SECOR

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DATE: October 14, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Facility No.: 3037 Address: 915 Camino Del Rio South, San Diego, CA
ARCO Environmental Engineer: Roy Thun
Consulting Co./Contact Person: SECOR/Bradley Eisenberg
SECOR Project No.: 08BP.U3037.05
Primary Agency/Regulatory ID No.: County of San Diego, Department of Environmental Health, Land and Water Quality Division, Site Assessment and Mitigation Program (SAM), (Danny Martinez) / Case #H05125-002

WORK PERFORMED THIS REPORTING PERIOD [Second - 2005 through Third - 2005]:

1. Performed second 2005 semi-annual groundwater monitoring and sampling event.
2. Submitted sensitive receptor survey report.
3. Conducted monitoring and sampling for remediation by natural attenuation (RNA) indicators.

WORK PROPOSED FOR NEXT REPORTING PERIOD [Fourth - 2005 through First - 2006]:

1. Submit second 2005 semi-annual groundwater monitoring report.
2. Perform first 2006 semi-annual groundwater monitoring and reporting.
3. Submit corrective action plan (CAP).

Current Phase of Project:	Monitoring/Assessment	(Assmnt, Remed., etc.)
Frequency of Sampling:	Semi-Annual	(Quarterly, etc.)
Frequency of Monitoring:	Semi-Annual	(Monthly, etc.)
Are Liquid Phase Hydrocarbons (LPH) Present On-site:	No	(Yes/No)
Cumulative LPH Recovered to Date:	None	(gallons)
LPH Recovered This Quarter:	None	(gallons)
Bulk Soil Removed to Date:	Unknown	(cubic yards)
Bulk Soil Removed This Quarter:	None	(cubic yards)
Water Wells or Surface Waters w/in a 2000 ft. Radius & Their Respective Directions:	San Diego River 1,500 feet to the north	(Distance and direction)
Current Remediation Techniques:	Passive Natural Attenuation	(SVES, LPH Removal)
Permits for Discharge:	N/A	(NPDES, POTW, etc.)

PROFESSIONAL GEOLOGIST
BRADLEY G. EISENBERG
No. 6872
Exp 11/05
STATE OF CALIFORNIA

DATE: October 14, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT (Continued)
ARCO Facility #3037

Approximate Depth to Groundwater:	12.52 to 22.16	(Measured Feet)
	Northwest	(Direction)
Groundwater Gradient:	0.007	(Magnitude)
Groundwater Beneficial Use:	Yes	(Yes/No)

DISCUSSION: On September 1, 2005, SECOR personnel gauged, purged, and sampled three of the four groundwater monitoring wells and five vadose zone/groundwater monitoring wells associated with the site (Figure 2) along with groundwater monitoring well City Well MW-2, which is owned by the City of San Diego. On September 2, 2005 SECOR personnel gauged, purged, and sampled well MW-3. SECOR purged and sampled the nine wells mentioned above. Field observations and data were documented on a monitoring well gauging log and well purging/sampling logs (attached). The depth to water ranged from 12.52 feet below ground surface (bgs) in City Well MW-2 to 22.16 feet bgs in well MW-1, as presented in Table 1. Groundwater elevations ranged from 23.23 to 24.84 feet above mean sea level (MSL). The estimated groundwater flow direction was to the northwest at an approximate gradient of 0.007 (Figure 3).

Groundwater samples were collected from the wells in accordance with the attached purging and sampling procedures. The groundwater samples were collected and analyzed for gasoline-range organics $C_6 - C_{12}$ (GRO); for benzene, toluene, ethylbenzene, and total xylenes (BTEX); and for the fuel oxygenates methyl tert-butyl ether (MTBE), tert-butyl alcohol (TBA), ethyl tert-butyl ether (ETBE), di-isopropyl ether (DIPE), tert-amyl methyl ether (TAME), and ethanol. The analytical results are summarized in Tables 2 and 3. GRO, benzene, and MTBE results are shown on Figure 4, and a benzene and MTBE isoconcentration map is presented in Figure 5. Hydrographs showing changes in groundwater elevation and benzene and MTBE concentrations with time are also attached.

The groundwater samples were also analyzed for the following parameters to establish a baseline for RNA data with the exception of the samples collected from wells MW-3 and VW-2: nitrate, ferrous and ferric iron, sulfate, sulfide, methane, ammonia, and alkalinity. The following parameters were measured in the field: dissolved oxygen (DO), oxidation reduction potential (ORP), specific conductivity (S Cond), pH, and temperature (T). The analytical results and field measurements are summarized on Table 4. Field measurements are included on the attached sample information logs.

CONCLUSIONS & RECOMMENDATIONS: In general, the September 2005 groundwater elevations decreased approximately 0.75 feet since the previous gauging event in March 2005. The analytical results were similar to previous results with the exception of benzene. The concentration of benzene decreased in groundwater samples collected from wells MW-2, VW-3, and VW-4 and increased in the groundwater sample collected from City well MW-2. Additionally, LPH sheen was not present in well VW-1 as it had been during the four previous sampling events. As with previous gauging events, the calculated groundwater elevation for well VW-2 was anomalous. A discussion of RNA indicator monitoring and sampling results will be provided in the pending CAP. SECOR recommends continued semi-annual groundwater monitoring and sampling, which includes the City-owned well in the groundwater monitoring program. Secor also recommends preparation of a CAP per SAM directive.

DATE: October 14, 2005

ARCO SEMI-ANNUAL GROUNDWATER MONITORING REPORT (Continued)
ARCO Facility #3037

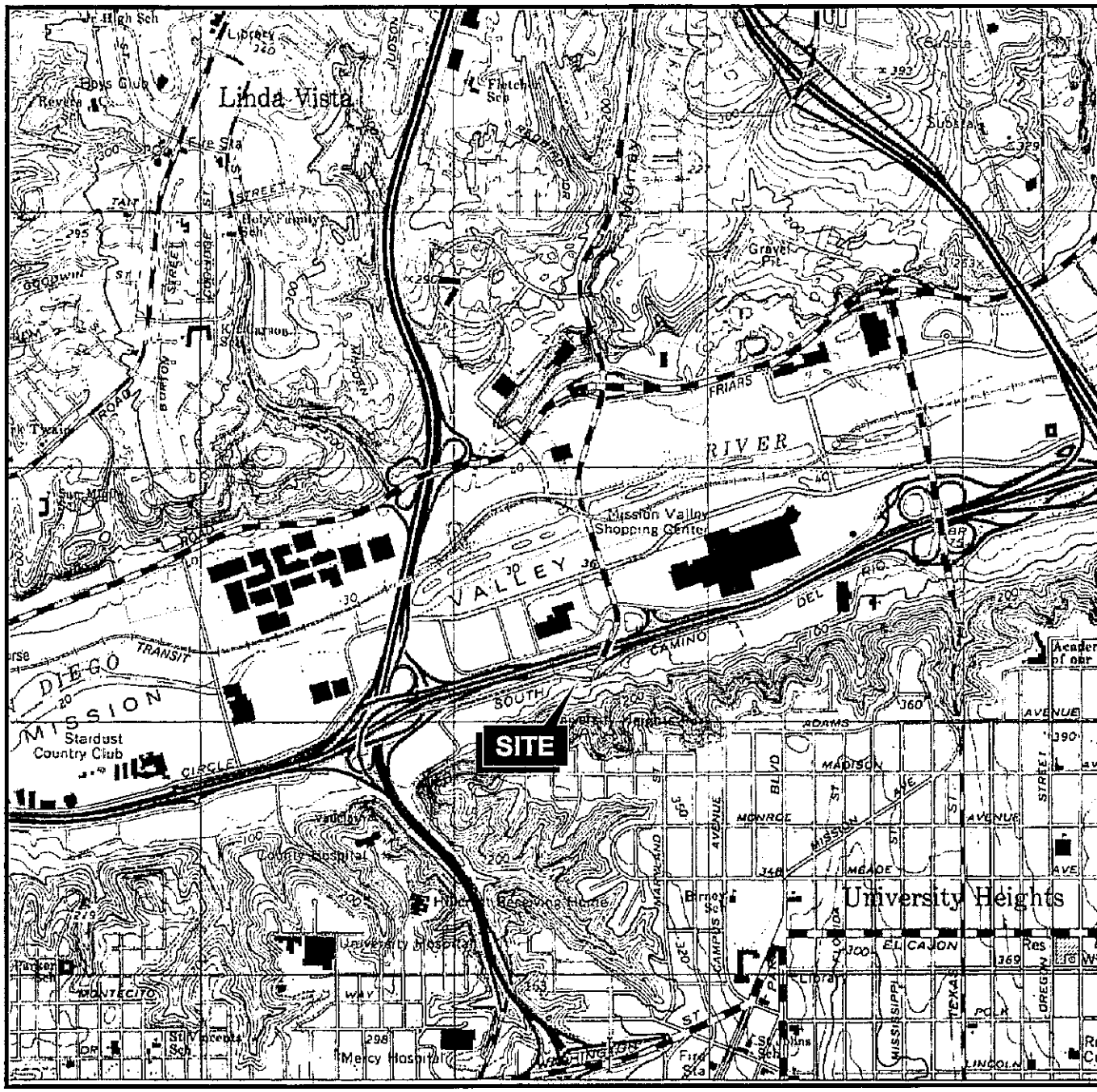
SUMMARY OF UNUSUAL ACTIVITY: None

AGENCY DIRECTIVE REQUIREMENTS: Conduct semi-annual monitoring and reporting.

ATTACHED:

- Site Location Map (Figure 1)
- Site Plan (Figure 2)
- Groundwater Gradient Map, September 1, 2005 (Figure 3)
- GRO, Benzene, and MTBE Concentrations in Groundwater, September 1 & 2, 2005 (Figure 4)
- Benzene and MTBE Isoconcentration Map, September 1 & 2, 2005 (Figure 5)
- Summary of Groundwater Elevations, 2002 to Present (Table 1)
- Summary of Groundwater Analytical Results, 2002 to Present (Table 2)
- Summary of Additional Oxygenates Analytical Results 2002 to Present (Table 3)
- Summary of Baseline Natural Attenuation Data (Table 4)
- Well Hydrographs
- Monitoring Well Purging and Sampling Procedures
- Monitoring Well Gauging Log
- Well Purging/Sampling Logs
- Laboratory Reports and Chain-of-Custody Documentation

cc: Roy Thun, Atlantic Richfield Company
Barbara J. and Thomas H. Handley Trust



QUADRANGLE LOCATION

N

0 1000 2000

1 INCH = 2000 FEET

Reference: U.S.G.S., 1996, La Jolla, California Quadrangle Topographic 7.5' Series.

SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)	FOR: ARCO FACILITY #3037 915 Camino Del Rio South San Diego, California		SITE LOCATION MAP		FIGURE: 1
	JOB NUMBER: 08BP.U3037.05	DRAWN BY: RO	CHECKED BY: SM	APPROVED BY:	DATE: 03/29/05

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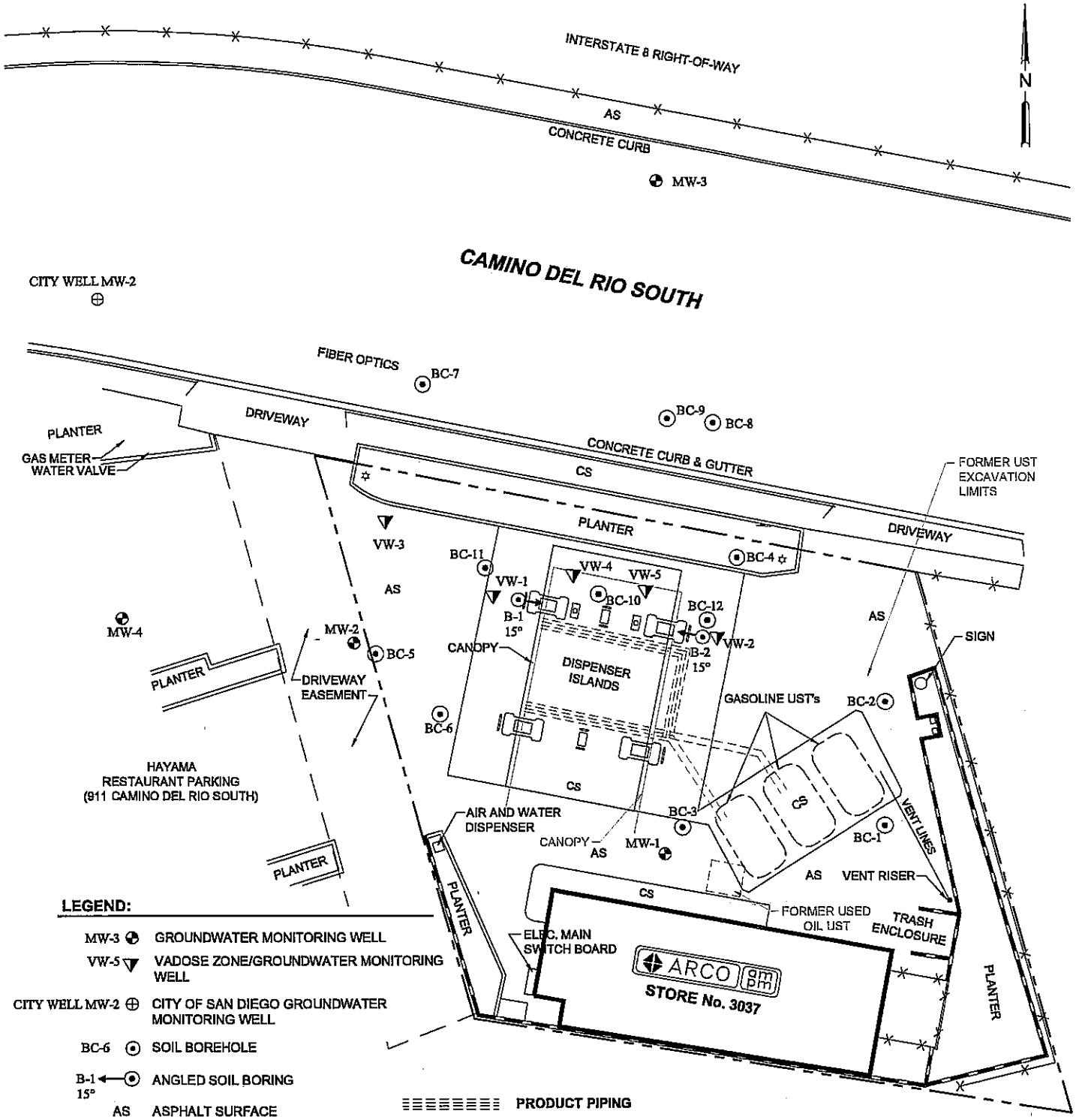
3037-USGS



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	JOB NUMBER: 08BP.U3037.05	DRAWN BY: RO	CHECKED BY: SM	APPROVED BY:	DATE: 03/29/05

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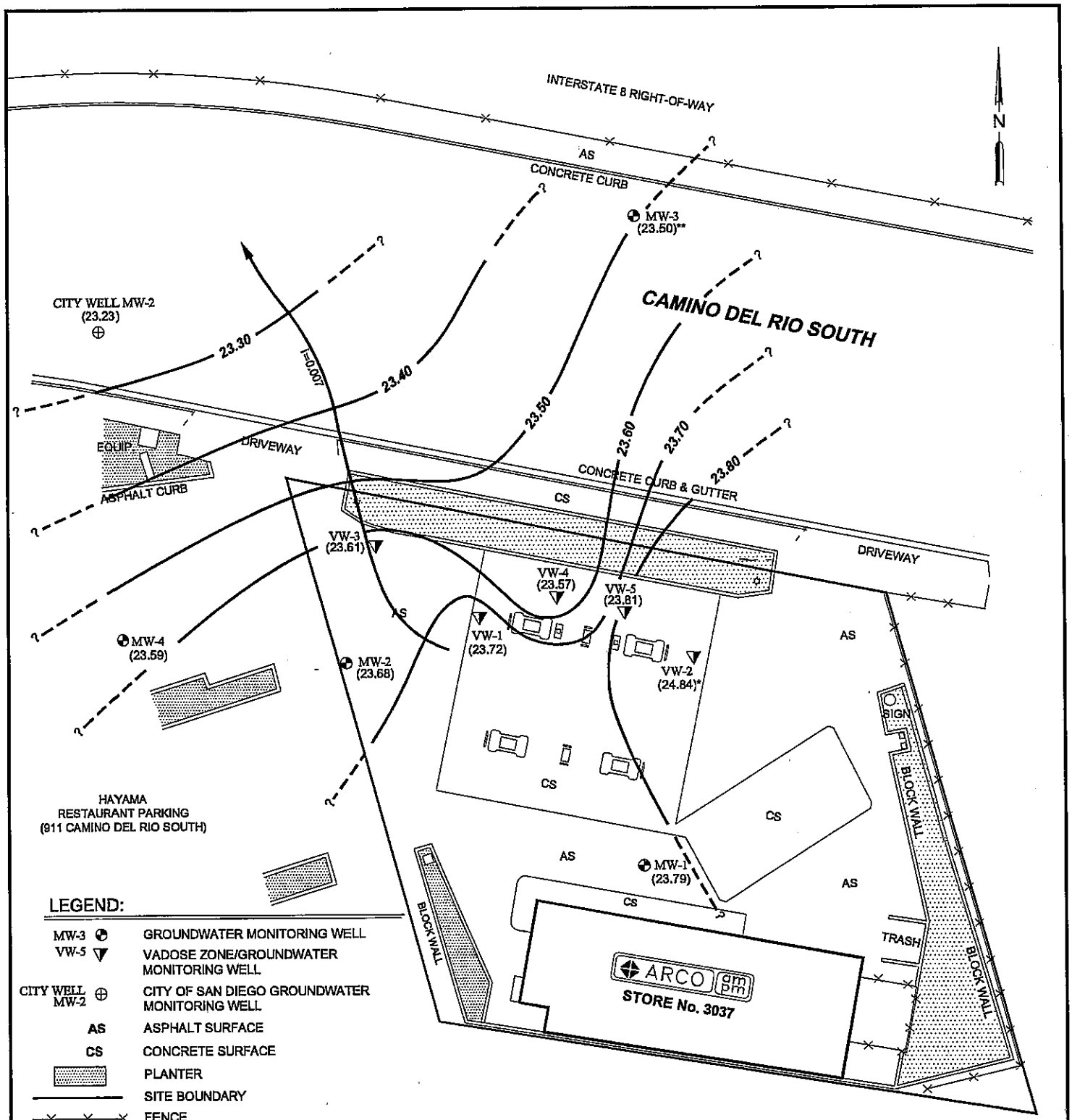
3037SP3-04



SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)	FOR: ARCO FACILITY #3037 915 Camino Del Rio South San Diego, California	GROUNDWATER GRADIENT MAP SEPTEMBER 1, 2005		FIGURE: 3
	JOB NUMBER: 08BP.U3037.05	DRAWN BY: BDF	CHECKED BY: TK	APPROVED BY: BGE	DATE: 09/27/05

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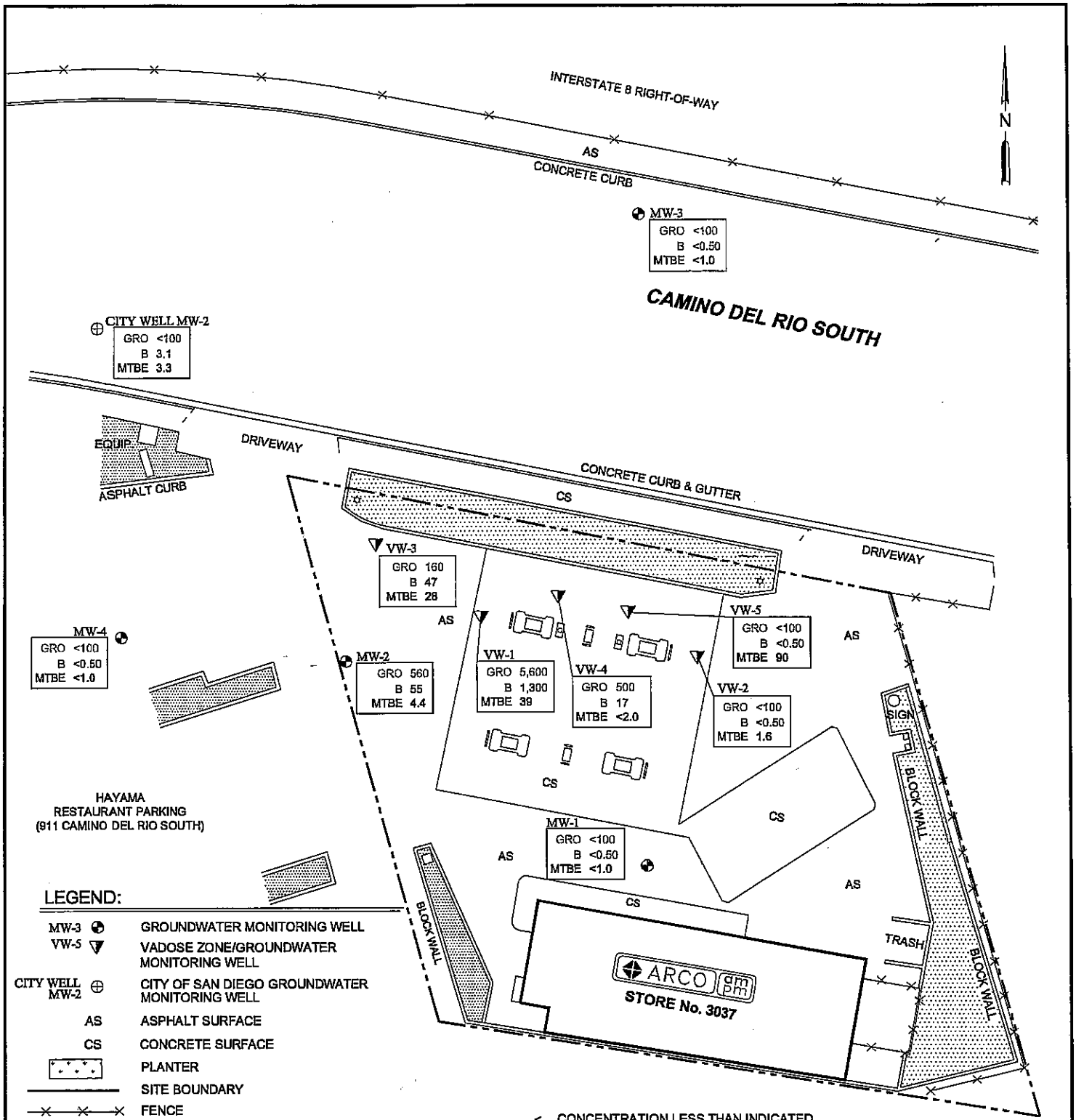
3037GW9-05



SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)	FOR: ARCO FACILITY #3037 915 Camino Del Rio South San Diego, California		GRO, BENZENE AND MTBE CONCENTRATIONS IN GROUNDWATER SEPTEMBER 1 & 2, 2005		FIGURE: 4
	JOB NUMBER: 08BP.U3037.05	DRAWN BY: BDF	CHECKED BY: TK	APPROVED BY: BGE	DATE: 09/27/05

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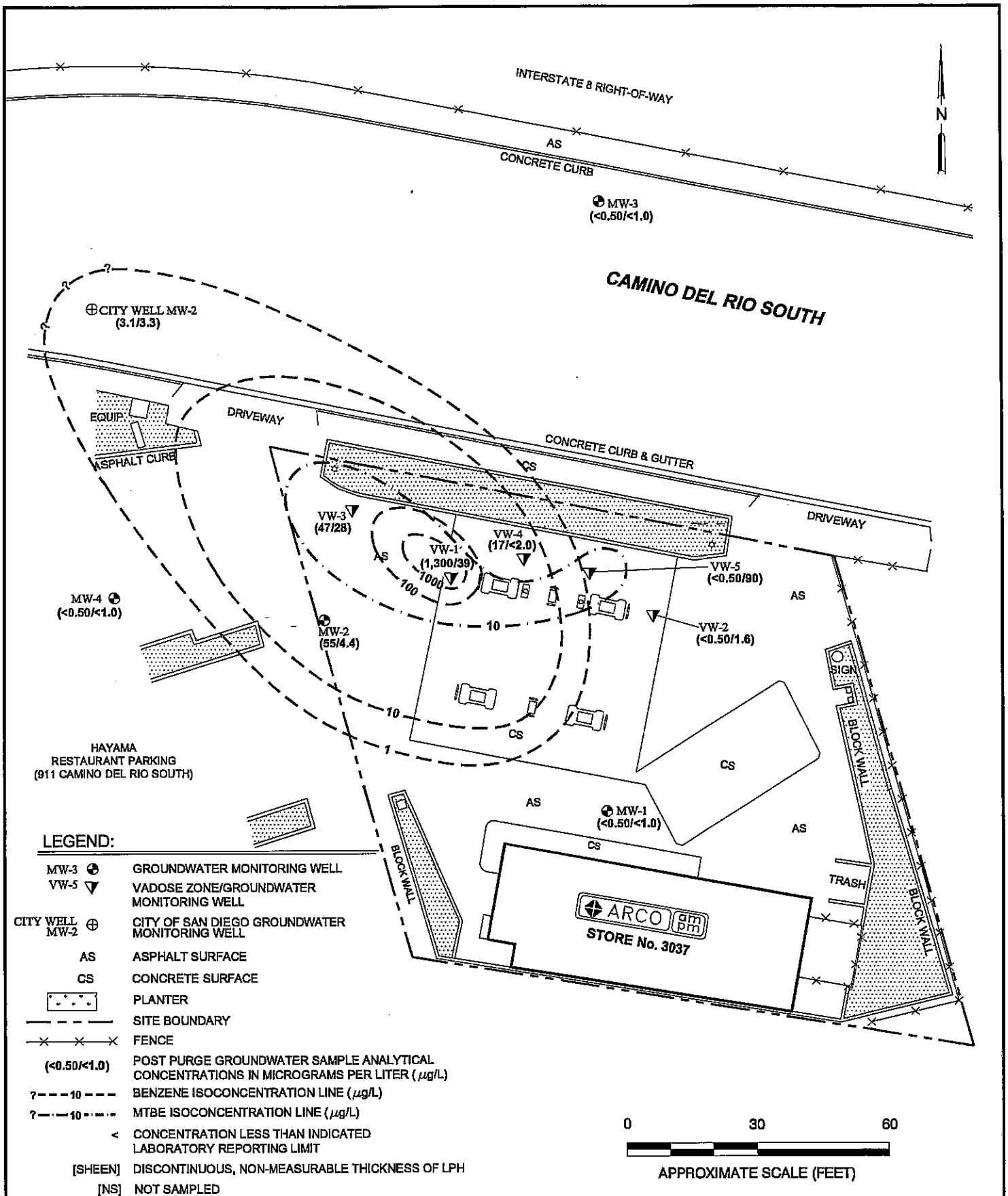

SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)	FOR: ARCO FACILITY #3037 915 Camino Del Rio South San Diego, California		BENZENE AND MTBE ISOCONCENTRATION MAP SEPTEMBER 1 & 2, 2005		FIGURE: 5
	JOB NUMBER: 08BP.U3037.05	DRAWN BY: BDF	CHECKED BY: TK	APPROVED BY: BGE	DATE: 09/27/05

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3037ISO9-05

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS, 2002 TO PRESENT
ARCO Facility #3037

Well ID/ Surveyed Well Elevation[1] (Feet MSL)	Date	Depth to Static Water (feet)	Apparent LPH Thickness (feet)	Groundwater Elevation[2] (feet MSL)
City Well MW-2[3]	02/18/03	Not Measured		
35.75	06/16/03	13.33	0.00	22.42
	09/03/03	Not Measured		
	11/26/03	13.47	0.00	22.28
	03/02/04	13.28	0.00	22.47
	06/17/04	13.48	0.00	22.27
	09/17/04	13.64	0.00	22.11
	03/02/05	11.81	0.00	23.94
	09/01/05	12.52	0.00	23.23
MW-1	03/06/02	22.37	0.00	23.58
	04/16/02	23.33	0.00	22.62
	09/03/02	26.48	0.00	19.47
	11/07/02	23.69	0.00	22.26
45.95	02/18/03	23.16	0.00	22.79
	06/16/03	22.71	0.00	23.24
	09/30/03	22.96	0.00	22.99
	11/26/03	23.11	0.00	22.84
	03/02/04	22.94	0.00	23.01
	06/17/04	23.15	0.00	22.80
	09/17/04	23.39	0.00	22.56
	03/02/05	21.20	0.00	24.75
	09/01/05	22.16	0.00	23.79
MW-2	03/06/02	20.02	0.00	22.37
	04/16/02	19.97	0.00	22.42
	09/03/02	20.35	0.00	22.04
	11/07/02	20.30	0.00	22.09
42.38	02/18/03	19.85	0.00	22.53
	06/16/03	19.31	0.00	23.07
	09/30/03	19.59	0.00	22.79
	11/26/03	19.76	0.00	22.62
	03/02/04	19.39	0.00	22.99
	06/17/04	19.71	0.00	22.67
	09/17/04	19.97	0.00	22.41
	03/02/05	17.97	0.00	24.41
	09/01/05	18.70	0.00	23.68

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS, 2002 TO PRESENT
ARCO Facility #3037

Well ID/ Surveyed Well Elevation[1] (Feet MSL)	Date	Depth to Static Water (feet)	Apparent LPH Thickness (feet)	Groundwater Elevation [2] (feet MSL)
MW-3	03/06/02	19.57	0.00	22.30
	04/16/02	19.51	0.00	22.36
	09/03/02	22.65	0.00	19.22
	11/07/02	19.85	0.00	22.02
41.86	02/18/03	19.40	0.00	22.46
	06/16/03	18.89	0.00	22.97
	09/30/03	19.13	0.00	22.73
	11/26/03	19.24	0.00	22.62
	03/02/04	19.17	0.00	22.69
	06/17/04	19.38	0.00	22.48
	09/17/04	19.54	0.00	22.32
	03/02/05	17.54	0.00	24.32
	09/02/05	18.36	0.00	23.50
MW-4	02/18/03	Installed on 3/18/03		
41.24	06/16/03	18.23	0.00	23.01
	09/30/03	18.48	0.00	22.76
	11/26/03	Not Measured - Car Parked Over Well		
	03/03/04[4]	18.48	0.00	22.76
	06/17/04	18.74	0.00	22.50
	09/17/04	18.86	0.00	22.38
	03/02/05	16.88	0.00	24.36
	09/01/05	17.65	0.00	23.59
VW-1	03/06/02	21.44	0.00	22.42
	04/16/02	21.39	0.00	22.47
	09/03/02	21.76	0.00	22.10
	11/07/02	21.74	0.00	22.12
44.44	02/18/03	21.79	0.00	22.65
	06/16/03	21.36	0.00	23.08
	09/30/03	21.65	0.00	22.79
	11/26/03	21.73	0.00	22.71
	03/02/04	21.61	0.00	22.83
	06/17/04	21.85	0.00	22.59
	09/17/04	22.03	0.00	22.41
	03/02/05	19.92	0.00	24.52
	09/01/05	20.72	0.00	23.72
VW-2	03/06/02	25.34	0.00	19.74

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS, 2002 TO PRESENT
ARCO Facility #3037

Well ID/ Surveyed Well Elevation[1] (Feet MSL)	Date	Depth to Static Water (feet)	Apparent LPH Thickness (feet)	Groundwater Elevation[2] (feet MSL)
VW-2	04/16/02	26.71	0.00	18.37
cont'd	09/03/02	26.67	0.00	18.41
	11/07/02	24.27	0.00	20.81
44.55	02/18/03	18.28	0.00	26.27
	06/16/03	19.12	0.00	25.43
	09/30/03	20.14	0.00	24.41
	11/26/03	20.08	0.00	24.47
	03/02/04	18.96	0.00	25.59
	06/17/04	20.81	0.00	23.74
	09/17/04	21.52	0.00	23.03
	03/02/05	17.30	0.00	27.25
	09/01/05	19.71	0.00	24.84
VW-3	03/06/02	17.31	0.00	22.37
	04/16/02	17.27	0.00	22.41
	09/03/02	20.40	0.00	19.28
	11/07/02	17.59	0.00	22.09
41.16	02/18/03	18.58	0.00	22.58
	06/16/03	18.12	0.00	23.04
	09/30/03	18.37	0.00	22.79
	11/26/03	18.56	0.00	22.60
	03/02/04	18.40	0.00	22.76
	06/17/04	18.58	0.00	22.58
	09/17/04	18.76	0.00	22.40
	03/02/05	16.77	0.00	24.39
	09/01/05	17.55	0.00	23.61
VW-4	03/06/02	21.76	0.00	22.45
	04/16/02	21.71	0.00	22.50
	09/03/02	22.07	0.00	22.14
	11/07/02	22.07	0.00	22.14
44.27	02/18/03	21.59	0.00	22.68
	06/16/03	21.17	0.00	23.10
	09/30/03	21.45	0.00	22.82
	11/26/03	21.55	0.00	22.72
	03/02/04	21.40	0.00	22.87
	06/17/04	21.67	0.00	22.60
	09/17/04	21.81	0.00	22.46

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS, 2002 TO PRESENT
ARCO Facility #3037

Well ID/ Surveyed Well Elevation[1] (Feet MSL)	Date	Depth to Static Water (feet)	Apparent LPH Thickness (feet)	Groundwater Elevation[2] (feet MSL)
VW-4	03/02/05	19.67	0.00	24.60
cont'd	09/01/05	20.70	0.00	23.57
VW-5	03/06/02	21.91	0.00	22.48
	04/16/02	21.84	0.00	22.55
	09/03/02	22.24	0.00	22.15
	11/07/02	22.23	0.00	22.16
44.32	02/18/03	21.55	0.00	22.77
	06/16/03	21.17	0.00	23.15
	09/30/03	21.41	0.00	22.91
	11/26/03	21.55	0.00	22.77
	03/02/04	21.42	0.00	22.90
	06/17/04	21.69	0.00	22.63
	09/17/04	21.83	0.00	22.49
	03/02/05	19.63	0.00	24.69
	09/01/05	20.51	0.00	23.81

Notes:

[1] = Elevations are measured in feet above mean sea level (MSL)

[2] = Groundwater elevation in feet MSL = Surveyed well elevation - depth to water

[3] =Third-Party Owned well (City of San Diego)

[4] = Well inaccessible on 3/2/04, gauged on 3/3/04

LPH = Liquid Phase Hydrocarbons

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All concentrations reported in micrograms per liter (µg/L)

Well Identification	Date	GRO	B	T	E	X	MTBE
City Well MW-2[a]	02/18/03	Well Not Sampled					
	06/16/03	Well Not Sampled					
	11/26/03	<500	<0.50	<0.50	18	<2.5	1.8
	03/03/04 NP	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	03/03/04	<500	<0.50	<0.50	24.0	<1.5	1.3
	06/17/04	<500	<0.50	<0.50	<0.50	<1.5	2.0
	09/17/04	<500	<0.50	0.78	<0.50	<1.5	1.7
	03/02/05	<100	<0.50	<0.50	<0.50	<1.0	1.7
	09/01/05	<100	3.1	10	1.8	16	3.3
MW-1	03/06/02	<500	<0.50	<0.50	<0.50	<1.5	1.1
	04/16/02	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	09/03/02	<500	<0.50	<0.50	<0.50	<1.5	4.0
	11/07/02	<500	<0.50	<0.50	<0.50	<1.5	5.3
	02/18/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	06/16/03	<500	<0.50	<0.50	<0.50	<1.5	2.7
	09/30/03	<500	<0.50	<0.50	<0.50	<1.5	2.5
	11/26/03	<500	<0.50	<0.50	<0.50	<1.5	1.9
	03/02/04	<500	<0.50	<0.50	<0.50	<1.5	2.1
	06/17/04	<500	<0.50	<0.50	<0.50	<1.5	1.2
	09/17/04	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	03/02/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
	09/01/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
MW-2	03/06/02	1,600	230	48	210	290	17
	04/16/02	<500	<0.50	<0.50	<0.50	<1.5	6.6
	09/03/02	1,700	220	39	180	220	28
	11/07/02	1,400	230	40	220	263	27
	02/18/03	1,600	200	55	200	310	27
	06/16/03	1,800	220	62	220	320	20
	09/30/03	1,500	180	51	210	280	15
	11/26/03	930	110	33	120	180	13
	03/02/04 NP	1,400	170	54	150	270	17
	03/02/04	1,200	140	46	140	240	16
	06/17/04	1,000	110	30	86	190	12
	09/17/04	770	88	26	56	150	11
	03/02/05	650	80	27	61	160	8.0
	09/01/05	560	55	29	53	160	4.4

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All concentrations reported in micrograms per liter (µg/L)

Well Identification	Date	GRO	B	T	E	X	MTBE
MW-3	03/06/02	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	04/16/02	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	09/03/02	<500	<0.50	0.64	<0.50	<1.5	<1.0
	11/07/02	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	02/18/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	06/16/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	09/30/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	11/26/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	03/02/04	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	06/17/04	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	09/17/04	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	03/02/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
	09/02/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
MW-4	02/18/03	Well installed 03/18/03					
	06/16/03	<500	<0.50	<0.50	<0.50	<1.5	1.0
	09/30/03	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	11/26/03	Well Not Sampled - Car Parked Over Well					
	03/03/04	<500	<0.50	<0.50	<0.50	<1.5	1.1
	06/17/04	<500	<0.50	<0.50	<0.50	<1.5	<1.0
	09/17/04	<500	<0.50	<0.50	<0.50	<1.5	1.0
	03/02/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
	09/01/05	<100	<0.50	<0.50	<0.50	<1.0	<1.0
VW-1	03/06/02	22,000	4,500	1,400	1,400	3,200	1,000
	04/16/02	10,000	2,500	230	700	790	440
	09/03/02	31,000	4,200	300	2,300	2,900	420
	11/07/02	32,000	3,400	730	1,500	2,380	1,100
	02/18/03	11,000	1,800	660	600	950	240
	06/16/03	Not Sampled - LPH Sheen in well					
	09/30/03	Not Sampled - LPH Sheen in well					
	11/26/03	5,300	1,700	260	320	450	590
	03/02/04	Not Sampled - LPH Sheen in well during purging					
	06/17/04	Not Sampled - LPH Sheen in well during purging					
	09/17/04	Not Sampled - LPH Sheen in well during purging					
	03/02/05	Not Sampled - LPH Sheen in well during purging					
	09/01/05	5,600	1,300	1,200	510	1,900	39

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All concentrations reported in micrograms per liter (µg/L)

Well Identification	Date	GRO	B	T	E	X	MTBE
VW-2	03/06/02	<500	1.9	0.97	15	57	32
	04/16/02	<500	<0.50	<0.50	<0.50	<1.5	17
	09/03/02	<500	<0.50	<0.50	0.52	<1.5	18
	11/07/02	<500	<0.50	<0.50	<0.50	<1.5	26
	02/18/03	<500	<0.50	<0.50	<0.50	<1.5	1.8
	06/16/03	<500	<0.50	<0.50	<0.50	<1.5	1.7
	09/30/03	<500	<0.50	<0.50	<0.50	<1.5	1.1
	11/26/03	Not Sampled - Insufficient Recharge					
	03/02/04	Not Sampled - Obstruction in well					
	06/17/04	Not Sampled - Obstruction in well					
	09/17/04	Not Sampled - Obstruction in well					
	03/02/05	Not Sampled - Obstruction in well					
	09/01/05	<100	<0.50	<0.50	<0.50	<1.0	1.6
VW-3	03/06/02	1,300	550	74	33	110	2,300
	04/16/02	<500	<0.50	<0.50	<0.50	<1.0	45
	09/03/02	<500	160	28	9.9	36	1,500
	11/07/02	<500	120	23	9.1	33	790
	02/18/03	770	150	48	22	82	210
	06/16/03	620	160	33	17	61	82
	09/30/03	570	190	32	18	58	97
	11/26/03	580	160	33	19	64	96
	03/02/04 NP	<500	51	14	7.5	27	47
	03/02/04	<500	75	21	12	42	50
	06/17/04	<500	95	27	16	54	44
	09/17/04	<500	83	21	13	43	32
	03/02/05	400	110	26	22	71	37
	09/01/05	160	47	13	11	36	28
VW-4	03/06/02	910	63	150	62	230	730
	04/16/02	2,200	120	15	200	240	320
	09/03/02	610	43	96	40	140	940
	11/07/02	510	35	55	27	106	1,500
	02/18/03	2,100	79	170	77	560	1,200
	06/16/03	2,400	78	310	140	590	1,400
	09/30/03	1,300	67	170	95	350	2,400
	11/26/03	830	55	110	66	230	3,900
	03/02/04 NP	740	40	<5.0	<5.0	<15	1,100
	03/02/04	720	70	98	67	200	3,200

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All concentrations reported in micrograms per liter (µg/L)

Well Identification	Date	GRO	B	T	E	X	MTBE
VW-4 cont'd	06/17/04	500	43	56	40	120	1,100
	09/17/04	<500	32	42	31	98	130
	03/02/05	2,300	84	260	120	710	20
	09/01/05	500	17	49	35	150	<2.0
VW-5	03/06/02	<500	3.7	<2.5	6.0	<7.5	500
	04/16/02	<500	<0.50	<0.50	<0.50	<1.5	8.2
	09/03/02	<500	<2.5	<2.5	5.3	<7.5	540
	11/07/02	<500	<5.0	<5.0	6.6	<15.0	660
	02/18/03	<500	8.5	<5.0	14	<15	1,700
	06/16/03	<500	5.4	<5.0	13	<15	1,600
	09/30/03	<500	<10	<10	16	<30	1,700
	11/26/03	<500	5.7	<5.0	17	<15	1,700
	03/02/04	<500	<5.0	<5.0	12	<15	1,600
	06/17/04	<500	<5.0	<5.0	14	<15	1,400
	09/17/04	<500	<5.0	10	9.6	<15	1,100
	03/02/05	<100	0.63	<0.50	2.4	<1.0	69
	09/01/05	<100	<0.50	<0.50	0.64	<1.0	90

Notes:

TPH = Total Petroleum Hydrocarbons (by EPA Method 8015M)
B = Benzene (by EPA Method 8260B)
T = Toluene (by EPA Method 8260B)
E = Ethylbenzene (by EPA Method 8260B)
X = Total Xylenes (by EPA Method 8260B)
MTBE = Methyl tert-butyl ether (by EPA Method 8260B)
< = Less than the indicated laboratory reporting limit
NP = Sample collected by no-purge sampling procedures
[a] = Third-Party owned well (City of San Diego)

TABLE 3
SUMMARY OF ADDITIONAL OXYGENATES ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All Results Reported in Micrograms per Liter (µg/L)

Well Identification	Date	TBA	DIPE	ETBE	TAME	ETHANOL
City Well MW-2[a]	11/26/03	<50	<5.0	<5.0	<5.0	<150
	03/03/04 NP	<50	<5.0	<5.0	<5.0	<150
	03/03/04	<50	<5.0	<5.0	<5.0	<150
	06/17/04	<50	<5.0	<5.0	<5.0	<150
	09/17/04	<50	<5.0	<5.0	<5.0	<150
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/01/05	<25	<2.0	<2.0	<2.0	<500
MW-1	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	<25	<5.0	<5.0	<5.0	--
	11/07/02	<50	<5.0	<5.0	<5.0	--
	02/18/03	<50	<5.0	<5.0	<5.0	<150
	06/16/03	<50	<5.0	<5.0	<5.0	<150
	09/30/03	<50	<5.0	<5.0	<5.0	<150
	11/26/03	<50	<5.0	<5.0	<5.0	<150
	03/02/04	<50	<5.0	<5.0	<5.0	<150
	06/17/04	<50	<5.0	<5.0	<5.0	<150
	09/17/04	<50	<5.0	<5.0	<5.0	<150
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/01/05	<25	<2.0	<2.0	<2.0	<500
MW-2	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	<25	<5.0	<5.0	<5.0	--
	11/07/02	<200	<20	<20	<20	--
	02/18/03	<200	<20	<20	<20	<600
	06/16/03	<200	<20	<20	<20	<600
	09/30/03	<200	<20	<20	<20	<600
	11/26/03	<50	<5.0	<5.0	<5.0	<150
	03/02/04 NP	<50	<5.0	<5.0	<5.0	<150
	03/02/04	<100	<10	<10	<10	<300
	06/17/04	<100	<10	<10	<10	<300
	09/17/04	<50	<5.0	<5.0	<5.0	<150
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/01/05	<25	<2.0	<2.0	<2.0	<500
MW-3	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	<25	<5.0	<5.0	<5.0	--
	11/07/02	<50	<5.0	<5.0	<5.0	--
	02/18/03	<50	<5.0	<5.0	<5.0	<150
	06/16/03	<50	<5.0	<5.0	<5.0	<150
	09/30/03	<50	<5.0	<5.0	<5.0	<150

TABLE 3
SUMMARY OF ADDITIONAL OXYGENATES ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All Results Reported in Micrograms per Liter (µg/L)

Well Identification	Date	TBA	DIPE	ETBE	TAME	ETHANOL
MW-3 cont'd	11/26/03	<50	<5.0	<5.0	<5.0	<1.0
	03/02/04	<50	<5.0	<5.0	<5.0	<150
	06/17/04	<50	<5.0	<5.0	<5.0	<150
	09/17/04	<50	<5.0	<5.0	<5.0	<150
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/02/05	<25	<2.0	<2.0	<2.0	<500
MW-4	06/16/03	<50	<5.0	<5.0	<5.0	<150
	09/30/03	<50	<5.0	<5.0	<5.0	<150
	11/26/03	Not Sampled - Car Parked Over Well				
	03/03/04	<50	<5.0	<5.0	<5.0	<150
	06/17/04	<50	<5.0	<5.0	<5.0	<150
	09/17/04	<50	<5.0	<5.0	<5.0	<150
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/01/05	<25	<2.0	<2.0	<2.0	<500
VW-1	04/16/02	<1,200	<250	<250	<250	--
	09/03/02	<1,200	<250	<250	<250	--
	11/07/02	<1,000	<100	<100	<100	--
	02/18/03	<1,000	<100	<100	<100	<3,000
	06/16/03	Not Sampled - Sheen in well				
	09/30/03	Not Sampled - Sheen in well				
	11/26/03	1,500	<120	<120	<120	<3,800
	03/02/04	Not Sampled - Sheen in well				
	06/17/04	Not Sampled - Sheen in well				
	09/17/04	Not Sampled - Sheen in well				
	03/02/05	Not Sampled - Sheen in well				
	09/01/05	1,600	<33	<33	<33	<8,300
VW-2	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	<25	<5.0	<5.0	<5.0	--
	11/07/02	<50	<5.0	<5.0	<5.0	--
	02/18/03	<50	<5.0	<5.0	<5.0	<150
	06/16/03	<50	<5.0	<5.0	<5.0	<150
	09/30/03	<50	<5.0	<5.0	<5.0	<150
	11/26/03	Not Sampled - Insufficient Recharge				
	03/02/04	Not Sampled - Obstruction in well				
	06/17/04	Not Sampled - Obstruction in well				
	09/17/04	Not Sampled - Obstruction in well				

TABLE 3
SUMMARY OF ADDITIONAL OXYGENATES ANALYTICAL RESULTS, 2002 TO PRESENT
ARCO Facility #3037
All Results Reported in Micrograms per Liter (µg/L)

Well Identification	Date	TBA	DIPE	ETBE	TAME	ETHANOL
VW-2 cont'd	03/02/05	Not Sampled - Obstruction in well				
	09/01/05	<25	<2.0	<2.0	<2.0	<500
VW-3	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	<250	<50	<50	<50	--
	11/07/02	560	<50	<50	<50	--
	02/18/03	470	<12	<12	<12	<380
	06/16/03	600	<10	<10	<10	<300
	09/30/03	480	<12	<12	<12	<380
	11/26/03	430	<10	<10	<10	<300
	03/02/04 NP	290	<5.0	<5.0	<5.0	<150
	03/02/04	290	<5.0	<5.0	<5.0	<150
	06/17/04	250	<5.0	<5.0	<5.0	<150
	09/17/04	180	<12	<12	<12	<380
	03/02/05	<50	<4.0	<4.0	<4.0	<1,000
	09/01/05	84	<2.0	<2.0	<2.0	<500
VW-4	04/16/02	900	<50	<50	<50	--
	09/03/02	1,300	<50	<50	<50	--
	11/07/02	930	<50	<50	<50	--
	02/18/03	<500	<50	<50	<50	<1,500
	06/16/03	<500	<50	<50	<50	<1,500
	09/30/03	<1,000	<100	<100	<100	<3,000
	11/26/03	<1,200	<120	<120	<120	<3,800
	03/02/04 NP	<500	<50	<50	<50	<1,500
	03/02/04	1,600	<120	<120	<120	<3,800
	06/17/04	3,500	<50	<50	<50	<1,500
	09/17/04	4,700	<50	<50	<50	<1,500
	03/02/05	1,100	<10	<10	<10	<2,500
	09/01/05	1,700	<4.0	<4.0	<4.0	<1,000
VW-5	04/16/02	<25	<5.0	<5.0	<5.0	--
	09/03/02	130	<25	<25	<25	--
	11/07/02	<500	<50	<50	<50	--
	02/18/03	<500	<50	<50	<50	<1,500
	06/16/03	<500	<50	<50	<50	<1,500
	09/30/03	<1,000	<100	<100	<100	<3,000
	11/26/03	<500	<50	<50	<50	<1,500
	03/02/04	<500	<50	<50	<50	<1,500
	06/17/04	<500	<50	<50	<50	<1,500

TABLE 3

SUMMARY OF ADDITIONAL OXYGENATES ANALYTICAL RESULTS, 2002 TO PRESENT

ARCO Facility #3037

All Results Reported in Micrograms per Liter (μg/L)

Well Identification	Date	TBA	DIPE	ETBE	TAME	ETHANOL
VW-5 cont'd	09/17/04	<500	<50	<50	<50	<1,500
	03/02/05	<25	<2.0	<2.0	<2.0	<500
	09/01/05	30	<2.0	<2.0	<2.0	<500

Notes:

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butanol

< = Less than the laboratory reporting limit shown.

Samples analyzed by EPA Method 8260B.

NP = Sample collected by no-purge sampling procedures

a =Third-Party owned well (CIty of San Diego)

TABLE 4

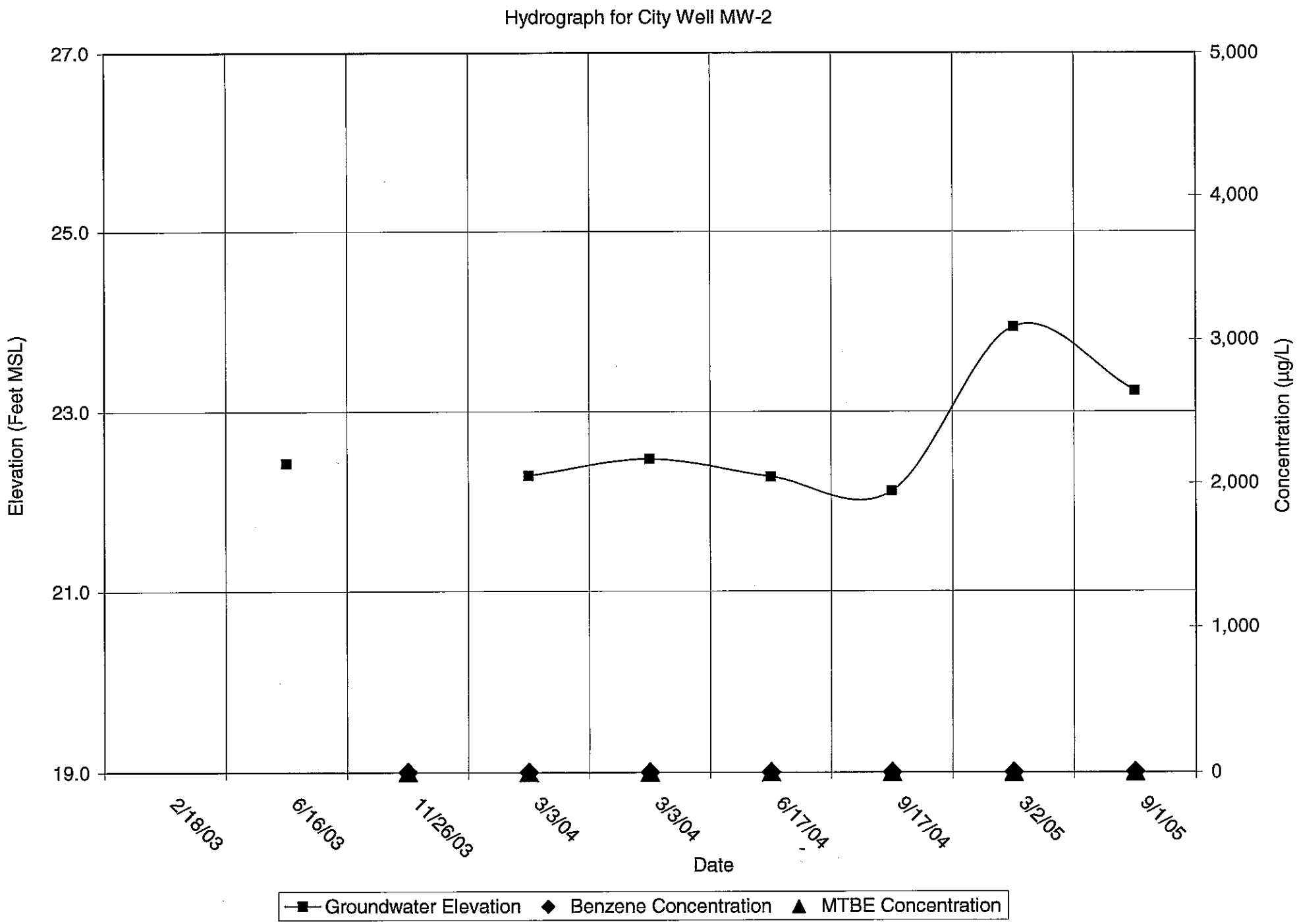
SUMMARY OF BASELINE NATURAL ATTENUATION DATA
ARCO Facility #3037
915 Camino Del Rio Sreet, San Diego, California

Well Identification	Petroleum Hydrocarbon Concentrations						Indicators of Natural Attenuation and General Groundwater Parameters												
	GRO	B	T	E	X	MTBE	DO	Nitrate	Ferric	Ferrous	Sulfate	Sulfide	Methane	Ammonia	Total Alkalinity	ORP	S Cond	pH	Temp
	(µg/L)							(µg/L)								(mV)	(mS/cm)		(°C)
MW-1	<100	<0.50	<0.50	<0.50	<1.0	<1.0	1.73/ 3.14	3,080	5,350	<200	223,000	<100	<1.0	<100	282,000	87/86	0.147/0.136	7.13/7.41	22.72/22.64
MW-2	560	55	29	53	160	4.4	0.37/1.07	2,010	13,700	<200	203,000	<100	250.00	<100	357,000	94/-87	0.129/0.133	7.08/7.53	24.15/24.08
MW-3	<100	<0.50	<0.50	<0.50	<1.0	<1.0	0.47/1.58	NS	NS	NS	NS	NS	NS	NS	NS	124/122	0.247/0.258	7.26/7.18	22.19/22.21
MW-4	<100	<0.50	<0.50	<0.50	<1.0	<1.0	0.56/4.28	5,120	5,120	<200	231,000	<100	<1.0	<100	334,000	177/100	0.150/0.147	6.59/7.37	23.79/23.57
City Well MW-2	<100	3.1	10	1.8	16	3.3	0.22/1.61	7,900	14,900	<200	334,000	<100	18	<100	519,000	89/76	0.264/0.333	6.75/7.28	24.33/24.96
VW-1	5,600	1,300	1,200	510	1,900	39	0.25/0.75	1,960	17,200	<200	165,000	<100	1,500	160	769,000	-100/-131	0.143/0.151	7.13/7.67	23.47/23.45
VW-2	<100	<0.50	<0.50	<0.50	<1.0	1.6	0.45/3.70	NS	NS	NS	NS	NS	NS	NS	NS	-28/135	89.6/88.1	7.07/7.01	23.40/23.44
VW-3	160	47	13	11	36	28	0.20/0.70	254	17,100	<200	118,000	<100	860	<100	683,000	-103/-96	0.226/0.217	7.04/7.16	23.98/22.72
VW-4	500	17	49	35	150	<2.0	0.23/0.34	<100	631	<200	124,000	<100	190	<100	806,000	-214/-81	0.211/0.272	7.16/7.26	22.72/22.92
VW-5	<100	<0.50	<0.50	0.64	<1.0	90	0.25/0.28	3,260	7,030	<200	240,000	<100	8.3	<100	503,000	47/106	0.235/0.241	6.96/7.01	22.75/22.75

Notes:

Samples for GRO, BTEX, and MTBE were collected on September 1, 2005, except for well MW-3, which was monitored and sampled on September 2, 2005.
Samples for indicators of natural attenuation and general groundwater parameters were collected on September 1, 2005.

GRO = Gasoline range organics C_6-C_{12} (DHS-Modified EPA Method 8015)
BTEX = Benzene, toluene, ethylbenzene, and total xylenes (EPA Method 8260B)
MTBE = Methyl tert-butyl ether (EPA Method 8260B)
DO = Dissolved oxygen (field measurement - pre & post purge)
Nitrate = Nitrate as nitrogen (EPA Method 300.0)
Ferrous = Ferrous iron (EPA Method 6010B-Diss)
Ferric = Ferric iron (laboratory calculation)
Sulfate = Sulfate (EPA Method 300.0)
Sulfide = Sulfide (EPA Method 376.2)
Methane = Methane (EPA Method RSK-175 Mod)
Ammonia = Ammonia (EPA Method 350.3)
Alkalinity = Alkalinity as calcium carbonate ($CaCO_3$) (EPA Method 310.1)
ORP = Oxidation-reduction potential (field measurement - pre & post purge)
S Cond = Specific conductivity (field measurement - pre & post purge)
pH = pH (field measurement - pre & post purge)
Temp = Temperature (field measurement - pre & post purge)
µg/L = Micrograms per Liter
mg/L = Milligrams per Liter
mV = Millivolts
mS/cm = millisiemens per centimeter
°C = Degrees celcius
< = Below indicated laboratory reporting limit
NS = Not sampled



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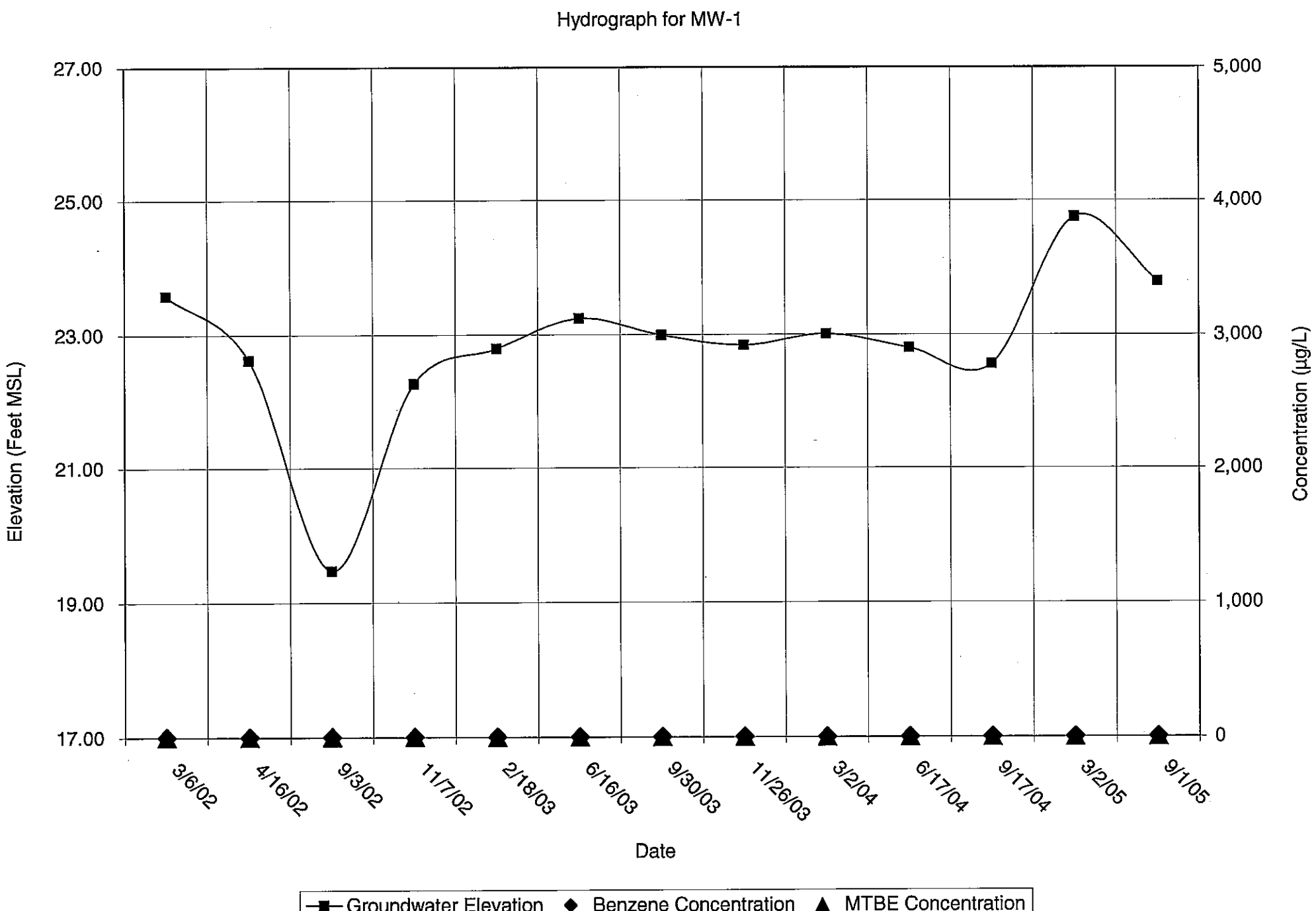

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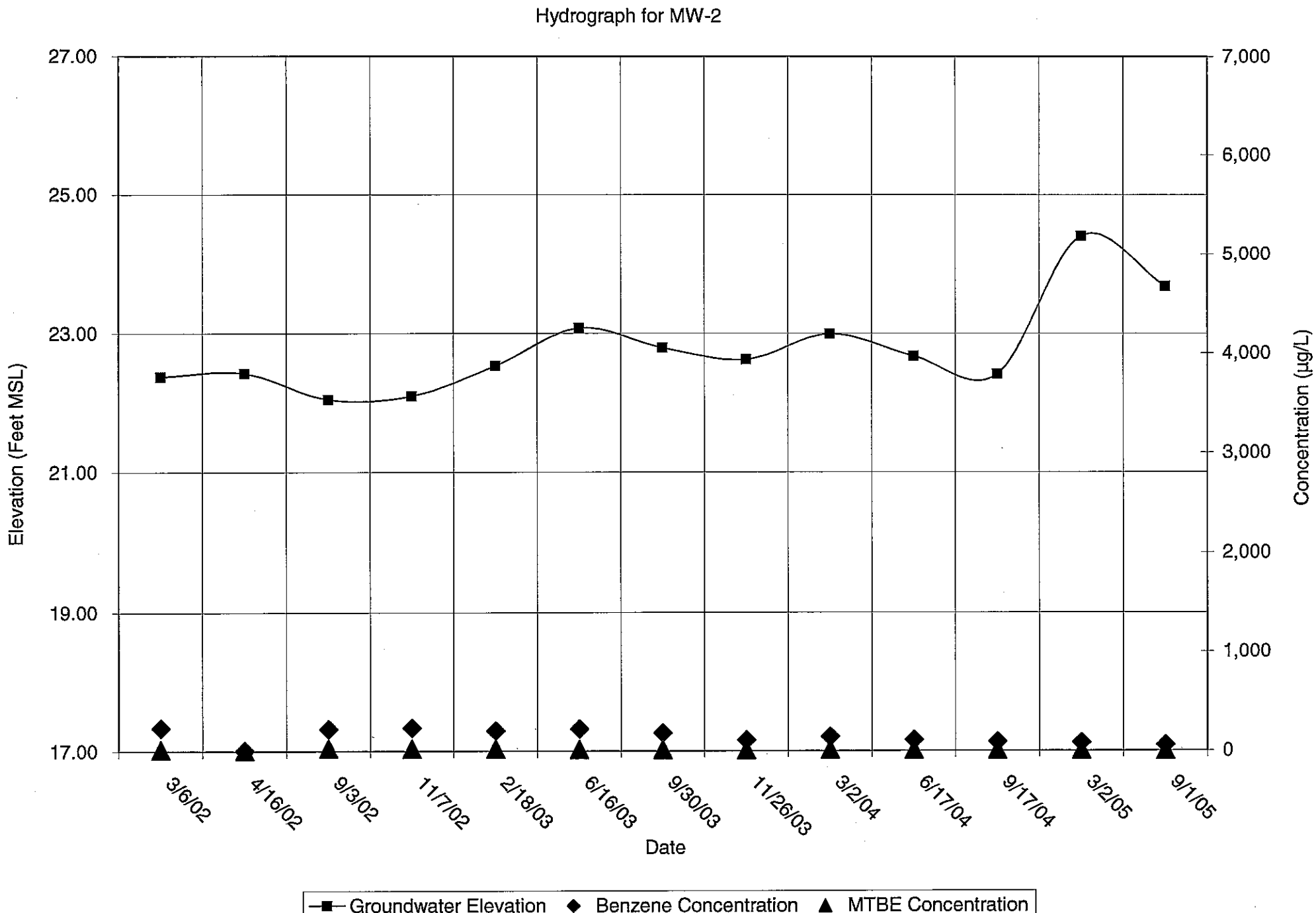

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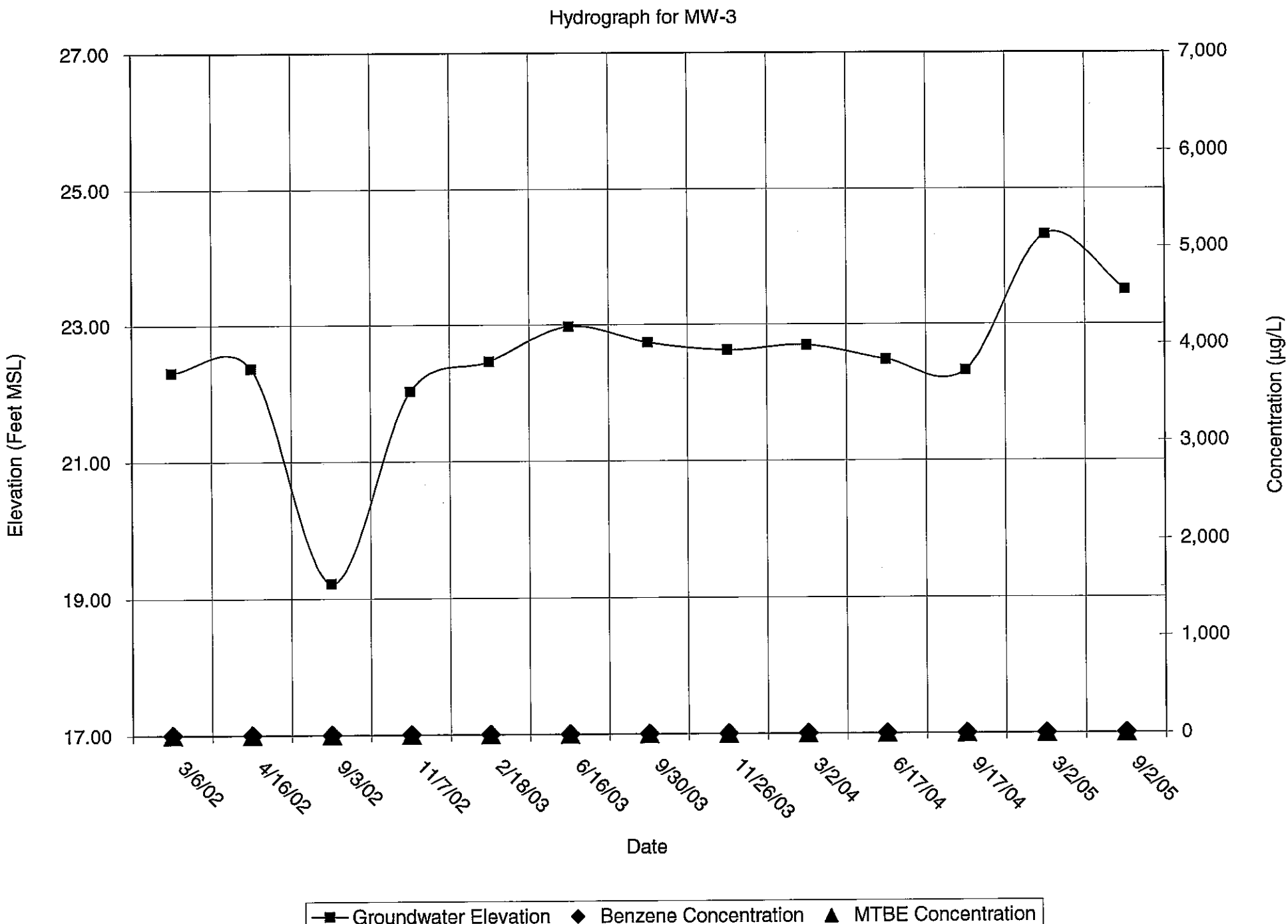

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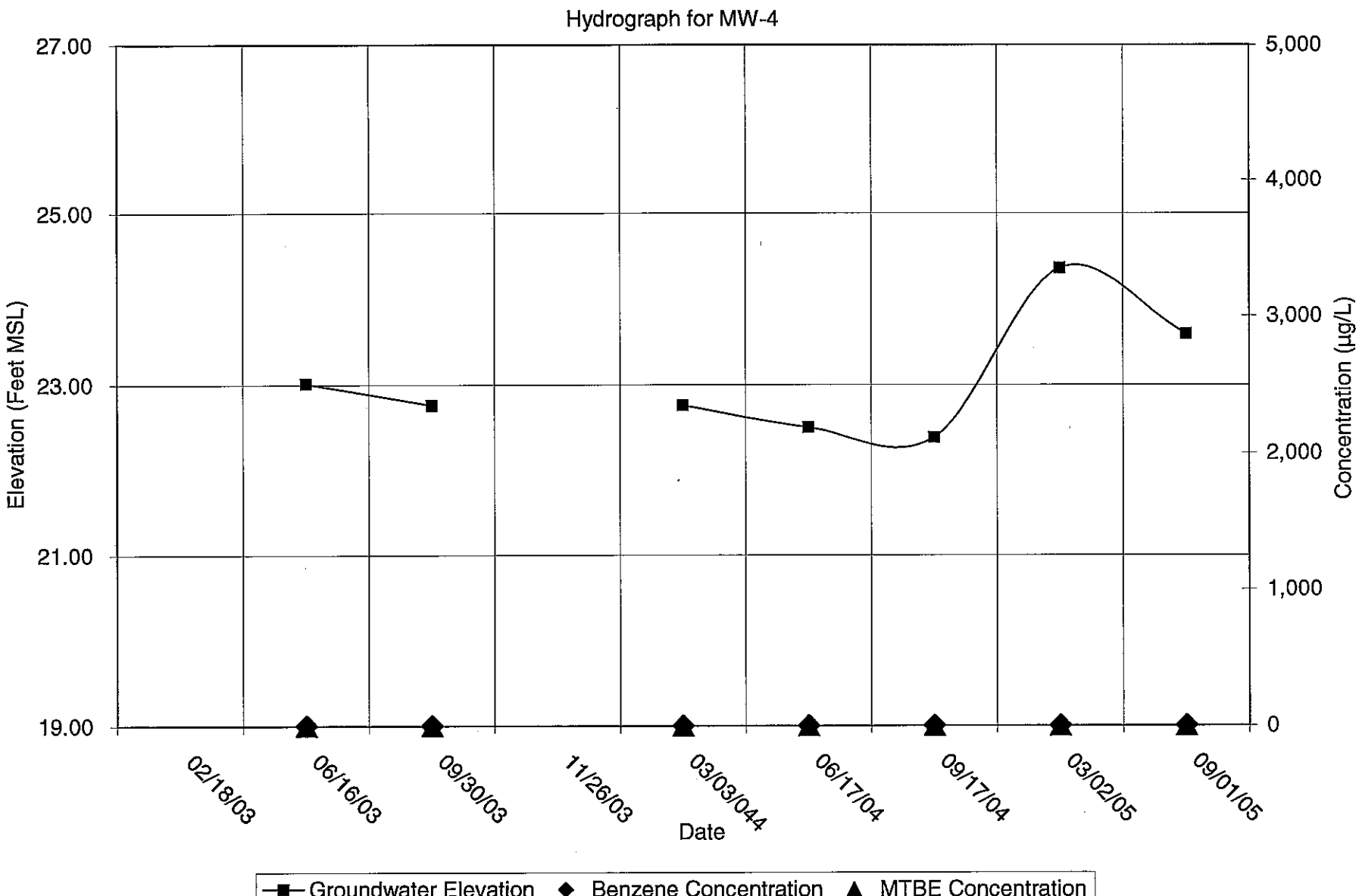

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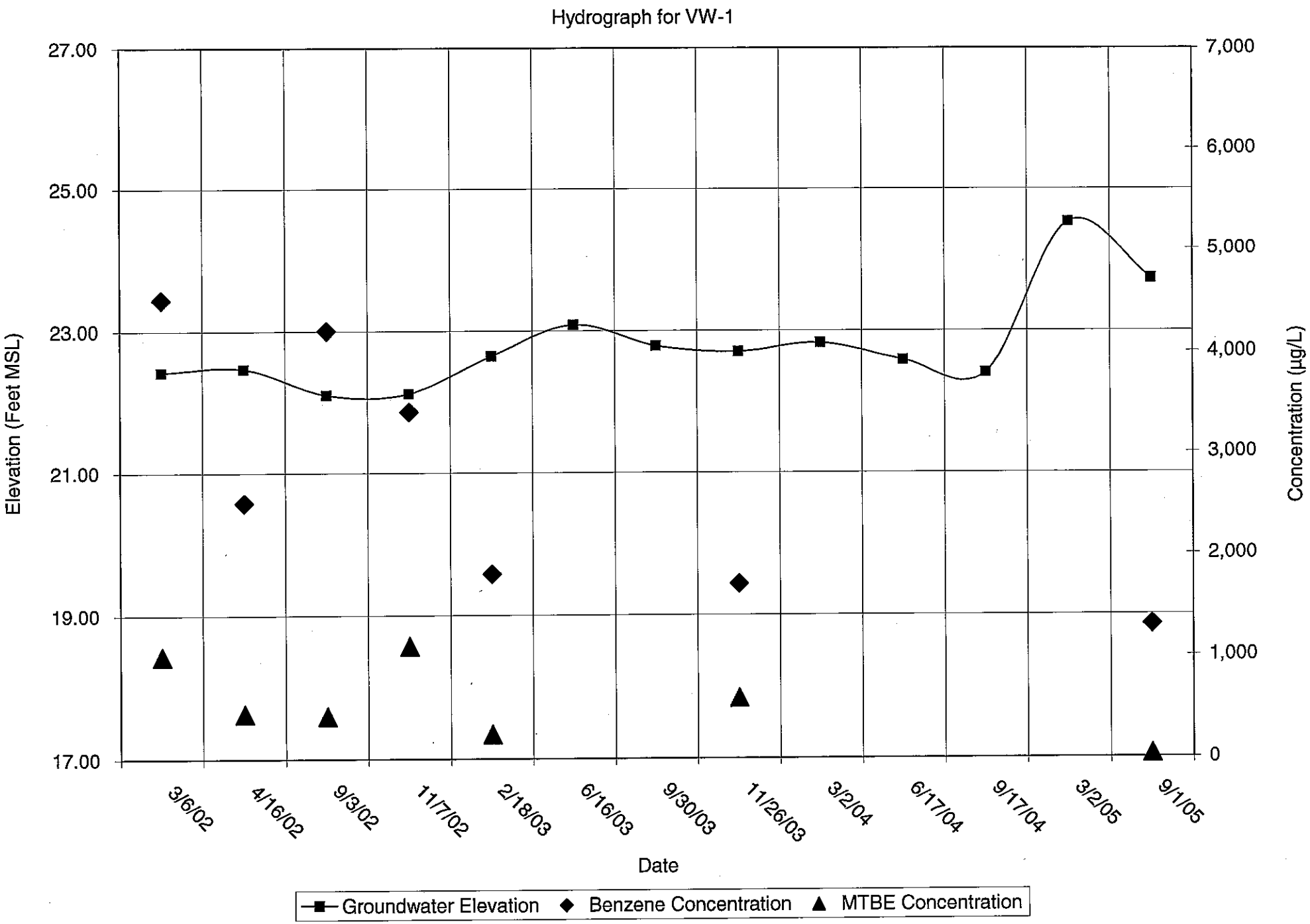

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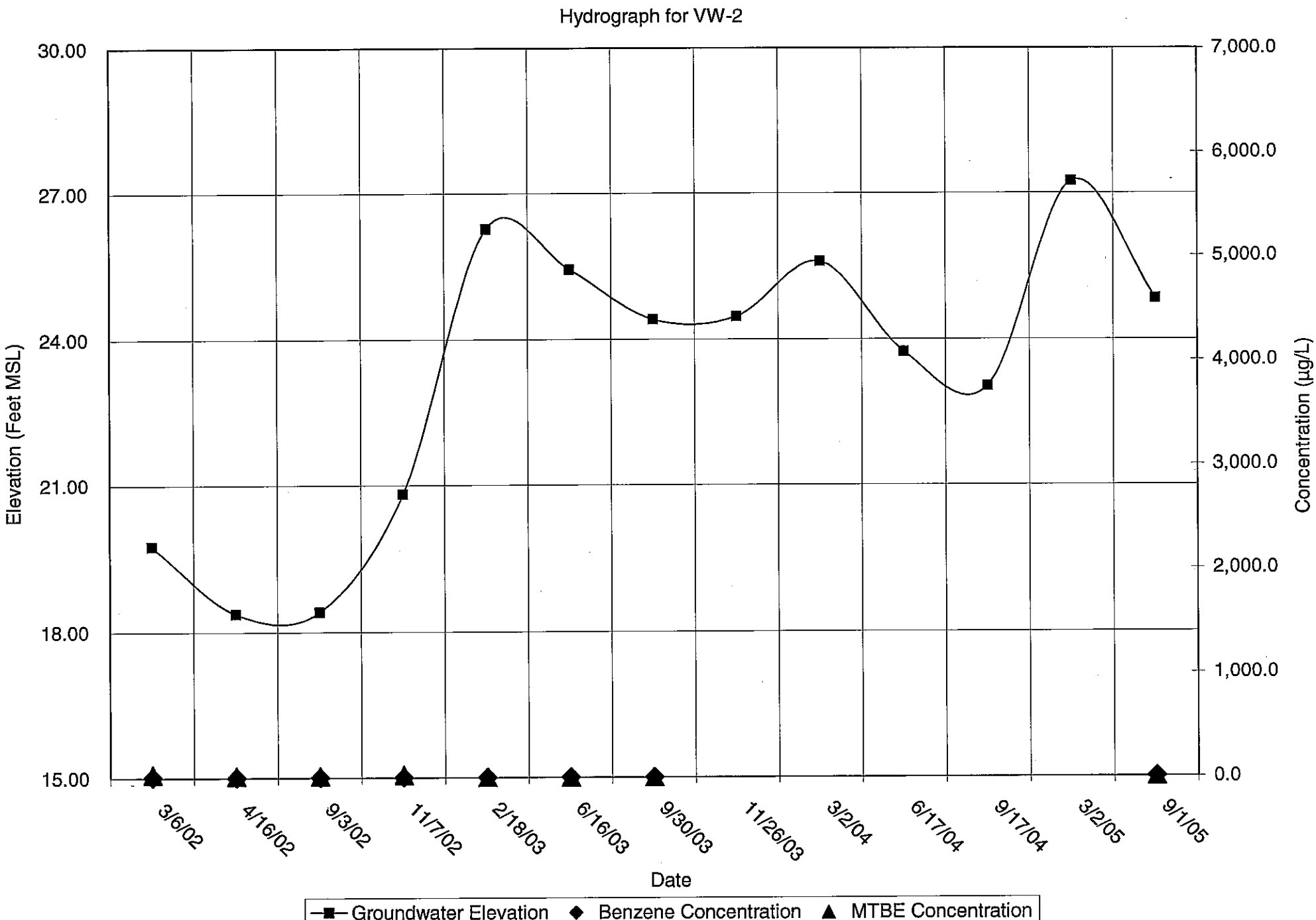

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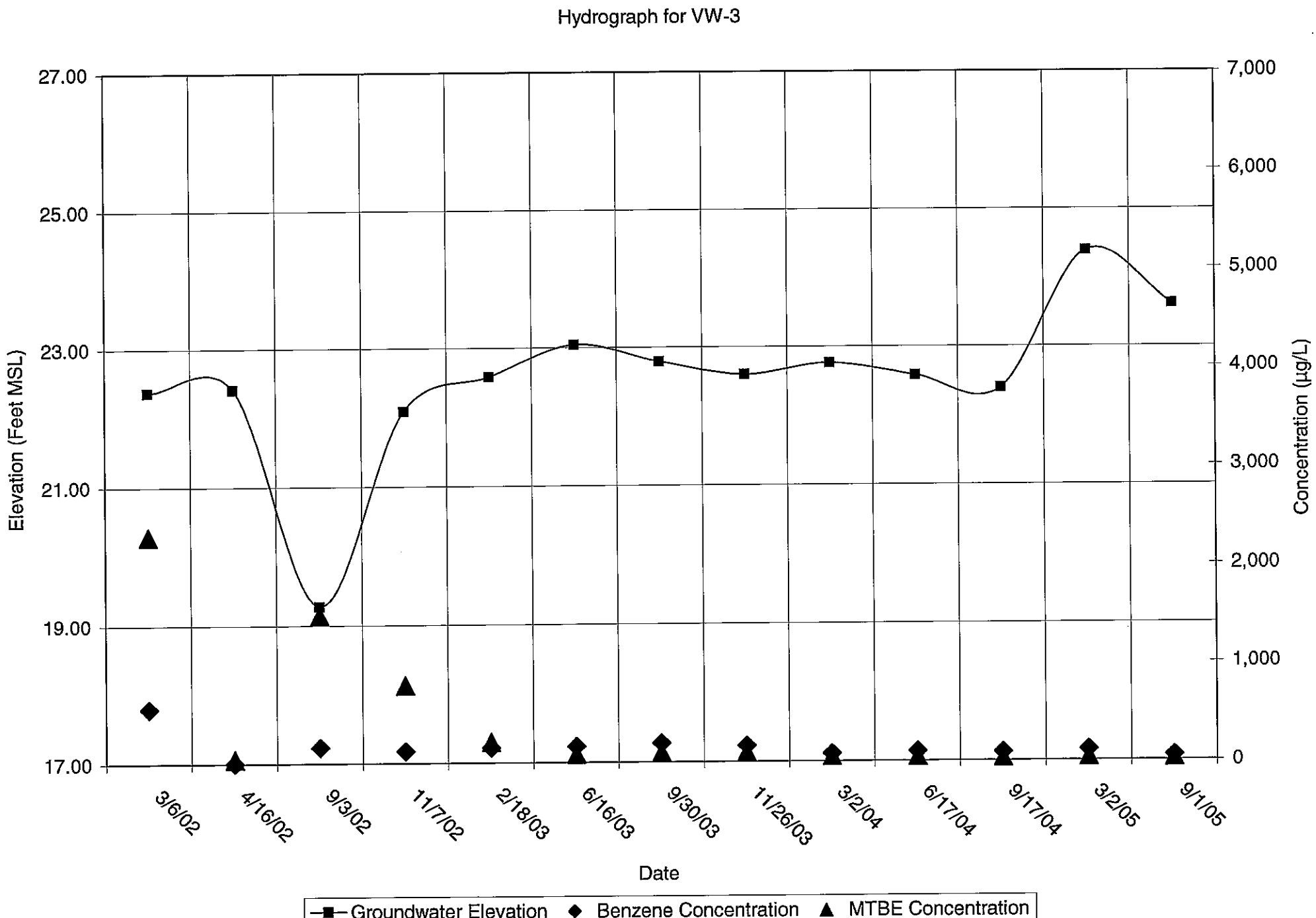

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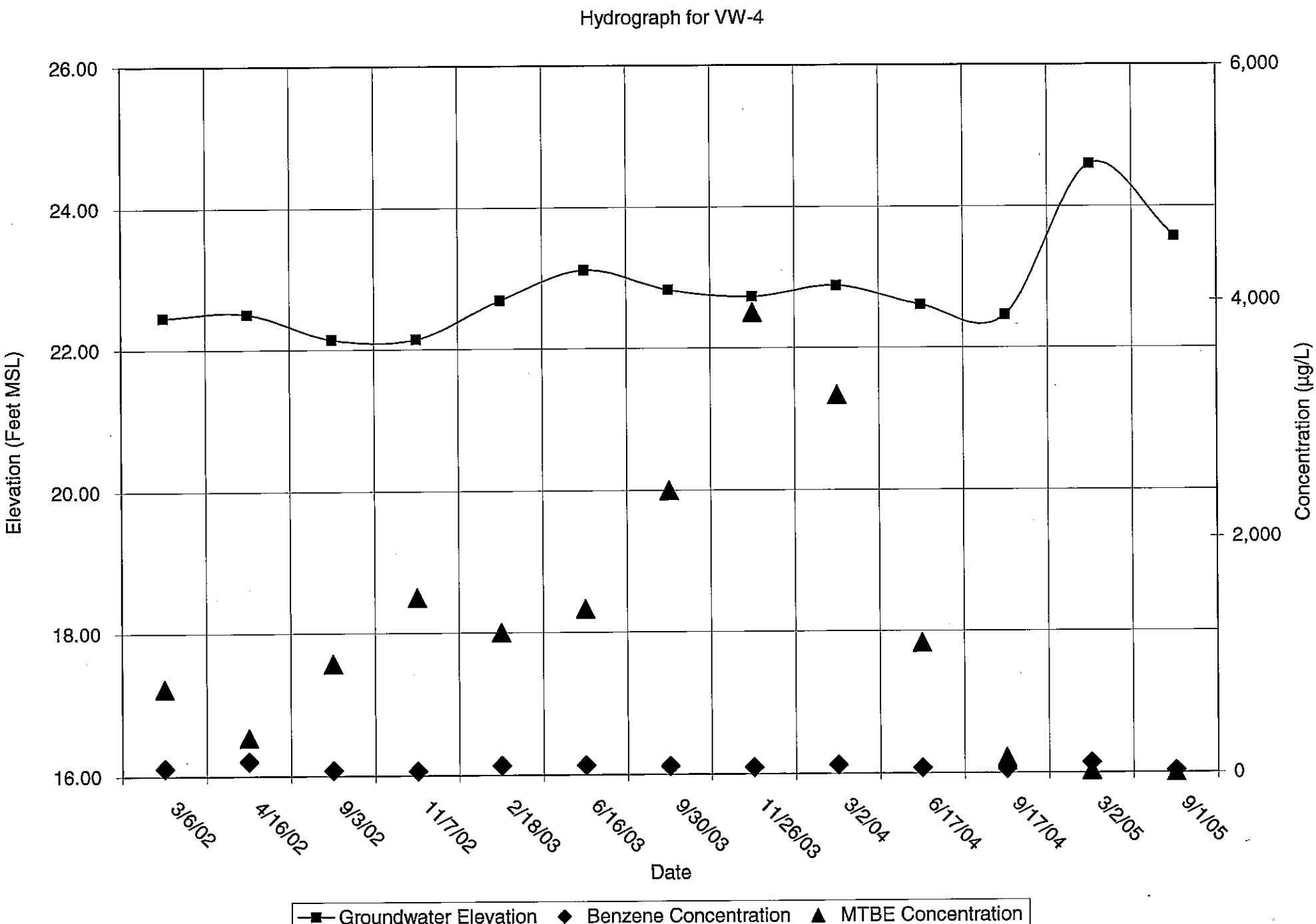

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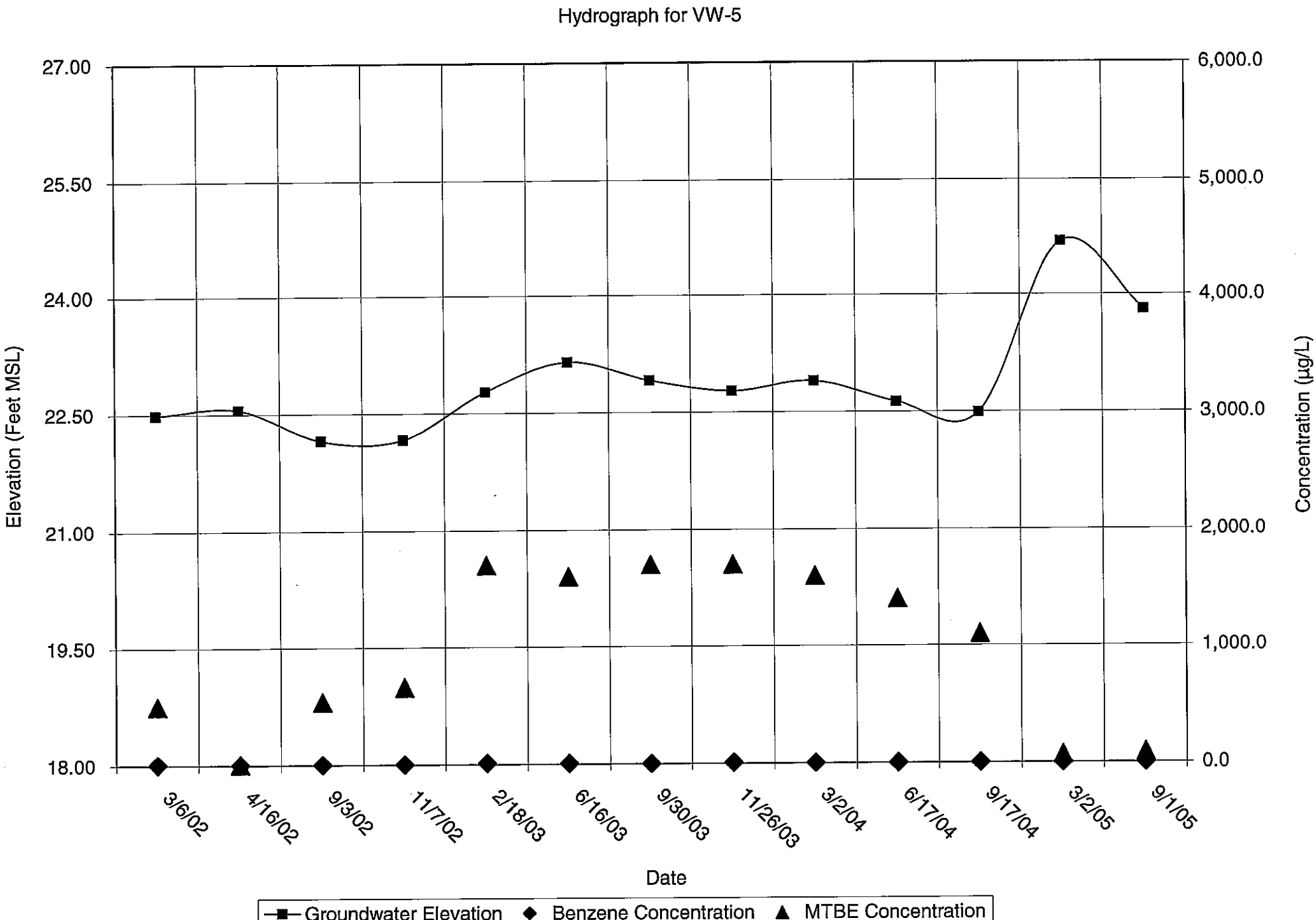

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MONITORING WELL PURGING AND SAMPLING PROCEDURES SAN DIEGO COUNTY

Fast recovering well: A well is considered to be fast recovering if recovery to 80 percent or more of its static condition occurs within 2 hours when using the high-flow purging method.

Slow recovering well: A well is considered to be slow recovering if recovery to 80 percent of its static water level takes longer than 2 hours when using the high-flow purging and sampling method.

Purging and Sampling Methods: The following method is currently approved by SAM.

High-flow Purging and Sampling: Purging using a pumping rate greater than 1 liter per minute (lpm) or 0.26 gallon per minute (gpm) (Barcelona and Puls, 1996). Traditionally, the high-flow purging method has been widely used. This method typically involves the removal of up to 3 borehole volumes prior to sampling. Samples are most often collected with a bailer or other device after completion of purging. This methodology provides a composite of the contaminant concentration within the well and will likely not be suitable for low yield wells.

1. High-flow Purging and Sampling Method

This method is widely used and involves the removal of water from the well at a rate in excess of 1 lpm (0.26 gpm) by a variety of methods, including pumps, bailers, etc. The following steps are necessary to collect representative samples. Well purging to "dryness" should be avoided.

a. Measure for NAPL

LNAPL and DNAPL may be present in groundwater monitoring wells. If NAPL exists, the well sampling procedure described in this section will typically not apply. Special considerations may be necessary and should be discussed with the SAM project manager on a case-by-case basis.

b. Measure Water Level

The groundwater level in the monitoring well should be measured to an accuracy of 0.01 foot prior to purging and sampling activities.

c. Placement of Pump

The pump should be placed in the lower one-third of the well screen.

d. Calculation of Borehole Volume

f. Parameter Stability

It is assumed that parameter stability is achieved when the difference between successive measurements is less than 10 percent. Generally, measurements are made after one borehole volume is removed and then at one-half borehole volume intervals. Commonly, the measurement of temperature, specific conductance, and pH are used exclusively, but it has been found these parameters are less sensitive to field conditions. It is recommended that dissolved oxygen, turbidity, specific conductance, and temperature be monitored.

g. Purge Well

The well must be purged with a device that does not compromise the sample by cross-contamination, aeration, or other negative effects

(1) Fast Recovering Wells

DEH considers the following two options acceptable methods for properly purging fast recovering wells:

(a) Option I
   i. Remove 3 borehole volumes of water.
   ii. Allow the well to recover to 80% of its static condition prior to collecting the sample.

(b) Option II
   i. Remove 1 borehole volume of water.
   ii. Conduct field water-quality measurements (dissolved oxygen, turbidity, specific conductance, and temperature).
   iii. Remove an additional ½ borehole volume of water. Conduct field water quality measurements again. If the first and second measurements vary by less than 10%, purging is considered adequate. Proceed to step (v.) below.
   iv. Repeat step (iii) until the measurements vary by less than 10% or until 3 borehole volumes of water have been removed.
   v. Allow the well to recover to 80% of its static condition before collecting the sample.

(2) Slow Recovering Wells

(a) Remove 1 borehole volume of water.

(b) The well should be allowed to recover for 2 hours after purging has stopped. Then the well should be sampled as soon after 2 hours as possible. Note that if the well recovers to greater than 80% in less than 2 hours, it is a fast recovering well. If so, follow the steps in Option I or II above.

h. Collect Samples

After the monitoring well has been properly purged, the guidelines below for groundwater sample collection should be followed.

(1) In the case of a fast recovering well, samples should be collected when the well has recovered to 80%. In the case of a slow recovering well, samples should be collected as soon as possible after 2 hours have elapsed.

(2) Collect groundwater samples from wells with sampling equipment.

Sampling equipment must be compatible with the contaminant being analyzed

(3) Sampling equipment should be decontaminated before use.

(4) Samples requiring organic analyses should not be filtered.

(5) Samples should be transferred from the sampling device to a container in a manner that minimizes aeration.

(6) Samples should be collected in approved sample containers appropriate for the type of analysis to be performed.

(7) Samples should not be transferred from one sample container to another.

(8) Headspace in sample containers should be avoided.

(9) EPA SW-846 sample preservation and holding times for specific analyses should be followed.

Appropriate sample chain-of-custody procedures must be followed.

SECOR

MONITORING WELL GAUGING LOG

Site Name & Facility No: **ARCO 3037**

Date: 9/1/05/9/2/05

Project Number: 08BP.U3037.05 / 4142

Field Representative(s): JG, DK, HW, WW

Checked by: TK

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-1	21.20	0929	—	22.16	—	34.87	45.95	23.79		
MW-2	17.97	0929	—	18.70	—	34.40	42.38	23.68		
MW-3	17.54	0919 09/02/05		18.36		34.49	41.86	23.5		
MW-4	16.88	0902	—	17.65	—	30.21	41.24	23.59		
VW-1	19.92	0936	—	20.72	—	23.86	44.44	23.72		
VW-2	17.30	0945	—	19.71	—	28.47	44.55	24.84		
VW-3	16.77	0912	—	17.55	—	24.19	41.16	23.61		
VW-4	19.67	0938	—	20.70	—	33.60	44.27	23.57		
VW-5	19.63	0936		20.51		27.70	44.32	23.81		
City Well (MW-2)	11.81	0920	—	12.52	—	18.81	35.75	23.23		

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

RNA PARAMETER FIELD SHEET

Site Name & Facility No: Arco 3037

Date: 9/1/2005

Project Number: 08BP.03037.05.0335

Field Representative(s): JG, DK, MN, WW 09/02/05

Checked by:

Well No.	Gauging Time	Depth to Water (ft.)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Specific Conductivity (S/m)	pH	Temperature (°C)	Comments
MW-1 pre	0929	22.16	1.73 after 16 min.	87	0.147	7.13	22.72	
MW-1 post	1103	26.14	3.14	86	.136 ~~0.129~~	7.41 ~~7.08~~	22.64 ~~24.15~~	
MW-2 pre	0929	18.70	0.37	94	0.129	7.08	24.15	
MW-2 post	1222	19.02	1.07	-87	.133	7.53	24.08	
MW-3 pre	0919	18.36	.47	124	.247	7.26	22.19	measured 9/2/05
MW-3 post	0955	27.06	1.58	122	.258	7.18	22.21	no RNA sampling
MW-4 pre	0902	17.65	0.56	177	0.150	6.59	23.79	
MW-4 post	1032	22.96	4.28	100	.147	7.37	23.57	
City Well (MW-2) pre	0920	12.52	0.22	89	0.264	6.75	24.33	
City Well (MW-2) post	1234 ~~1202~~	DRY 17.53	1.61	~~96~~ 76	.333	7.28	24.96	
VW-1 pre	0936	20.72	0.25	-100	0.143	7.13	23.47	Set probes @ 23 ft BGS 5 ft standard bottomed out
VW-1 post	1134	21.83	.75	-131	.151	7.67	23.45	

Notes:
NM = Not measured
mg/L = milligrams per liter
mV = millivolts

S/m = Siemens per meter
°C = degrees celsius

SECOR

MONITORING WELL GAUGING LOG

Site Name & Facility No: Arco 3037 Date: 9/1/2005

Project Number: 08BP.03037.05.0335 Field Representative(s):

Checked by:

Well No.	Gauging Time	Depth to Water (ft.)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Specific Conductivity (S/m)	pH	Temperature (°C)	Comments
VW-2 pre	0945	19.71	0.45	-28	~~27~~ 89.6 (?)	7.07	23.40	probes set @ 21.20. Unable to get past this depth } no RNA sampling
VW-2 post	1331	21.41	3.70	135	88.1	7.01	23.44	Very little H_2O column for Horiba & DO probes }
VW-3 pre	0912	17.55	0.20	-103	0.226	7.04	23.98	
VW-3 post	1052	18.63	.70	-96	.217	7.16	23.97	
VW-4 pre	0938	20.70	0.23	-214	0.211	7.16	22.72	
VW-4 post	1212	26.48	.34	-81	.272	7.26	22.92	
VW-5 pre	0936	20.51	0.25	47	0.235	6.96	22.75	
VW-5 post	1247	24.89	.28	106	.241	7.01	22.75	

Notes:
NM = Not measured
mg/L = milligrams per liter
mV = millivolts

ORP = oxidation-reduction potential
S/m = Siemens per meter
°C = degrees celsius

HORIBA U-22 CALIBRATION FORM
ARCO Facility #3037
915 Camino Del Rio South, San Diego, CA

DATE/TIME: 9/1/05, 8:30a CALIBRATED BY: WW

HORIBA U-22 ID #: — DO METER ID #: Rental YSI 55

Office	Horiba U-22					Office DO Meter
	DO (mg/L)	ORP (mV)	S Cond (S/m)	pH	Temp (°C)	DO mg/L
Standard	0			4.0		0
Instrument Reading	2.71			4.01		0
Difference	2.71			0.01		0
Calibration Successful?	N			Y		Y

Pre-Sampling	Horiba U-22		Office DO Meter		Less than 0.5mg/L
	Temp °C	DO (mg/L)	Temp (°C)	DO (mg/L)	
Standard		0		0	
Instrument Reading		2.50		0.1	
Difference		2.50		0.1	
Calibration Successful?		N		Y	

Post-Sampling	Horiba U-22		Office DO Meter		Less than 0.5mg/L
	Temp °C	DO (mg/L)	Temp (°C)	DO (mg/L)	
Standard		~~0.2~~ 0		0	
Instrument Reading		2.37		0	
Difference		2.37		0	
Calibration Successful?		N		Y	

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 1
Project Name:	ARCO 3037
Date:	9/1/05
Project Number:	08BP.U3037.05 / 4142
Sample Time:	1313
SECOR Rep: W Wang	Checked by: TK
Sample No:	MW- 1

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #3A

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

pH Temp/Conductivity Meter Type / ID: 1

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): 22.18 @ 1038, 9/1/05

Total Well Depth (DTB) (ft): 34.87

Water Column: 12.69

Floating Product: ___

Thickness (in): ___

Borehole Volume (gal): 19.04

1.5 Borehole Volumes (gal): 28.56

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1041	Started Purging					
1053	28.03	19.5	7.51	23.3	1381	tan, silty, odorless
1059	28.83	29	7.48	23.2	1377	"
1313	22.18	sample				

Maximum Drawdown (DTW_2) (ft) = 28.83

H_2O Removal Rate (GPM) = 1.61

✓ Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1313

Depth to Water at time of sampling (DTW_3): 22.18

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: H. 25P/12OR (100%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(22.18) - (22.18)}{(22.18) - (28.83)} = \frac{0}{-6.65} = 100\%$$

80% Recharge = 23.51

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 2
	Project Name: ARCO 3037		Date: 9/1/05
	Project Number: 08BP.U3037.05 / 4142		Sample Time: 1330
	SECOR Rep: W Wlong	Checked by: TK	Sample No: MW- 2

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS
Water Level Meter Type & ID: Solinist # 3A	Borehole Diameter (in): 8 (10) 12
Purging Equipment / Method: ___Vac Truck ___Submersible Pump (a) Bailer ___Other	Casing Diameter (in): 2 (4)
pH Temp/Conductivity Meter Type / ID: 1	Depth to Water (DTW_1) (ft): 18.88@1154, 9/1/05
Sampling Method: ___Teflon Bailer (a) Disposable Bailer ___Other:	Total Well Depth (DTB) (ft): 34.40 / Water Column: 15.52
Decontamination Method: ___Steam / High Pressure Wash (a) 3 Stage (Alconox, Tap & DI rinse) ___Other:	Floating Product: — / Thickness (in): —
	Borehole Volume (gal): 23.28 / 1.5 Borehole Volumes (gal): 34.92

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1200	Started Purging					
1204	31.02	23.5	7.48	24.6	1336	brown, silty, low odor
1208	31.83	35	7.48	24.5	1318	
1330	18.75	sample				

Maximum Drawdown (DTW_2) (ft) = 31.83

H_2O Removal Rate (GPM) = 4.38

(X) Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1330

Depth to Water at time of sampling (DTW_3): 18.75

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: 4.20P/120R(99%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(18.88) - (18.75)}{(18.88) - (31.83)} = \frac{-0.13}{-12.95}$$

$$= 98\ \%$$

80% Recharge = 21.47

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name	ARCO 3037	Well No:	MW- 3
Project Number:	08BP.U3037.05 / 4142	Date:	09/02/05
SECOR Rep: M. Nowak	Checked by: TK	Sample Time:	1013
		Sample No:	MW- 3

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

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

pH Temp/Conductivity Meter Type / ID: ~~Horiba~~ 1

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): 18.36

Total Well Depth (DTB) (ft): 34.49

Water Column: 18.13

Floating Product: —

Thickness (in): —

Borehole Volume (gal): 24.20

1.5 Borehole Volumes (gal): 36.29

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
0937	Started Purging					
0942	27.88	24.5	7.51	21.8	2.33	None / Hvy. Silt / Brown
0947	31.44	36.5	7.42	21.8	2.41	" " "
1013	20.98	Sample				

Maximum Drawdown (DTW_2) (ft) = 31.44

H_2O Removal Rate (GPM) = ~~3.66~~ (mt) 3.65

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1013

Depth to Water at time of sampling (DTW_3): 20.98

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: H.24P/37R(87%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(18.36)-(20.98)}{(18.36)-(31.44)} = \frac{2.62}{13.08}$$

$$= 80\ \%$$

80% Recharge = 20.98

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: MW- 4
	Project Name: ARCO 3037		Date: 9-1-05
	Project Number: 08BP.U3037.05 / 4142		Sample Time: 1210
	SECOR Rep: J. Garcia	Checked by: WW	Sample No: MW- 4

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 ___Submersible Pump X Bailer ___Other	Casing Diameter (in): 2 (4)	
pH Temp/Conductivity Meter Type / ID: LA	Depth to Water (DTW_1) (ft): 17.64	
Sampling Method: ___Teflon Bailer X Disposable Bailer ___Other:	Total Well Depth (DTB) (ft): 30.21	Water Column: 12.57
Decontamination Method: ___Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___Other:	Floating Product:	Thickness (in):
	Borehole Volume (gal): 18.85	1.5 Borehole Volumes (gal): 28.28

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
0958	Started Purging					
1004	26.64	19	8.50	23.8	9400	brown, cloudy, odorless
1010	Dry	28.5	8.48	23.7	9410	brown, cloudy, odorless
1210	17.86	Sample				

Maximum Drawdown (DTW_2) (ft) = 30.21

H_2O Removal Rate (GPM) = 2.37

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1210

Depth to Water at time of sampling (DTW_3): 17.86

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: H. ZIP/120R (98%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(17.64)-(17.86)}{(17.64)-(30.21)} = \frac{.22}{12.57} = 98.\ \%$$

80% Recharge = 20.15

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	VW- 1
Project Name	ARCO 3037
Date:	9-1-05
Project Number:	08BP.U3037.05 / 4142
Sample Time:	1309
SECOR Rep: J. Garcia	Checked by: WW
Sample No:	VW- 1

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 3

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

pH Temp/Conductivity Meter Type / ID: 1A

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): 20.76

Total Well Depth (DTB) (ft): 23.86

Water Column: 3.1

Floating Product:

Thickness (in):

Borehole Volume (gal): 4.65

1.5 Borehole Volumes (gal): 6.97

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1104	Started Purging					
1109	Dry	5	7.35	24.2	13.74	black, light odor
1120	Dry	7	7.32	24.0	1380	black, light odor
1309	21.06	Sample				

Maximum Drawdown (DTW_2) (ft) = 23.86

H_2O Removal Rate (GPM) = 0.44

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1309

Depth to Water at time of sampling (DTW_3): 21.06

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: H. Sheen

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(20.76)-(21.06)}{(20.76)-(23.86)} = \frac{-0.3}{-3.1}$$

$$= 90\ \%$$

80% Recharge = 21.38

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: VW- 2
	Project Name: ARCO 3037		Date: 9/1/05
	Project Number: 08BP.U3037.05 / 4142		Sample Time: 1451
	SECOR Rep: W Wong	Checked by: TK	Sample No: VW- 2

PURGING & SAMPLING EQUIPMENT / METHOD	WELL SPECIFICATIONS & MEASUREMENTS	
Water Level Meter Type & ID: Solinist # 3A	Borehole Diameter (in): 8 (10) 12	
Purging Equipment / Method: ___Vac Truck ___Submersible Pump X Bailer ___Other	Casing Diameter (in): 2 (4)	
pH Temp/Conductivity Meter Type / ID: 1	Depth to Water (DTW_1) (ft): 19.82	
Sampling Method: ___Teflon Bailer X Disposable Bailer ___Other:	Total Well Depth (DTB) (ft): 21.44 28 Obstruction AT	Water Column: 1.62
Decontamination Method: ___Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___Other:	Floating Product: —	Thickness (in): —
	Borehole Volume (gal): 2.43	1.5 Borehole Volumes (gal): 3.65

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1245	Started Purging					
1247	21.23	2.5	7.34	24.3	1092	brown, silty, low odor
1251	dry	4	7.33	24.9	1115	
1451	21.35	sample				

Maximum Drawdown (DTW_2) (ft) = 21.44

H_2O Removal Rate (GPM) = 0.67

___Fast Recharging Well

X Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1451

Depth to Water at time of sampling (DTW_3): 21.35

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: H. Obstructed

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(19.82) - (21.35)}{(19.82) - (21.44)} = \frac{-1.53}{-1.62} = 5.5\ \%$$

80% Recharge = 20.14

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: VW- 3
	Project Name: ARCO 3037		Date: 9-1-05
	Project Number: 08BP.U3037.05 / 4142		Sample Time: 1243
	SECOR Rep: J. Garcia	Checked by: WW	Sample No: VW- 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 X Bailer ___ Submersible Pump ___ Other	Casing Diameter (in): 2 (4)
pH Temp/Conductivity Meter Type / ID: 1A	Depth to Water (DTW_1) (ft): 17.48
Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 24.19 / Water Column: 6.71
Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Floating Product: / Thickness (in):
	Borehole Volume (gal): 10.06 / 1.5 Borehole Volumes (gal): 15.09

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1038	Started Purging					
1041	~~10.85~~ 23.65	10.5	8.22	24.6	17.71	brown, cloudy, odorless
1043	Dry	15.5	8.53	24.4	17.20	brown, cloudy, odorless
1243	~~Sample~~ 1748	Sample				

Maximum Drawdown (DTW_2) (ft) = 24.19

H_2O Removal Rate (GPM) = 3.1

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1243

Depth to Water at time of sampling (DTW_3): 17.48

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: H. 7P/18R (98%)

RECOVERY CALCULATIONS

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

$$\%\ of\ Recovery = 1 - \frac{(17.48) - (17.48)}{(17.48) - (24.19)} = \frac{0}{-6.71}$$

$$= 100\ \%$$

80% Recharge = 18.82

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG	Well No: VW- 4
	Project Name: ARCO 3037	Date: 9-1-05
	Project Number: 08BP.U3037.05 / 4142	Sample Time: 1352
	SECOR Rep: J. Garcia / Checked by: MW	Sample No: VW- 4

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: 1A	Depth to Water (DTW_1) (ft): 20.61	
Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:	Total Well Depth (DTB) (ft): 33.60	Water Column: 12.99
	Floating Product:	Thickness (in):
Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:	Borehole Volume (gal): 19.48	1.5 Borehole Volumes (gal): 29.22

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
(1139) 1145	Started Purging					
(1158) 1158	26.81	19.5	7.29	23.2	1389	clear, odorless
1205	28.83	29.5	7.32	23.3	1368	clear, odorless
1352	21.00	Sample				

Maximum Drawdown (DTW_2) (ft) = 28.83

H_2O Removal Rate (GPM) = 1.48

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1352

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: H. 15P/85R (97%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(20.61)-(21.00)}{(20.61)-(28.83)} = \frac{-.39}{-8.22}$$

$$= 95 \%$$

80% Recharge = 22.25

SECOR INTERNATIONAL INCORPORATED	WELL PURGING / SAMPLING LOG		Well No: VW- 5
	Project Name: ARCO 3037		Date: 9-1-05
	Project Number: 08BP.U3037.05 / 4142		Sample Time: 1401
	SECOR Rep: J. Garcia	Checked by: WW	Sample No: VW- 5

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: 1A	Depth to Water (DTW_1) (ft): 20.80	
Sampling Method: ___Teflon Bailer X Disposable Bailer ___Other:	Total Well Depth (DTB) (ft): 27.70	Water Column: 6.9
Decontamination Method: ___Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) Other:	Floating Product:	Thickness (in):
	Borehole Volume (gal): 10.35	1.5 Borehole Volumes (gal): 15.52

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1221	Started Purging					
1229	24.73	10.5	7.29	23.2	1304	clear, odorless
1236	26.31	16	7.30	23.2	1350	clear, odorless
1401	21.36	Sample				

Maximum Drawdown (DTW_2) (ft) = 26.31

H_2O Removal Rate (GPM) = 1.06

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1401

Depth to Water at time of sampling (DTW_3): 21.36

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: H. 17P/120R (88%)

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(20.80)-(21.36)}{(20.80)-(26.31)} = \frac{-.56}{-5.51} = \frac{\cancel{0.83}}{\cancel{84}} \text{ WW} \quad 90 \text{ WW} \quad \%$$

80% Recharge = 21.90

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name:	ARCO 3037
Project Number:	08BP.U3037.05 / 4142
SECOR Rep:	D. KRAUTTER
Checked by:	
Well No:	CITYWELL (MW-2)
Date:	9/1/05
Sample Time:	1357
Sample No:	CITYWELL (MW-2)

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 8

Purging Equipment / Method: ___Vac Truck ___Bailer X Submersible Pump ___Other

pH Temp/Conductivity Meter Type / ID: NA

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): 12.70 @ 0959

Total Well Depth (DTB) (ft): 27.70

Water Column: 15.00

Floating Product:

Thickness (in):

Borehole Volume (gal): 11.55

1.5 Borehole Volumes (gal): 17.32

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1006	Started Purging					
1130	DRY	~~12.5~~ 8	7.12	28.8	2490	TAN CLOUDY NO ODOR
1157	DRY	~~12.5~~ 12	7.16	28.9	2490	" "
1357	16.74	SAMP.				

Maximum Drawdown (DTW_2) (ft) = 27.70

H_2O Removal Rate (GPM) = 0.11

___Fast Recharging Well

X Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1357

Depth to Water at time of sampling (DTW_3): 16.74

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: H. 38P/120R (35X)

H. SLOW DRY @ 4 gal

RECOVERY CALCULATIONS

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

$$\% \text{ of Recovery} = 1 - \frac{(12.70) - (16.74)}{(12.70) - (27.70)} = \frac{-4.04}{-15.00}$$

$$= 73\%$$

80% Recharge = 15.70

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

September 15, 2005

STL LOT NUMBER: **E5I020405**
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 11 samples received under chain of custody by STL Los Angeles on September 1, 2005. These samples are associated with your ARCO #3037 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 _____73_____ pages.

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 except as noted on the following page.

Per the request from Secor personnel on September 2, 2005, Sulfate (E300.0) analysis was requested and Phosphate (E365.3) analysis was deleted for this project.

Per instruction from Secor personnel on September 2, 2005, sample Id for the equipment blank was changed to "EB-3037-20050901.

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

Sincerely,

Sabina Sudoko
Project Manager
CC: Project File

LOT NUMBER E5I020405

Nonconformance 05-13865

Affected Samples:
E5I020405 (4): CITY WELL CMW-2
E5I020405 (6): VW-2
E5I020405 (10): TB-3037-20050901

Affected Methods:
SW8260B, SW8015B

Details:
Sample –004 had three vials out of nine that had headspace greater than 6mm. The lab used vial #8 for the 8260B analysis and vial #4 for the GRO analysis. These vials did not have headspace upon receipt.

Sample –006 had one vial out of nine that had headspace greater than 6mm. The lab used vial #4 for the 8260B analysis and vial #3 for the GRO analysis. These vials did not have headspace upon receipt.

The lab supplied trip blank had two vials out of six that had headspace greater than 6mm.

Nonconformance 05-13926

Affected Samples:
E5I020405 (1): MW-1
E5I020405 (2): MW-2
E5I020405 (3): MW-4
E5I020405 (4): CITY WELL CMW-2
E5I020405 (6): VW-2
E5I020405 (7): VW-3
E5I020405 (8): VW-4
E5I020405 (9): VW-5

Affected Methods:
8015B

Details:
Please note that there will not be a MS/MD associated with these samples. A different BP sample that was assigned for the MS/MSD had exceeded the calibration range. Therefore, the LCS controls this batch (5255350).

Sudoko, Sabina

From: Brad Eisenberg [beisenberg@secor.com]
Sent: Tuesday, September 06, 2005 4:03 PM
To: Sudoko, Sabina
Subject: RE: Information for E5I020405

OK

Brad
-----Original Message-----
From: ssudoko@stl-inc.com [mailto:ssudoko@stl-inc.com]
Sent: Tuesday, September 06, 2005 3:10 PM
To: Brad Eisenberg; Brian Auchard; Angie Douglas; Amie Booth
Subject: Information for E5I020405

* *

Lot ID: E5I020405
Project Number: 08BP.03037.06/0427
Project Name/Site: ARCO #3037

Acknowledgment of samples received for ARCO 3037

Note: Sample -004 (CITY WEL CMW-2) has 3 vials that have headspace > 6mm.
- Sample -006 (VW-2) has 1 vial that has headspace > 6mm.
- The lab supplied trip blk has 2 vials that have headspace > 6mm.

Per the request from the client, Sulfate was requested for the analysis and phosphate (E365.3) has been deleted.

Pls check the sample confirmation sheet.

thank you.

Sabina Sudoko
(714)258-8610
ssudoko@stl-inc.com

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ARCO SITE #3037

ESI020405 Page 1 of 2

Chain of Custody Record

Project Name: ARCO 3037 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.:	3037	Consultant/Contractor:	SECOR
Address:	1721 Grand Ave.	BP/AR Facility Address:	915 Camino del Rio South	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.:	T0607300106	Consultant/Contractor Project No.:	08BP.03037.06/0427
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BP4-0001	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	NaOH/Zn Acetate	EPA 8015M GRO C6-C12	EPA 8260B BTEX, Oxys, MTBE, EtOH	300.1/300 Alk, Nitrate, Phosphate	6010B Ferrous Iron	6010B Total Iron	350.3 Ammonia as Nitrogen	376.2 Sulfide	RSK (Methane)			Sample Point Lat/Long and Comments
1	MW-1	1313	9/1/05		X		14	14	2	1	1	9		1	X	X	X	X	X	X	X	X			
2	MW-2	1330						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
3	MW-4	1210						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
4	City Well (MW-2)	1357						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
5	VW-1	1309						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
6	VW-2	1451					5	6				5 6			X	X									
7	VW-3	1243						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
8	VW-4	1352						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
9	VW-5	1401						14	2	1	1	9		1	X	X	X	X	X	X	X	X			
10	TB-3037-20050901	0730						6				6													HOLD

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Wilson Work		9/1/05	4:00		9/1/05	4:00 PM
Sampler's Company: Secor		9/1/05	6:30 PM		9-1-05	1830
Shipment Date:						
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 ___ °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

ESI020405

ARCO SITE #3037

ESI020405 Page 2 of 2

Chain of Custody Record

Project Name: ARCO 3037 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.:	3037	Consultant/Contractor:	SECOR
Address:	1721 Grand Ave.	BP/AR Facility Address:	915 Camino del Rio South	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.:	T0607300106	Consultant/Contractor Project No.:	08BP.03037.06/0427
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BP4-0001	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	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 Comments
1	EB-3037 0901	1430	9/1/05		X			6				X		X	X	HOLD
2														WW		
3																
4																
5																
6																
7																
8																
9																
10																

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Wilson Wong		9/1/05	9:00 PM		9/1/05	9:00 PM
Sampler's Company: Secor		9/1/05	6:00 PM		9/1/05	1830
Shipment Date:						
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 ____ °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

ESI020405

Chain of Custody Record

Project Name: ARCO 3037 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.:	3037	Consultant/Contractor:	SECOR
Address:	1721 Grand Ave	BP/AR Facility Address:	915 Camino del Rio South	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.:	T0607300106	Consultant/Contractor Project No.:	08BP 03037.06/0427
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BP4-0001	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	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	Preservative: NaOH/Zn Acetate	Requested Analysis: EPA 8015M GRO C6-C12	Requested Analysis: EPA 8260B BTEX, Oxys, MTBE, EtOH	Requested Analysis: 375.1/310.1 Alk, Nitrate, Ammonia, SO4, Sulfate	Requested Analysis: 6010B Ferrous Iron	Requested Analysis: 6010B Total Iron	Requested Analysis: 350.3 Ammonia as Nitrogen	Requested Analysis: 376.2 Sulfide	Requested Analysis: 8015B RSK (Methane)	Sample Point Lat/Long and Comments
1	MW-1	1313	9/1/05		X		16	14	2	1	1	9		1	X	X	X	X	X	X	X	X	
2	MW-2	1330						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
3	MW-4	1210						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
4	City Well (MW-2)	1357						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
5	VW-1	1309						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
6	VW-2	1451					5	6			5	6			X	X							
7	VW-3	1243						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
8	VW-4	1352						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
9	VW-5	1401						14	2	1	1	9		1	X	X	X	X	X	X	X	X	
10	TB-3037-20050901	0730						6				6											HCL-D

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Wilson Wong		9/1/05	4:00pM		9/1/05	4:10pM
Sampler's Company: SECOR						
Shipment Date:						
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 ___ °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 3037 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.:	3037	Consultant/Contractor:	SECOR
Address:	1721 Grand Ave.	BP/AR Facility Address:	915 Camino del Rio South	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.:	106073001 06	Consultant/Contractor Project No.:	08BP 03037.06/0427
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BP4-0001	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	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
	EB-3037-20050901																							
1	~~EB-3037~~ 0901 (GW)	1430	9/1/05		X			6				X			X	X								HOLD
2															WW									
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Sampler's Name: Wilson Wong	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date / Time
Sampler's Company: Secor		9/1/05	4:00 PM		9/1/05 4:00 PM
Shipment Date:					
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 °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

STL LOS ANGELES - PROJECT RECEIPT CHECKLIST Date: 9-1-05

LIMS Lot #: E5I020405 Quote #: 102428

Client Name: SECOR Project: #3037

Received by: RS Date/Time Received: 9-1-05 1830

Delivered by : ☐ Client ☒ STL ☐ DHL ☐ Fed Ex ☐ UPS ☐ Other _____

********** **Initial / Date**

Custody Seal Status Cooler: ☐Intact ☐Broken ☑None ..... _____

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 0.4 °C IR passed daily verification ☑ Yes ☐No ..... _____

Temperature - **BLANK** 19.3 °C +0.4 CF = 18.9 °C (2) 7.2-0.4=6.8 ..... _____

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 2 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 # _____ ..... _____ SM

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☐ Yes ☒ N/A.... _____ SM

Labeled by: SAL M. Labeling checked ..... _____

****

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 9/6/05 SM

Lab ID	Container(s) #	Headspace	Lab ID	Container(s) #	Headspace
004	1,2,3	☐ > 6mm			☐ > 6mm
006	1	☐ > 6mm			☐ > 6mm
010	#7 & 8	☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm
		☐ > 6mm			☐ > 6mm

LIMS Lot # E5I020405

PROJECT RECEIPT CHECKLIST Cont'd

Fraction	1	2	3	4	5	6	7	8	9	10	11			
VOAH/ *	6	6	6	6	6	5	6	6	6	6	6			
RSK	3	3	3	3	3		3	3	3					
PB	1	1	1	1	1		1	1	1					
PBn	1	1	1	1	1		1	1	1					
PBzna	1	1	1	1	1		1	1	1					
AGB	1	1	1	1	1		1	1	1					
AGBS	1	1	1	1	1		1	1	1					

* 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 9/6/05 SM

- **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
  - ☐ Broken
  - ☐ Extra
  - ☐ Without Labels
  - ☐ Other:
  - ☒ Voa Vials with Bubbles > 6mm SM.
- **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: 9-1-05

PM Review/Date: 9/6 SV

SECOR International Inc

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: E5I020405-001 **Work Order #...:** HJXFE1AA **Matrix.....:** W
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250197
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250335 **Analysis Time..:** 01:52
Dilution Factor: 1
Analyst ID.....: 000062 **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	101	(75 - 120)
1,2-Dichloroethane-d4	102	(65 - 130)
Toluene-d8	100	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...: E5I020405-001 **Work Order #...:** HJXFE1AF **Matrix.....:** W
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 12:50
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	ND	0.0010	mg/L

SECOR International Inc

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...: E5I020405-001 **Work Order #...:** HJXFE1AC **Matrix.....:** W
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 10:57
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)	82	(70 - 130)

SECOR International Inc

Client Sample ID: MW-1

TOTAL Metals

Lot-Sample #...: E5I020405-001 **Matrix.....:** W
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**5350**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/09/05**	**HJXFE1AH**
		Dilution Factor: 1		Analysis Time..: 16:19	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: E5I020405-001 **Work Order #...:** HJXFE **Matrix.....:** W
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**282000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 09:23	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 09:23	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:56	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 09:23	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**3080**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 08:34	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:13	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**223000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 12:01	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**282000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 09:23	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:42	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...: E5I020405-002 **Work Order #...:** HJXFP1AA **Matrix.....:** W
Date Sampled...: 09/01/05 13:30 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250197
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250335 **Analysis Time..:** 02:13
Dilution Factor: 1
Analyst ID.....: 000062 **Instrument ID..:** MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	**55**	**0.50**	**ug/L**
Ethanol	ND IO	500	ug/L
Ethylbenzene	**53**	**0.50**	**ug/L**
tert-Butyl alcohol	ND	25	ug/L
Toluene	**29**	**0.50**	**ug/L**
o-Xylene	**47**	**1.0**	**ug/L**
Xylenes (total)	**160**	**1.0**	**ug/L**
m-Xylene & p-Xylene	**120**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	**4.4**	**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	100	(75 - 120)
1,2-Dichloroethane-d4	99	(65 - 130)
Toluene-d8	96	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: E5I020405-002 **Work Order #...:** HJXFP1AF **Matrix.....:** W
Date Sampled...: 09/01/05 13:30 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 13:06
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**0.25**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: E5I020405-002 **Work Order #...:** HJXFP1AC **Matrix.....:** W
Date Sampled...: 09/01/05 13:30 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 11:23
Dilution Factor: 1
Analyst ID.....: 001464 **Instrument ID..:** G15
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	**560**	**100**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	98	(70 - 130)

SECOR International Inc

Client Sample ID: MW-2

TOTAL Metals

Lot-Sample #...: E5I020405-002 **Matrix.....:** W
Date Sampled...: 09/01/05 13:30 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**13700**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/09/05**	**HJXFP1AH**
		Dilution Factor: 1		Analysis Time..: 16:26	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: E5I020405-002 **Work Order #...:** HJXFP **Matrix.....:** W
Date Sampled...: 09/01/05 13:30 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**357000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 09:35	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 09:35	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:54	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 09:35	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**2010**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 08:49	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:21	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**203000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 12:16	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**357000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 09:35	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:43	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: MW-4

GC/MS Volatiles

Lot-Sample #...: E5I020405-003 **Work Order #...:** HJXFQ1AA **Matrix.....:** W
Date Sampled...: 09/01/05 12:10 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250197
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250335 **Analysis Time..:** 02:35
Dilution Factor: 1
Analyst ID.....: 000062 **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	93	(75 - 120)
1,2-Dichloroethane-d4	108	(65 - 130)
Toluene-d8	96	(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 #...: E5I020405-003 **Work Order #...:** HJXFQ1AF **Matrix.....:** W
Date Sampled...: 09/01/05 12:10 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 13:25
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	ND	0.0010	mg/L

SECOR International Inc

Client Sample ID: MW-4

GC Volatiles

Lot-Sample #...: E5I020405-003 **Work Order #...:** HJXFQ1AC **Matrix.....:** W
Date Sampled...: 09/01/05 12:10 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 11:50
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)	80	(70 - 130)

SECOR International Inc

Client Sample ID: MW-4

TOTAL Metals

Lot-Sample #...: E5I020405-003 **Matrix.....:** W
Date Sampled...: 09/01/05 12:10 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**5120**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXFQ1AH**
		Dilution Factor: 1		Analysis Time..: 17:01	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: MW-4

General Chemistry

Lot-Sample #...: E5I020405-003 **Work Order #...:** HJXFQ **Matrix.....:** W
Date Sampled...: 09/01/05 12:10 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**334000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 09:46	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 09:46	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:58	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 09:46	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**5120**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 09:03	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:26	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**231000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 12:31	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**334000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 09:46	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:44	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: CITY WELL CMW-2

GC/MS Volatiles

Lot-Sample #...: E5I020405-004 **Work Order #...:** HJXFR1AA **Matrix.....:** W
Date Sampled...: 09/01/05 13:57 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 15:26
Dilution Factor: 1
Analyst ID.....: 000038 **Instrument ID..:** MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	**3.1**	**0.50**	**ug/L**
Ethanol	ND IO	500	ug/L
Ethylbenzene	**1.8**	**0.50**	**ug/L**
tert-Butyl alcohol	ND	25	ug/L
Toluene	**10**	**0.50**	**ug/L**
o-Xylene	**5.5**	**1.0**	**ug/L**
Xylenes (total)	**16**	**1.0**	**ug/L**
m-Xylene & p-Xylene	**10**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	**3.3**	**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	87	(75 - 120)
1,2-Dichloroethane-d4	107	(65 - 130)
Toluene-d8	87	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: CITY WELL CMW-2

GC Volatiles

Lot-Sample #...: E5I020405-004 **Work Order #...:** HJXFR1AF **Matrix.....:** W
Date Sampled...: 09/01/05 13:57 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 14:12
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**0.018**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: CITY WELL CMW-2

GC Volatiles

Lot-Sample #...: E5I020405-004 **Work Order #...:** HJXFR1AC **Matrix.....:** W
Date Sampled...: 09/01/05 13:57 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 12:17
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)	83	(70 - 130)

SECOR International Inc

Client Sample ID: CITY WELL CMW-2

TOTAL Metals

Lot-Sample #...: E5I020405-004 **Matrix.....:** W
Date Sampled...: 09/01/05 13:57 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**14900**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXFR1AH**
		Dilution Factor: 1		Analysis Time..: 17:09	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: CITY WELL CMW-2

General Chemistry

Lot-Sample #...: E5I020405-004 **Work Order #...:** HJXFR **Matrix.....:** W
Date Sampled...: 09/01/05 13:57 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**519000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 10:00	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 10:00	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:48	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 10:00	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**7900**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 09:18	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:32	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**334000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 12:45	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**519000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 10:00	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:45	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: VW-1

GC/MS Volatiles

Lot-Sample #...: E5I020405-005 **Work Order #...:** HJXFW1AA **Matrix.....:** W
Date Sampled...: 09/01/05 13:09 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 17:40
Dilution Factor: 16.67
Analyst ID.....: 000038 **Instrument ID..:** MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	33	ug/L
Benzene	**1300**	**8.3**	**ug/L**
Ethanol	ND IO	8300	ug/L
Ethylbenzene	**510**	**8.3**	**ug/L**
tert-Butyl alcohol	**1600**	**420**	**ug/L**
Toluene	**1200**	**8.3**	**ug/L**
o-Xylene	**620**	**17**	**ug/L**
Xylenes (total)	**1900**	**17**	**ug/L**
m-Xylene & p-Xylene	**1200**	**17**	**ug/L**
Methyl tert-butyl ether (MTBE)	**39**	**17**	**ug/L**
Ethyl-t-Butyl Ether (ETBE)	ND	33	ug/L
Tert-amyl methyl ether (TAME)	ND	33	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
1,2-Dichloroethane-d4	93	(65 - 130)
Toluene-d8	84	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: VW-1

GC Volatiles

Lot-Sample #...: E5I020405-005 **Work Order #...:** HJXFW1AF **Matrix.....:** W
Date Sampled...: 09/01/05 13:09 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 14:28
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**1.5**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: VW-1

GC Volatiles

Lot-Sample #...: E5I020405-005 **Work Order #...:** HJXFW1AC **Matrix.....:** W
Date Sampled...: 09/01/05 13:09 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5256246
Prep Date.....: 09/12/05 **Analysis Date..:** 09/12/05
Prep Batch #...: 5256367 **Analysis Time..:** 16:07
Dilution Factor: 5
Analyst ID.....: 001464 **Instrument ID..:** G15
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	**5600**	**500**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	90	(70 - 130)

SECOR International Inc

Client Sample ID: VW-1

TOTAL Metals

Lot-Sample #...: E5I020405-005 **Matrix.....:** W
Date Sampled...: 09/01/05 13:09 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**17200**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXFW1AH**
		Dilution Factor: 1		Analysis Time..: 17:16	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: VW-1

General Chemistry

Lot-Sample #...: E5I020405-005 **Work Order #...:** HJXFW **Matrix.....:** W
Date Sampled...: 09/01/05 13:09 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**769000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 10:17	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 10:17	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:46	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 10:17	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**1960**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 09:33	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	**160**	**100**	**ug/L**	**MCAWW 350.3**	**09/06/05**	**5249057**
		Dilution Factor: 1		Analysis Time..: 11:40	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**165000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 13:00	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**769000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 10:17	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:46	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: VW-2

GC/MS Volatiles

Lot-Sample #...: E5I020405-006 **Work Order #...:** HJXF01AA **Matrix.....:** W
Date Sampled...: 09/01/05 14:51 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 15:47
Dilution Factor: 1
Analyst ID.....: 000038 **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)	**1.6**	**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	91	(75 - 120)
1,2-Dichloroethane-d4	98	(65 - 130)
Toluene-d8	96	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: VW-2

GC Volatiles

Lot-Sample #...: E5I020405-006 **Work Order #...:** HJXF01AC **Matrix.....:** W
Date Sampled...: 09/01/05 14:51 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 14:04
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)	78	(70 - 130)

SECOR International Inc

Client Sample ID: VW-3

GC/MS Volatiles

Lot-Sample #...: E5I020405-007 **Work Order #...:** HJXF21AA **Matrix.....:** W
Date Sampled...: 09/01/05 12:43 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 16:09
Dilution Factor: 1
Analyst ID.....: 000038 **Instrument ID..:** MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	2.0	ug/L
Benzene	**47**	**0.50**	**ug/L**
Ethanol	ND IO	500	ug/L
Ethylbenzene	**11**	**0.50**	**ug/L**
tert-Butyl alcohol	**84**	**25**	**ug/L**
Toluene	**13**	**0.50**	**ug/L**
o-Xylene	**12**	**1.0**	**ug/L**
Xylenes (total)	**36**	**1.0**	**ug/L**
m-Xylene & p-Xylene	**24**	**1.0**	**ug/L**
Methyl tert-butyl ether (MTBE)	**28**	**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	104	(65 - 130)
Toluene-d8	90	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: VW-3

GC Volatiles

Lot-Sample #...: E5I020405-007 **Work Order #...:** HJXF21AF **Matrix.....:** W
Date Sampled...: 09/01/05 12:43 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 14:44
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**0.86**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: VW-3

GC Volatiles

Lot-Sample #...: E5I020405-007 **Work Order #...:** HJXF21AC **Matrix.....:** W
Date Sampled...: 09/01/05 12:43 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 14:30
Dilution Factor: 1
Analyst ID.....: 001464 **Instrument ID..:** G15
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	**160**	**100**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	83	(70 - 130)

SECOR International Inc

Client Sample ID: VW-3

TOTAL Metals

Lot-Sample #...: E5I020405-007 **Matrix.....:** W
Date Sampled...: 09/01/05 12:43 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**17100**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXF21AH**
		Dilution Factor: 1		Analysis Time..: 17:24	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: VW-3

General Chemistry

Lot-Sample #...: E5I020405-007 **Work Order #...:** HJXF2 **Matrix.....:** W
Date Sampled...: 09/01/05 12:43 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**683000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 10:32	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 10:32	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:50	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 10:32	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**254**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 09:48	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:44	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**118000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 13:15	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**683000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 10:32	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:47	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: VW-4

GC/MS Volatiles

Lot-Sample #...: E5I020405-008 **Work Order #...:** HJXF51AA **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 18:23
Dilution Factor: 2
Analyst ID.....: 000038 **Instrument ID..:** MSN
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diisopropyl Ether (DIPE)	ND	4.0	ug/L
Benzene	**17**	**1.0**	**ug/L**
Ethanol	ND IO	1000	ug/L
Ethylbenzene	**35**	**1.0**	**ug/L**
tert-Butyl alcohol	**1700**	**50**	**ug/L**
Toluene	**49**	**1.0**	**ug/L**
o-Xylene	**58**	**2.0**	**ug/L**
Xylenes (total)	**150**	**2.0**	**ug/L**
m-Xylene & p-Xylene	**88**	**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	98	(75 - 120)
1,2-Dichloroethane-d4	100	(65 - 130)
Toluene-d8	90	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: VW-4

GC Volatiles

Lot-Sample #...: E5I020405-008 **Work Order #...:** HJXF51AF **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 14:59
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**0.19**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: VW-4

GC Volatiles

Lot-Sample #...: E5I020405-008 **Work Order #...:** HJXF51AC **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 14:57
Dilution Factor: 1
Analyst ID.....: 001464 **Instrument ID..:** G15
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
GRO (C6 - C12)	**500**	**100**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	92	(70 - 130)

SECOR International Inc

Client Sample ID: VW-4

TOTAL Metals

Lot-Sample #...: E5I020405-008 **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**631**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXF51AH**
		Dilution Factor: 1		Analysis Time..: 17:31	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: VW-4

General Chemistry

Lot-Sample #...: E5I020405-008 **Work Order #...:** HJXF5 **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**806000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 10:49	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 10:49	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:44	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 10:49	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	ND	100	ug/L	MCAWW 300.0A	09/02/05	5246052
		Dilution Factor: 1		Analysis Time..: 10:03	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:54	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**124000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 13:30	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**806000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 10:49	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:48	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

SECOR International Inc

Client Sample ID: VW-5

GC/MS Volatiles

Lot-Sample #...: E5I020405-009 **Work Order #...:** HJXF61AA **Matrix.....:** W
Date Sampled...: 09/01/05 14:01 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 18:45
Dilution Factor: 1
Analyst ID.....: 000038 **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	**0.64**	**0.50**	**ug/L**
tert-Butyl alcohol	**30**	**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)	**90**	**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	85	(75 - 120)
1,2-Dichloroethane-d4	99	(65 - 130)
Toluene-d8	90	(80 - 130)

NOTE(S):

IO Contract limits originate from BP-GCLN Technical Requirements

SECOR International Inc

Client Sample ID: VW-5

GC Volatiles

Lot-Sample #...: E5I020405-009 **Work Order #...:** HJXF61AF **Matrix.....:** W
Date Sampled...: 09/01/05 14:01 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 15:15
Dilution Factor: 1
Analyst ID.....: 101605 **Instrument ID..:** GC3
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	**0.0083**	**0.0010**	**mg/L**

SECOR International Inc

Client Sample ID: VW-5

GC Volatiles

Lot-Sample #...: E5I020405-009 **Work Order #...:** HJXF61AC **Matrix.....:** W
Date Sampled...: 09/01/05 14:01 **Date Received..:** 09/01/05 18:30 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 15:24
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)	81	(70 - 130)

SECOR International Inc

Client Sample ID: VW-5

TOTAL Metals

Lot-Sample #...: E5I020405-009 **Matrix.....:** W
Date Sampled...: 09/01/05 14:01 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5250160						
Iron	**7030**	**100**	**ug/L**	**SW846 6010B**	**09/07-09/10/05**	**HJXF61AH**
		Dilution Factor: 1		Analysis Time..: 17:39	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5250104		

SECOR International Inc

Client Sample ID: VW-5

General Chemistry

Lot-Sample #...: E5I020405-009 **Work Order #...:** HJXF6 **Matrix.....:** W
Date Sampled...: 09/01/05 14:01 **Date Received..:** 09/01/05 18:30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	**503000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246047**
		Dilution Factor: 1		Analysis Time..: 11:06	Analyst ID.....: 0000221	
		Instrument ID..: W04		MS Run #.....:		
Carbonate Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1		Analysis Time..: 11:06	Analyst ID.....: 000022	
		Instrument ID..: W04		MS Run #.....:		
Ferrous Iron	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1		Analysis Time..: 08:52	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5249256		
Hydroxide Alkalinity	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1		Analysis Time..: 11:06	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Nitrate as N	**3260**	**100**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246052**
		Dilution Factor: 1		Analysis Time..: 10:17	Analyst ID.....: 000022	
		Instrument ID..: W01		MS Run #.....: 5252172		
Nitrogen, as Ammonia	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1		Analysis Time..: 11:59	Analyst ID.....: 0000222	
		Instrument ID..: W04		MS Run #.....: 5251344		
Sulfate	**240000**	**10000**	**ug/L**	**MCAWW 300.0A**	**09/02/05**	**5246053**
		Dilution Factor: 10		Analysis Time..: 13:45	Analyst ID.....: 0000224	
		Instrument ID..: W01		MS Run #.....: 5252176		
Total Alkalinity	**503000**	**4000**	**ug/L**	**MCAWW 310.1**	**09/03/05**	**5246044**
		Dilution Factor: 1		Analysis Time..: 11:06	Analyst ID.....: 0000226	
		Instrument ID..: W04		MS Run #.....:		
Total Sulfide	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1		Analysis Time..: 10:49	Analyst ID.....: 999995	
		Instrument ID..: W17		MS Run #.....: 5251291		

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HJ3561AA **Matrix.....:** WATER
MB Lot-Sample #: E5I070000-335

Prep Date.....: 09/06/05 **Analysis Time..:** 21:08
Analysis Date..: 09/06/05 **Prep Batch #...:** 5250335 **Instrument ID..:** MSN
Dilution Factor: 1

Analyst ID.....: 000062

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	92	(75 - 120)
1,2-Dichloroethane-d4	98	(65 - 130)
Toluene-d8	89	(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 #...: E5I020405 **Work Order #...:** HJ46F1AA **Matrix.....:** WATER
MB Lot-Sample #: E5I070000-540

Prep Date.....: 09/07/05 **Analysis Time..:** 14:43
Analysis Date..: 09/07/05 **Prep Batch #...:** 5250540 **Instrument ID..:** MSN
Dilution Factor: 1

Analyst ID.....: 000038

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	98	(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 Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HKG601AA **Matrix.....:** WATER
MB Lot-Sample #: M5I140000-165

Prep Date.....: 09/13/05 **Analysis Time..:** 09:23
Analysis Date..: 09/13/05 **Prep Batch #...:** 5257165 **Instrument ID..:** GC3
Dilution Factor: 1

Analyst ID.....: 101605

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	0.0010	mg/L	RSK SOP-175

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HKDM31AA **Matrix.....:** WATER
MB Lot-Sample #: E5I120000-350

Prep Date.....: 09/09/05 **Analysis Time..:** 10:30
Analysis Date..: 09/09/05 **Prep Batch #...:** 5255350 **Instrument ID..:** G15
Dilution Factor: 1

Analyst ID.....: 001464

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)	79	(70 - 130)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HKFGP1AA **Matrix.....:** WATER
MB Lot-Sample #: E5I130000-367

Prep Date.....: 09/12/05 **Analysis Time..:** 15:09
Analysis Date..: 09/12/05 **Prep Batch #...:** 5256367 **Instrument ID..:** G15
Dilution Factor: 1

Analyst ID.....: 001464

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)	75	(70 - 130)

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: E5I020405 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: E5I070000-160 **Prep Batch #...:** 5250160						
Iron	ND	100	ug/L	SW846 6010B	09/07-09/10/05	HJ24L1CD

Dilution Factor: 1

Analysis Time..: 15:25 Analyst ID.....: 021088 Instrument ID..: M01

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: E5I020405 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: HJ7HQ1AA		MB Lot-Sample #:	E5I030000-047	
	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246047
		Dilution Factor: 1				
		Analysis Time..: 09:12		Analyst ID.....: 000022	Instrument ID..: W04	
Carbonate Alkalinity		Work Order #: HJ7HN1AA		MB Lot-Sample #:	E5I030000-046	
	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246046
		Dilution Factor: 1				
		Analysis Time..: 09:12		Analyst ID.....: 000022	Instrument ID..: W04	
Ferrous Iron		Work Order #: HJ1PX1AA		MB Lot-Sample #:	E5I030000-050	
	ND	200	ug/L	SM18 3500-FE D	09/02/05	5246050
		Dilution Factor: 1				
		Analysis Time..: 08:42		Analyst ID.....: 999995	Instrument ID..: W17	
Hydroxide Alkalinity		Work Order #: HJ7HM1AA		MB Lot-Sample #:	E5I030000-045	
	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246045
		Dilution Factor: 1				
		Analysis Time..: 09:12		Analyst ID.....: 000022	Instrument ID..: W04	
Nitrate as N		Work Order #: HJXPM1AA		MB Lot-Sample #:	E5I030000-052	
	ND	100	ug/L	MCAWW 300.0A	09/02/05	5246052
		Dilution Factor: 1				
		Analysis Time..: 08:15		Analyst ID.....: 000022	Instrument ID..: W01	
Nitrogen, as Ammonia		Work Order #: HJ0PD1AA		MB Lot-Sample #:	E5I060000-057	
	ND	100	ug/L	MCAWW 350.3	09/06/05	5249057
		Dilution Factor: 1				
		Analysis Time..: 09:34		Analyst ID.....: 000022	Instrument ID..: W04	
Sulfate		Work Order #: HJXPN1AA		MB Lot-Sample #:	E5I030000-053	
	ND	1000	ug/L	MCAWW 300.0A	09/02/05	5246053
		Dilution Factor: 1				
		Analysis Time..: 08:15		Analyst ID.....: 000022	Instrument ID..: W01	
Total Alkalinity		Work Order #: HJXQ41AA		MB Lot-Sample #:	E5I030000-044	
	ND	4000	ug/L	MCAWW 310.1	09/03/05	5246044
		Dilution Factor: 1				
		Analysis Time..: 09:12		Analyst ID.....: 000022	Instrument ID..: W04	
Total Sulfide		Work Order #: HJ6V91AA		MB Lot-Sample #:	E5I080000-155	
	ND	100	ug/L	MCAWW 376.2	09/08/05	5251155
		Dilution Factor: 1				
		Analysis Time..: 10:41		Analyst ID.....: 999995	Instrument ID..: W17	

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 #...: E5I020405 **Work Order #...:** HJ3561AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I070000-335
Prep Date.....: 09/06/05 **Analysis Date..:** 09/06/05
Prep Batch #...: 5250335 **Analysis Time..:** 20:46
Dilution Factor: 1 **Instrument ID..:** MSN
Analyst ID.....: 000062

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**10.3**	**ug/L**	**103**	**SW846 8260B**
tert-Butyl alcohol	**50.0**	**51.9**	**ug/L**	**104**	**SW846 8260B**
Ethanol	**2000**	**1820 IO**	**ug/L**	**91**	**SW846 8260B**
Tert-amyl methyl ether (T	**10.0**	**9.60**	**ug/L**	**96**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**10.0**	**9.45**	**ug/L**	**94**	**SW846 8260B**
Ethylbenzene	**10.0**	**9.99**	**ug/L**	**100**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**10.0**	**9.61**	**ug/L**	**96**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**10.0**	**9.72**	**ug/L**	**97**	**SW846 8260B**
Toluene	**10.0**	**9.21**	**ug/L**	**92**	**SW846 8260B**
m-Xylene & p-Xylene	**20.0**	**19.1**	**ug/L**	**96**	**SW846 8260B**
o-Xylene	**10.0**	**9.11**	**ug/L**	**91**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
1,2-Dichloroethane-d4	103	(65 - 130)
Toluene-d8	94	(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 #...: E5I020405 **Work Order #...:** HJ46F1AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I070000-540
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 13:56
Dilution Factor: 1 **Instrument ID..:** MSN
Analyst ID.....: 000038

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.09**	**ug/L**	**91**	**SW846 8260B**
tert-Butyl alcohol	**50.0**	**49.0**	**ug/L**	**98**	**SW846 8260B**
Ethanol	**2000**	**1830 IO**	**ug/L**	**92**	**SW846 8260B**
Tert-amyl methyl ether (T	**10.0**	**8.96**	**ug/L**	**90**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**10.0**	**9.56**	**ug/L**	**96**	**SW846 8260B**
Ethylbenzene	**10.0**	**8.93**	**ug/L**	**89**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**10.0**	**9.45**	**ug/L**	**94**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**10.0**	**9.79**	**ug/L**	**98**	**SW846 8260B**
Toluene	**10.0**	**8.54**	**ug/L**	**85**	**SW846 8260B**
m-Xylene & p-Xylene	**20.0**	**16.6**	**ug/L**	**83**	**SW846 8260B**
o-Xylene	**10.0**	**8.42**	**ug/L**	**84**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	89	(75 - 120)
1,2-Dichloroethane-d4	97	(65 - 130)
Toluene-d8	84	(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 #...: E5I020405 **Work Order #...:** HKG601AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: M5I140000-165 HKG601AD-LCSD
Prep Date.....: 09/13/05 **Analysis Date..:** 09/13/05
Prep Batch #...: 5257165 **Analysis Time..:** 08:40
Dilution Factor: 1 **Instrument ID..:** GC3
Analyst ID.....: 101605

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Methane	**0.327**	**0.347**	**mg/L**	**106**		**RSK SOP-175**
	0.327	**0.362**	**mg/L**	**111**	**4.3**	**RSK SOP-175**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HKDM31AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I120000-350
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 10:03
Dilution Factor: 1 **Instrument ID..:** G15
Analyst ID.....: 001464

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
GRO (C6 - C12)	**1000**	**917 LW**	**ug/L**	**92**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	115	(70 - 130)

NOTE(S):

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

Bold print denotes control parameters

LW Quantitated against gasoline.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HKFGP1AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I130000-367
Prep Date.....: 09/12/05 **Analysis Date..:** 09/12/05
Prep Batch #...: 5256367 **Analysis Time..:** 15:36
Dilution Factor: 1 **Instrument ID..:** G15
Analyst ID.....: 001464

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
GRO (C6 - C12)	**1000**	**920 LW**	**ug/L**	**92**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	113	(70 - 130)

NOTE(S):

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

Bold print denotes control parameters

LW Quantitated against gasoline.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E5I020405 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E5I070000-160 **Prep Batch #...:** 5250160							
Iron	1000	1090	ug/L	109	SW846 6010B	09/07-09/09/05	HJ24L1CE

Dilution Factor: 1 Analysis Time..: 15:30 Analyst ID.....: 021088

Instrument ID..: M01

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: E5I020405 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		WO#:HJXQ41AC-LCS/HJXQ41AD-LCSD				LCS Lot-Sample#: E5I030000-044		
	800000	809000	ug/L	101		MCAWW 310.1	09/03/05	5246044
	800000	805000	ug/L	101	0.49	MCAWW 310.1	09/03/05	5246044

Dilution Factor: 1 Analysis Time..: 08:48 Analyst ID.....: 000022

Instrument ID..: W04

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E5I020405 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Ferrous Iron			Work Order #: HJ1PX1AC		LCS Lot-Sample#:	E5I030000-050	
	2000	2030	ug/L	102	SM18 3500-FE D	09/02/05	5246050
			Dilution Factor: 1		Analysis Time..: 08:40	Analyst ID.....: 999995	
			Instrument ID..: W17				
Nitrate as N			Work Order #: HJXPM1AC		LCS Lot-Sample#:	E5I030000-052	
	5000	5010	ug/L	100	MCAWW 300.0A	09/02/05	5246052
			Dilution Factor: 1		Analysis Time..: 08:00	Analyst ID.....: 000022	
			Instrument ID..: W01				
Nitrogen, as Ammonia			Work Order #: HJ0PD1AC		LCS Lot-Sample#:	E5I060000-057	
	5000	5080	ug/L	102	MCAWW 350.3	09/06/05	5249057
			Dilution Factor: 1		Analysis Time..: 09:22	Analyst ID.....: 000022	
			Instrument ID..: W04				
Sulfate			Work Order #: HJXPN1AC		LCS Lot-Sample#:	E5I030000-053	
	25000	25100	ug/L	100	MCAWW 300.0A	09/02/05	5246053
			Dilution Factor: 1		Analysis Time..: 08:00	Analyst ID.....: 000022	
			Instrument ID..: W01				
Total Sulfide			Work Order #: HJ6V91AC		LCS Lot-Sample#:	E5I080000-155	
	500	531	ug/L	106	MCAWW 376.2	09/08/05	5251155
			Dilution Factor: 1		Analysis Time..: 10:40	Analyst ID.....: 999995	
			Instrument ID..: W17				

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HJXE71AD-MS **Matrix.....:** WATER
MS Lot-Sample #: E5I020402-004 HJXE71AE-MSD
Date Sampled...: 08/29/05 15:05 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250197
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250335 **Analysis Time..:** 04:46
Dilution Factor: 62.5 **Analyst ID.....:** 000062 **Instrument ID..:** MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**560**	**625**	**1150**	**ug/L**	**94**		**SW846 8260B**
	560	**625**	**1180**	**ug/L**	**98**	**2.3**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**3120**	**2860**	**ug/L**	**91**		**SW846 8260B**
	ND	**3120**	**3090**	**ug/L**	**99**	**7.8**	**SW846 8260B**
Ethanol	**ND**	**125000**	**114000**	**ug/L**	**91 IO**		**SW846 8260B**
	ND	**125000**	**116000**	**ug/L**	**93 IO**	**1.6**	**SW846 8260B**
Tert-amyl methyl ether (T	**ND**	**625**	**582**	**ug/L**	**93**		**SW846 8260B**
	ND	**625**	**605**	**ug/L**	**97**	**4.0**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**ND**	**625**	**563**	**ug/L**	**90**		**SW846 8260B**
	ND	**625**	**590**	**ug/L**	**94**	**4.7**	**SW846 8260B**
Ethylbenzene	**3800**	**625**	**4250**	**ug/L**	**77**		**SW846 8260B**
	3800	**625**	**4220**	**ug/L**	**73**	**0.56**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**ND**	**625**	**593**	**ug/L**	**95**		**SW846 8260B**
	ND	**625**	**605**	**ug/L**	**97**	**2.0**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**ND**	**625**	**618**	**ug/L**	**99**		**SW846 8260B**
	ND	**625**	**645**	**ug/L**	**103**	**4.3**	**SW846 8260B**
Toluene	**91**	**625**	**654**	**ug/L**	**90**		**SW846 8260B**
	91	**625**	**643**	**ug/L**	**88**	**1.8**	**SW846 8260B**
m-Xylene & p-Xylene	**2000**	**1250**	**3190**	**ug/L**	**94**		**SW846 8260B**
	2000	**1250**	**3080**	**ug/L**	**85**	**3.5**	**SW846 8260B**
o-Xylene	**2000**	**625**	**2490**	**ug/L**	**86**		**SW846 8260B**
	2000	**625**	**2440**	**ug/L**	**79**	**1.9**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 120)
	100	(75 - 120)
1,2-Dichloroethane-d4	104	(65 - 130)
	110	(65 - 130)
Toluene-d8	98	(80 - 130)
	91	(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

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5I020405 **Work Order #...:** HJXHC1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: E5I020410-006 HJXHC1AD-MSD
Date Sampled...: 08/31/05 13:30 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5250311
Prep Date.....: 09/07/05 **Analysis Date..:** 09/07/05
Prep Batch #...: 5250540 **Analysis Time..:** 19:16
Dilution Factor: 200 **Analyst ID.....:** 000038 **Instrument ID..:** MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**5900**	**2000**	**7970**	**ug/L**	**105**		**SW846 8260B**
	5900	**2000**	**7500**	**ug/L**	**81**	**6.2**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**10000**	**10400**	**ug/L**	**104**		**SW846 8260B**
	ND	**10000**	**11600**	**ug/L**	**116**	**11**	**SW846 8260B**
Ethanol	**ND**	**400000**	**371000**	**ug/L**	**93 IO**		**SW846 8260B**
	ND	**400000**	**379000**	**ug/L**	**95 IO**	**2.3**	**SW846 8260B**
Tert-amyl methyl ether (T	**ND**	**2000**	**1980**	**ug/L**	**99**		**SW846 8260B**
	ND	**2000**	**1830**	**ug/L**	**92**	**7.9**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**ND**	**2000**	**1940**	**ug/L**	**97**		**SW846 8260B**
	ND	**2000**	**1860**	**ug/L**	**93**	**4.3**	**SW846 8260B**
Ethylbenzene	**3100**	**2000**	**5090**	**ug/L**	**100**		**SW846 8260B**
	3100	**2000**	**4830**	**ug/L**	**87**	**5.3**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**ND**	**2000**	**1990**	**ug/L**	**100**		**SW846 8260B**
	ND	**2000**	**1870**	**ug/L**	**93**	**6.5**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**15000**	**2000**	**17600**	**ug/L**	**148 BB**		**SW846 8260B**
	15000	**2000**	**16200**	**ug/L**	**84**	**7.7**	**SW846 8260B**
Toluene	**410**	**2000**	**2210**	**ug/L**	**90**		**SW846 8260B**
	410	**2000**	**2160**	**ug/L**	**88**	**2.0**	**SW846 8260B**
m-Xylene & p-Xylene	**5300**	**4000**	**9020**	**ug/L**	**94**		**SW846 8260B**
	5300	**4000**	**8720**	**ug/L**	**87**	**3.3**	**SW846 8260B**
o-Xylene	**2300**	**2000**	**4240**	**ug/L**	**95**		**SW846 8260B**
	2300	**2000**	**4130**	**ug/L**	**89**	**2.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	90	(75 - 120)
	95	(75 - 120)
1,2-Dichloroethane-d4	107	(65 - 130)
	116	(65 - 130)
Toluene-d8	90	(80 - 130)
	87	(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 #...: E5I020405 **Work Order #...:** HJXHC1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: E5I020410-006 HJXHC1AG-MSD
Date Sampled...: 08/31/05 13:30 **Date Received..:** 09/01/05 18:30 **MS Run #.....:** 5256246
Prep Date.....: 09/12/05 **Analysis Date..:** 09/12/05
Prep Batch #...: 5256367 **Analysis Time..:** 17:27
Dilution Factor: 25 **Analyst ID.....:** 001464 **Instrument ID..:** G15

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
GRO (C6 - C12)	**26000**	**1000**		**ug/L**	**0.0**		**SW846 8015B**
	Qualifiers: BB,LW						
	26000	**1000**		**ug/L**	**0.0**	**0.0**	**SW846 8015B**
	Qualifiers: BB,LW						

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	119	(70 - 130)
	116	(70 - 130)

NOTE(S):

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

Bold print denotes control parameters

BB Sample > 4x spike concentration.

LW Quantitated against gasoline.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E5I020405 **Matrix.....:** WATER
Date Sampled...: 09/01/05 14:45 **Date Received..:** 09/01/05 18:30

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E5I020309-005 **Prep Batch #...:** 5250160									
Iron									
	ND	1000	1010	ug/L	101		SW846 6010B	09/07-09/09/05	HJWPC1C2
	ND	1000	1020	ug/L	102	0.85	SW846 6010B	09/07-09/09/05	HJWPC1C3

Dilution Factor: 1
Analysis Time..: 16:00 Instrument ID..: M01 Analyst ID.....: 021088
MS Run #.....: 5250104

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E5I020405 **Matrix.....:** WATER
Date Sampled...: 09/01/05 13:13 **Date Received..:** 09/01/05 18:30

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			WO#: HJ7GX1AG-MS/HJ7GX1AH-MSD				MS Lot-Sample #: E5I080376-001		
	ND	12500	11600	ug/L	93		MCAWW 300.0A	09/02/05	5246052
	ND	12500	11500	ug/L	92	0.73	MCAWW 300.0A	09/02/05	5246052
			Dilution Factor: 1						
			Analysis Time..: 19:32		Instrument ID..: W01			Analyst ID.....: 000022	
			MS Run #.....: 5252172						
Nitrogen, as Ammonia			WO#: HJ7GX1AC-MS/HJ7GX1AD-MSD				MS Lot-Sample #: E5I080376-001		
	1940	5000	6560	ug/L	92		MCAWW 350.3	09/06/05	5249057
	1940	5000	6690	ug/L	95	2.0	MCAWW 350.3	09/06/05	5249057
			Dilution Factor: 1						
			Analysis Time..: 10:22		Instrument ID..: W04			Analyst ID.....: 000022	
			MS Run #.....: 5251344						
Sulfate			WO#: HJ7GX1AJ-MS/HJ7GX1AK-MSD				MS Lot-Sample #: E5I080376-001		
	107000	62500	169000	ug/L	99		MCAWW 300.0A	09/02/05	5246053
	107000	62500	169000	ug/L	98	0.32	MCAWW 300.0A	09/02/05	5246053
			Dilution Factor: 1						
			Analysis Time..: 19:32		Instrument ID..: W01			Analyst ID.....: 000022	
			MS Run #.....: 5252176						

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E5I020405 **Matrix.....:** W
Date Sampled...: 09/01/05 13:52 **Date Received..:** 09/01/05 18:30

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Ferrous Iron			WO#: HJXF51AQ-MS/HJXF51AR-MSD				MS Lot-Sample #: E5I020405-008		
	ND	2000	2060	ug/L	103		SM18 3500-FE	09/02/05	5246050
	ND	2000	2050	ug/L	103	0.30	SM18 3500-FE	09/02/05	5246050
			Dilution Factor: 1						
			Analysis Time..: 09:12		Instrument ID..: W17			Analyst ID.....: 999995	
			MS Run #.....: 5249256						
Total Sulfide			WO#: HJXFE1AQ-MS/HJXFE1AR-MSD				MS Lot-Sample #: E5I020405-001		
	ND	500	190 GB	ug/L	30		MCAWW 376.2	09/08/05	5251155
	ND	500	207 GB	ug/L	33	8.8	MCAWW 376.2	09/08/05	5251155
			Dilution Factor: 1						
			Analysis Time..: 10:50		Instrument ID..: W17			Analyst ID.....: 999995	
			MS Run #.....: 5251291						

NOTE(S):

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

GB Matrix spike recovery not within control

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

September 16, 2005

STL LOT NUMBER: **E5I070236**
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 three samples received under chain of custody by STL Los Angeles on September 6, 2005. These samples are associated with your ARCO #3037 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 000013 pages.

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 except as noted on the following page.

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

Sincerely,

Sabina Sudoko
Project Manager
CC: Project File

LOT NUMBER E5I070236

Nonconformance 05-13926

Affected Samples:
E5I070236 (3): MW-3

Affected Methods:
8015B

Details:
Please note that there will not be a MS/MD associated with this sample. A different BP sample that was assigned for the MS/MSD had exceeded the calibration range. Therefore, the LCS controls this batch (5255350).

Page ___ of ___

Chain of Custody Record

Project Name: ARCO 3037 Groundwater Monitoring E5I070236
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.:	3037	Consultant/Contractor:	SECOR
Address:	1721 Grand Ave.	BP/AR Facility Address:	915 Camino del Rio South	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.:	T0607300106	Consultant/Contractor Project No.:	08BP.03037.06/0427
Tele/Fax:	714.258.8610	Enfos Project No.:	G0BP4-0001	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	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 Comments
1	TB-3037-20050902	0730	9/2/05		X			6				X		X	X	Hold
2	EB-3037-20050902	1100	↓		↓			↓				↓		↓	↓	Hold
3	MW-3	1013	↓		↓			↓				↓		↓	↓	
4																
5																
6																
7																
8																
9																
10																

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Mat Nowak	Mat Nowak / Secor	9/6/05	4:30 PM	[signature]	9/6/05	5:30
Sampler's Company: Secor	[signature]	9/6/05	6:00 PM	[signature]	9/6/05	18:00
Shipment Date:						
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 ___ °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

STL LOS ANGELES - PROJECT RECEIPT CHECKLIST Date: 9-6-05

LIMS Lot #: E5I070236 Quote #: 62428

Client Name: Secor Project: ARCO 3037.

Received by: AV. Date/Time Received: 9-6-05 18:00

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

****

Initial / Date

Custody Seal Status Cooler: ☐ Intact ☐ Broken ☑ None ..... 9-6-05 AV

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 -4 °C IR passed daily verification ☑ Yes ☐ No .....

Temperature - **BLANK** 3.4 °C +/- -4 CF = 3.1 °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 # ____ .....

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☑ Yes ☐ N/A....

Labeled by: TGS for AV Labeling checked .....

****

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

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

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

NA

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

Headspace Anomaly ☑ N/A 9-6-05 AV

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 # E5I070236

PROJECT RECEIPT CHECKLIST Cont'd

Fraction	1-3													
VOAH/ *	6													

* 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 9-6-05

- **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: Albert Vargas 9-7-05

PM Review/Date: Stuart 9-8-05

SECOR International Inc

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: E5I070236-003 **Work Order #...:** HJ30Q1AA **Matrix.....:** W
Date Sampled...: 09/02/05 10:13 **Date Received..:** 09/06/05 18:00 **MS Run #.....:** 5253034
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5253056 **Analysis Time..:** 15:27
Dilution Factor: 1
Analyst ID.....: 000038 **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	105	(65 - 130)
Toluene-d8	90	(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 #...: E5I070236-003 **Work Order #...:** HJ30Q1AC **Matrix.....:** W
Date Sampled...: 09/02/05 10:13 **Date Received..:** 09/06/05 18:00 **MS Run #.....:**
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 15:51
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)	85	(70 - 130)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E5I070236 **Work Order #...:** HKARW1AA **Matrix.....:** WATER
MB Lot-Sample #: E5I100000-056

Prep Date.....: 09/09/05 **Analysis Time..:** 10:05
Analysis Date..: 09/09/05 **Prep Batch #...:** 5253056 **Instrument ID..:** MSN
Dilution Factor: 1

Analyst ID.....: 000038

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	87	(75 - 120)
1,2-Dichloroethane-d4	107	(65 - 130)
Toluene-d8	99	(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 #...: E5I070236 **Work Order #...:** HKDM31AA **Matrix.....:** WATER
MB Lot-Sample #: E5I120000-350

Prep Date.....: 09/09/05 **Analysis Time..:** 10:30
Analysis Date..: 09/09/05 **Prep Batch #...:** 5255350 **Instrument ID..:** G15
Dilution Factor: 1

Analyst ID.....: 001464

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)	79	(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 #...: E5I070236 **Work Order #...:** HKARW1AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I100000-056
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5253056 **Analysis Time..:** 09:20
Dilution Factor: 1 **Instrument ID..:** MSN
Analyst ID.....: 000038

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.64**	**ug/L**	**96**	**SW846 8260B**
tert-Butyl alcohol	**50.0**	**45.1**	**ug/L**	**90**	**SW846 8260B**
Ethanol	**2000**	**1710 IO**	**ug/L**	**86**	**SW846 8260B**
Tert-amyl methyl ether (T	**10.0**	**9.89**	**ug/L**	**99**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**10.0**	**9.64**	**ug/L**	**96**	**SW846 8260B**
Ethylbenzene	**10.0**	**9.54**	**ug/L**	**95**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**10.0**	**9.56**	**ug/L**	**96**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**10.0**	**8.89**	**ug/L**	**89**	**SW846 8260B**
Toluene	**10.0**	**9.77**	**ug/L**	**98**	**SW846 8260B**
m-Xylene & p-Xylene	**20.0**	**18.0**	**ug/L**	**90**	**SW846 8260B**
o-Xylene	**10.0**	**9.10**	**ug/L**	**91**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	90	(75 - 120)
1,2-Dichloroethane-d4	101	(65 - 130)
Toluene-d8	95	(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 #...: E5I070236 **Work Order #...:** HKDM31AC **Matrix.....:** WATER
LCS Lot-Sample#: E5I120000-350
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5255350 **Analysis Time..:** 10:03
Dilution Factor: 1 **Instrument ID..:** G15
Analyst ID.....: 001464

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
GRO (C6 - C12)	**1000**	**917 LW**	**ug/L**	**92**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	115	(70 - 130)

NOTE(S):

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

Bold print denotes control parameters

LW Quantitated against gasoline.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E5I070236 **Work Order #...:** HJ7TV1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: E5I080407-003 HJ7TV1AD-MSD
Date Sampled...: 09/07/05 15:41 **Date Received..:** 09/08/05 18:45 **MS Run #.....:** 5253034
Prep Date.....: 09/09/05 **Analysis Date..:** 09/09/05
Prep Batch #...: 5253056 **Analysis Time..:** 18:51
Dilution Factor: 1 **Analyst ID.....:** 000038 **Instrument ID..:** MSN

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.65**	**ug/L**	**96**		**SW846 8260B**
	ND	**10.0**	**9.63**	**ug/L**	**96**	**0.20**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**50.0**	**54.0**	**ug/L**	**108**		**SW846 8260B**
	ND	**50.0**	**51.1**	**ug/L**	**102**	**5.4**	**SW846 8260B**
Ethanol	**ND**	**2000**	**1860**	**ug/L**	**93 IO**		**SW846 8260B**
	ND	**2000**	**1720**	**ug/L**	**86 IO**	**8.2**	**SW846 8260B**
Tert-amyl methyl ether (T	**ND**	**10.0**	**10.4**	**ug/L**	**104**		**SW846 8260B**
	ND	**10.0**	**10.4**	**ug/L**	**104**	**0.19**	**SW846 8260B**
Ethyl-t-Butyl Ether (ETBE	**ND**	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**1.3**	**SW846 8260B**
Ethylbenzene	**ND**	**10.0**	**8.90**	**ug/L**	**85**		**SW846 8260B**
	ND	**10.0**	**9.64**	**ug/L**	**92**	**8.0**	**SW846 8260B**
Diisopropyl Ether (DIPE)	**ND**	**10.0**	**10.4**	**ug/L**	**104**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**3.3**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**ND**	**10.0**	**9.63**	**ug/L**	**96**		**SW846 8260B**
	ND	**10.0**	**9.79**	**ug/L**	**98**	**1.6**	**SW846 8260B**
Toluene	**ND**	**10.0**	**9.37**	**ug/L**	**89**		**SW846 8260B**
	ND	**10.0**	**9.48**	**ug/L**	**90**	**1.2**	**SW846 8260B**
m-Xylene & p-Xylene	**ND**	**20.0**	**17.5**	**ug/L**	**84**		**SW846 8260B**
	ND	**20.0**	**18.3**	**ug/L**	**88**	**4.3**	**SW846 8260B**
o-Xylene	**ND**	**10.0**	**9.47**	**ug/L**	**89**		**SW846 8260B**
	ND	**10.0**	**9.51**	**ug/L**	**90**	**0.42**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 120)
	91	(75 - 120)
1,2-Dichloroethane-d4	104	(65 - 130)
	102	(65 - 130)
Toluene-d8	94	(80 - 130)
	92	(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