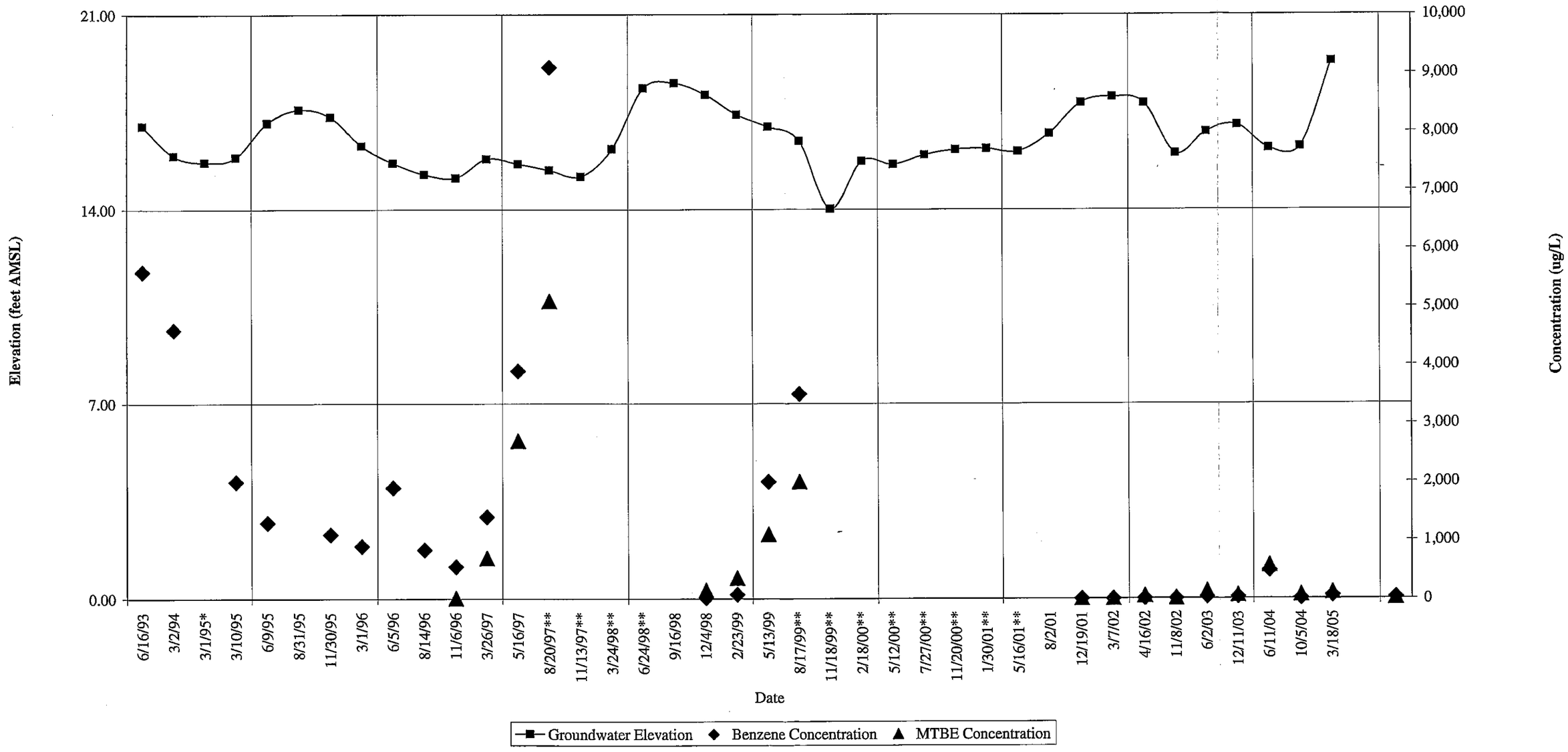
Hydrograph for MW-5

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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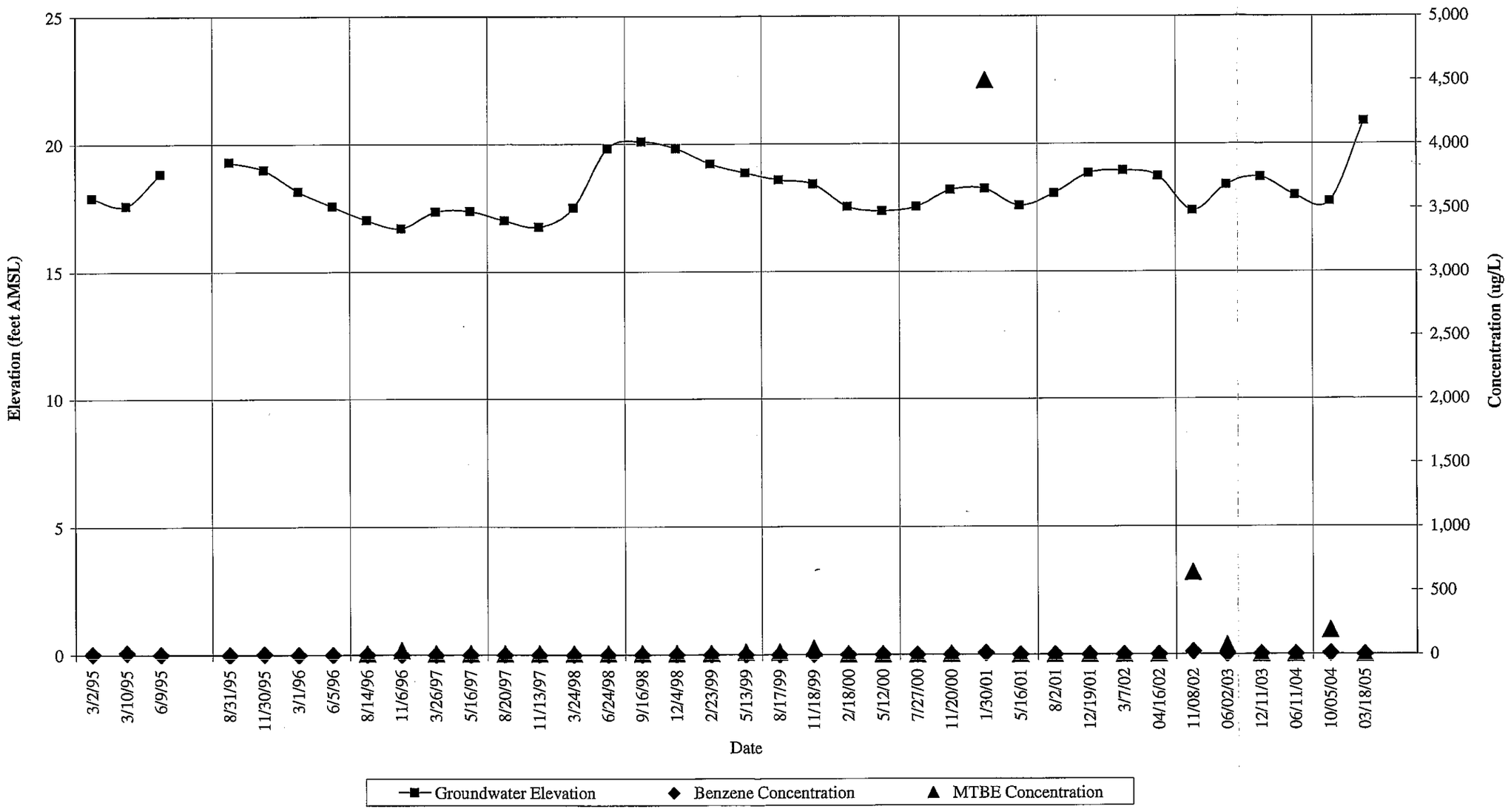
Hydrograph for MW-6

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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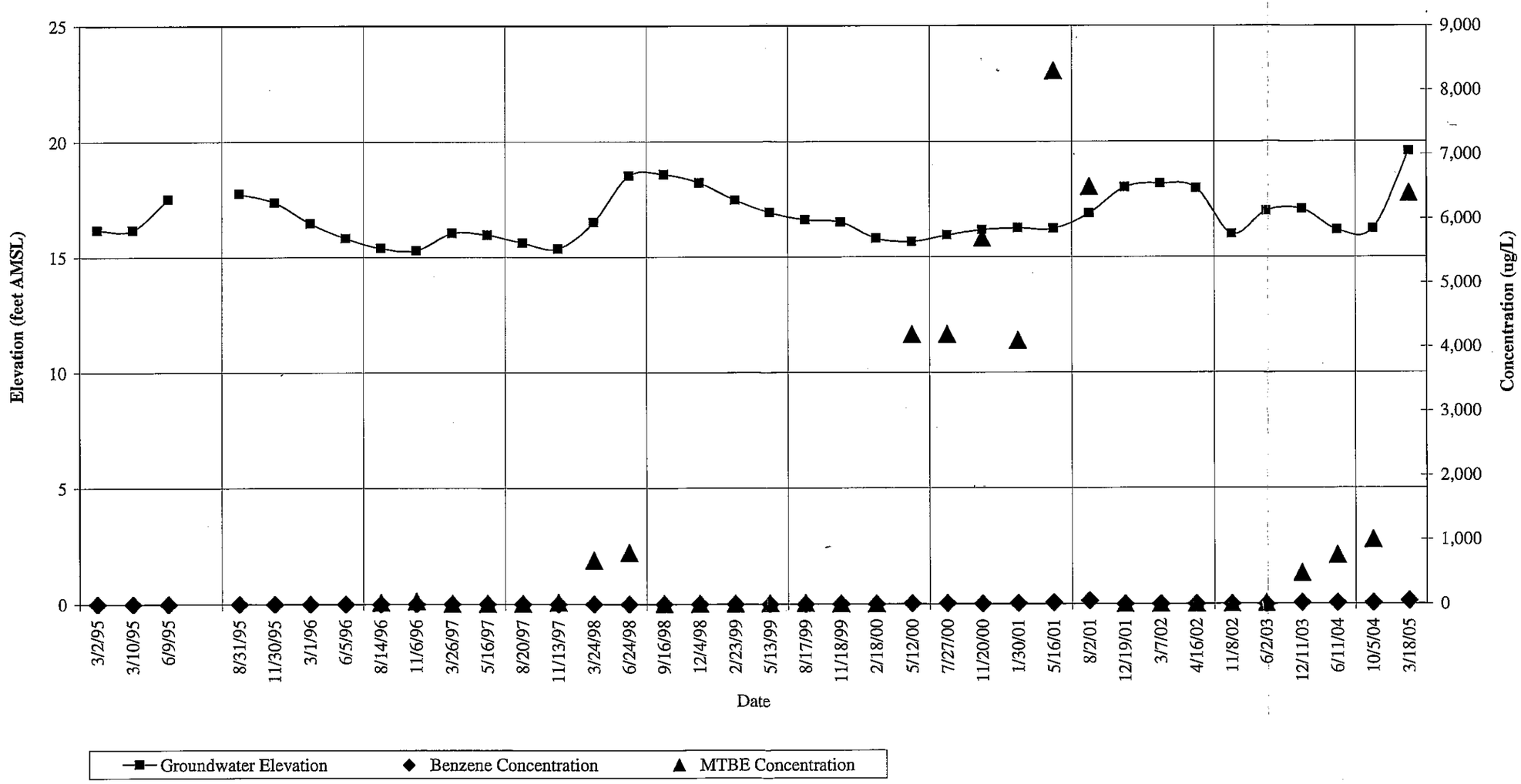
Hydrograph for MW-7

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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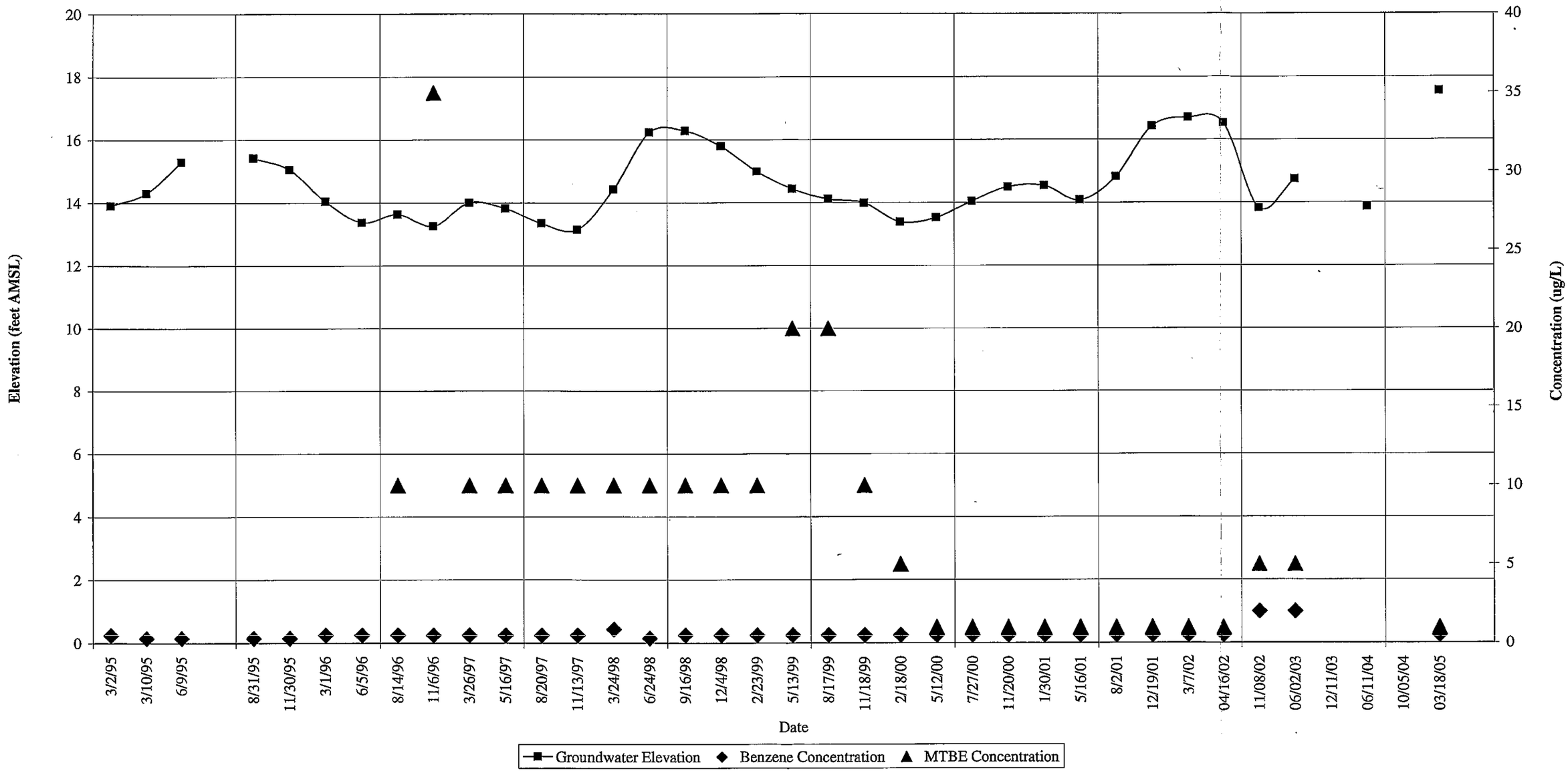
Hydrograph for MW-8

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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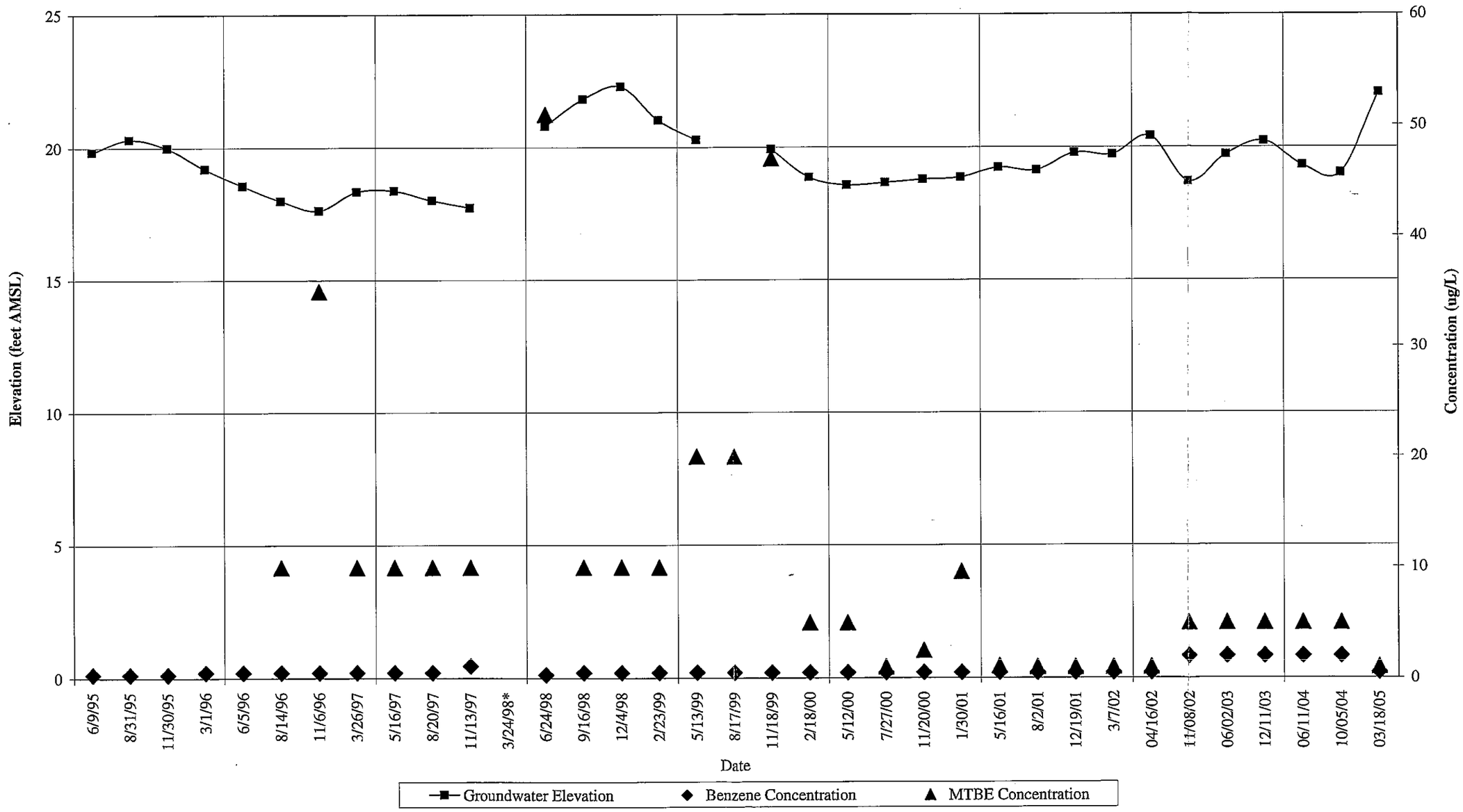
Hydrograph for MW-10

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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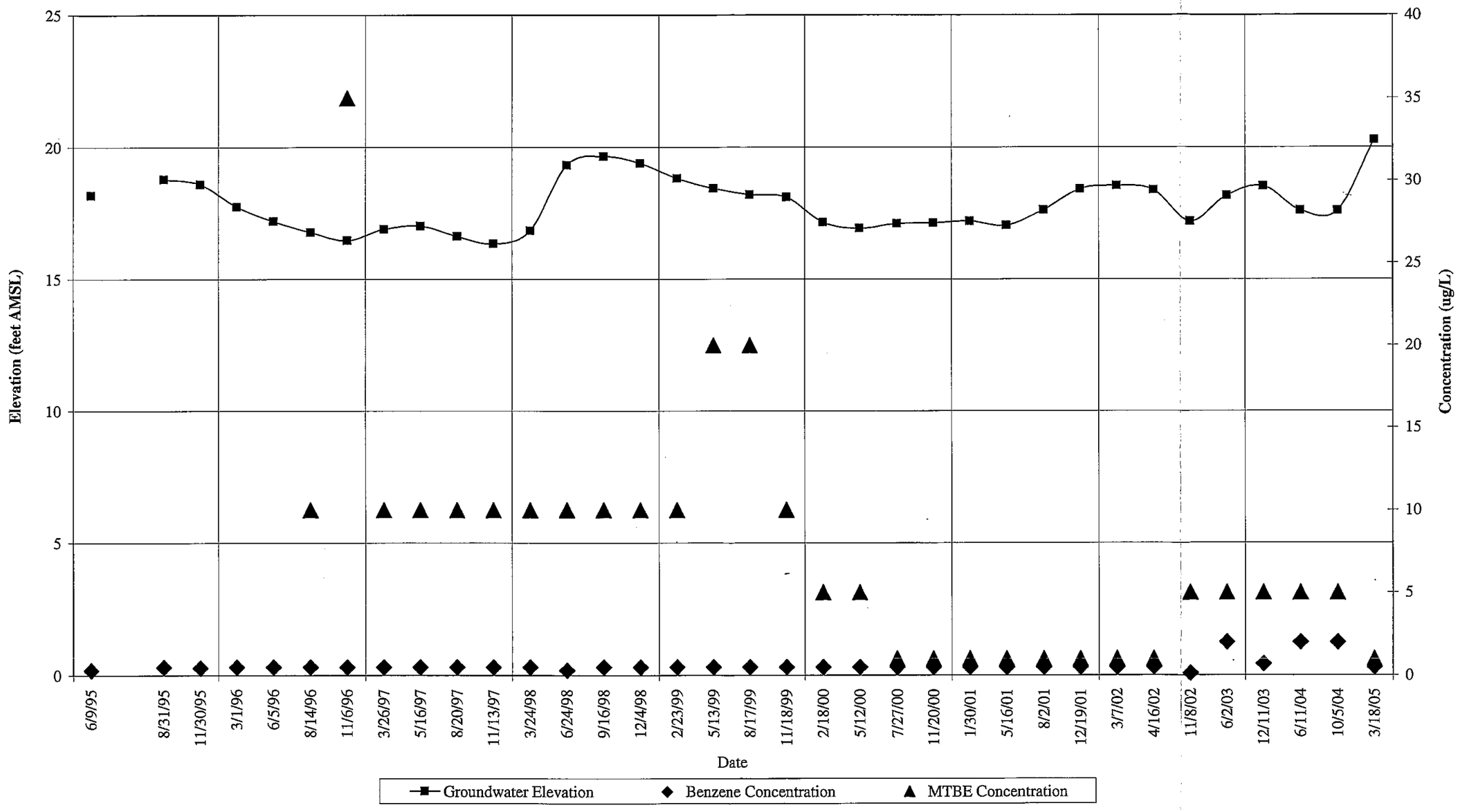
Hydrograph for MW-9

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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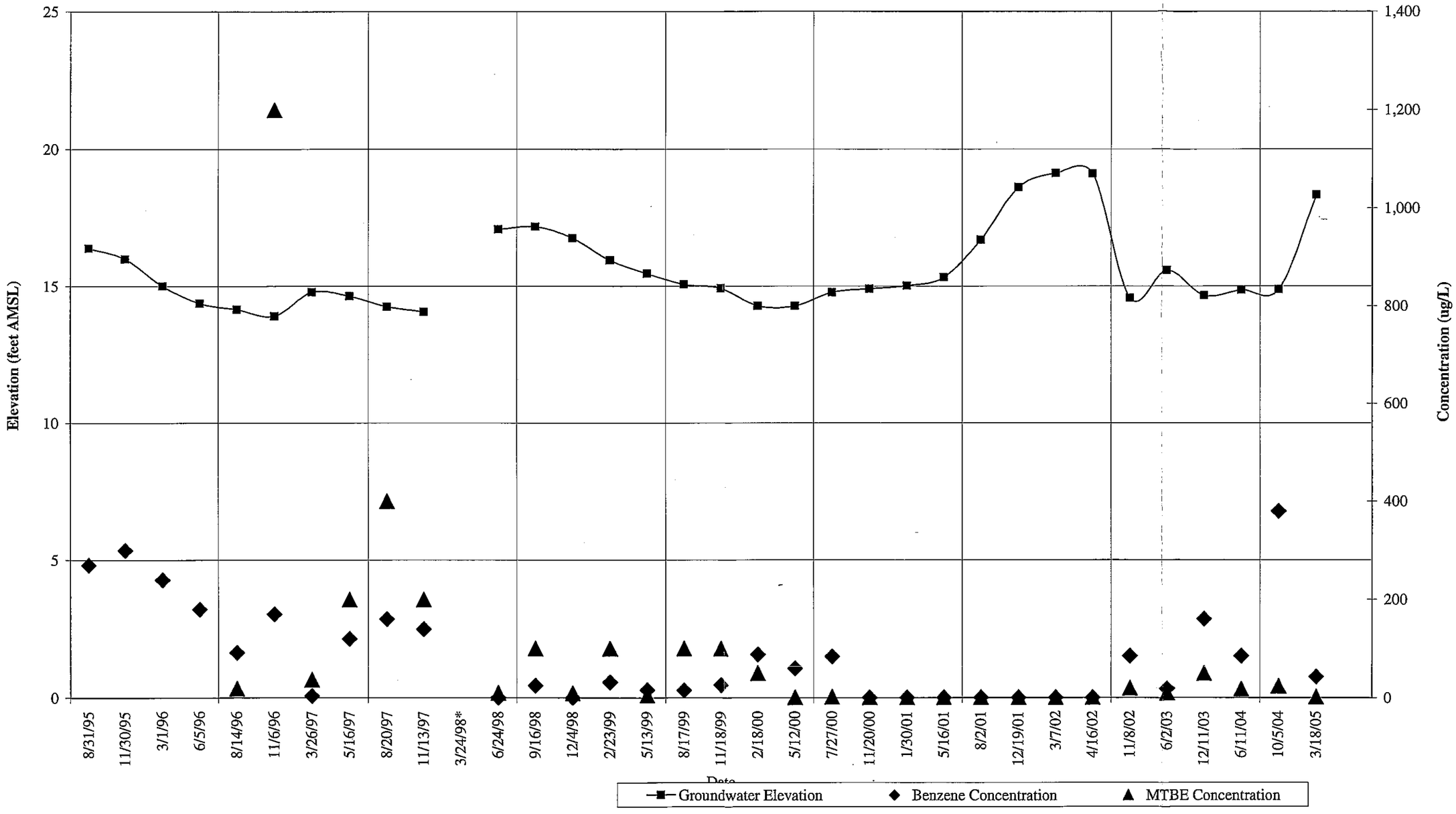
Hydrograph for MW-11

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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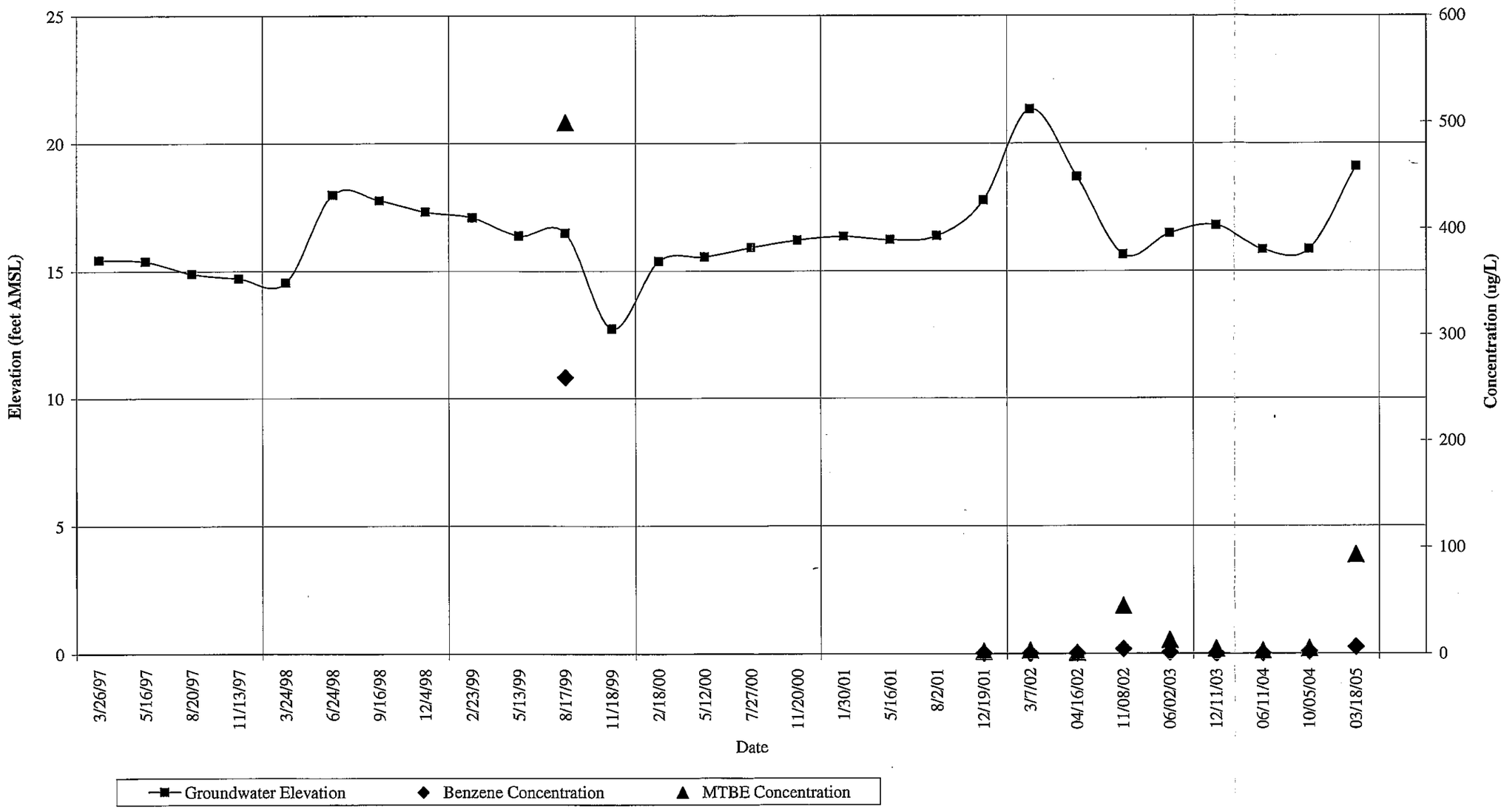
Hydrograph for MW-12

ARCO Facility 06021
1801 South Coast Highway
Oceanside, California



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SECOR

MONITORING WELL GAUGING LOG

Site Name & Facility No: **ARCO 6021** Date: 3/18/2005

Project Number: 08BP.U6021.07 / 4142 Field Representative(s): MN DIC | C

Checked by: ck

Well No.	Previous QTR DTW	Gauging Time	Depth to Floating Product	Depth to Water (ft)	Floating Product Thickness	Total Casing Depth (ft)	Casing Elevation[1]	Groundwater Elevation[1]	Corrected Groundwater Elevation[1]*	Comments
MW-2	Dry	0943	–	18.50	–		39.35	20.85 ✓		
MW-3	23.14	0942	–	19.91	–		39.64	19.73 ✓		
MW-4	23.15	0939	–	19.86	–		39.10	19.24 ✓		
MW-5	23.89	0940	–	20.83	–		40.15	19.32 ✓		
MW-6	22.15	0947	–	19.01	–		39.90	20.89 ✓		
MW-7	21.50	1010	–	18.14	–		37.73	19.59 ✓		
MW-8	NM	1000	–	20.35	–		37.90	17.55 ✓		
MW-9	22.53	0950	–	19.85	–		40.13	20.28 ✓		
MW-10	19.81	1044	–	16.79	–		38.84	22.05 ✓		
MW-11	22.90	1025	–	19.44	–		37.78	18.34 ✓		
MW-12	23.54	0955	–	20.30	–		39.40	19.10 ✓		

Notes:
1 = feet above mean sea level unless noted otherwise
* = elevation adjusted by adding (.75 x product thickness) to measured water elevation
\- = not measured due to the presence of liquid-phase hydrocarbons

Sheen = discontinuous, non-measurable thickness of LPH
Trace = continuous, non-measurable thickness of LPH
ND = Not detected
NM = Not measured

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG	Well No: MW- 2
	Project Name: ARCO 6021	Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142	Sample Time: 1244
	SECOR Rep: D. KRAUTER / Checked by:	Sample No: MW- 2

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS
Water Level Meter Type & ID: Solinist # 2	Borehole Diameter (in): 8 (10) 12
Purging Equipment / Method: ___Vac Truck ___Bailer X Submersible Pump ___Other	Casing Diameter (in): 2 (4)
pH Temp/Conductivity Meter Type / ID: 1A	Depth to Water (DTW_1) (ft): 18.61 @ 1148
Sampling Method: ___Teflon Bailer X Disposable Bailer ___Other:	Total Well Depth (DTB) (ft): 27.12 / Water Column: 8.51
Decontamination Method: ___Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___Other:	Floating Product: / Thickness (in): —
	Borehole Volume (gal): 12.77 / 1.5 Borehole Volumes (gal): 19.15

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1148	Started Purging					
1200	22.65	13	7.13	23.7	1331	CLEAR, ODORLESS
1216	21.49	19.5	7.14	23.8	1327	" "
1244	SAMP.					

Maximum Drawdown (DTW_2) (ft) = 22.65

H^2O Removal Rate (GPM) = ~~0.69~~ 0.70

X Fast Recharging Well

___Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 12.44

Depth to Water at time of sampling (DTW_3): 19.41

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(18.61) - (19.41)}{(18.61) - (22.65)} = \frac{-0.80}{-4.04}$$

$$= 80\ \%$$

80% Recharge = ~~19.15~~ 19.45

19.45

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 3
	Project Name: ARCO 6021		Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142		Sample Time: 1436
	SECOR Rep: JC/WW	Checked by: DE/DN	Sample No: MW- 3

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS	
Water Level Meter Type & ID: Solinist # 3	Borehole Diameter (in): 8 (10) 12	
Purging Equipment / Method: ___ Vac Truck ___ Bailer X Submersible Pump ___ Other	Casing Diameter (in): 2 (4)	
pH Temp/Conductivity Meter Type / ID:	Depth to Water (DTW_1) (ft): 20.18	
Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 31.35 ~~31.00~~	Water Column: 11.17
Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Floating Product: —	Thickness (in): —
	Borehole Volume (gal): 16.76	1.5 Borehole Volumes (gal): 25.15

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1417	Started Purging					
1424	26.80	17	7.08	22.8	1469	tan, cloudy, no odor
1426	28.40	25.5	7.01	22.7	1487	
1436	21.50	sample				

Maximum Drawdown (DTW_2) (ft) = 28.40	X Fast Recharging Well
H^2O Removal Rate (GPM) = 2.83	___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1436	Depth to Water at time of sampling (DTW_3): 21.80		
Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 (DTB-DTW_1)
2	10	1.14 (DTB-DTW_1)
4	10	1.50 (DTB-DTW_1)
4	12	1.95 (DTB-DTW_1)
6	10	2.11 (DTB-DTW_1)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(20.18) - 21.80}{(20.18) - (28.40)} = \frac{-1.62}{-8.22}$$

$$= 80\ \%$$

80% Recharge = 21.82

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name:	ARCO 6021
Project Number:	08BP.U6021.07 / 4142
SECOR Rep:	W Wong
Checked by:	AE
Well No:	MW- 4
Date:	3/18/2005
Sample Time:	1405
Sample No:	MW- 4

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 3

Purging Equipment / Method: ___ Vac Truck ___ Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: 6

Sampling Method: ___ Teflon Bailer or Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash or 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12

Casing Diameter (in): 2 (4)

Depth to Water (DTW_1) (ft): 19.80

Total Well Depth (DTB) (ft): 31.54 ~~34.00~~

Water Column: 11.64

Floating Product: ___

Thickness (in): ___

Borehole Volume (gal): 17.46

1.5 Borehole Volumes (gal): 26.19

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1326	Started Purging					
1342	26.82	17.5	7.29	22.3	1753	tan, silty, low odor, light sheen
1347	27.27	26.5	7.36	22.4	1727	"
1405	21.37	sample				

Maximum Drawdown (DTW_2) (ft) = 27.27

H^2O Removal Rate (GPM) = 1.26

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1405

Depth to Water at time of sampling (DTW_3): 21.37

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 (DTB-DTW_1)
2	10	1.14 (DTB-DTW_1)
4	10	1.50 (DTB-DTW_1)
4	12	1.95 (DTB-DTW_1)
6	10	2.11 (DTB-DTW_1)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(19.80)-(21.37)}{(19.80)-(27.27)} = \frac{-1.47}{-7.37}$$

$$= 80\ \%$$

80% Recharge = 21.37

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name	ARCO 6021	Well No:	MW- 5
Project Number:	08BP.U6021.07 / 4142	Date:	3/18/2005
SECOR Rep: T. Cummins	Checked by:	Sample Time:	1418
		Sample No:	MW- 5

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 1

Purging Equipment / Method: ___ Vac Truck ___ Bailer X Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: 5

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12

Casing Diameter (in): 2 (4)

Depth to Water (DTW_1) (ft): 20.96

Total Well Depth (DTB) (ft): 32.05

Water Column: 11.09

Floating Product: —

Thickness (in): —

Borehole Volume (gal): 16.64

1.5 Borehole Volumes (gal): 24.95

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1354	Started Purging					
1401	27.04	17	7.21	22.7	1540	brown, cloudy, no odor
1404	27.39	25	7.17	22.6	1580	"
1418	22.20	sample				

Maximum Drawdown (DTW_2) (ft) = 27.39

H^2O Removal Rate (GPM) = 2.50

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1418

Depth to Water at time of sampling (DTW_3): 22.20

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(20.96) - (22.20)}{(20.96) - (27.39)} = \frac{-1.24}{-6.43}$$

$$= 81\ \%$$

80% Recharge = 22.25

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 6
	Project Name: ARCO 6021		Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142		Sample Time: 1405
	SECOR Rep: D. KRAUTTER	Checked by: AC / JN	Sample No: MW- 6

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS	
Water Level Meter Type & ID: Solinist # 2	Borehole Diameter (in): 8 (10) 12	
Purging Equipment / Method: ___ Vac Truck ___ Bailer X Submersible Pump ___ Other	Casing Diameter (in): 2 (4)	
pH Temp/Conductivity Meter Type / ID: 1A	Depth to Water (DTW_1) (ft): 19.12 @ 1256	
Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 30.00	Water Column: 10.88
	Floating Product: —	Thickness (in): —
Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Borehole Volume (gal): 16.32	1.5 Borehole Volumes (gal): 24.48

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (µ mhos)	Water Description (odor, turbidity, color)
1308	Started Purging					
1320	25.24	16.5	6.80	23.0	1365	TAN CLOUDY, ODORLESS
1346	22.79	24.5	6.80	23.0	1346	" "
1405	20.34	SAMPLE				

Maximum Drawdown (DTW_2) (ft) = 25.24

H^2O Removal Rate (GPM) = 0.64

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1405

Depth to Water at time of sampling (DTW_3): 20.34

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes: LOTS OF ROOTS

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(19.12)-(20.34)}{(19.12)-(25.24)} = \frac{-1.22}{-6.12} = 80\%$$

80% Recharge = 20.34

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 7
	Project Name: ARCO 6021		Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142		Sample Time: 1339
	SECOR Rep: L. Cummins	Checked by: AE/W	Sample No: MW- 7

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 1

Purging Equipment / Method: ___ Vac Truck ___ Bailer ✓ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: 5

Sampling Method: ___ Teflon Bailer ✓ Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash ✓ 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12

Casing Diameter (in): 2 (4)

Depth to Water (DTW_1) (ft): 18.16

Total Well Depth (DTB) (ft): 30.05

Water Column: 11.89

Floating Product: —

Thickness (in): —

Borehole Volume (gal): 17.84

1.5 Borehole Volumes (gal): 26.75

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1306	Started Purging					
1314	26.45	18	6.83	23.1	1884	clear, colorless, odorless
1318	28.69	27	6.85	23.4	1707	
1339	2020	sample				

Maximum Drawdown (DTW_2) (ft) = 28.69

H^2O Removal Rate (GPM) = 2.25

✓ Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1339

Depth to Water at time of sampling (DTW_3): 20.20

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(18.16) - (20.20)}{(18.16) - (28.69)} = \frac{-2.04}{-10.53}$$

$$= 81\%$$

80% Recharge = 20.27

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG	Well No: MW- 8
	Project Name: ARCO 6021	Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142	Sample Time: 1130
	SECOR Rep: I. Cummins / Checked by:	Sample No: MW- 8

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS
Water Level Meter Type & ID: Solinist # 1	Borehole Diameter (in): 8 (10) 12
Purging Equipment / Method: ___ Vac Truck ___ Bailer ✓ Submersible Pump ___ Other	Casing Diameter (in): 2 (4)
pH Temp/Conductivity Meter Type / ID: 5	Depth to Water (DTW_1) (ft): 20.39
Sampling Method: ___ Teflon Bailer ✓ Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 29.85 / Water Column: 9.46
Decontamination Method: ___ Steam / High Pressure Wash ✓ 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Floating Product: — / Thickness (in): —
	Borehole Volume (gal): 14.19 / 1.5 Borehole Volumes (gal): 21.29

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	~~Cond~~ pH (1L)	Temp (°C)	~~Elect. Cond~~ pH (µ mhos) (1L)	Water Description (odor, turbidity, color)
1104	Started Purging					
1110	26.30	15	2.73	22.5	6.95	clear, colorless, slight odor
1113	28.34	22	2.65	22.4	6.89	
1130	21.95	sample				

Maximum Drawdown (DTW_2) (ft) = 28.34

H^2O Removal Rate (GPM) = 2.44

✓ Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1130

Depth to Water at time of sampling (DTW_3): 21.95

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 (DTB-DTW_1)
2	10	1.14 (DTB-DTW_1)
4	10	1.50 (DTB-DTW_1)
4	12	1.95 (DTB-DTW_1)
6	10	2.11 (DTB-DTW_1)

Notes: Rust

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(20.39) - (21.95)}{(20.39) - (28.34)} = \frac{-1.56}{-7.95}$$

$$= 80\ \%$$

80% Recharge = 21.98

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 9
Project Name	ARCO 6021
Date:	3/18/2005
Project Number:	08BP.U6021.07 / 4142
Sample Time:	1115
SECOR Rep:	D. KRAUTTER
Checked by:	
Sample No:	MW- 9

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 2

Purging Equipment / Method: ___ Vac Truck ___ Bailer X Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: 1 A

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12

Casing Diameter (in): 2 (4)

Depth to Water (DTW_1) (ft): 19.92 @ 1041

Total Well Depth (DTB) (ft): 30.04

Water Column: 10.12

Floating Product:

Thickness (in):

Borehole Volume (gal): 15.18

1.5 Borehole Volumes (gal): 22.77

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (µ mhos)	Water Description (odor, turbidity, color)
1050	Started Purging					
1058	23.21	16	6.79	23.4	1592	CLEAR, ODORLESS
1102	22.46	23	6.76	23.7	1604	" "
1115	20.57	SAMPLE				

Maximum Drawdown (DTW_2) (ft) = 23.21

H^2O Removal Rate (GPM) = 1.92

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1115

Depth to Water at time of sampling (DTW_3): 20.57

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1)-(DTW_3)}{(DTW_1)-(DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(19.92)-(20.57)}{(19.92)-(23.21)} = \frac{-0.65}{-3.29}$$

$$= 80\ \%$$

80% Recharge = 20.58

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 10
	Project Name: ARCO 6021		Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142		Sample Time: 1109
	SECOR Rep: W Worc	Checked by: AC / W	Sample No: MW- 10

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS	
Water Level Meter Type & ID: Solinist # 3	Borehole Diameter (in): 8 (10) 12	
Purging Equipment / Method: ___ Vac Truck ___ Bailer U X Submersible Pump ___ Other	Casing Diameter (in): 2 (4)	
pH Temp/Conductivity Meter Type / ID: C	Depth to Water (DTW_1) (ft): 16.79	
Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 30.10	Water Column: 13.31
	Floating Product: —	Thickness (in): —
Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Borehole Volume (gal): 19.27	1.5 Borehole Volumes (gal): 29.85

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1044	Started Purging					
1051	22.70	20	7.34	23.0	1502	tan, low silt, odorless
1055	23.79	30	7.29	23.2	1520	
1109	18.19	sample				

Maximum Drawdown (DTW_2) (ft) = 23.79

H^2O Removal Rate (GPM) = 2.73

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1109

Depth to Water at time of sampling (DTW_3): 18.19

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(16.79) - (18.19)}{(16.79) - (23.79)} = \frac{-1.40}{-7.00}$$

$$= 80 \%$$

80% Recharge = 18.19

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name	ARCO 6021	Well No:	MW- 11
Project Number:	08BP.U6021.07 / 4142	Date:	3/18/2005
SECOR Rep:	T Cummings	Sample Time:	1244
Checked by:	AE / N	Sample No:	MW- 11

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 1

Purging Equipment / Method: ___ Vac Truck ___ Bailer ✓ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: 5

Sampling Method: ___ Teflon Bailer ✓ Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash ✓ 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12

Casing Diameter (in): 2 (4)

Depth to Water (DTW_1) (ft): 19.48

Total Well Depth (DTB) (ft): 29.45

Water Column: 9.97

Floating Product: —

Thickness (in): —

Borehole Volume (gal): 14.94

1.5 Borehole Volumes (gal): 22.43

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1224	Started Purging					
1229	26.26	15	7.12	22.1	1358	clear, colorless, odorless
1234	27.37	13	7.12	22.2	1371	
1244	21.00	sample				

Maximum Drawdown (DTW_2) (ft) = 27.37

H^2O Removal Rate (GPM) = 2.30

✓ Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1244

Depth to Water at time of sampling (DTW_3): 21.00

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes: Roots

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(19.48) - (21.00)}{(19.48) - (27.37)} = \frac{-1.52}{-7.89} = 81\%$$

80% Recharge = 21.06

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 12
	Project Name: ARCO 6021		Date: 3/18/2005
	Project Number: 08BP.U6021.07 / 4142		Sample Time: 1258
	SECOR Rep: W Wong	Checked by: AO/ad	Sample No: MW- 12

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS
Water Level Meter Type & ID: Solinist # 3	Borehole Diameter (in): 8 (10) 12
Purging Equipment / Method: ___ Vac Truck, X Bailer, U X Submersible Pump, ___ Other	Casing Diameter (in): 2 (4)
pH Temp/Conductivity Meter Type / ID: 6	Depth to Water (DTW_1) (ft): 19.87 @ 1155
Sampling Method: ___ Teflon Bailer, X Disposable Bailer, ___ Other:	Total Well Depth (DTB) (ft): 29.01 / Water Column: 9.14
Decontamination Method: ___ Steam / High Pressure Wash, X 3 Stage (Alconox, Tap & DI rinse), ___ Other:	Floating Product: ___ / Thickness (in): ___
	Borehole Volume (gal): 13.71 / 1.5 Borehole Volumes (gal): 20.57

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1156	Started Purging					
1221	27.35	14	7.38	21.5	1228	gray, odor, v. silty, globs of bottom
1230	dry	21	7.28	21.7	1202	"
1258	21.70	Sample				

Maximum Drawdown (DTW_2) (ft) = dry / ~~29.10~~ 29.01

H^2O Removal Rate (GPM) = 0.62

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1258

Depth to Water at time of sampling (DTW_3): 21.70

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
(6) x 40ml VOAs	(N)	(HCL & ICE) or NONE	GRO, BTEX, MTBE, (8015M, 8260B)
			DIPE, TAME, ETBE, TBA, Ethanol (8260B)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes: Pump on rig wasn't working well due to mud in well → switched to hand bailer → bentonite globs while purging

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(19.87) - (21.70)}{(19.87) - (29.01)} = \frac{-1.83}{-9.14}$$

$$= 80 \%$$

80% Recharge ≐ 21.70

SEVERN TRENT STL

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705

Tel: 714 258 8610 Fax: 714 258 0921
www.stl-inc.com

April 4, 2005

STL LOT NUMBER: **E5C220201**
PO/CONTRACT: GEM-6-21909

BRAD EISENBERG
SECOR International Inc
2655 Camino Del Rio North
Suite 302
San Diego, CA 92108-1633

Dear BRAD EISENBERG,

This report contains the analytical results for the 13 samples received under chain of custody by STL Los Angeles on March 21, 2005. These samples are associated with your ARCO #6021 project.

STL Los Angeles certifies that the test results provided in this report meet all the requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of the report. NELAP Certification Number for STL Los Angeles is 01118CA/E87652.

Any matrix related anomaly is footnoted within the report. A cooler receipt temperature between 2-6 degrees Celsius is within EPA acceptance criteria. The temperature(s) of the coolers received for this project can be found on the Project Receipt Checklist.

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report contains 000043 pages.

ACCREDITED IN ACCORDANCE WITH nelac

Severn Trent Laboratories, Inc.

CASE NARRATIVE

Historical control limits for the LCS are used to define the estimate of uncertainty for a method.

All applicable quality control procedures met method-specified acceptance criteria.

If you have any questions, please feel free to call me at 714.258.8610.

Sincerely,

Sabina Sudoko
Project Manager
CC: Project File

Chain of Custody Record

Project Name: ARCO 6021 Groundwater Monitoring
BP BU/AR Region/Enfos Segment: Retail
State or Lead Regulatory Agency: County of San Diego, DEH
Requested Due Date (mm/dd/yy): Standard TAT

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

Lab Name:	STL Los Angeles	BP/AR Facility No.:	6021	Consultant/Contractor:	SECOR International, Inc.
Address:	1721 Grand Ave.	BP/AR Facility Address:	1801 South Coast Highway	Address:	2655 Camino Del Rio North, Suite 302
	Santa Ana, CA 92705-4808	Site Lat/Long:			San Diego, CA 92108
Lab PM:	Sabina Sudoko	California Global ID No.:	T0607301115	Consultant/Contractor Project No.:	08BP.06021.05 / 0403
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BNQ-0001	Consultant/Contractor PM:	Brad Eisenberg
BP/AR PM Contact:	Roy Thun	Provision or RCOP:	Provision	Tele/Fax:	619.296.6195/6199
Address:	4 Centerpointe Dr.	Phase/WBS:	Monitoring (04)	Report Type & QC Level:	Normal
	La Palma, CA 90623	Sub Phase/Task:	Analytical	E-mail EDD To:	beisenberg@secor.com
Tele/Fax:	661.287.3855/222-2349	Cost Element:	Subcontracted Cost	Invoice to:	Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		EPA 8015M GRO C6-C12	EPA 8260B BTEX, Oxys, MTBE, EtOH								Sample Point Lat/Long and Comment
1	MW-2	1244	3/19/05		X			6				X			X	X								
2	MW-3	1436			X																			
3	MW-4	1405			X																			
4	MW-5	1418			X																			
5	MW-6	1405			X																			
6	MW-7	1339			X																			
7	MW-8	1130			X																			
8	MW-9	115			X																			
9	MW-10	1109			X																			
10	MW-11	1244			X																			

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Wilson Wong						
Sampler's Company: SECOR						
Shipment Date:		3/21	1715		3/21	1715
Shipment Method:						
Shipment Tracking No:						

Special Instructions: Oxy's = TBA, DIPE, TAME, ETBE

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

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

BP COC Rev. 4 10/1/04

Chain of Custody Record

Project Name: ARCO 6021 Groundwater Monitoring
BP BU/AR Region/Enfos Segment: Retail
State or Lead Regulatory Agency: County of San Diego, DEH
Requested Due Date (mm/dd/yy): Standard TAT

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

Lab Name:	STL Los Angeles	BP/AR Facility No.:	6021	Consultant/Contractor:	SECOR International, Inc.
Address:	1721 Grand Ave.	BP/AR Facility Address:	1801 South Coast Highway	Address:	2655 Camino Del Rio North, Suite 302
	Santa Ana, CA 92705-4808	Site Lat/Long:			San Diego, CA 92108
Lab PM:	Sabina Sudoko	California Global ID No.:	T0607301115	Consultant/Contractor Project No.:	08BP.06021.05 / 0403
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BNQ-0001	Consultant/Contractor PM:	Brad Eisenberg
BP/AR PM Contact:	Roy Thun	Provision or RCOP:	Prevision	Tele/Fax:	619.296.6195/6199
Address:	4 Centerpointe Dr.	Phase/WBS:	Monitoring (04)	Report Type & QC Level:	Normal
	La Palma, CA 90623	Sub Phase/Task:	Analytical	E-mail EDD To:	beisenberg@secor.com
Tele/Fax:	661.287.3855/222-2349	Cost Element:	Subcontracted Cost	Invoice to:	Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: EPA 8015M GRO C6-C12	Requested Analysis: EPA 8260B BTEX, Oxys, MTBE, EtOH	Sample Point Lat/Long and Comment
1	TB-1919-2005 03/8		3/21/05		X			6				X				HOLD
2	EB-1919-2005 03/8		↓		X			6				X				HOLD
3	MW-12	1258	↓		X			12				X		X	X	
4																
5																
6																
7																
8																
9																
10																

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Wilson Wong						
Sampler's Company: SECOR						
Shipment Date:		3/21	1715		3/21/05	1500
Shipment Method:					3/21/05	1715
Shipment Tracking No:						

Special Instructions: Oxy's = TBA, DIPE, TAME, ETBE

Custody Seals In Place Yes No Temp Blank Yes No Cooler Temperature on Receipt N/A °F/C Trip Blank Yes ✓ No

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

BP COC Rev. 4 10/1/04

STTR #6021

4

R5C221

STL LOS ANGELES - PROJECT RECEIPT CHECKLIST Date: 3.21.05

LIMS Lot #: ~~ESC~~ 220201 Quote #: 62428

Client Name: SECOR - SD Project: 6021

Received by: K FREITAG Date/Time Received: 3-21-05 1715

Delivered by : ☐ Client ☑ STL ☐ DHL ☐ Fed Ex ☐ UPS ☐ Other

****

	Initial / Date
Custody Seal Status Cooler: ☐Intact ☐Broken ☑None	3/21
Custody Seal Status Samples: ☐Intact ☐Broken ☑None	
Custody Seal #(s): ☑No Seal #	
Sampler Signature on COC ☑ Yes ☐No ☐N/A	
IR Gun # A Correction Factor -0.1 °C IR passed daily verification ☑Yes ☐No	
Temperature - BLANK 2.1 °C +/-0.1 CF = 2.0 °C	
Temperature – COOLER (___ °C ___ °C ___ °C ___ °C) = ___ avg °C +/- ___ CF = ___ °C	
Samples outside temperature criteria but received within 6 hours of final sampling ☐ Yes ☑N/A	
Sample Container(s): ☑STL-LA ☐ Client	
One COC/Multiple coolers: ☐ Yes- # coolers ___ All within temp criteria ☐ Yes ☐No ☑N/A	
One or more coolers with an anomaly: ☐ Yes – (fill out PRC for each) ☑N/A	
Samples: ☑Intact ☐Broken ☐Other	
pH measured: ☐ Yes ☐ Anomaly (if checked, notify lab and file NCM) ☑N/A	
Anomalies: ☒No ☐Yes – complete CUR and Create NCM NCM #	3/22/05
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☑ Yes ☐ N/A	
Labeled by: AB Labeling checked AB	

****

Turn Around Time: ☐RUSH–24HR ☐RUSH–48HR ☐RUSH–72HR ☑NORMAL

Short-Hold Notification: ☐ pH ☐Wet Chem ☐Metals (Filter/Pres) ☐Encore ☐ >1/2 HT expired…

Outside Analysis(es) (Test/Lab/Date Sent Out) :

_____

_____

_____

********** LEAVE NO BLANK SPACES ; USE N/A **********

Headspace Anomaly ☒N/A 3/22/05

Lab ID	Container(s) #	Headspace	Lab ID	Container(s) #	Headspace
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm

LIMS Lot # E5C220201

PROJECT RECEIPT CHECKLIST Cont'd

Fraction	9/12	13												
VOAH/ *	6	12												

* VOA with headspace/bubbles < 6mm

H: HCL, S: H2SO4, N: HNO3, V: VOA, SL, Sleeve, E: Encore, PB: Poly Bottle, CGB: Clear Glass Bottle, AGJ: Amber Glass Jar, T: Terracore AGB: Amber Glass Bottle, n/f/l:HNO3-Lab filtered, n/f:HNO3-Field filtered, znna: Zinc Acetate/Sodium Hydroxide, Na2s2o3: sodium thiosulfate

Condition Upon Receipt Anomaly Form

☒ N/A 3/22/05

- **COOLERS**
  - ☐ Not Received (received COC only)
  - ☐ Leaking
  - ☐ Other:
- **CUSTODY SEALS (COOLER(S)**
  - ☐ None
  - ☐ Not Intact
  - ☐ Other

CONTAINER(S)
- ☐ None
- ☐ Not Intact
- ☐ Other

- **TEMPERATURE (SPECS 4 ± 2°C)**
  - ☐ Cooler Temp(s)
  - ☐ Temperature Blank(s)
- **CHAIN OF CUSTODY (COC)**
  - ☐ Not relinquished by Client; No date/time relinquished
  - ☐ Incomplete information provided
  - ☐ Other ☐ COC not received – notify PM
- **CONTAINERS**
  - ☐ Leaking ☐ Voa Vials with Bubbles > 6mm
  - ☐ Broken
  - ☐ Extra
  - ☐ Without Labels
  - ☐ Other:
- **LABELS**
  - ☐ Not the same ID/info as in COC
  - ☐ Incomplete Information
  - ☐ Markings/Info illegible
  - ☐ Torn
- **SAMPLES**
  - ☐ Samples NOT RECEIVED but listed on COC
  - ☐ Samples received but NOT LISTED on COC
  - ☐ Logged based on Label Information
  - ☐ Logged based on info from other samples on COC
  - ☐ Logged according to Work Plan
  - ☐ Logged on HOLD UNTIL FURTHER NOTICE
  - ☐ Will be noted on COC--Client to send samples with new COC
  - ☐ Mislabeled as to tests, preservatives, etc.
  - ☐ Holding time expired – list sample ID and test
  - ☐ Improper container used
  - ☐ Not preserved/Improper preservative used
  - ☐ Improper pH _____ Lab to preserve sample and document
  - ☐ Insufficient quantities for analysis ☐ Other

Comments:

☐ Corrective Action Implemented:

☐ Client Informed: verbally on _____ By: _____ ☐ In writing on _____ By: _____

☐ Sample(s) on hold until: _____ ☐ Sample(s) processed "as is."

Logged by/Date: 3/22/05

PM Review/Date: 3/22 8

SECOR International Inc

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...:	E5C220201-001	Work Order #...:	G6P5C1AA	Matrix.....:	W
Date Sampled...:	03/18/05 12:44	Date Received..:	03/21/05 17:15	MS Run #.....:	5084161
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084258	Analysis Time..:	03:40		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	ND	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	ND	0.50	ug/L
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	**1.3**	**1.0**	**ug/L**
m-Xylene & p-Xylene	**1.3**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	86	(75 - 120)
1,2-Dichloroethane-d4	167 AZ	(65 - 130)
Toluene-d8	96	(80 - 130)

NOTE(S):

Surrogate recovery is outside stated control limits.

AZ Surr. recovery outside of acceptance limits due to matrix interf.

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...:	E5C220201-001	Work Order #...:	G6P5C1AC	Matrix.....:	W
Date Sampled...:	03/18/05 12:44	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	12:33		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	87	(70 - 130)

SECOR International Inc

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...:	E5C220201-002	Work Order #...:	G6P5N1AA	Matrix.....:	W
Date Sampled...:	03/18/05 14:36	Date Received..:	03/21/05 17:15	MS Run #.....:	5084161
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084258	Analysis Time..:	04:23		
Dilution Factor:	25				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	50	ug/L
Benzene	ND	12	ug/L
Ethanol	ND IO	12000	ug/L
Ethylbenzene	**640**	**12**	**ug/L**
tert-Butyl alcohol	ND	620	ug/L
Toluene	ND	12	ug/L
o-Xylene	**200**	**25**	**ug/L**
Xylenes (total)	**1600**	**25**	**ug/L**
m-Xylene & p-Xylene	**1400**	**25**	**ug/L**
Methyl tert-butyl ether (MTBE)	**2100**	**25**	**ug/L**
Ethyl-t-Butyl Ether (ETBE)	ND	50	ug/L
Tert-amyl methyl ether (TAME)	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
1,2-Dichloroethane-d4	96	(65 - 130)
Toluene-d8	97	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...:	E5C220201-002	Work Order #...:	G6P5N1AC	Matrix.....:	W
Date Sampled...:	03/18/05 14:36	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	13:00		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	2900	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	97	(70 - 130)

SECOR International Inc

Client Sample ID: MW-4

GC/MS Volatiles

Lot-Sample #...:	E5C220201-003	Work Order #...:	G6P5X1AA	Matrix.....:	W
Date Sampled...:	03/18/05 14:05	Date Received..:	03/21/05 17:15	MS Run #.....:	5084318
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084479	Analysis Time..:	18:30		
Dilution Factor:	33.33				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	67	ug/L
Benzene	ND	17	ug/L
Ethanol	ND IO	17000	ug/L
Ethylbenzene	**79**	**17**	**ug/L**
tert-Butyl alcohol	ND	830	ug/L
Toluene	ND	17	ug/L
o-Xylene	ND	33	ug/L
Xylenes (total)	**56**	**33**	**ug/L**
m-Xylene & p-Xylene	**49**	**33**	**ug/L**
Methyl tert-butyl ether (MTBE)	**2500**	**33**	**ug/L**
Ethyl-t-Butyl Ether (ETBE)	ND	67	ug/L
Tert-amyl methyl ether (TAME)	ND	67	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
1,2-Dichloroethane-d4	104	(65 - 130)
Toluene-d8	85	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-4

GC Volatiles

Lot-Sample #...:	E5C220201-003	Work Order #...:	G6P5X1AC	Matrix.....:	W
Date Sampled...:	03/18/05 14:05	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	13:27		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	1200	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	95	(70 - 130)

SECOR International Inc

Client Sample ID: MW-5

GC/MS Volatiles

Lot-Sample #...:	E5C220201-004	Work Order #...:	G6P561AA	Matrix.....:	W
Date Sampled...:	03/18/05 14:18	Date Received..:	03/21/05 17:15	MS Run #.....:	5084318
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084479	Analysis Time..:	14:53		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	**28**	**0.50**	**ug/L**
Ethanol	ND IO	500	ug/L
Ethylbenzene	**59**	**0.50**	**ug/L**
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	**6.9**	**1.0**	**ug/L**
m-Xylene & p-Xylene	**6.5**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	**22**	**1.0**	**ug/L**
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 120)
1,2-Dichloroethane-d4	117	(65 - 130)
Toluene-d8	88	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-5

GC Volatiles

Lot-Sample #...:	E5C220201-004	Work Order #...:	G6P561AC	Matrix.....:	W
Date Sampled...:	03/18/05 14:18	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	13:54		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	220	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	89	(70 - 130)

SECOR International Inc

Client Sample ID: MW-6

GC/MS Volatiles

Lot-Sample #...:	E5C220201-005	Work Order #...:	G6P581AA	Matrix.....:	W
Date Sampled...:	03/18/05 14:05	Date Received..:	03/21/05 17:15	MS Run #.....:	5084318
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084479	Analysis Time..:	15:14		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	ND	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	ND	0.50	ug/L
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 120)
1,2-Dichloroethane-d4	91	(65 - 130)
Toluene-d8	88	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-6

GC Volatiles

Lot-Sample #...:	E5C220201-005	Work Order #...:	G6P581AC	Matrix.....:	W
Date Sampled...:	03/18/05 14:05	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	14:21		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	86	(70 - 130)

SECOR International Inc

Client Sample ID: MW-7

GC/MS Volatiles

Lot-Sample #...:	E5C220201-006	Work Order #...:	G6P6A1AA	Matrix.....:	W
Date Sampled...:	03/18/05 13:39	Date Received..:	03/21/05 17:15	MS Run #.....:	5090132
Prep Date.....:	03/30/05	Analysis Date..:	03/30/05		
Prep Batch #...:	5090196	Analysis Time..:	17:20		
Dilution Factor:	100				
Analyst ID.....:	000038	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	200	ug/L
Benzene	ND	50	ug/L
Ethanol	ND IO	50000	ug/L
Ethylbenzene	ND	50	ug/L
tert-Butyl alcohol	ND	2500	ug/L
Toluene	ND	50	ug/L
o-Xylene	ND	100	ug/L
Xylenes (total)	ND	100	ug/L
m-Xylene & p-Xylene	ND	100	ug/L
Methyl tert-butyl ether (MTBE)	**6400**	**100**	**ug/L**
Ethyl-t-Butyl Ether (ETBE)	ND	200	ug/L
Tert-amyl methyl ether (TAME)	ND	200	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	72 AZ	(75 - 120)
1,2-Dichloroethane-d4	83	(65 - 130)
Toluene-d8	95	(80 - 130)

NOTE(S):

Surrogate recovery is outside stated control limits.

AZ Surr. recovery outside of acceptance limits due to matrix interf.

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-7

GC Volatiles

Lot-Sample #...:	E5C220201-006	Work Order #...:	G6P6A1AC	Matrix.....:	W
Date Sampled...:	03/18/05 13:39	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	14:47		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	1800	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	91	(70 - 130)

SECOR International Inc

Client Sample ID: MW-8

GC/MS Volatiles

Lot-Sample #...: E5C220201-007 Work Order #...: G6P6D1AA Matrix.....: W
Date Sampled...: 03/18/05 11:30 Date Received..: 03/21/05 17:15 MS Run #.....: 5084318
Prep Date.....: 03/25/05 Analysis Date..: 03/25/05
Prep Batch #...: 5084479 Analysis Time..: 15:58
Dilution Factor: 1
Analyst ID.....: 015590 Instrument ID..: MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	ND	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	ND	0.50	ug/L
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	89	(75 - 120)
1,2-Dichloroethane-d4	129	(65 - 130)
Toluene-d8	84	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-8

GC Volatiles

Lot-Sample #...:	E5C220201-007	Work Order #...:	G6P6D1AC	Matrix.....:	W
Date Sampled...:	03/18/05 11:30	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	15:14		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	86	(70 - 130)

SECOR International Inc

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #...:	E5C220201-008	Work Order #...:	G6P6F1AA	Matrix.....:	W
Date Sampled...:	03/18/05 11:15	Date Received..:	03/21/05 17:15	MS Run #.....:	5088143
Prep Date.....:	03/26/05	Analysis Date..:	03/26/05		
Prep Batch #...:	5088278	Analysis Time..:	01:57		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	ND	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	ND	0.50	ug/L
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	82	(75 - 120)
1,2-Dichloroethane-d4	155 AZ	(65 - 130)
Toluene-d8	97	(80 - 130)

NOTE(S):

Surrogate recovery is outside stated control limits.

AZ Surr. recovery outside of acceptance limits due to matrix interf.

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...:	E5C220201-008	Work Order #...:	G6P6F1AC	Matrix.....:	W
Date Sampled...:	03/18/05 11:15	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	15:41		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	87	(70 - 130)

SECOR International Inc

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...:	E5C220201-009	Work Order #...:	G6P6J1AA	Matrix.....:	W
Date Sampled...:	03/18/05 11:09	Date Received..:	03/21/05 17:15	MS Run #.....:	5088143
Prep Date.....:	03/26/05	Analysis Date..:	03/26/05		
Prep Batch #...:	5088278	Analysis Time..:	02:19		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	ND	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	ND	0.50	ug/L
tert-Butyl alcohol	ND	25	ug/L
Toluene	ND	0.50	ug/L
o-Xylene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	77	(75 - 120)
1,2-Dichloroethane-d4	195 AZ	(65 - 130)
Toluene-d8	96	(80 - 130)

NOTE(S):

Surrogate recovery is outside stated control limits.

AZ Surr. recovery outside of acceptance limits due to matrix interf.

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #...:	E5C220201-009	Work Order #...:	G6P6J1AC	Matrix.....:	W
Date Sampled...:	03/18/05 11:09	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	17:01		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	88	(70 - 130)

SECOR International Inc

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #...:	E5C220201-010	Work Order #...:	G6P6K1AA	Matrix.....:	W
Date Sampled...:	03/18/05 12:44	Date Received..:	03/21/05 17:15	MS Run #.....:	5084318
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084479	Analysis Time..:	17:03		
Dilution Factor:	2				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	4.0	ug/L
Benzene	**43**	**1.0**	**ug/L**
Ethanol	ND IO	1000	ug/L
Ethylbenzene	**140**	**1.0**	**ug/L**
tert-Butyl alcohol	ND	50	ug/L
Toluene	ND	1.0	ug/L
o-Xylene	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L
m-Xylene & p-Xylene	ND	2.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	4.0	ug/L
Tert-amyl methyl ether (TAME)	ND	4.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	102	(75 - 120)
1,2-Dichloroethane-d4	70	(65 - 130)
Toluene-d8	85	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #...:	E5C220201-010	Work Order #...:	G6P6K1AC	Matrix.....:	W
Date Sampled...:	03/18/05 12:44	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	17:28		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	530	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	93	(70 - 130)

SECOR International Inc

Client Sample ID: MW-12

GC/MS Volatiles

Lot-Sample #...:	E5C220201-013	Work Order #...:	G6QA51AA	Matrix.....:	W
Date Sampled...:	03/18/05 12:58	Date Received..:	03/21/05 17:15	MS Run #.....:	5084318
Prep Date.....:	03/25/05	Analysis Date..:	03/25/05		
Prep Batch #...:	5084479	Analysis Time..:	17:24		
Dilution Factor:	1				
Analyst ID.....:	015590	Instrument ID..:	MSN		
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	6.3	0.50	ug/L
Ethanol	ND IO	500	ug/L
Ethylbenzene	49	0.50	ug/L
tert-Butyl alcohol	980	25	ug/L
Toluene	1.3	0.50	ug/L
o-Xylene	50	1.0	ug/L
Xylenes (total)	76	1.0	ug/L
m-Xylene & p-Xylene	26	1.0	ug/L
Methyl tert-butyl ether (MTBE)	93	1.0	ug/L
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	ug/L
Tert-amyl methyl ether (TAME)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 120)
1,2-Dichloroethane-d4	72	(65 - 130)
Toluene-d8	85	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-12

GC Volatiles

Lot-Sample #...:	E5C220201-013	Work Order #...:	G6QA51AC	Matrix.....:	W
Date Sampled...:	03/18/05 12:58	Date Received..:	03/21/05 17:15	MS Run #.....:	5087315
Prep Date.....:	03/23/05	Analysis Date..:	03/23/05		
Prep Batch #...:	5087562	Analysis Time..:	18:48		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G15		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	370	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	89	(70 - 130)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5C220201
MB Lot-Sample #: E5C250000-258

Work Order #...: G622P1AA

Matrix.....: WATER

Prep Date.....: 03/24/05

Analysis Time..: 21:19

Analysis Date..: 03/24/05

Prep Batch #...: 5084258

Instrument ID..: MSN

Dilution Factor: 1

Analyst ID.....: 015590

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.50	ug/L	SW846 8260B
Ethanol	ND IO	500	ug/L	SW846 8260B
Ethylbenzene	ND	0.50	ug/L	SW846 8260B
tert-Butyl alcohol	ND	25	ug/L	SW846 8260B
Toluene	ND	0.50	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	SW846 8260B
Diisopropyl Ether (DIPE)	ND	2.0	ug/L	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	2.0	ug/L	SW846 8260B
Tert-amyl methyl ether (T	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	88	(75 - 120)
1,2-Dichloroethane-d4	91	(65 - 130)
Toluene-d8	101	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

IO Contract limits originate from BP-GCLN Technical Requirements

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5C220201
MB Lot-Sample #: E5C250000-479

Analysis Date..: 03/25/05
Dilution Factor: 1

Work Order #...: G64MN1AA

Prep Date.....: 03/25/05
Prep Batch #...: 5084479

Analyst ID.....: 015590

Matrix.....: WATER

Analysis Time..: 12:19
Instrument ID..: MSN

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.50	ug/L	SW846 8260B
Ethanol	ND IO	500	ug/L	SW846 8260B
Ethylbenzene	ND	0.50	ug/L	SW846 8260B
tert-Butyl alcohol	ND	25	ug/L	SW846 8260B
Toluene	ND	0.50	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	SW846 8260B
Diisopropyl Ether (DIPE)	ND	2.0	ug/L	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	2.0	ug/L	SW846 8260B
Tert-amyl methyl ether (T	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	83	(75 - 120)
1,2-Dichloroethane-d4	108	(65 - 130)
Toluene-d8	85	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

IO Contract limits originate from BP-GCLN Technical Requirements

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5C220201
MB Lot-Sample #: E5C290000-278

Work Order #...: G68AP1AA
Prep Date.....: 03/25/05
Prep Batch #...: 5088278
Analyst ID.....: 015590

Matrix.....: WATER
Analysis Time..: 20:51
Instrument ID..: MSN

Analysis Date..: 03/25/05
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.50	ug/L	SW846 8260B
Ethanol	ND IO	500	ug/L	SW846 8260B
Ethylbenzene	ND	0.50	ug/L	SW846 8260B
tert-Butyl alcohol	ND	25	ug/L	SW846 8260B
Toluene	ND	0.50	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	SW846 8260B
Diisopropyl Ether (DIPE)	ND	2.0	ug/L	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	2.0	ug/L	SW846 8260B
Tert-amyl methyl ether (T	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	81	(75 - 120)
1,2-Dichloroethane-d4	102	(65 - 130)
Toluene-d8	93	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

IO Contract limits originate from BP-GCLN Technical Requirements

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5C220201
MB Lot-Sample #: E5C310000-196

Analysis Date..: 03/30/05
Dilution Factor: 1

Work Order #...: G7DX71AA

Prep Date.....: 03/30/05
Prep Batch #...: 5090196

Analyst ID.....: 000038

Matrix.....: WATER

Analysis Time..: 16:04
Instrument ID..: MSN

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.50	ug/L	SW846 8260B
Ethanol	ND IO	500	ug/L	SW846 8260B
Ethylbenzene	ND	0.50	ug/L	SW846 8260B
tert-Butyl alcohol	ND	25	ug/L	SW846 8260B
Toluene	ND	0.50	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	SW846 8260B
Diisopropyl Ether (DIPE)	ND	2.0	ug/L	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	2.0	ug/L	SW846 8260B
Tert-amyl methyl ether (T	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	82	(75 - 120)
1,2-Dichloroethane-d4	91	(65 - 130)
Toluene-d8	94	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

IO Contract limits originate from BP-GCLN Technical Requirements

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: E5C220201
MB Lot-Sample #: E5C280000-562

Analysis Date..: 03/23/05
Dilution Factor: 1

Work Order #...: G66591AA

Prep Date.....: 03/23/05
Prep Batch #...: 5087562

Analyst ID.....: 001464

Matrix.....: WATER

Analysis Time..: 11:19
Instrument ID..: G15

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
GRO (C6 - C12)	ND	100	ug/L	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	82	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G622P1AC Matrix.....: WATER
LCS Lot-Sample#: E5C250000-258
Prep Date.....: 03/24/05 Analysis Date..: 03/24/05
Prep Batch #...: 5084258 Analysis Time..: 20:58
Dilution Factor: 1 Instrument ID..: MSN
Analyst ID.....: 015590

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	10.0	8.05	ug/L	80	SW846 8260B
tert-Butyl alcohol	50.0	38.4	ug/L	77	SW846 8260B
Ethanol	2000	1720 IO	ug/L	86	SW846 8260B
Tert-amyl methyl ether (T	10.0	9.22	ug/L	92	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	10.0	8.80	ug/L	88	SW846 8260B
Ethylbenzene	10.0	8.43	ug/L	84	SW846 8260B
Diisopropyl Ether (DIPE)	10.0	9.02	ug/L	90	SW846 8260B
Methyl tert-butyl ether (MTBE)	10.0	8.75	ug/L	88	SW846 8260B
Toluene	10.0	8.04	ug/L	80	SW846 8260B
m-Xylene & p-Xylene	20.0	15.9	ug/L	80	SW846 8260B
o-Xylene	10.0	8.23	ug/L	82	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 120)
1,2-Dichloroethane-d4	102	(65 - 130)
Toluene-d8	100	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G64MN1AC Matrix.....: WATER
LCS Lot-Sample#: E5C250000-479
Prep Date.....: 03/25/05 Analysis Date..: 03/25/05
Prep Batch #...: 5084479 Analysis Time..: 11:58
Dilution Factor: 1 Instrument ID..: MSN
Analyst ID.....: 015590

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	10.0	11.9	ug/L	119	SW846 8260B
tert-Butyl alcohol	50.0	46.7	ug/L	93	SW846 8260B
Ethanol	2000	2110 IO	ug/L	106	SW846 8260B
Tert-amyl methyl ether (T	10.0	13.0	ug/L	130	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	10.0	12.4	ug/L	124	SW846 8260B
Ethylbenzene	10.0	9.75	ug/L	98	SW846 8260B
Diisopropyl Ether (DIPE)	10.0	12.7	ug/L	127	SW846 8260B
Methyl tert-butyl ether (MTBE)	10.0	12.0	ug/L	120	SW846 8260B
Toluene	10.0	9.48	ug/L	95	SW846 8260B
m-Xylene & p-Xylene	20.0	18.4	ug/L	92	SW846 8260B
o-Xylene	10.0	9.39	ug/L	94	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 120)
1,2-Dichloroethane-d4	103	(65 - 130)
Toluene-d8	85	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G68AP1AC Matrix.....: WATER
LCS Lot-Sample#: E5C290000-278
Prep Date.....: 03/25/05 Analysis Date..: 03/25/05
Prep Batch #...: 5088278 Analysis Time..: 20:29
Dilution Factor: 1 Instrument ID..: MSN
Analyst ID.....: 015590

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	10.0	8.03	ug/L	80	SW846 8260B
tert-Butyl alcohol	50.0	35.4	ug/L	71	SW846 8260B
Ethanol	2000	1680 IO	ug/L	84	SW846 8260B
Tert-amyl methyl ether (T	10.0	9.48	ug/L	95	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	10.0	8.98	ug/L	90	SW846 8260B
Ethylbenzene	10.0	8.48	ug/L	85	SW846 8260B
Diisopropyl Ether (DIPE)	10.0	9.16	ug/L	92	SW846 8260B
Methyl tert-butyl ether (MTBE)	10.0	8.98	ug/L	90	SW846 8260B
Toluene	10.0	8.36	ug/L	84	SW846 8260B
m-Xylene & p-Xylene	20.0	16.1	ug/L	80	SW846 8260B
o-Xylene	10.0	8.11	ug/L	81	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 120)
1,2-Dichloroethane-d4	92	(65 - 130)
Toluene-d8	99	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G7DX71AC Matrix.....: WATER
LCS Lot-Sample#: E5C310000-196
Prep Date.....: 03/30/05 Analysis Date..: 03/30/05
Prep Batch #...: 5090196 Analysis Time..: 14:22
Dilution Factor: 1 Instrument ID..: MSN
Analyst ID.....: 000038

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	10.0	9.29	ug/L	93	SW846 8260B
tert-Butyl alcohol	50.0	43.1	ug/L	86	SW846 8260B
Ethanol	2000	2250 IO	ug/L	113	SW846 8260B
Tert-amyl methyl ether (T	10.0	9.39	ug/L	94	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	10.0	9.39	ug/L	94	SW846 8260B
Ethylbenzene	10.0	9.41	ug/L	94	SW846 8260B
Diisopropyl Ether (DIPE)	10.0	9.34	ug/L	93	SW846 8260B
Methyl tert-butyl ether (MTBE)	10.0	8.75	ug/L	88	SW846 8260B
Toluene	10.0	9.17	ug/L	92	SW846 8260B
m-Xylene & p-Xylene	20.0	18.9	ug/L	94	SW846 8260B
o-Xylene	10.0	8.63	ug/L	86	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 120)
1,2-Dichloroethane-d4	98	(65 - 130)
Toluene-d8	96	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E5C220201 Work Order #...: G66591AC Matrix.....: WATER
LCS Lot-Sample#: E5C280000-562
Prep Date.....: 03/23/05 Analysis Date..: 03/23/05
Prep Batch #...: 5087562 Analysis Time..: 11:45
Dilution Factor: 1 Instrument ID..: G15
Analyst ID.....: 001464

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
GRO (C6 - C12)	**1000**	**971**	**ug/L**	**97**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	120	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G6G1X1AF-MS Matrix.....: WATER
MS Lot-Sample #: E5C170390-001 G6G1X1AG-MSD
Date Sampled...: 03/16/05 15:30 Date Received..: 03/17/05 17:30 MS Run #.....: 5084161
Prep Date.....: 03/25/05 Analysis Date..: 03/25/05
Prep Batch #...: 5084258 Analysis Time..: 05:07
Dilution Factor: 1 Analyst ID.....: 015590 Instrument ID..: MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	10.0	6.78	ug/L	68 LN		SW846 8260B
	ND	10.0	8.60	ug/L	86	24	SW846 8260B
tert-Butyl alcohol	ND	50.0	50.6	ug/L	101		SW846 8260B
	ND	50.0	62.3	ug/L	125	21	SW846 8260B
Ethanol	ND	2000	2100	ug/L	105 IO		SW846 8260B
	ND	2000	2610	ug/L	130 IO	22	SW846 8260B
Tert-amyl methyl ether (T	ND	10.0	7.56	ug/L	76		SW846 8260B
	ND	10.0	9.36	ug/L	94	21	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	10.0	7.26	ug/L	73		SW846 8260B
	ND	10.0	9.15	ug/L	92	23	SW846 8260B
Ethylbenzene	ND	10.0	7.08	ug/L	71		SW846 8260B
	ND	10.0	9.10	ug/L	91	25	SW846 8260B
Diisopropyl Ether (DIPE)	ND	10.0	7.60	ug/L	76		SW846 8260B
	ND	10.0	9.53	ug/L	95	23	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	10.0	7.48	ug/L	75		SW846 8260B
	ND	10.0	8.78	ug/L	88	16	SW846 8260B
Toluene	ND	10.0	7.08	ug/L	71 LN		SW846 8260B
	ND	10.0	8.95	ug/L	90	23	SW846 8260B
m-Xylene & p-Xylene	ND	20.0	13.5	ug/L	67 LN		SW846 8260B
	ND	20.0	17.9	ug/L	89	28	SW846 8260B
o-Xylene	ND	10.0	7.01	ug/L	70		SW846 8260B
	ND	10.0	9.00	ug/L	90	25	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 120)
	96	(75 - 120)
1,2-Dichloroethane-d4	120	(65 - 130)
	144 AZ	(65 - 130)
Toluene-d8	97	(80 - 130)
	100	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

Surrogate recovery is outside stated control limits.

AZ Surr. recovery outside of acceptance limits due to matrix interf.

Spiked analyte recovery is outside stated control limits.

LN MS and/or MSD below acceptance limits. See Blank Spike (LCS).

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G6KEG1AE-MS Matrix.....: WATER
MS Lot-Sample #: E5C180357-007 G6KEG1AF-MSD
Date Sampled...: 03/17/05 12:04 Date Received..: 03/18/05 11:35 MS Run #.....: 5084318
Prep Date.....: 03/25/05 Analysis Date..: 03/25/05
Prep Batch #...: 5084479 Analysis Time..: 18:52
Dilution Factor: 50 Analyst ID.....: 015590 Instrument ID..: MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	1300	500	2000	ug/L	142 LM		SW846 8260B
	1300	500	1940	ug/L	129 LM	3.2	SW846 8260B
tert-Butyl alcohol	ND	2500	1540	ug/L	62		SW846 8260B
	ND	2500	1790	ug/L	72	15	SW846 8260B
Ethanol	ND	100000	101000	ug/L	101 IO		SW846 8260B
	ND	100000	91700	ug/L	92 IO	9.9	SW846 8260B
Tert-amyl methyl ether (T	ND	500	671	ug/L	134 LM		SW846 8260B
	ND	500	666	ug/L	133 LM	0.71	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	500	642	ug/L	128		SW846 8260B
	ND	500	647	ug/L	129	0.80	SW846 8260B
Ethylbenzene	1000	500	1490	ug/L	96		SW846 8260B
	1000	500	1570	ug/L	112	5.4	SW846 8260B
Diisopropyl Ether (DIPE)	310	500	1050	ug/L	148 LM		SW846 8260B
	310	500	1020	ug/L	142 LM	2.8	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	500	643	ug/L	129		SW846 8260B
	ND	500	631	ug/L	126	1.8	SW846 8260B
Toluene	3300	500	3710	ug/L	87		SW846 8260B
	3300	500	3900	ug/L	125 LM	5.0	SW846 8260B
m-Xylene & p-Xylene	1800	1000	2790	ug/L	96		SW846 8260B
	1800	1000	2940	ug/L	111	5.3	SW846 8260B
o-Xylene	1400	500	1950	ug/L	107		SW846 8260B
	1400	500	2040	ug/L	125	4.5	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	103	(75 - 120)
	108	(75 - 120)
1,2-Dichloroethane-d4	80	(65 - 130)
	76	(65 - 130)
Toluene-d8	83	(80 - 130)
	90	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Spiked analyte recovery is outside stated control limits.

LM MS and/or MSD above acceptance limits. See Blank Spike (LCS).

IO Contract limits originate from BP-GCLN Technical Requirements

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G67441AC-MS Matrix.....: WATER
MS Lot-Sample #: E5B180344-005 G67441AD-MSD
Date Sampled...: 03/18/05 13:39 Date Received..: 03/21/05 17:15 MS Run #.....: 5088143
Prep Date.....: 03/26/05 Analysis Date..: 03/26/05
Prep Batch #...: 5088278 Analysis Time..: 04:51
Dilution Factor: 50 Analyst ID.....: 015590 Instrument ID..: MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	500	441	ug/L	88		SW846 8260B
	ND	500	492	ug/L	98	11	SW846 8260B
tert-Butyl alcohol	ND	2500	3020	ug/L	80		SW846 8260B
	ND	2500	3110	ug/L	83	3.0	SW846 8260B
Ethanol	ND	100000	88000	ug/L	88 IO		SW846 8260B
	ND	100000	88800	ug/L	89 IO	0.86	SW846 8260B
Tert-amyl methyl ether (T	ND	500	501	ug/L	100		SW846 8260B
	ND	500	533	ug/L	107	6.2	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	500	458	ug/L	92		SW846 8260B
	ND	500	515	ug/L	103	12	SW846 8260B
Ethylbenzene	ND	500	486	ug/L	97		SW846 8260B
	ND	500	551	ug/L	110	12	SW846 8260B
Diisopropyl Ether (DIPE)	ND	500	506	ug/L	101		SW846 8260B
	ND	500	540	ug/L	108	6.4	SW846 8260B
Methyl tert-butyl ether (MTBE)	6700	500	6840	ug/L	25 BB		SW846 8260B
	6700	500	7310	ug/L	119	6.6	SW846 8260B
Toluene	ND	500	489	ug/L	98		SW846 8260B
	ND	500	533	ug/L	107	8.5	SW846 8260B
m-Xylene & p-Xylene	ND	1000	922	ug/L	92		SW846 8260B
	ND	1000	1060	ug/L	106	14	SW846 8260B
o-Xylene	ND	500	470	ug/L	94		SW846 8260B
	ND	500	513	ug/L	103	8.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
	93	(75 - 120)
1,2-Dichloroethane-d4	97	(65 - 130)
	91	(65 - 130)
Toluene-d8	102	(80 - 130)
	102	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

Spiked analyte recovery is outside stated control limits.

BB Sample > 4X spike concentration

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5C220201 Work Order #...: G6RAC1AD-MS Matrix.....: WATER
MS Lot-Sample #: E5C220343-001 G6RAC1AE-MSD
Date Sampled...: 03/21/05 12:30 Date Received..: 03/22/05 14:20 MS Run #.....: 5090132
Prep Date.....: 03/30/05 Analysis Date..: 03/30/05
Prep Batch #...: 5090196 Analysis Time..: 20:16
Dilution Factor: 50 Analyst ID.....: 000038 Instrument ID..: MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	3100	500	3780	ug/L	142 BB		SW846 8260B
	3100	500	3650	ug/L	115	3.6	SW846 8260B
tert-Butyl alcohol	ND	2500	1790	ug/L	72		SW846 8260B
	ND	2500	1760	ug/L	71	1.4	SW846 8260B
Ethanol	ND	100000	91300	ug/L	91 IO		SW846 8260B
	ND	100000	80800	ug/L	81 IO	12	SW846 8260B
Tert-amyl methyl ether (T	ND	500	458	ug/L	92		SW846 8260B
	ND	500	456	ug/L	91	0.54	SW846 8260B
Ethyl-t-Butyl Ether (ETBE	ND	500	464	ug/L	93		SW846 8260B
	ND	500	455	ug/L	91	1.9	SW846 8260B
Ethylbenzene	1100	500	1600	ug/L	105		SW846 8260B
	1100	500	1620	ug/L	109	1.2	SW846 8260B
Diisopropyl Ether (DIPE)	ND	500	480	ug/L	96		SW846 8260B
	ND	500	465	ug/L	93	3.0	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	500	491	ug/L	89		SW846 8260B
	ND	500	479	ug/L	86	2.4	SW846 8260B
Toluene	53	500	509	ug/L	91		SW846 8260B
	53	500	499	ug/L	89	2.0	SW846 8260B
m-Xylene & p-Xylene	390	1000	1410	ug/L	102		SW846 8260B
	390	1000	1430	ug/L	104	0.91	SW846 8260B
o-Xylene	ND	500	452	ug/L	82		SW846 8260B
	ND	500	464	ug/L	84	2.5	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
	95	(75 - 120)
1,2-Dichloroethane-d4	85	(65 - 130)
	77	(65 - 130)
Toluene-d8	95	(80 - 130)
	93	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

IO Contract limits originate from BP-GCLN Technical Requirements

Spiked analyte recovery is outside stated control limits.

BB Sample > 4X spike concentration

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E5C220201 Work Order #...: G6P2E1AD-MS Matrix.....: WATER
MS Lot-Sample #: E5C220193-001 G6P2E1AE-MSD
Date Sampled...: 03/18/05 07:00 Date Received..: 03/21/05 17:15 MS Run #.....: 5087315
Prep Date.....: 03/23/05 Analysis Date..: 03/23/05
Prep Batch #...: 5087562 Analysis Time..: 20:08
Dilution Factor: 1 Analyst ID.....: 001464 Instrument ID..: G15

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
GRO (C6 - C12)	150	1000	1160	ug/L	101		SW846 8015B
	150	1000	1170	ug/L	103	1.3	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	119	(70 - 130)
	122	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters