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#### **QUARTERLY GROUNDWATER** MONITORING REPORT (2<sup>nd</sup> Quarter, 2002)

Former E-Z Serve Location No. 100877 525 West 'A' Street Hayward, California STID No. 3580

Submitted to: Restructure Petroleum Marketing Services of California, Inc. 205 S. Hoover Boulevard, Suite 101 Tampa, Florida 33609

> Submitted by ATC Associates Inc. 9620 Chesapeake Drive, Suite 203 San Diego, California 92123

ATC Work Order No. 100877-C2-7 ATC Project No. 43.25827.0024 July 10, 2002

Prepared by:

Scott D. Levin

**Project Scientist** 

Approved by:

Scott D. Meckstroth, R.C.E. No. 63337

Project Engineer

**DATE:** July 10, 2002

#### QUARTERLY GROUNDWATER MONITORING REPORT - SECOND QUARTER 2002

Facility: Former E-Z Serve No. 100877	Site Address: 525 West 'A' Street, Hayward, California
Responsible Party / Contact Person:	RPMS-CA / Felix Oliu, Project Manager
Consulting Co. / Contact Person:	ATC Associates Inc. / Michael T. Davis, Project Manager (858) 569-0692
ATC Project No.:	43.35827.0024
Regulatory Agency/File No.:	RWQCB

#### WORK PERFORMED THIS QUARTER [April 1, 2002 – June 30, 2002]:

- 1. Performed second quarter groundwater monitoring and sampling.
- 2. Installed wells VEAS-1, VEAS-2, VEAS-3, and EX-1.
- 3. Prepared second quarter groundwater monitoring report.

#### WORK PROPOSED FOR NEXT QUARTER [July 1, 2002 - September 30, 2002]:

- 1. Perform third quarter groundwater monitoring and sampling.
- 2. Perform feasibility studies and submit Corrective Action Plan.
- 3. Submit third quarter groundwater monitoring report.

Current Phase of Project:	Assessment	(Assessment, Remediation, etc.)
Frequency of Sampling:	Quarterly	(Quarterly, etc.)
Frequency of Monitoring:	Quarterly .	(Monthly, etc.)
Liquid Phase Hydrocarbons Present On Site:	No	(Yes/No)
Cumulative PSH Recovered to Date:	Unknown	(Gallons)
PSH Recovered This Quarter:	None	(Gallons)
Purge Water Removed This Quarter:	None	(Gallons)
Permits for Discharge:	None	(NDPES, POTW, etc)
Current Remediation Techniques:	None	(SVES, PSH Recovery)
Approximate Depth to Groundwater:	14.10 to 16.24	(Measured Feet)
Groundwater Gradient:	0.009 ft/ft	(Magnitude)
Groundwater Flow Direction:	Southwesterly	(Direction)

Discussion: On May 29, 2002, ATC Associates, Incorporated (ATC) personnel gauged 11 groundwater monitor wells (Figure 1 and 2). Depth to groundwater ranged between 14.10 (MW-13) to 16.24 (MW-12) feet below ground surface (bgs). Wellheads of MW-8 through MW-11 remain inaccessible. The direction of groundwater flow was calculated to be to southwesterly with a hydraulic gradient of approximately 0.009 ft/ft (Figure 2). No measurable liquid phase hydrocarbons (PSH) were recorded in any of the 11 monitoring wells. Groundwater elevations and contours are illustrated on Figure 2 and historic groundwater and PSH monitoring data is presented in Table 1.

On May 29, 2002, ATC collected groundwater samples from 11 monitoring wells. ATC utilized the attached no-purge sampling procedures described in Appendix A to collect groundwater samples from MW-1, MW-1A, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-12, MW-13, and MW-14. Field logs are also included in Appendix A. Groundwater samples collected were analyzed for total petroleum hydrocarbons characterized as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and firel oxygenates methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butyl alcohol (TBA) by EPA Test Method 8260. The highest TPHg, benzene, and MTBE concentrations reported were 12,000, 390, and 32 µg/L, respectively. The highest TPHg concentration was reported in MW-1A, the highest benzene and MTBE concentrations were reported in MW-2. TPHg, benzene, and MTBE concentrations are illustrated on Figure 2 and historic groundwater analytical results are presented in Tables 1 and 2. Hydrographs of groundwater elevations and analytical data are attached in Appendix B and complete laboratory analytical results and chain-of-custody documentation are attached in Appendix C.

Recommendations: Continue quarterly groundwater monitoring and sampling, and submit a Corrective Action Plan. Contract a professional electromagnetic subsurface survey to locate the wellheads of MW-8 through MW-11.

Summary of Unusual Activity: None.

Agency Directive Requirements: Corrective Action Plan.

#### ATTACED:

- Table 1 Groundwater Elevations and Sample Analytical Results
- Table 2 Groundwater Sample Analytical Results for Fuel Oxygenates
- Figure 1 Vicinity Map
- Figure 2 Groundwater Summary Map (May 29, 2002)
- Appendix A ATC Groundwater Monitoring and Sampling Procedures, and Field Logs
- Appendix B Hydrographs
- Appendix C Laboratory Report and Chain-of-Custody Record

**TABLES** 

## Table 1 Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	GWE <sup>1</sup>	PSH	ТРНд	В	${f r}$	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	2/5/92	41.75	20.82	20.93	0.00	46,000	7,600	2,300	2,400	6,500	<u></u>
	9/11/92	41.75	20.08	21.67	0.00	48,000	9,000	1,200	1,800	4,600	
	12/22/92	41.75	19.79	21.96	0.00	84,000	22,000	1,600	4,800	17,000	
	3/3/93	41.75	16.23	25.52	0.00	54,000	16,000	1,600	1,900	4,300	***
	6/23/93	41.75	16.86	24.89	0.00	30,000	18,000	1,100	1,400	3,700	
	9/30/93	41.75	18.04	23.71	0.00	33,000	10,000	440	940	1,700	
	2/6/94	41.75	18.15	23.60	0.00	64,000	18,000	1,600	4,700	12,000	
	5/2/94	41.75	17.26	24.49	0.00	7,200	2,100	29	490	520	
	7/1/94	41.75	17.60	24.15	0.00	13,000	3,700	150	550	12,000	
	9/20/94	41.75	20.59	21.16	0.00	10,000	3,100	75	440	870	
	12/5/94	41.75	17.83	23.92	0.00	8,700	3,700	87	520	950	
	3/10/95	41.75	14.67	27.08	0.00						
	3/15/95	41.75	14.43	27.32	0.00	290	56	2	12	47	
	9/23/96	41.75	14.92	26.83	0.00	20,000	5,200	860	700		
	12/4/96	41.75	15.61	26.14	0.00	17,000	3,100	64	610	1,100	270 280
	4/8/97 <sup>NP</sup>	41.75	13.01	28.50	0.00	2,100	430	15		1,200	
	6/30/97	41.75	14.68	28.30 27.07	0.00	10,000	2,100		52	85	100
	11/25/97	41.75	15.99	25.76				< 22	< 76	320	<
				31.77	0.00	16,000	2,100	23	76	240	<
	6/1/98 6/14/01	41.75	9.98 15.05	26.70	0.00	19,000	6,100 380	430	1,100	2,300	420
	11/7/01 <sup>2</sup>	41.75			0.00	6,000		8.4	260	180	<25
		41.75	16.31	25.44	0.00	12,000	1,000	30	1,000	740	11
	1/30/02	41.75	14.15	27.60	0.00	8,800	690	16	480	270	14
	5/29/02	41.75	14.55	27.20	0.00	6,400	330	13	250	260	12
MW-1A	6/23/93	43.40	17.80	25.76	0.21						
	9/30/93	43.40									
	2/6/94	43.40	18.89	24.51	0.00	8,900	1,700	42	1,000	400	
	5/2/94	43,40	18.35	25.12	0.09					••	
	7/1/94	43.40	18.45	24.95	0.00	12,000	1,100	<1	920	1,100	
	9/20/94	43,40	21.72	21.85	0.22						
	12/5/94	43.40	18.87	24.58	0.07						
	3/10/95	43.40	15.83	27.57	0.00						<b>-</b> -
	3/15/95	43.40	15.55	27.89	0.05						
	9/23/96	43.40	16.00	27.41	0.01						
	12/4/96	43.40	16.55	26.85	0.00	52,000	420	140	1,000	3,500	130
	4/8/97 <sup>NP</sup>	43.40	14.15	29,25	SHEEN			**			
	6/30/97	43.40	15.57	27.83	0.00	17,000	180	<	140	1,100	<
	11/25/97	43.40	16.91	26.49	0.00	19,000	110	37	290	910	<
	6/1/98	43.40	10.78	32.62	0.00	18,000	200	17	230	820	91
	6/14/01	43.40	15.93	27.48	0.01	27,000	29	< 5.0	620	520	<50
	11/7/01 <sup>2</sup>	43.40	17.32	26.08	0.00	21,000	51	<5.0	700	510	<5.0
	1/30/02	43.40	15.05	28.35	0.00	24,000	22	<5.0	390	330	<5.0
	5/29/02	43.40	15.49	27.91	0.00	12,000	32	<5.0	550	270	<5.0
MW-2	2/5/92	43.26	22.35	20.91	0.00	67,000	13,000	4,700	820	1,300	
	9/11/92	43.26	21.67	21.59	0.00	57,000	9,000	1,400	1,200	8,400	
	12/22/92	43.26	21.39	21.87	0.00	31,000	9,900	350	2,000	4,100	
	3/3/93	43.26	17.75	25.51	0.00	17,000	5,100	1,300	720	1,900	
	6/23/93	43.26	18.42	24.84	0.00	60,000	23,000	1,500	4,500	17,000	
	9/30/93	43.26	19.63	23.63	0.00	38,000	12,000	780	1,500	6,500	
	2/6/94	43.26	19.61	23.65	0.00	34,000	8,900	450	2,000	5,500	
	5/2/94	43.26	19.84	23.42	0.00	18,000	3,800	260	1,100	3,500	
	7/1/94	43.26	19.18	24.08	0.00	18,000	3,700	510	870	2,600	
	9/20/94	43.26	22.17	21.09	0.00	19,000	4,500	300	1,200	4,000	
	12/6/94	43.26	19.37	23,89	0.00	22,000	4,700	340	1,400	4,500	
	3/10/95	43.26	16.33	26.93	0.00		4,700 	540 	1,400		
	5, 10,73	10.20	10.00	20.77	0.00						

## Table 1 Groundwater Elevations and Sample Analytical Results Former E-Z Serve Location No. 100877

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	$GWE^1$	PSH	TPHg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)
MW-2	3/15/95	43.26	16.89	26.37	0.00	29,000	5,600	350	1,900	6,300	
(Cont.)	9/23/96	43.26	16.61	26.65	0.00	29,000	3,700	150	1,000	4,300	860
	12/4/96	43.26	17.19	26.07	0.00	31,000	3,800	140	2,000	5,100	690
	4/8/97 <sup>NP</sup>	43.26	14.86	28.40	0.00	20,000	2,500	80	1,300	3,400	880
	6/30/97	43.26	16.28	26.98	0.00	41,000	2,700	130	1,200	4,000	890
	11/25/97	43.26	17.56	25.70	0.00	51,000	2,900	140	1,800	7,000	1,200
	6/1/98	43.26	11.58	31.68	0.00	33,000	2,700	130	1,800	5,700	610
	6/14/01	43.26	16.63	26.63	0.00	18,000	860	14	1,100	2,200	<100
	11/7/01 <sup>2</sup>	43.26	17.85	25.41	0.00	20,000	880	20	1,100	2,600	21
	1/30/02	43.26	15.65	27.61	0.00	19,000	880	19	1,100	2,400	56
	5/29/02	43.26	16.12	27.14	0.00	8,100	390	16	560	1,400	32
MW-3	2/5/92	43.89	21.85	22.04	0.00	16,000	2,700	410	<1	3,400	
	9/11/92	43.89	21.13	22.76	0.00	43,000	7,600	1,600	1,400	4,100	
	12/22/92	43.89	20.88	23.01	0.00	29,000	8,800	1,200	1,500	3,700	
	3/3/93	43.89	17.29	26.60	0.00	17,000	5,000	1,500	680	1,700	
	6/23/93	43.89	17.88	26.01	0.00	5,700	3,000	120	560	790	
	9/30/93	43.89	19.18	24.71	0.00	21,000	7,000	2,100	970	2,600	
	2/6/94	43.89	19.21	24.68	0.00	24,000	7,200	1,600	990	3,200	
	5/2/94	43.89	18.30	25.59	0.00	10,000	2,200	440	470	1,200	
	7/1/94	43.89	18.63	25.26	0.00	8,200	2,000	370	350	930	
	9/20/94	43.89	21.64	22.25	0.00	7,200	2,000	360	380	1,000	
	12/6/94	43.89	19.15	24.74	0.00	9,000	2,300	400	440	1,100	
	3/10/95	43.89	16.33	27.56	0.00		-,000				
	3/15/95	43.89	16.89	27.00	0.00	4,300	980	47	370	780	
	9/23/96	43.89	16.11	27.78	0.00	10,000	950	20	700	780	80
	12/4/96	43.89	16.63	27.26	0.00	13,000	1,100	25	1,000	1,100	67
	4/8/97 <sup>NP</sup>	43.89	14.25	29.64	0.00	3,800	210	4.6	270	280	56
	6/30/97	43.89	15.70	28.19	0.00	3,500	280	<	32	180	<
	11/25/97	43.89	16.99	26.90	0.00	6,800	230	<	370	290	130
	6/1/98	43.89								250	
	6/14/01	43.89	16.02	27.87	0.00	2,100	9	<0.5	78	43	<5.0
	11/7/01 <sup>2</sup>	43.89	17.33	26.56	0.00	7,700	75	<5.0	410	150	
	1/30/02	43.89	15.10	28.79	0.00	3,600	27	<5.0	120	34	<5.0
	5/29/02	43.89	15.63	28.26	0.00	2,000	18	<5.0 <5.0	53	13	<5.0 <5.0
							10	-5.0	33	13	~5.0
MW-4	2/5/92	42.76	21.31	21.45	0.00	16,000	2,700	410	<1	3,400	
	9/11/92	42.76	20.62	22.14	0.00	43,000	7,600	1,600	1,400	4,100	
	12/22/92	42.76	20.37	22.39	0.00	29,000	8,800	1,200	1,500	3,700	
	3/3/93	42.76	16.78	25.98	0.00	17,000	5,000	1,500	680	1,700	
	6/23/93	42.76	17.45	25.31	0.00	5,700	3,000	120	560	790	
	9/30/93	42.76	18.64	24.12	0.00	21,000	7,000	2,100	970	2,600	
	2/6/94	42.76	18.59	24.17	0.00	24,000	7,200	1,600	990	3,200	
	5/2/94	42.76	17.81	24.95	0.00	10,000	2,200	440	470	1,200	,
	7/1/94	42.76	18.13	24.63	0.00	8,200	2,000	370	350	930	
	9/20/94	42.76	21.13	21.63	0.00	7,200	2,000	360	380	1,000	
	12/6/94	42.76	18.36	24.40	0.00	9,000	2,300	400	440	1,100	
	3/10/95	42.76	15.25	27.51	0.00						
	3/15/95	42.76	14.89	27.87	0.00	15,000	4,400	600	770	2,660	
	9/23/96	42.76	15.56	27.20	0.00	32,000	7,400	540	1,500	2,800	2,100
	12/4/96	42.76	16.11	26.65	0,00	23,000	7,800	140	1,200	1,200	1,900
	4/8/97 <sup>NP</sup>	42.76	13.73	29.03	0.00	16,000	3,900	680	850	2,300	980
	6/30/97	42.76	15.19	27.57	0.00	63,000	7,000	430	1,400	4,400	1,700
	11/25/97	42.76	16.49	26.27	0.00	30,000	4,300	61	810	1,500	880
	6/1/98 6/14/01	42.76 42.76	10.42	32.34	0.00	33,000	5,700	710	1,700	2,900	720
			15.55	27.21	0.00	9,500	690	45	560	600	<50

## Table 1 Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well Samp No. Da MW-4 11/7. (Cont.) 1/30 5/29  MW-5 2/5/ 9/11 12/22 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5. 3/10	701²     42.76       702     42.76       702     42.76       92     42.10       792     42.10       793     42.10       793     42.10       794     42.10       794     42.10       794     42.10       794     42.10       794     42.10       795     42.10       795     42.10       795     42.10	(feet) 16.81 14.60 15.14 20.93 20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02 14.93	(feet) 25.95 28.16 27.62 21.17 21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33 24.08	(feet) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	(µg/L) 6,000 4,800 5,300 78,000 49,000 34,000 22,000 15,000 23,000 8,000 10,000	(µg/L) 710 830 720 7,900 4,700 8,600 7,500 5,800 7,600 6,000 1,300	(μg/L) 20 16 57 5,000 400 340 640 120 410 180	(µg/L) 630 600 600 2,900 1,400 2,200 1,300 1,100 1,000 2,000	(µg/L) 190 61 200 1,800 4,100 4,800 3,400 2,100 4,400 5,900	(µg/L) 27 42 35
MW-4 11/7. (Cont.) 1/30 5/29  MW-5 2/5/ 9/11 12/2: 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	701²       42.76         702       42.76         702       42.76         702       42.76         702       42.76         92       42.10         792       42.10         83       42.10         793       42.10         94       42.10         94       42.10         794       42.10         794       42.10         795       42.10         795       42.10         795       42.10	14.60 15.14 20.93 20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	28.16 27.62 21.17 21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	6,000 4,800 5,300 78,000 49,000 34,000 22,000 15,000 25,000 23,000 8,000	710 830 720 7,900 4,700 8,600 7,500 5,800 7,600 6,000	20 16 57 5,000 400 340 640 120 410 180	630 600 600 2,900 1,400 2,200 1,300 1,100 1,000	190 61 200 1,800 4,100 4,800 3,400 2,100 4,400	27 42 35
(Cont.) 1/30 5/29 MW-5 2/5/ 9/11 12/2; 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	/02     42.76       /02     42.76       /02     42.76       92     42.10       /92     42.10       /93     42.10       /93     42.10       94     42.10       94     42.10       /94     42.10       /94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10	14.60 15.14 20.93 20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	27.62 21.17 21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	4,800 5,300 78,000 49,000 34,000 22,000 15,000 25,000 23,000 8,000	720 7,900 4,700 8,600 7,500 5,800 7,600 6,000	57 5,000 400 340 640 120 410 180	2,900 1,400 2,200 1,300 1,100 1,000	1,800 4,100 4,800 3,400 2,100 4,400	35    
5/29 MW-5 2/5/ 9/11 12/2: 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	/02     42.76       92     42.10       /92     42.10       /93     42.10       /93     42.10       /93     42.10       94     42.10       94     42.10       94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10       /95     42.10	15.14 20.93 20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	27.62 21.17 21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	5,300 78,000 49,000 34,000 22,000 15,000 25,000 23,000 8,000	720 7,900 4,700 8,600 7,500 5,800 7,600 6,000	57 5,000 400 340 640 120 410 180	2,900 1,400 2,200 1,300 1,100 1,000	1,800 4,100 4,800 3,400 2,100 4,400	35    
MW-5 2/5/ 9/11 12/22 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	92 42.10 /92 42.10 2/92 42.10 93 42.10 /93 42.10 /94 42.10 94 42.10 94 42.10 /94 42.10 /94 42.10 /94 42.10 /95 42.10 /95 42.10	20.93 20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	21.17 21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	78,000 49,000 34,000 22,000 15,000 25,000 23,000 8,000	7,900 4,700 8,600 7,500 5,800 7,600 6,000	5,000 400 340 640 120 410 180	2,900 1,400 2,200 1,300 1,100 1,000	1,800 4,100 4,800 3,400 2,100 4,400	
9/11 12/2: 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20	/92     42.10       2/92     42.10       93     42.10       /93     42.10       /93     42.10       94     42.10       94     42.10       /94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10       /95     42.10	20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00 0.00	49,000 34,000 22,000 15,000 25,000 23,000 8,000	4,700 8,600 7,500 5,800 7,600 6,000	400 340 640 120 410 180	1,400 2,200 1,300 1,100 1,000	4,100 4,800 3,400 2,100 4,400	
9/11 12/2: 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20	/92     42.10       2/92     42.10       93     42.10       /93     42.10       /93     42.10       94     42.10       94     42.10       /94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10       /95     42.10	20.27 19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	21.83 22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00	49,000 34,000 22,000 15,000 25,000 23,000 8,000	4,700 8,600 7,500 5,800 7,600 6,000	400 340 640 120 410 180	1,400 2,200 1,300 1,100 1,000	4,100 4,800 3,400 2,100 4,400	
12/2: 3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20	2/92     42.10       93     42.10       /93     42.10       /93     42.10       /94     42.10       94     42.10       94     42.10       /94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10       /95     42.10	19.99 16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	22.11 25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00 0.00	34,000 22,000 15,000 25,000 23,000 8,000	8,600 7,500 5,800 7,600 6,000	340 640 120 410 180	2,200 1,300 1,100 1,000	4,800 3,400 2,100 4,400	 
3/3/ 6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5	93 42.10 /93 42.10 /93 42.10 94 42.10 94 42.10 94 42.10 /94 42.10 /94 42.10 /95 42.10 /95 42.10	16.49 17.02 18.25 18.26 17.50 17.79 20.77 18.02	25.61 25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00	22,000 15,000 25,000 23,000 8,000	7,500 5,800 7,600 6,000	640 120 410 180	1,300 1,100 1,000	3,400 2,100 4,400	
6/23 9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	/93     42.10       /93     42.10       /94     42.10       /94     42.10       /94     42.10       /94     42.10       /94     42.10       /95     42.10       /95     42.10       /95     42.10	17.02 18.25 18.26 17.50 17.79 20.77 18.02	25.08 23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00 0.00	15,000 25,000 23,000 8,000	5,800 7,600 6,000	120 410 180	1,100 1,000	2,100 4,400	
9/30 2/6/ 5/2/ 7/1/ 9/20 12/5.	793     42.10       94     42.10       94     42.10       94     42.10       794     42.10       794     42.10       795     42.10       795     42.10       795     42.10	18.25 18.26 17.50 17.79 20.77 18.02	23.85 23.84 24.60 24.31 21.33	0.00 0.00 0.00 0.00	25,000 23,000 8,000	7,600 6,000	410 180	1,000	4,400	
2/6/ 5/2/ 7/1/ 9/20 12/5.	94 42.10 94 42.10 94 42.10 994 42.10 994 42.10 995 42.10 995 42.10	18.26 17.50 17.79 20.77 18.02	23.84 24.60 24.31 21.33	0.00 0.00 0.00	23,000 8,000	6,000	180			
5/2/ 7/1/ 9/20 12/5.	94 42.10 94 42.10 /94 42.10 /94 42.10 /95 42.10 /95 42.10	17.50 17.79 20.77 18.02	24.60 24.31 21.33	0.00 0.00	8,000			-,		
7/1/ 9/20 12/5	94 42.10 /94 42.10 /94 42.10 /95 42.10 /95 42.10	17.79 20.77 18.02	24.31 21.33	0.00			29	440	770	
9/20 12/5	794 42.10 794 42.10 795 42.10 795 42.10	20.77 18.02	21.33		10.000	1,700	97	600	1,400	
12/5	/94 42.10 /95 42.10 /95 42.10	18.02			8,400	1,600	54	650	1,400	~~
	/95 42.10 /95 42.10		24.00	0.00	10,000	1,800	<50	620	1,400	
	95 42.10	11172	27.17	0.00						
3/15/		14.70	27.40	0.00	5,300	1,100	11	180	320	
9/23		15.19	26.91	0.00	9,800	1,800	11	470	510	100
12/4		15.78	26.32	0.00	10,000	2,200	9	550	430	70
4/8/9		13.39	28.71	0.00	11,000	1,300	15	450	720	180
6/30/		14.83	27.27	0.00	3,800	500	<	75	84	<
11/25		16.14	25.96	0.00	8,200	1,300	14	310	220	<
6/1/9		10.10	32.00	0.00	3,600	290	12	52	52	81
6/14/		15.19	26.91	0.00	5,100	44	0.71	110	23	<5.0
11/7/		16.47	25.63	0.00	7,600	220	<5.0	550	30	<5.0
1/30/		14.27	27.83	0.00	6,200	180	<20	310	130	<20
5/29/		14.73	27.37	0.00	3,900	66	0.8	110	7.4	0.9
					•					
MW-6 2/5/5	92 42.33	21.29	21.04	0.00	51,000	5,400	3,500	3,600	10,000	
9/11/	92 42.33	20.56	21,77	0.00	24,000	2,500	830	1,400	2,300	
12/22	/92 42.33	20.31	22.02	0.00	23,000	5,100	630	2,000	3,100	
3/3/9	3 42.33	16.83	25.50	0.00	18,000	4,400	820	1,400	2,400	
6/23/	93 42.33	17.30	25.03	0.00	18,000	4,600	850	2,700	3,400	
9/30/	93 42.33	19.05	23.28	0.00						
2/6/9		18.55	23.78	0.00	20,000	4,600 <sup>,</sup>	690	2,100	2,500	
5/2/9	42.33	17.74	24.59	0.00	5,300	930	54	610	240	
7/1/9	42.33	18.09	24.24	0.00	10,000	1,500	160	850	690	
9/20/	94 42.33	21.05	21.28	0.00	11,000	2,000	140	1,200	760	
12/6/		18.33	24.00	0.00	8,600	1,300	87	980	610	
3/10/	95 42.33	15.35	26.98	0.00						
3/15/	95 42.33	14.91	27.42	0.00	9,800	1,600	110	1,000	1,000	
9/23/	96 42.33	15.50	26.83	0.00	12,000	520	55	930	350	51
12/4/	96 42.33	16.06	26.27	0.00	11,000	390	25	680	170	130
4/8/97	<sup>NP</sup> 42.33	13.64	28.69	0.00	17,000	700	92	1,400	900	2,700
6/30/	97 42.33	15.08	27.25	0.00	11,000	270	37	590	450	, <
11/25	97 42.33	16.40	25.93	0.00	9,100	130	26	500	150	310
6/1/9		10.31	32.02	0.00	14,000	190	50	680	400	160
6/14/		15.46	26.87	0.00	6,400	29	6.3	200	55	<20
11/7/0		16.71	25.62	0.00	7,200	34	8,7	180	31	<5.0
1/30/		14.60	27.73	0.00	6,600	32	7.2	130	28	<5.0
5/29/		14.99	27.34	0.00	5,200	26	7.0	150	27	<5.0
\$ 2557 M	, ,, ,,	48.00	04.00	0.00	00.000	4 600				
MW-7 6/23/9		17.87	24.83	0.00	29,000	4,200	71	4,400	5,600	,
9/30/9		18.94	23.76	0.00	30,000	3,200	71	2,800	3,400	
2/6/9		19.11	23.64	0.06						
5/2/9	4 42.70	18.11	24.59	0.00	5,700	630	13	660	400	<b>#</b> =

# Table 1 Groundwater Elevations and Sample Analytical Results Former E-Z Serve Location No. 100877

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	$\mathbf{GME}_{\mathbf{I}}$	PSH	TPHg	В	T	Œ	x	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)
MW-7	7/1/94	42.70	18.72	23.98	0.00	3,100	180	99	160	520	- <u>-</u> -
(Cont.)	9/20/94	42.70	21.41	21.29	0.00	6,100	540	6	750	730	
, ,	12/5/94	42.70	18.66	24.04	0.00	3,700	280	<10	430	350	
	3/10/95	42.70	15,72	26.98	0.00	3,900	310	<10	540	540	
	3/14/95	42.70	15.23	27.47	0.00	1,900	290	4	26	296	
	9/23/96	42.70	15.94	26.76	0.00	6,300	76	<	420	270	15
	12/4/96	42.70	16.43	26.27	0.00	7,800	67	<	600	350	22
	4/8/97 <sup>NP</sup>	42,70	14.10	28.60	0.00	5,600	42	<	240	96	<
	6/30/97	42.70	15.51	27.19	0.00	5,500	<	79	<	44	280
	11/25/97	42.70	16.80	25.90	0.00	2,400	23	5.4	<	54	120
	6/1/98	42.70	10.31	32.39	0.00	14,000	190	50	680	400	160
	6/14/01	42.70	15.46	27.24	0.00	6,400	29	6	200	55	<20
	11/7/01 <sup>2</sup>	42.70									
	1/30/02	42.70	14.97	27.73	0.00	6,200	1.5	<0.5	96	4.6	<0.5
	5/29/02	42.70	15.49	27.73	0.00	1,600	1.0	<0.5	3.4	1.9	<0.5
	3129102	42.70	13.43	21.21	0.00	1,000	1.0	<b>~0.3</b>	3.4	1.9	<0.5
MW-8*	6/23/93	97.61	17.64	79.97	0.00	350	43	9	35	67	
	9/30/93	97.61	18.85	78.76	0.00	2,700	190	340	170	720	
	2/6/94	97.61	18.91	78.70	0.00	<100	<1	1	1	2	₩=
	5/2/94	97.61	18.11	79.50	0.00	<100	<1	3	<1	7	
	7/1/94	97.61	18.43	79.18	0.00	300	18	48	19	37	
	9/20/94	97.61	21.43	76.18	0.00	<100	<1	<1	<1	<1	
	12/5/94	97.61	18.72	78.89	0.00	<50	<0.5	<0.5	<0.5	<0.5	
	3/10/95	97.61	18.69	78.92	0.00						
	3/14/95	97.61	14.83	82.78	0.00	<50	< 0.5	<0.5	<0.5	1	
	9/23/96	97.61	15.83	81.78	0.00	<	<	<	<	<	<
	)1231) V	77.01	10.05			well inaccessib			•	•	
MW-9*	6/23/93	95.41	15.94	79.47	0.00	45,000	14,000	1,200	2,800	12,000	
	9/30/93	95.41	17.05	78.36	0.00	86,000	22,000	1,100	3,300	15,000	
	2/6/94	95.41	17.07	78.34	0.00	43,000	10,000	460	2,100	7,500	
	5/2/94	95.41	16.24	79.17	0.00	17,000	5,400	270	1,300	4,700	
	7/1/94	95.41	16.59	78.82	0.00	10,000	2,100	120	450	1,300	
	9/20/94	95.41	19.61	75.80	0.00	7,500	2,200	97	400	1,200	
	12/5/94	95.41	16.85	78.56	0.00	10,000	2,700	130	530	1,600	
	3/10/95	95.41									
	3/14/95	95.41	14.18	81.23	0.00	18,000	5,900	270	1,200	3,680	
				Not Sam	pled, well in	accessible sind	ce 1st Quarter,	1995,			
MW-10*	6/23/93	97.11	17.39	79.72	0.00	25,000	980	640	2.500	10.000	
IVI VV - 1 O .	9/30/93	97.11	18.58	78.53	0.00	35,000		640	3,500	12,000	
						4,000	230	12	100	680	
	2/6/94	97.11	18.61	78.50	0.00	2,000	69	12	220	120	
	5/2/94	97.11	17.83	79.28	0.00	710	16	6	85	62	
	7/1/94	97.11	18.17	78.94	0.00	2,000	52	43	120	210	
	9/20/94	97.11	21.15	75.96	0.00	2,800	34	16	270	560	
	12/5/94	97.11	18.43	78.68	0.00	2,700	30	13	260	430	
	3/10/95	97.11	15.37	81.74	0.00						
	3/14/95	97.11	15.93	81.18	0.00	1,400	18	6	200	239	
	9/23/96	97.11	15.59	81.52	0.00	3,800	4	2.9	220	170	397
	12/4/96	97.11	16.15	80.96	0.00	4,600	1.6	7.7	260	150	20
				Mor Sam	pica, wen in	accessible sinc	e 4in Quarter,	1990.			
MW-11*	2/10/95	92.68	11.80	80.88	0.00	7,000	140	22	600	1,000	
	3/10/95	92.68	11.58	81.10	0.00						
	3/14/95	92.68	13.96	78.72	0.00	6,000	200	17	750	1,276	
	9/23/96	92.68	12.29	80.39	0.00	27,000	55	81	300	3,500	40
	· · · · · · · · · ·	- · · · ·				,				2,000	

Table 1
Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	$\mathbf{GWE}^{\mathbf{I}}$	PSH	TPHg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	$(\mu g/L)$	(µg/L)	(μg/L)	(µg/L)	(μg/L)
MW-11	12/4/96	92.68									<u>(r-5 - )</u>
(Cont.)	4/8/97	92.68	10.51	82.17	0.00	24,000	280	130	3,000	3,700	<
(,						accessible sind			-,	2,. 00	
					• /		`	•			
MW-12	2/10/95	43.25	16.30	26.95	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	
	3/10/95	43.25	16.37	26.88	0.00						
	3/14/95	43.25	15.69	27.56	0.00	<50	< 0.5	< 0.5	< 0.5	0.9	
	9/23/96	43.25	16.67	26.58	0.00	<	<	1.6	<	<	<
	12/4/96	43.25	17.16	26.09	0.00	<	3.2	<	1.9	3.4	<
	4/8/97 <sup>NP</sup>	43.25	14.88	28.37	0.00	<	<	<	<	<	<
	6/30/97	43.25	16.33	26.92	0.00						
	11/25/97	43.25	17.61	25.64	0.00						
	6/1/98	43.25	11.58	31.67	0.00					,	
	6/14/01	43.25	16.62	26.63	0.00	<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0
	11/7/01 <sup>2</sup>	43.25	17.91	25.34	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	1/30/02	43.25	15.60	27.65	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
	5/29/02	43.25	16.24	27.01	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-13	2/10/95	40.97	14.45	26.52	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	
	3/10/95	40.97	14.30	26.67	0.00						
	3/14/95	40.97	15.81	25.16	0.00	<50	< 0.5	< 0.5	< 0.5	1	
	9/23/96	40.97	14.60	26.37	0.00	<	<	0.80	1	<	<
	12/4/96	40.97									
	4/8/97 <sup>NP</sup>	40.97	12.75	28.22	0.00	<	<	<	<	<	<
	6/30/97	40.97	14.13	26.84	0.00						
	11/25/97	40.97	15.48	25.49	0.00		**	•••			
	6/1/98	40.97	9.58	31.39	0.00						
	6/14/01	40.97	14.51	26.46	0.00	<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0
	11/7/01 <sup>2</sup>	40.97	15.85	25.12	0.00	<50	<0.5	<0.5	< 0.5	< 0.5	< 0.5
	1/30/02	40.97	13.65	27.32	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	5/29/02	40.97	14.10	26.87	0.00	<50	<0.5	<0.5	< 0.5	<0.5	< 0.5
MW-14	2/10/95	43.19	16.28	26.91	0.00	12,000	42	8	740	2 100	
747 41 - 1 4	3/10/95	43.19	16.33	26.86	0.00	12,000			/ <del>4</del> 0	2,100	
	3/14/95	43.19	14.87	28.32	0.00	1,400	6	2	36	298	
	9/23/96	43.19	16.67	26.52	0.00	6,400	2.8	<	690	96	9.6
	12/4/96	43.19	17.06	26.13	0.00	9,500	6.3	<	1,100	400	30
	4/8/97 <sup>NP</sup>	43.19	14.77	28.42	0.00	2,900	<	2.7	220	21	<
	6/30/97	43.19	16.22	26.97	0.00	74	1.3	<	0.51	0.68	<
	11/25/97	43.19	17.52	25.67	0.00	<	<	<	<	<	<
	6/1/98	43.19	11.46	31.73	0.00	<50	<0.5	<0.5	<0.5	<0.5	<5
	6/14/01	43.19	16.53	26.66	0.00	470	<0.5	<0.5	2.8	1	<5
	11/7/01 <sup>2</sup>	43.19	17.84	25.35	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
•	1/30/02	43.19	15.55	27.64	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	5/29/02	43.19	16.14	27.05	0.00	<50	<0.5	<0.5	< 0.5	<0.5	<0.5
		=		* =	•	=	· <del>-</del>			-10	4.0

No known groundwater monitoring or sampling was conducted between June 1, 1998 and June 14, 2001 and June 14, 2001 and November 7, 2001. Wellhead elevations resurveyed on January 30, 2002.

TOC = Top of casing referenced to USGS benchmark [elevation = 48.50 feet above mean sea level].

DTW = Depth to water measured from top of casing.

GWE = Groundwater elevation as referenced to benchmark in feet above mean sea level.

TPHg = Total Petroleum Hydrocarbons as gasoline (EPA Method 8015).

B = Benzene (EPA Method 602 or 8020/1).

T = Toluene (EPA Method 602 or 8020/1).

E = Ethylbenzene (EPA Method 602 or 8020/1).

X = Total Xylenes (EPA Method 602 or 8020/1).

#### Table 1

#### Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

MTBE = Methyl t-Butyl Ether (EPA Method 8020 or 8021).

SHEEN = Discontinuous, non-measurable thickness of PSH.

PSH = Phase Separate Hydrocarbon thickness in feet.

μg/L = Micrograms per liter (~parts per billion)

- < = Sample reported as "not detected," in previous tables, reporting limit not known.
- NP = No-purge sample collection method implemented and continued, beginning April 8, 1997...
- <sup>1</sup> = If PSH present, corrected GWE = TOC Measured DTW + Corrected PSH Thickness (PSH Thickness x gas density [0.75 g/cc]).
- <sup>2</sup> = All analysis performed by EPA Method 8260 beginning on November 7, 2001.
- \* = Wellhead elevation not re-surveyed on January 30, 2002. Previous arbitrary benchmark used as elevation refrence.
- -- = Not measured, surveyed, sampled, or analyzed.

Table 2
Groundwater Sample Analytical Results for Fuel Oxygenates

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	DIPE	ETBE	MTBE	TAME	TBA
No.	Date	(µg/L)	(μg/L)	(μg/L)	(µg/L)	(µg/L)
MW-1	11/7/01	<5.0	<5.0	11	<5.0	<50
	1/30/02	<5.0	<5.0	14	<5.0	<50
	5/29/02	2.5	<2.0	12	<2.0	<20
MW-1A	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
	1/30/02	<5.0	<5.0	<5.0	<5.0	<50
	5/29/02	<5.0	<5.0	<5.0	<5.0	<50
MW-2	11/7/01	<5.0	<5.0	21	<5.0	<50
	1/30/02	<5.0	<5.0	<b>5</b> 6	<5.0	<50
	5/29/02	<5.0	<5.0	32	<5.0	<50
MW-3	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
	1/30/02	<5.0	<5.0	<5.0	< 5.0	< 50
	5/29/02	<5.0	<5.0	<5.0	<5.0	<50
MW-4	11/7/01	<5.0	<5.0	27	<5.0	<50
	1/30/02	< 5.0	<5.0	42	<5.0	< 50
	5/29/02	<20	<20	35	<20	<200
MW-5	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
	1/30/02	<20	<20	<20	<20	< 200
	5/29/02	2.0	<0.5	0.9	<0.5	<5.0
MW-6	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
	1/30/02	<5.0	<5.0	< 5.0	<5.0	<50
	5/29/02	<5.0	<5.0	<5.0	<5.0	<50
MW-7	11/7/01					<del></del>
	1/30/02	<5.0	< 5.0	< 5.0	<5.0	<50
	5/29/02	<0.5	<0.5	<0.5	<0.5	<5.0
MW-12	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
	1/30/02	< 0.5	< 0.5	< 0.5	< 0.5	<5.0
	5/29/02	<0.5	<0.5	<0.5	<0.5	<5.0
MW-13	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
	1/30/02	<0.5	< 0.5	< 0.5	< 0.5	<5.0
	5/29/02	< 0.5	<0.5	<0.5	<0.5	<5.0
MW-14	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
	1/30/02	< 0.5	< 0.5	< 0.5	< 0.5	<5.0
	5/29/02	<0.5	< 0.5	< 0.5	< 0.5	<5.0

Notes: Analytical results above the laboratory detection limits are in boldface font. Results by EPA Method 8260.

DIPE = Di-isopropyl Ether

ETBE = Ethyl tert-Butyl Ether

MTBE = Methyl-tert-Butyl Ether (See Table 1 for historic results)

TAME = tert-Amyl Methyl Ether

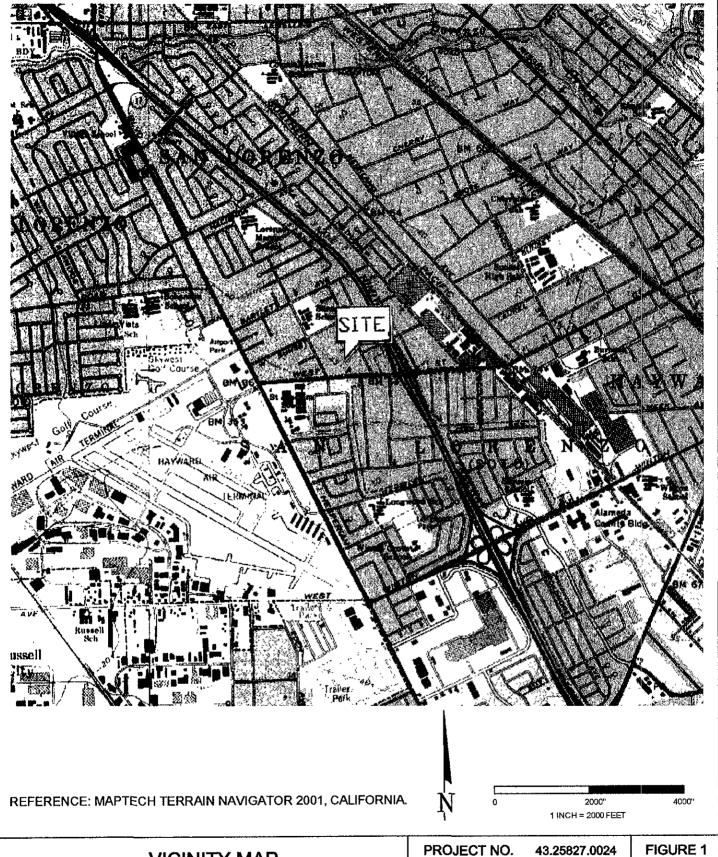
TBA = tert-Butanol

 $\mu g/L$  = micrograms per liter (~parts per billion)

< = Analytical results below the given laboratory detection limit.

-- = Not sampled or analyzed.

FIGURES



#### **VICINITY MAP**

Former E-Z Serve Location No. 100877 525 West A Street Hayward, California

PROJECT NO.

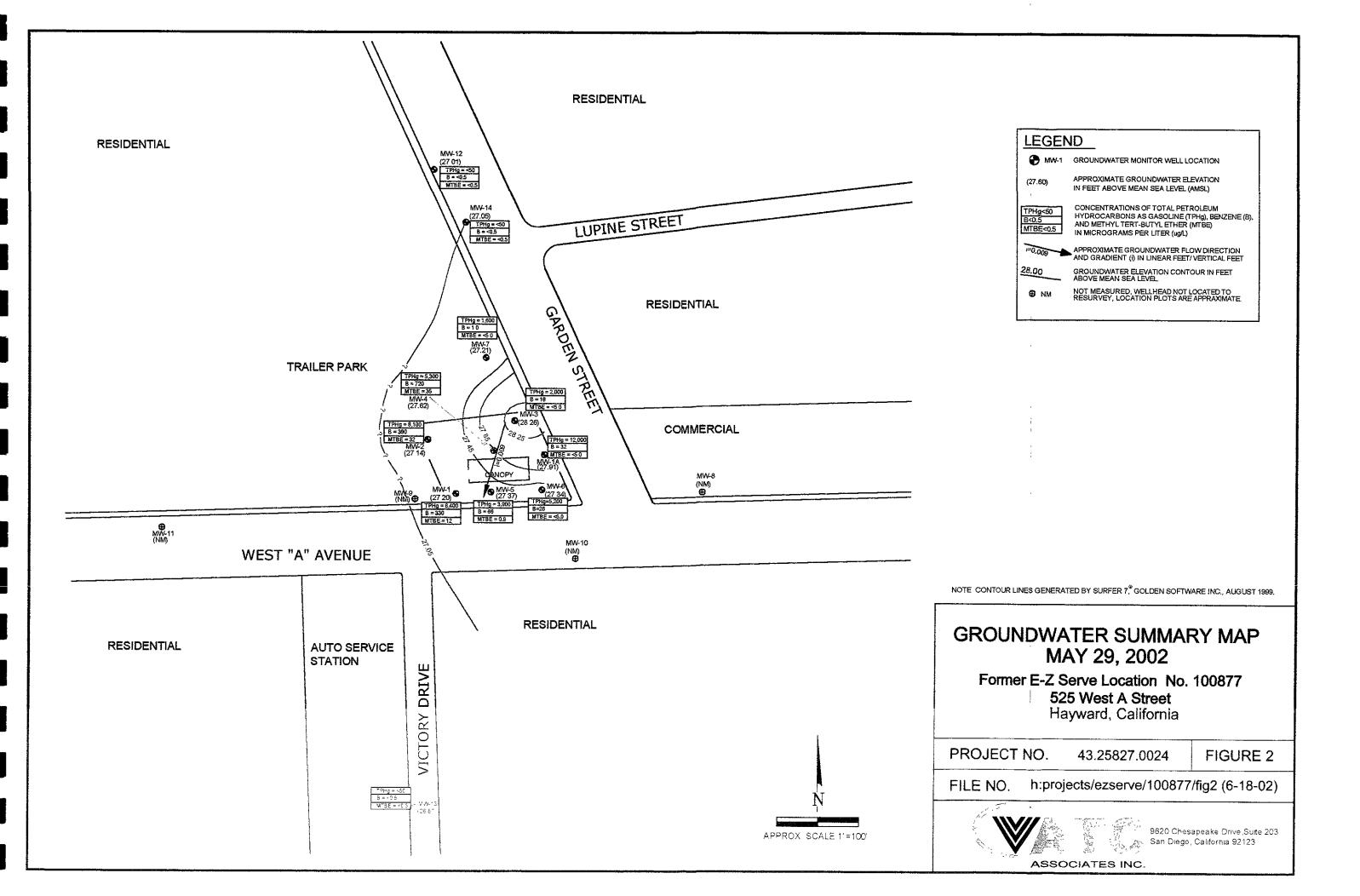
FIGURE 1

FILE NO.

h:projects/ezserve/100877/fig1



9620 Chesapeake Drive, Suite 203 San Diego, California 92123



#### **APPENDICES**

# ${\bf APPENDIX\ A}$ ${\bf GROUNDWATER\ MONITORING\ AND\ SAMPLING\ PROCEDURES,}$ ${\bf AND\ FIELD\ LOGS}$



#### GROUNDWATER MONITORING AND SAMPLING PROCEDURES

(Includes No-Purge Sampling)

#### **Groundwater Monitoring and Decontamination Method**

Prior to beginning, a decontamination area is established. Decontamination procedures consist of scrubbing down-well equipment in a Liquidnox® solution wash (or equivalent degreasing compound), and rinsing in potable water and a final rinse of de-ionized (or distilled) water before and after each well. Any non-dedicated down-well equipment is decontaminated prior to use on site.

Prior to purging and sampling a well, the static water level is measured to the nearest 0.01 feet with an electronic interface probe and/or water level meter. Depth to bottom is typically measured every quarterly event. The water level meter and tape will be decontaminated between each well. If floating phase-separated hydrocarbons (PSH) are suspected or previously confirmed, an electronic interface probe is used to measure the well fluids to the nearest 0.01 feet. PSH may alternatively be measured using a clear, open-ended product bailer, and the thickness is measured to the nearest 0.01 feet in the bailer. Any monitoring well containing a measurable thickness of PSH before or during purging is not additionally purged and no sample is collected from that well. Wells containing hydrocarbon sheen are sampled unless otherwise specified by the project manager. Field observations such as well integrity as well as water level measurements and PSH thickness are recorded in the field.

#### Well Purging

When well purging is required, each monitoring well to be sampled is purged using, a truck-mounted vacuum pump, a polyvinyl chloride (PVC) bailer or a submersible pump. Physical parameters (pH, temperature, and conductivity) of the purge groundwater are monitored during purging activities to assess if the water sample collected is representative of the aquifer. If required, parameters such as dissolved oxygen, turbidity, salinity etc. are also measured. Samples are considered representative if parameter stability is achieved. Stability is defined as a change of less than 0.25 pH units, less than 10% change in conductivity in micro mhos, and less than 1.0 degree centigrade (1.8 degrees Fahrenheit) change in temperature. Parameters are measured in a discreet sample decanted from the bailer separately from the rest of the purge groundwater. Parameters are measured during purging; initially, and at volume intervals of one well or borehole volume (dependent on local regulations). Purging continues until the required well or borehole volumes have been removed, until the well completely dewaters, or until measured parameters stabilize as indicated above. When wells dewater or demonstrate a slow recharge, wells may be sampled although fewer than required volumes have been removed. Well purging information is recorded on the Purge Data sheet. All meters used to measure parameters are calibrated daily. Purge water is sealed, labeled, and stored on site in D.O.T.-approved 55-gallon drums. After being chemically profiled, the water is transported to an appropriate disposal facility by a licensed waste hauler.

#### **Groundwater Sample Collection**

After purging, groundwater samples are collected after at least 80% of its static water level is recovered in the well. If recharge is extremely slow, the well is allowed to recharge until sufficient volume has accumulated for sample collection. No-purge groundwater samples are collected when prior approval by the lead regulatory agency has been permitted. When no-purge samples are collected the same procedures are followed excluding well purging. All groundwater samples are collected using polyethylene disposable bailers attached with new, clean string or rope. Groundwater samples being analyzed for compounds most sensitive to volatilization are collected first. Groundwater samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form and preserved on ice in a cooler for transport to a state-certified analytical laboratory. After collection, all samples are stored in a chilled cooler and refrigerated to approximately four (4) degrees Celsius while a laboratory representative transports the samples to their facility. Analytical detection limits match or surpass standards required by relevant local or regional guidelines.



#### QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PROCEDURES

#### Field Procedures

To prevent contamination of the samples and/or cross-contamination of monitoring wells ATC personnel adhere to the following procedures in the field:

- New, clean pair of appropriate disposable gloves is dawned prior to sampling each well.
- Wells are gauged and purged in the expected order of increasing degree of contamination based on historical analytical results.
- All purging equipment will be thoroughly decontaminated between each well using the procedures previously described at the beginning of this section.
- During sample collection for volatile organic analysis, the amount of air passing through the sample is minimized. This helps prevent the air from stripping the volatiles from the groundwater. Sample bottles are filled by slowly running the sample down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside, the sample container is discarded and the procedure is repeated with a new container.

#### Sample Control

Laboratory and field handling procedures may be monitored, if required by the client or local regulatory agency, by including quality control (QC) samples for analysis with the groundwater samples. Examples of different types of QC samples are as follows:

- Trip blanks are prepared at the analytical laboratory, by laboratory personnel to check handling procedures while in the field, as required by site conditions and local regulations. Trip blanks are transported to the project site in the same manner as the laboratory-supplied sample containers to be filled. They are not opened, and are returned to the laboratory with the samples collected. Trip blanks are analyzed for purgable organic compounds.
- Equipment blanks are prepared in the field to determine if decontamination of field sampling equipment has been effective, as required by site conditions and local regulations. The sampling equipment used to collect the groundwater samples is rinsed with distilled water that is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory, and are analyzed for the same chemical constituents as the samples collected at the site.
- Duplicates (split samples) are collected at the same time that the standard groundwater samples are being collected and are analyzed for the same compounds in order to check the reproducibility of laboratory data. They are typically only collected from one well per sampling event, as required by site conditions and local regulations. The duplicate is assigned an identification number that will not associate it with the source well.

Generally, trip blanks and field blanks check field handling and transportation procedures. Duplicates check laboratory procedures. The configuration of QC samples is determined by ATC depending on site conditions and regulatory requirements.

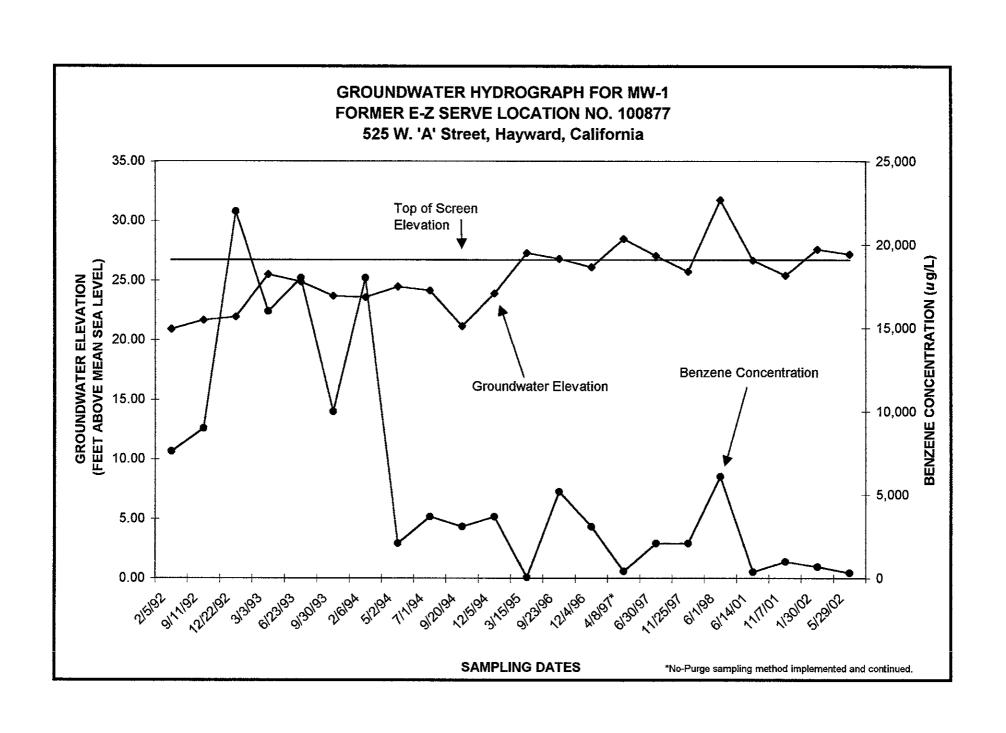
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		Date 5-29-07
	CIATES INC.	Job No. 43.25827.0024
Field Office: SAN 4	Piece D	Project EZServe 10087% Task No.
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То:		Weather Temperature
		Client RPMS of Colif
Attn:		Contractor
		ATC Representative TM & MR
Page ( of (	•	
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17		
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		viewed By:

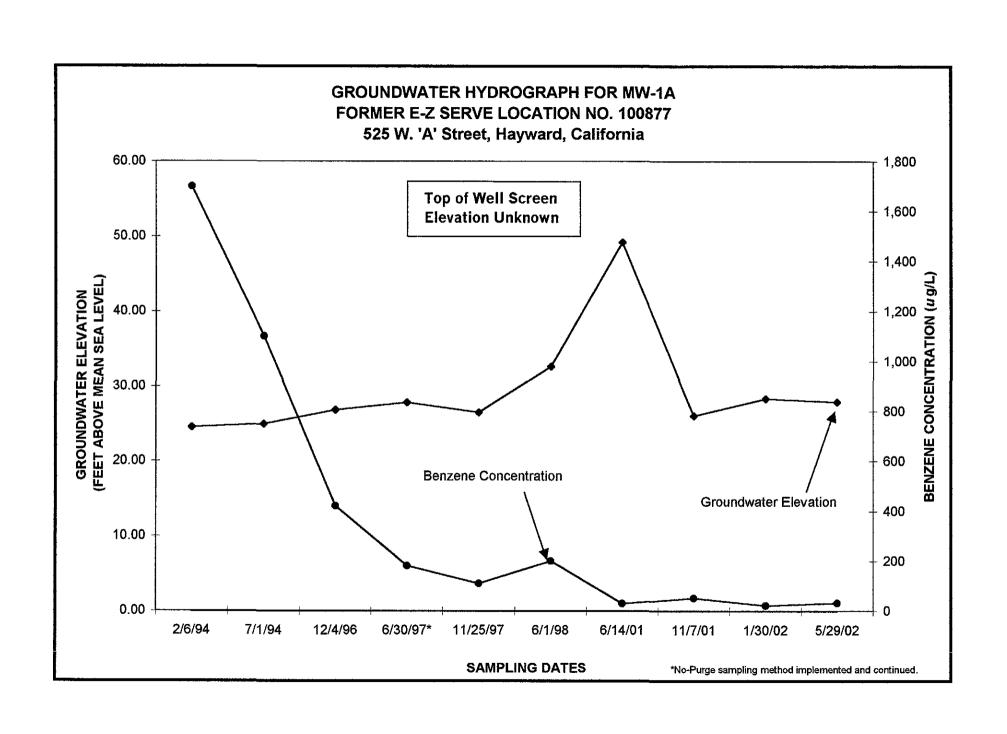


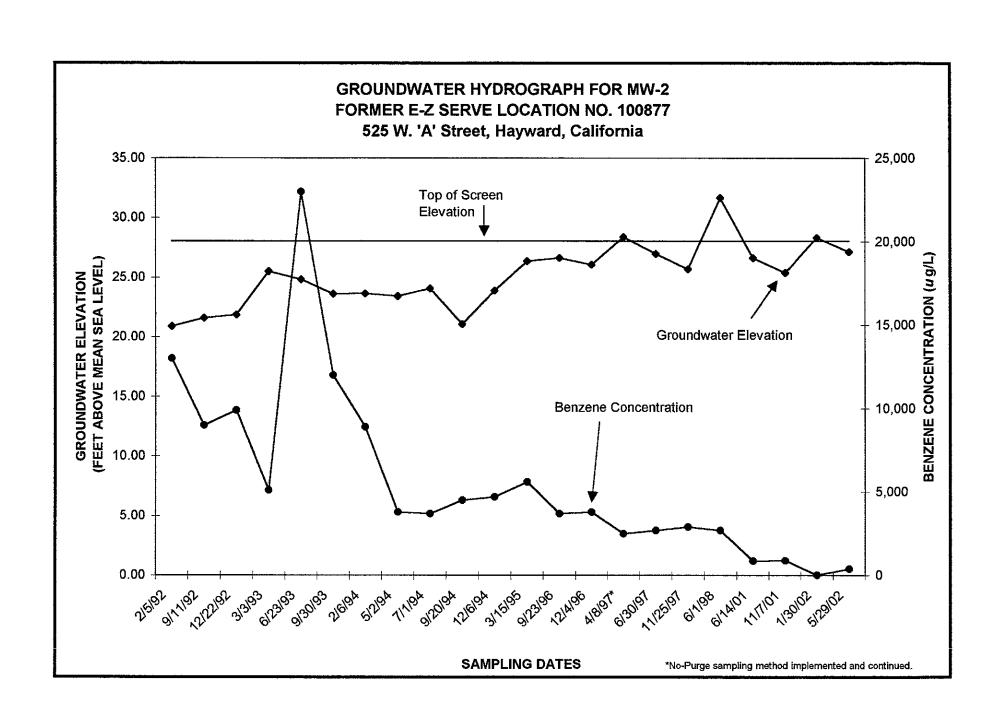
### **NO-PURGE SAMPLING LOG**

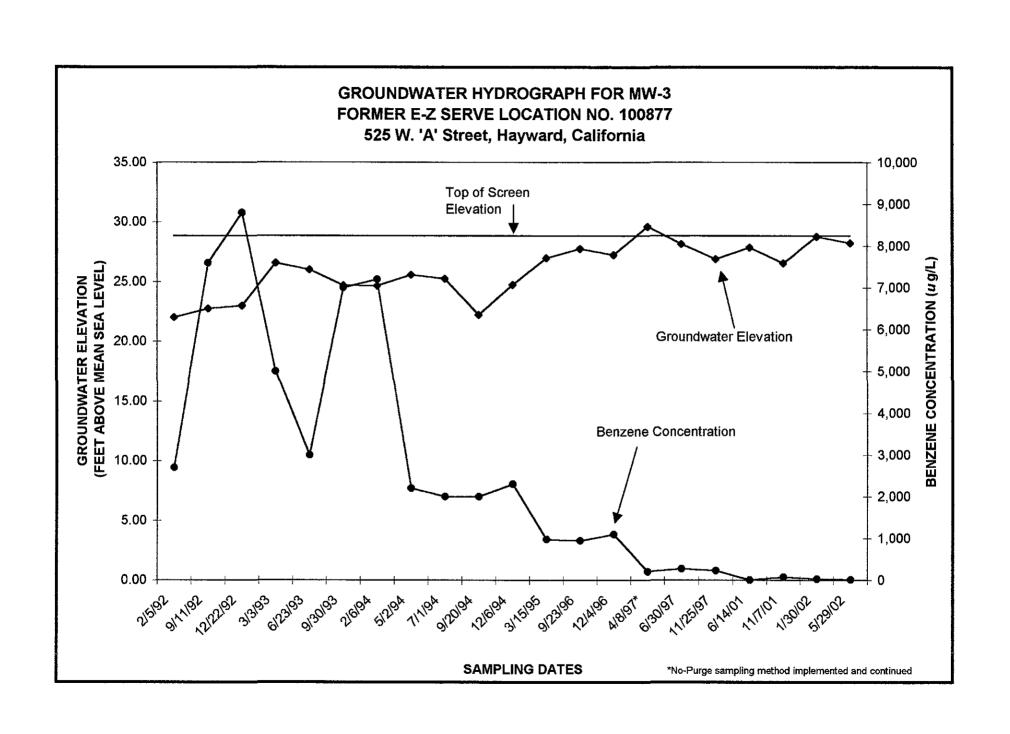
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		1, 1				
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		ATZ-2				
		C	ollection Data			
	Depth To Water		Container Type &	Filtered	Sample	
Well No.	(feet)	Time	Volume	(yes/no)	Preservative	Requested Laboratory Analysis
MW-IA	15.49	1600	3 VOAS	N	Mil/Ice	
W7-1	14.55	1300				
MW-Z	16.12	1500				
MW-3	15.63	1200				
MW-4	15.14	1400				
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MU-6	14.99	1020				
MV-7	15.49	0840				1 / ) , 1
MW-8	NM					Unable to locate
MV-9	NM	D				
MW-10	NM	D				
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MV-12	16.24	0700				
MW-13	14.10	0930				
MW-14	16.14	0750		V		
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ATC Personno	el On-Site:	+TM				
Subcontractor	On Site:	-				
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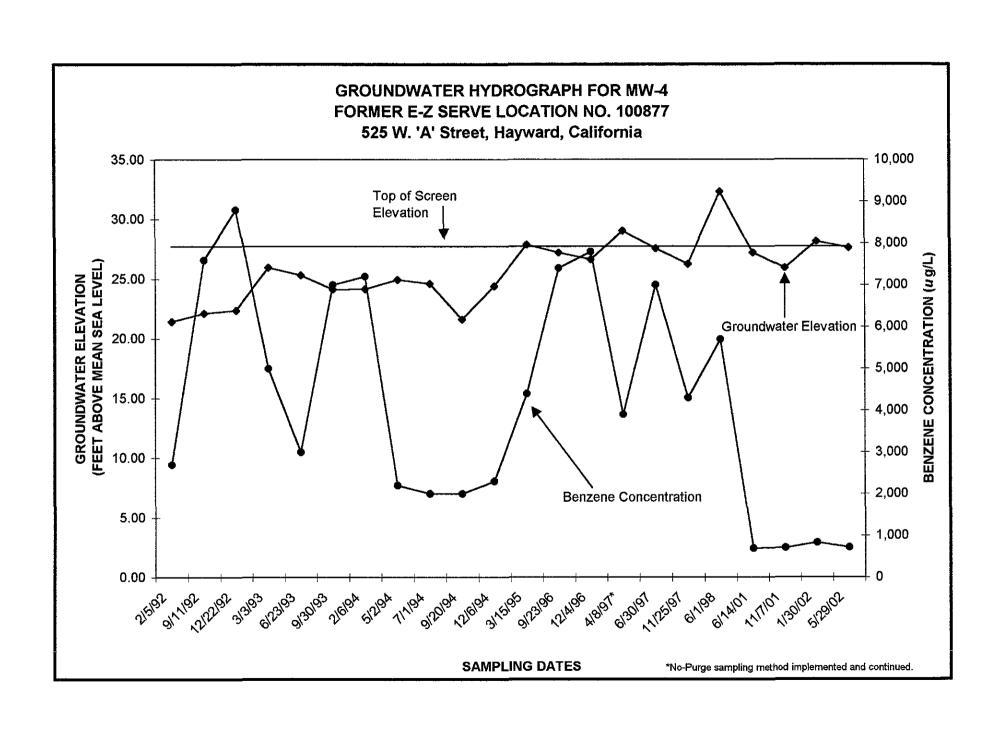
# APPENDIX B HYDROGRAPHS

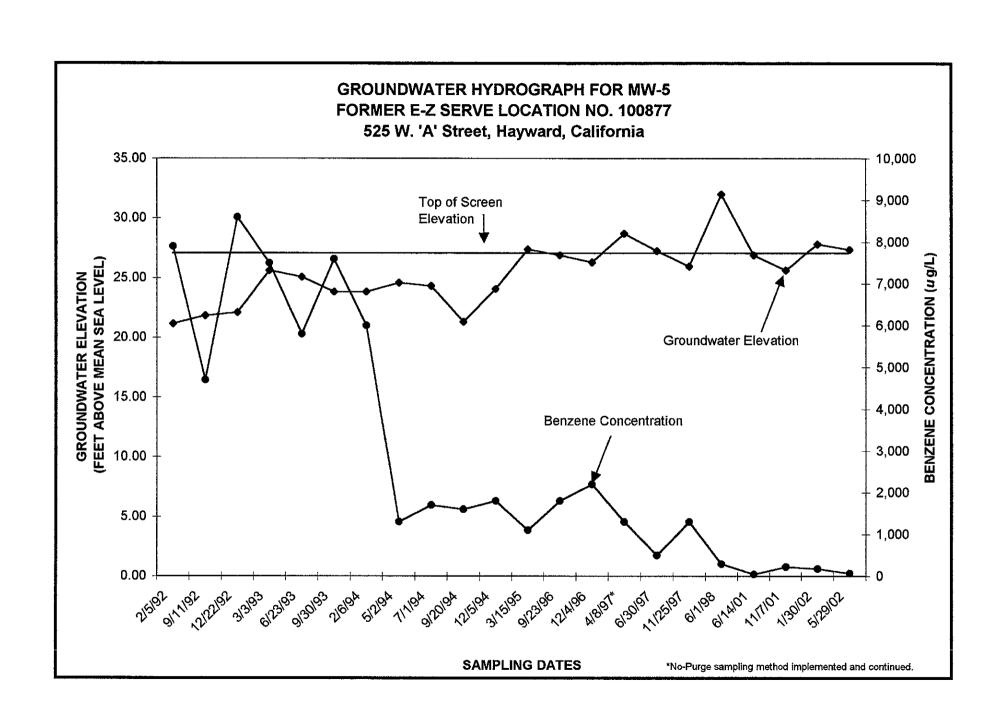


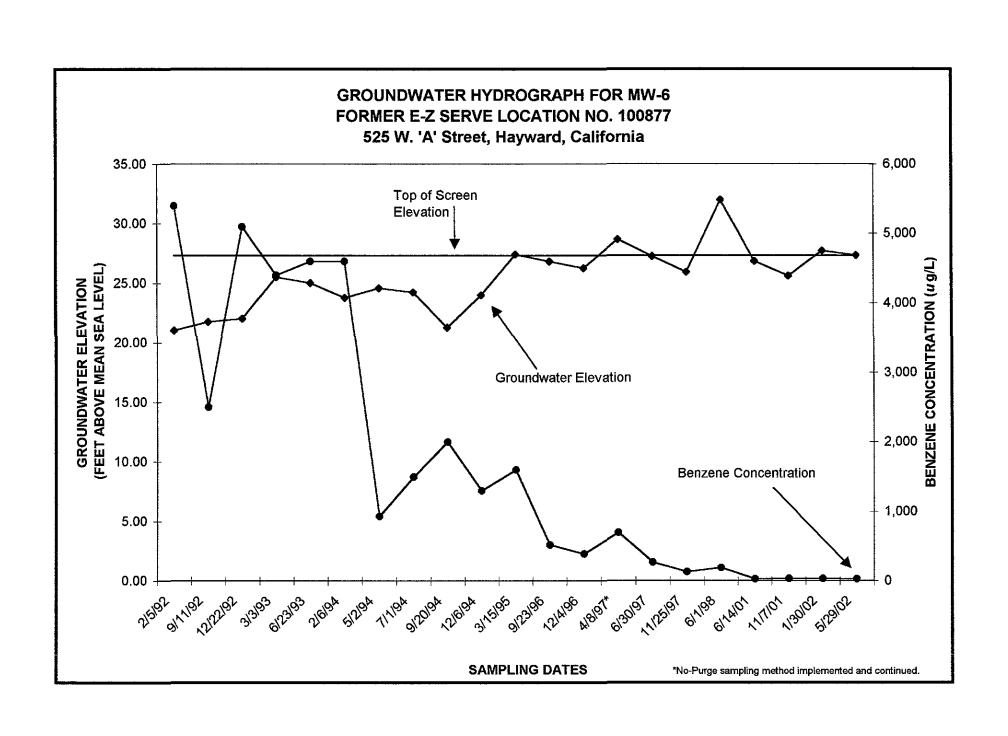


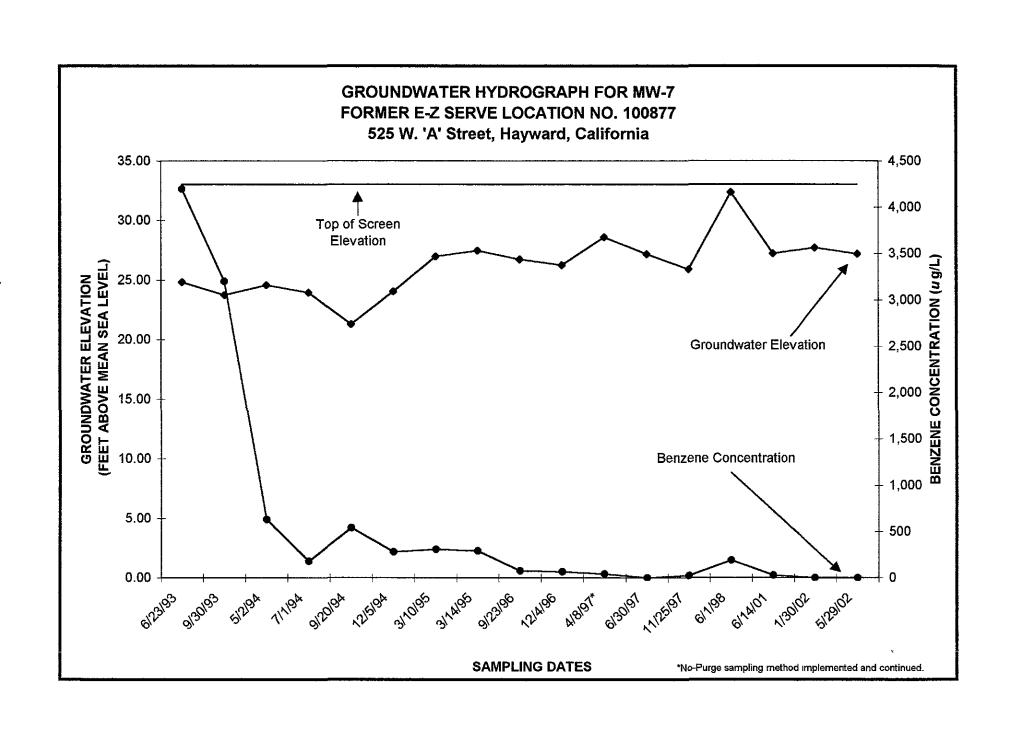


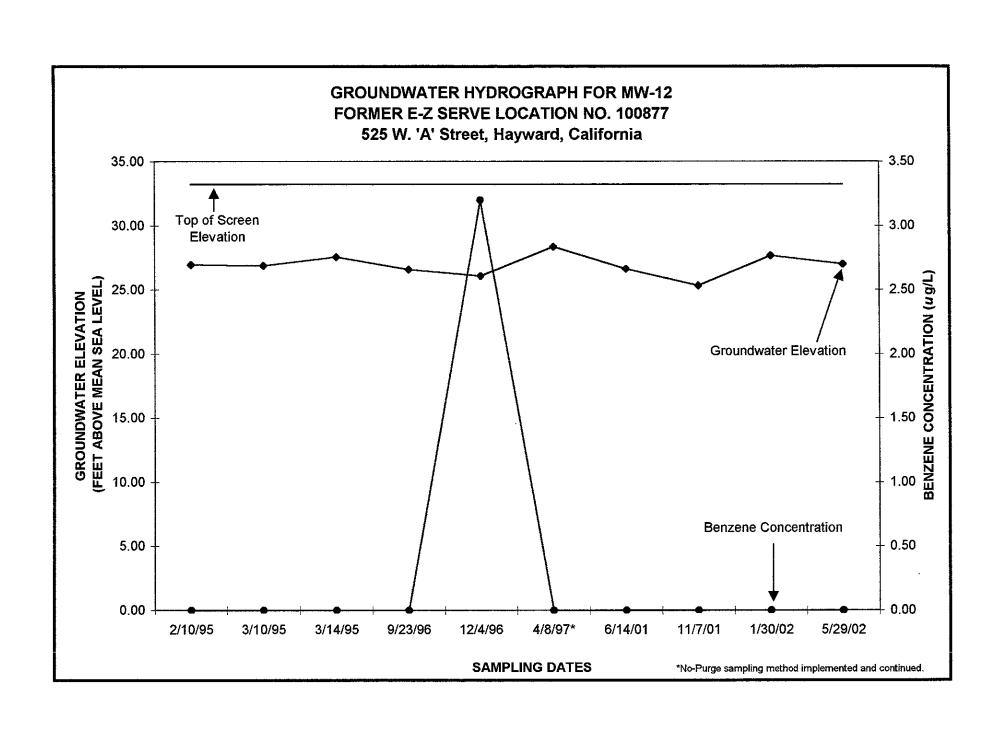


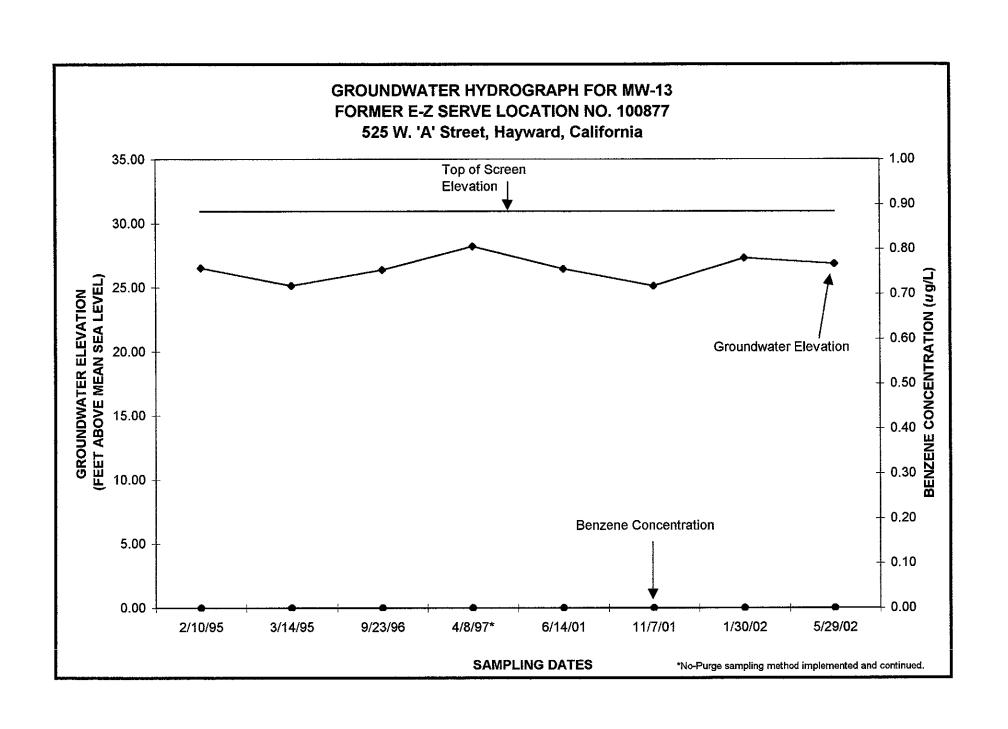


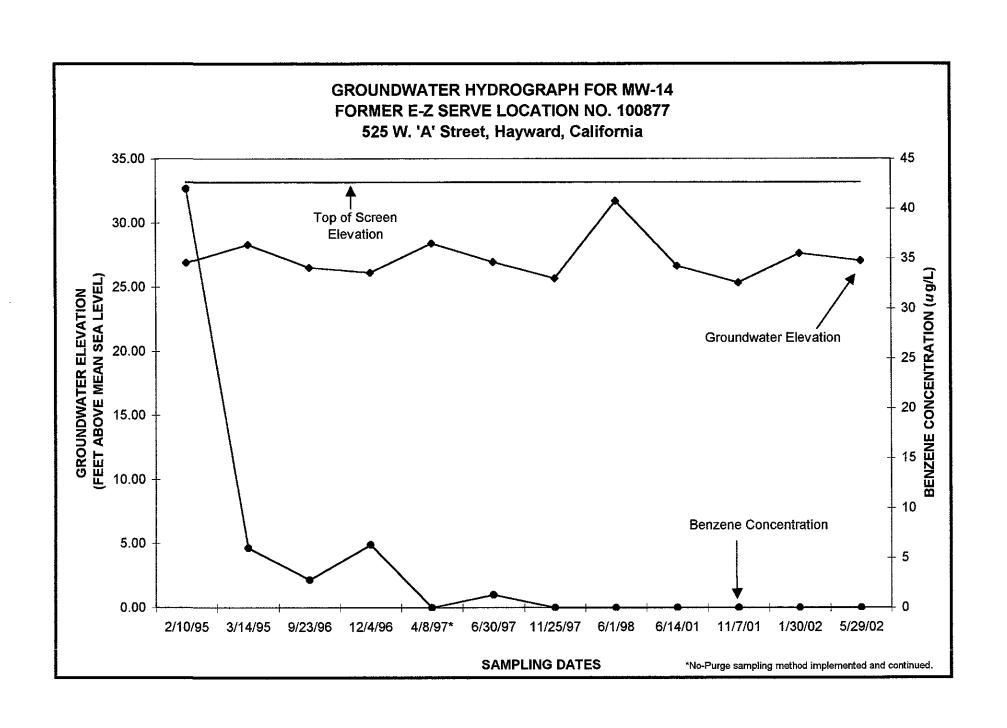












#### APPENDIX C

#### LABORATORY REPORT AND CHAIN-OF-CUSTODY RECORD



#### REPORT OF ANALYTICAL RESULTS

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-1

Collected:

05/29/02

Received:

06/03/02

Aqueous

Matrix:

Sample Description:

MW-1A

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**		
	ug/L	ug/L		
Benzene	5.0	32.		
Toluene	5.0	ND		
Ethylbenzene	5.0	550.		
Xylenes	5.0	270.		
t-Amyl Methyl Ether (TAME)	5.0	ND		
t-Butyl Alcohol (TBA)	50.	ND		
Diisopropyl Ether (DIPE)	5.0	ND		
Ethyl-t-Butyl Ether (ETBE)	5.0	ND		
Methyl-t-Butyl Ether (MTBE)	5.0	ND		
Percent Surrogate Recovery		101		

#### TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

500.

12000.

BTX as a Percent of Fuel

3

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

\*PQL - Practical Quantitation Limit

\*\*Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110611 MSD #11 27813-1.xls DZ/jgt/pv/lz

the .

Dwain Zsadanyi **Project Manager** 



#### REPORT OF ANALYTICAL RESULTS

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

**Mark Ruddis** 

Lab Number: 27813-2 Collected: 05/29/02 Received: 06/03/02

Matrix: Aqueous

Sample Description:

MW-1

Analyzed:

06/10/02

Method: See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	2.0	330.
Toluene	2.0 ·	13.
Ethylbenzene	2.0	250.
Kylenes	2.0	260.
t-Amyl Methyl Ether (TAME)	2.0	ND
-Butyl Alcohol (TBA)	20.	ND
Diisopropyl Ether (DIPE)	2.0	2.5
Ethyl-t-Butyl Ether (ETBE)	2.0	ND
Methyl-t-Butyl Ether (MTBE)	2.0	12.
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	200.	6400.
BTX as a Percent of Fuel		9

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

\*PQL - Practical Quantitation Limit

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110610 MSD #11 27813-2.xls DZ/jgt/pv/jh

e.

Dwain Zsadanyi **Project Manager** 

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



#### REPORT OF ANALYTICAL RESULTS

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number: .

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-3

Collected:

05/29/02

Received: Matrix: 06/03/02 Aqueous

Sample Description:

MW-2

Analyzed:

06/10/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	5.0	390.
Toluene	5.0	16.
Ethylbenzene	5.0	560.
Xylenes	5.0	1400.
t-Amyl Methyl Ether (TAME)	5.0	ND
t-Butyl Alcohol (TBA)	50.	ND
Diisopropyl Ether (DIPE)	5.0	ND
Ethyl-t-Butyl Ether (ETBE)	5.0	ND
Methyl-t-Butyl Ether (MTBE)	5.0	32.
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	500.	8100.
BTX as a Percent of Fuel		22

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110610 MSD #11 27813-3.xls DZ/jgt/pv/jh

Ban.

Dwain Zsadanyi Project Manager

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Aqueous

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

Mark Ruddis

Lab Number: 27813-4 Collected: 05/29/02 Received: 06/03/02 Matrix:

Sample Description:

MW-3

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	5.0	18.
Toluene	5.0	ND
Ethylbenzene	5.0	53.
Xylenes	5.0	13.
t-Amyl Methyl Ether (TAME)	5.0	ND
t-Butyl Alcohol (TBA)	50.	ND
Diisopropyl Ether (DIPE)	5.0	ND
Ethyl-t-Butyl Ether (ETBE)	5.0	ND
Methyl-t-Butyl Ether (MTBE)	5.0	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	500.	2000.

BTX as a Percent of Fuel

2

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110611 MSD #11 27813-4.xls DZ/jgt/pv/lz

-Semmy. Dwain Zsadanyi

**Project Manager** 

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Sco

Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-5

Collected:

05/29/02

Received:

06/03/02

Matrix:

Aqueous

Sample Description:

MW-4

Analyzed:

06/10/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**	
	ug/L	ug/L	
· · · · · · · · · · · · · · · · · · ·			
Benzene	20.	720.	
Toluene	20.	57.	
Ethylbenzene	20.	600.	
Xylenes	20.	200.	
t-Amyl Methyl Ether (TAME)	20.	ND	
t-Butyl Alcohol (TBA)	200.	ND	
Diisopropyl Ether (DIPE)	20.	ND	
Ethyl-t-Butyl Ether (ETBE)	20.	ND	
Methyl-t-Butyl Ether (MTBE)	20.	35.	
Percent Surrogate Recovery		100	
TOTAL PETROLEUM HYDROCARBONS			
TOTAL PETROLLOW ITT DROCARBONS			
Total Petroleum Hydrocarbons	2000.	5300.	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

\*PQL - Practical Quantitation Limit

BTX as a Percent of Fuel

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110610 MSD #11 27813-5.xls DZ/jgt/pv/jh

e.

Dwain Zsadanyi Project Manager 18

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-6

Collected: Received:

05/29/02 06/03/02

Matrix:

Aqueous

Sample Description:

MW-5

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**	
- Indiana and a second a second and a second a second and	ug/L	ug/L	
Benzene	0.5	66.	
Toluene	0.5	0.8	
Ethylbenzene	0.5	110.	
Xylenes	0.5	7.4	
t-Amyl Methyl Ether (TAME)	0.5	ND	
t-Butyl Alcohol (TBA)	5.0	ND	
Diisopropyl Ether (DIPE)	0.5	2.0	
Ethyl-t-Butyl Ether (ETBE)	0.5	ND	
Methyl-t-Butyl Ether (MTBE)	0.5	0.9	
Percent Surrogate Recovery		102	
TOTAL PETROLEUM HYDROCARBONS		, + 5 A A A A A A A A A A A A A A A A A A	
Total Petroleum Hydrocarbons	50.	3900.	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

BTX as a Percent of Fuel

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110611 MSD #11

27813-6.xls

Dwain Zsadanyi **Project Manager** 

DZ/jgt/pv/lz

2

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: EZ Serve #100877

Project Number: EZS0024
Collected by: Mark Ruddis

 Lab Number:
 27813-7

 Collected:
 05/29/02

 Received:
 06/03/02

 Matrix:
 Aqueous

Sample Description:

MW-6

Analyzed: 06/11/02

Method: See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	5.0	26.
Foluene	5.0	7.0
thylbenzene	5.0	150.
(ylenes	5.0	27.
-Amyl Methyl Ether (TAME)	5.0	ND
-Butyl Alcohol (TBA)	50.	ND
Diisopropyl Ether (DIPE)	5.0	ND
Ethyl-t-Butyl Ether (ETBE)	5.0	ND
flethyl-t-Butyl Ether (MTBE)	5.0	ND
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS	<del>.</del>	
Total Petroleum Hydrocarbons	500.	5200.
3TX as a Percent of Fuel		1

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

- Ben .

Dwain Zsadanyi Project Manager

VA110610 MSD #11 27813-7.xls DZ/jgt/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Aqueous

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

**EZS0024** 

Collected by:

Mark Ruddis

Lab Number: 27813-8 Collected: 05/29/02 06/03/02

Received: Matrix:

Sample Description:

MW-7

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	1.0
Toluene	0.5	ND
Ethylbenzene	0.5	3.4
Xylenes	0.5	1.9
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		` 101

Total Petroleum Hydrocarbons

50.

1600.

BTX as a Percent of Fuel

<1

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110611 MSD #11 27813-8.xls DZ/jgt/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: EZ Serve #100877

**Project Number:** 

EZS0024

Collected by: Mark Ruddis

Lab Number: 27813-9 Collected: 05/29/02 Received: 06/03/02 Matrix: Aqueous

Sample Description:

MW-12

Analyzed:

06/11/02 Method: See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Kylenes	0.5	ND
-Amyl Methyl Ether (TAME)	0.5	ND
-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Fotal Petroleum Hydrocarbons	50.	ND
3TX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

\*PQL - Practical Quantitation Limit

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

Dwain Zsadanyi **Project Manager** 

VA110610 MSD #11 27813-9.xls DZ/jgt/pv/jh

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-10

Collected:

05/29/02

Received:

06/03/02

Matrix:

Aqueous

Sample Description:

MW-13

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110610 MSD #11 27813-10.xls

DZ/jgt/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

Mark Ruddis

Lab Number:

27813-11

Collected:

05/29/02

Received:

06/03/02

Matrix:

Aqueous

Sample Description:

MW-14

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS	· · · · · · · · · · · · · · · · · · ·	
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

100mg

Dwain Zsadanyi Project Manager

VA110610 MSD #11 27813-11.xls DZ/jgt/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.





Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Project:

Project Number: Collected by: Lab Number:

**BLK VA110610** 

Collected:

Received:

Matrix:

Aqueous

Sample Description:

Instrument Blank

Analyzed:

06/10/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
<sup>-</sup> oluene	0.5	ND
thylbenzene	0.5	ND
(ylenes	0.5	ND
-Amyl Methyl Ether (TAME)	0.5	ND
-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
thyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
ercent Surrogate Recovery		100
OTAL PETROLEUM HYDROCARBONS		
asoline	50.	ND
TX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,

ZymaX envirotechnology, inc.

VA110610 MSD #11 A110610b.xls DZ/sw/pv/lz

- Com

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



# QUALITY ASSURANCE REPORT SPIKE RESULTS

Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401 Lab Number: QS VA110610
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

**Quality Assurance Spike** 

Analyzed:

06/10/02

Method:

See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
	ug/L	ug/L	necovery
Benzene	2.0	1.9	95
Toluene	30.4	30.6	101
Ethylbenzene	8.3	8.3	100
Xylenes	47.7	47.9	100
Methyl t-Butyl Ether (MTBE)	31.1	30.0	96
Percent Surrogate Recovery			101
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	500.	503.	101
BTX as a Percent of Fuel	16	16	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,

ZymaX envirotechnology, inc.

de .

Dwain Zsadanyi Project Manager

VA110610 MSD #11 A110610q.xls DZ/sw/pv/lz



## QUALITY ASSURANCE REPORT SPIKE DUPLICATE RESULTS

Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401 Lab Number: QSD VA110610
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Quality Assurance Spike Duplicate

Anaiyzed:

06/10/02

Method: See Below

CONSTITUENT	Amount Spiked	Amount Recovered	Percent	Relative Percent
	ug/L	ug/L	Recovery	Difference*
Benzene	. 2.0	1.8	90	5
Toluene	30.4	30.5	100	0
Ethylbenzene	8.3	8.3	100	0
Xylenes	47.7	47.8	100	0
Methyl t-Butyl Ether (MTBE)	31.1	29.9	96	0
Percent Surrogate Recovery			101	
TOTAL PETROLEUM HYDROCARBO	ONS			
Gasoline	500.	500.	100	1
BTX as a Percent of Fuel	16	16		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110610 MSD #11 A110610q.xls DZ/sw/pv/lz Submitted by,

ZymaX envirotechnology, inc.

<sup>\*</sup>Relative Percent Difference of the spike and spike duplicate





Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401 Lab Number: BLK VA110611
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Instrument Blank

Analyzed:

06/11/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**	
	ug/L	ug/L	
3enzene	0.5	ND	
Foluene	0.5	ND	
Ethylbenzene	0.5	ND	
Kylenes	0.5	ND	
-Amyl Methyl Ether (TAME)	0.5	ND	
-Butyl Alcohol (TBA)	5.0	ND	
Diisopropyl Ether (DIPE)	0.5	ND	
Ethyl-t-Butyl Ether (ETBE)	0.5	ND	
Methyl-t-Butyl Ether (MTBE)	0.5	ND	
Percent Surrogate Recovery		100	
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	50.	ND	
3TX as a Percent of Fuel		N/A	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,

ZymaX envirotechnology, inc.

Alexand.

Dwain Zsadanyi Project Manager

VA110611 MSD #11 A110611b.xls DZ/jgt/pv/lz

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.





Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401 Lab Number: QS A110611
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Quality Assurance Spike

Analyzed:

06/11/02

Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
Parana	1.9	1.9	100
Benzene	31.9	31.7	99
Toluene Ethylbenzene	8.8	8.7	99
Xylenes	50.3	50.0	99
Methyl t-Butyl Ether (MTBE)	34.6	32.2	93
Percent Surrogate Recovery			102
TOTAL PETROLEUM HYDROCARBONS		<del>_</del>	
Gasoline	500.	499.	100
BTX as a Percent of Fuel	17	17	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110611 MSD #11 VA110611q.xls DZ/jdm/lz Submitted by, ZymaX envirotechnology, inc.

Alexander :



## QUALITY ASSURANCE REPORT SPIKE DUPLICATE RESULTS

Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: QSD A110611
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Quality Assurance Spike Duplicate

Analyzed:

06/11/02

Method: See Below

CONSTITUENT	Amount Spiked	Amount Recovered	Percent	Relative Percent
	ug/L	ug/L	Recovery	Difference*
Benzene	1.9	1.9	100	0
Toluene	31.9	31.8	100	0
Ethylbenzene	8.8	8.8	100	1
Xylenes	50.3	50.5	100	1
Methyl t-Butyl Ether (MTBE)	34.6	32.8	95	2
Percent Surrogate Recovery			101	
TOTAL PETROLEUM HYDROCARBO	ons			
Gasoline	500.	497.	99	0
BTX as a Percent of Fuel	17	17		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by, ZymaX envirotechnology, inc.

Dwain Zsadanyi

they.

Dwain Zsadanyı Project Manager

VA110611 MSD #11 VA110611q.xls DZ/jdm/lz

<sup>\*</sup>Relative Percent Difference of the spike and spike duplicate



71 Zaca Lane San Luis Obispo CA 93401 tel 805.544.4696 fax 805.544.8226

report to 500	TT LEUN	phone \$58~569~0	692	fax 569-0	695			ANALYSIS REQUE	STED	Turnaround Time
company ATC address 9620C	ASSOCIATES INC. Ulsaelaki M. #203	project <i>F2.566</i> project #	W 100	877	t.	BTEX	0XX 8240			ASAP 48 hr 12 hr 72 hr
SANO	1860, CA.92123	sampler MANK M	tuga15			1	*			24 hr std 🔀
ZymaX use only	SAMPLE DESCRIPTION	Date Sampled	Time		Preserve	Shot	MT36			ō # Remarks
17813-1	MW-1A	5/29/02	1600	Uro	Vkl/ke	X	Х			3
-2	MW-1		1300		i					1
-3	MW-Z		1500	·~						
الأحا	MW-3		1200				e-Companion to the			800
-5	Wn-H		1400							\$ (\$ 1 )
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