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(954) 570-5885 FAX: (954) 570-5974

November 25, 1996

Ms. Madhulla Logan Alameda County Department of Health Services 1131 Harbor Bay Parkway Alameda, California 94502

Subject: Transmittal of Third Quarter Groundwater Monitoring Report

Dear Ms. Logan:

Enclosed please find a copy of the third quarter groundwater monitoring report for the former E-Z Serve facility #100877, located at 525 West A Street, Hayward, California.

If you have any comments regarding this correspondence, please feel free to contact me at (954) 570-5885.

Sincerely,

BROWN & ROOT ENVIRONMENTAL

Arnold C. Lamb

California State Manager

enclosure

cc:

B. Cobb - E-Z Serve

C. Dalton - BRE DFB

(954) 570-5885 FAX: (954) 570-5974

October 16, 1996

Mr. Brian Cobb Environmental and Construction Manager E-Z Serve Petroleum Marketing Company of California P.O. Box 922021 Houston, Texas 77292-2021

SUBJECT: Third Quarter 1996 Groundwater Monitoring (July through September)

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

Dear Mr. Cobb:

Brown & Root Environmental (BRE) was contracted by E-Z Serve Petroleum Marketing Company of California (E-Z Serve) to perform groundwater monitoring at the former E-Z Serve Facility No. 100877 (Site). The Site is located at 525 West A Street, Hayward, California. The Site is presently a vacant lot. The underground storage tanks (USTs) were excavated and removed in June 1990. Site features are depicted on Figure 1.

This report summarizes field and analytical data collected during the current quarter (July 1996 through September 1996) for this facility. The activities summarized in this report were completed at the direction of the Alameda County Department of Health Services (ACDHS).

MONITORING RESULTS

On September 23, 1996, BRE personnel completed the third quarter groundwater monitoring event. Depth to groundwater measurements were collected prior to well purging and sampling. Prior to sampling all monitoring wells were checked for free product using an ORS Environmental Equipment Oil/Water Interface Probe. Phase separated product was detected at this Site in MW-1. The field protocol followed by BRE personnel during groundwater well purging and sampling is included as Appendix A. Well purging and sampling documentation logs are included as Appendix B. BRE will forward documentation of purge water disposal will be forwarded to the State agency under a separate cover.

Depth to groundwater beneath the facility during this monitoring event ranged from 12.29 to 16.77 feet below land surface (bls). Depth to groundwater measurements across the study area during this quarter indicate that the groundwater table dropped approximately 1.5 feet from the last monitoring event. Table 1 presents the groundwater elevation data.



Water table elevations and a groundwater contour map for September 17, 1996, are depicted on Figure 1. The data indicate that groundwater flows generally to the southwest. The average hydraulic gradient is approximately 0.0015 feet per foot. The flow direction and gradient are similar to the second quarter monitoring event.

BRE personnel collected groundwater samples from 13 monitoring wells during this field event. A Groundwater sample was not collected from monitoring well MW-1 because of the presence of phase separated product (approximately 0.01 feet in thickness). Groundwater samples were transported to a California certified laboratory, Centrum Analytical Laboratories, Inc., in Redlands California, and analyzed for Total Petroleum Hydrocarbons - Gasoline range organics (TPHg) by EPA Method 8015 (modified) and total volatile organic aromatics (TVOA), including methyl tertiary butyl ether (MTBE), by EPA Method 8020.

Laboratory analysis of the groundwater samples indicates the presence of dissolved phase petroleum hydrocarbons above laboratory method detection limits (MDLs) in all of the monitoring wells. TPHg concentrations ranged from below detection limit (MW-7, MW-12, and MW-14) to 32,000 μ g/L (MW-4), and TVOA concentrations ranged 16 μ g/L (MW-12) to 12,240 μ g/L (MW-4). MTBE concentrations ranged from below detection limit (MW-8, MW-12, and MW-13) to 2,100 μ g/L (MW-4). Table 1 presents the analytical testing data. The analytical data is depicted on a site plan as Figure 2. The complete analytical laboratory report including the chain of custody is included as Appendix C.

Quality assurance and quality control (QA/QC) samples were also obtained during this quarterly sampling event. The QA/QC samples consisted of one duplicate sample (obtained from well MW-3), one trip blank, and one equipment blank. Hydrocarbon constituents were not detected in either the trip blank or the equipment blank.

CONCLUSIONS AND RECOMMENDATIONS

A risk assessment was conducted for the Site and was submitted to ACDHS in May 1995. Additional information was provided in response to the ACDHS review letter dated August 1995. More information was provided in March 1996 to respond to the verbal request of ACDHS. Currently, ACDHS has not responded to the latest information submitted to them.

BRE recommends the following:

• Reduce the frequency of monitoring to semi-annual for MW-12, MW-8, and MW-13 because they are upgradient and beyond the extent of contamination.



BRE also recommends that the results of the quarterly sampling event be forwarded to the ACDHS for review and comment. Based upon the monitoring data collected during the third quarter, the monitoring events should continue on a quarterly basis.

If you have any questions or comments pertaining to this correspondence, please contact the undersigned at (904) 730-6777.

Sincerely,

BROWN & ROOT ENVIRONMENTAL

Noel Manarang Site Manager

Distribution: (1) Ms. Madhulla Logan

Alameda County Department of Health Services

1131 Harbor Bay Parkway

Alameda, CA 94502



PROFESSIONAL CERTIFICATION

Third Quarter 1996 Groundwater Monitoring Former E-Z Serve #100877 525 West A Street Hayward, California

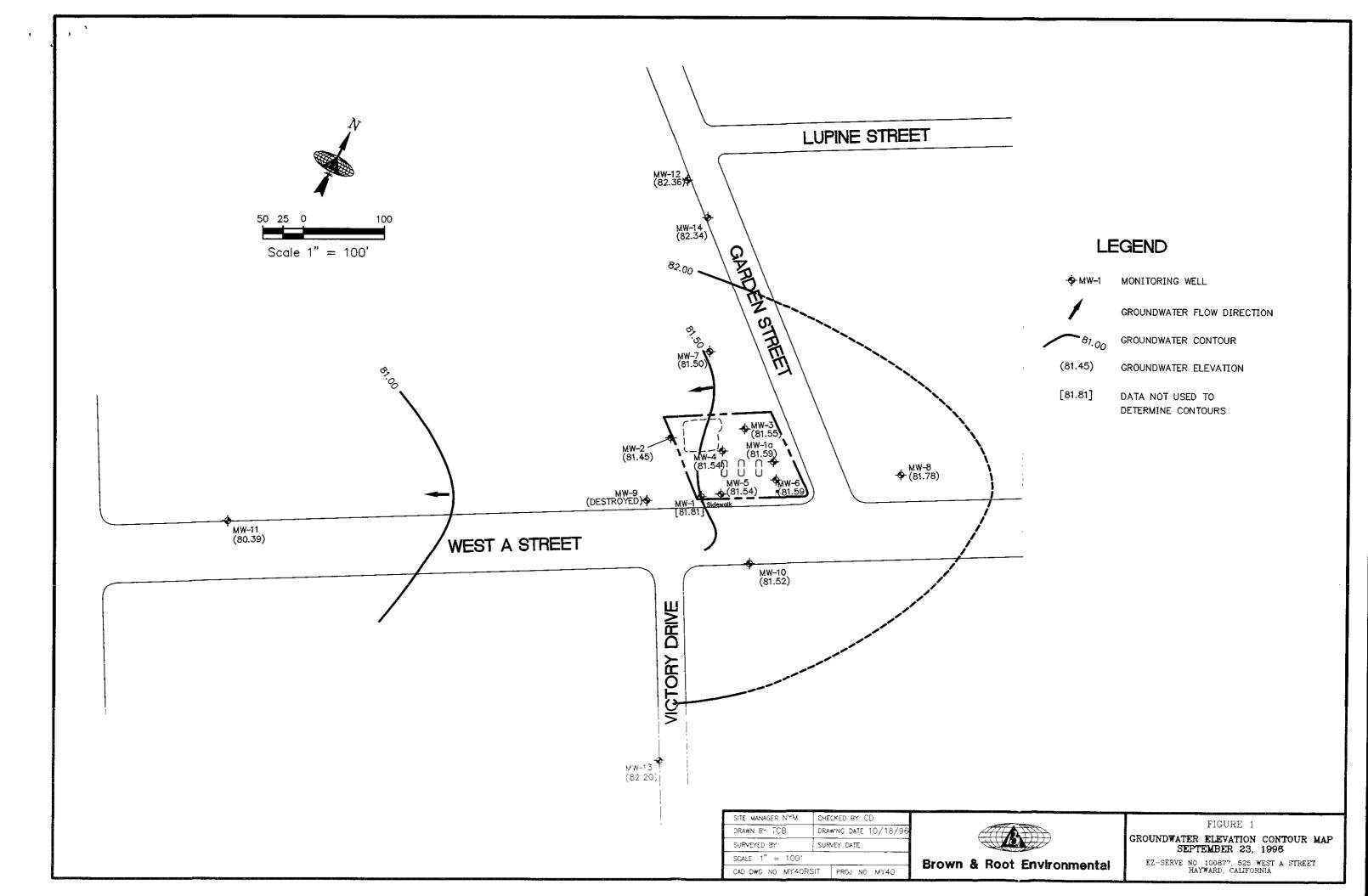
This quarterly groundwater monitoring report was prepared under my responsible supervision in conformance with standard engineering practices and principles, and California Business and Professions Code Section 6735, 7835, and 7835 1 sees luate the groundwater conditions at this site.

No. 39508

site.

Kevin F. Donnelly, P.E.

California Registration No. 39508



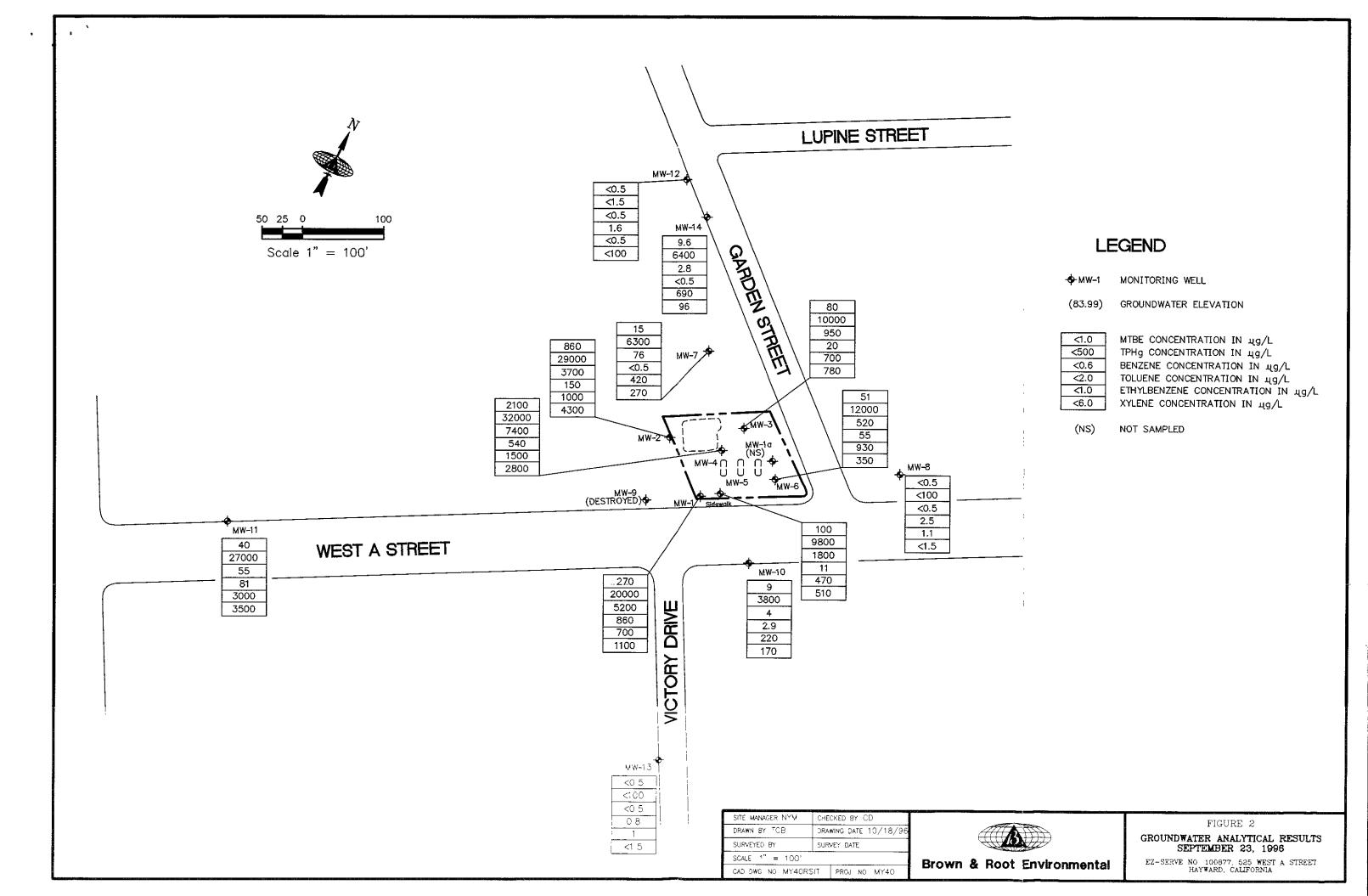


Table 1
Summary of Groundwater Elevation Data and Analytical Results
Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Date	Well	Depth to	Groundwater	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation	Water	Elevation						
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(09/1)
MW-1	2/5/92	99.91	20.82	79.09	NA	76,000	23,000	2,400	6,500	46,000
(screened	9/11/92		20.08	79.83	NA	9,000	1,200	1,800	4,600	48,000
interval	12/22/92		19.79	80.12	NA	22,000	1,600	4,800	17,000	84,000
14.5 - 28.5	3/3/93		16.23	83.68	NA	16,000	1,600	1,900	4,300	54,000
ft bls)	6/23/93	96.73	16.86	79.87	NA	18,000	1,100	1,400	3,700	30,000
´	9/30/93		18.04	78.69	NA	10,000	440	940	1,700	33,000
ľ	2/6/94		18.15	78.58	NA	18,000	1,600	4,700	12,000	64,000
	5/2/94		17.26	79.47	NA	2,100	29	490	520	7,200
ľ	7/1/94		17.60	79.13	NA	3,700	150	550	12,000	13,000
	9/20/94	•	20.59	76.14	NA	3,100	75	440	870	10,000
	12/5/94		17.83	78.90	NA	3,700	87	520	950	87,000
	3/15/95		14.43	82.30	NA	56	2	12	47	290
	6/16/95	•	14.56	82.17	NA	530	12	90	160	2,000
	9/22/95		16.05	80.68	NA	1,400	9	75	110	1,600
	12/11/95		16.74	79.99	NA	1,700	<25	183	270	6,330
	2/13/96		13.38	83.35	NA	8	3	<1 ·	10.6	140
	6/14/96		13.41	83.32	240	6,900	150	960	1,500	24,000
	9/23/96		14.92	81.81	270	5,200	860	700	1,100	20,000
MW-1A	6/23/93	97.59	17.80	80.00			NA - 0.21 ft of	free product	1	J
(screened	2/6/94	 	18.89	78.70	NA	1,700	42	1000	400	8,900.00
interval	5/2/94		18.35	79.24	NA	1,.00	1	09 ft of free produ		0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
not avail.)	7/1/94		18.45	79.14	NA	1,100	<1	920	1,100	12,000
	9/20/94		21.72	75.87	1	1,1,1,1	NA - 0.22 ft of		1 2,200	,,,,,,,
	12/5/94		18.87	78.72	 		NA - 0.07 ft of			
	3/14/95		15.55	82.04	 		NA - 0.05 ft of			
	6/15/95	 	15.63	81.96	i ·		NA - 0.03 ft of			
	9/22/95		17.05	80.54	NA	180	9.2	130	310	2,000
	12/11/95		15.72	81.87	NA NA	310	26	350	850	10,100
	2/13/96		14.35	83.24	NA	830	70	730	2,300	20,700

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525 West A Street, Hayward, California

	Sampled	Elevation	Depth io Water	Groundwater Elevation	MTBE	Benzene	Tolnene	Ethylbenzene	Xylenes	TPHg
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
	6/14/96		14.28	83.31		,	NA			
	9/23/96		16.00	81.59			NA - 0.01 ft of	free product		
MW-2	2/5/92	101.45	22.35	79.10	NA	13,000	4,700	820	1,300	67,000
(screened	9/11/92		21.67	79.78	NA	9,000	1,400	1,200	8,400	57,000
interval	12/22/92		21.39	80.06	NA	9,900	350	2,000	4,100	31,000
15 - 29	3/3/93		17.75	83.70	NA	5,100	1,300	720	1,900	17,000
ft bls)	6/23/93	98.06	18.42	79.64	NA	23,000	1,500	4,500	17,000	60,000
	9/30/93		19.63	78.43	NA	12,000	780	1,500	6,500	38,000
<u></u>	2/6/94		19.61	78.45	NA	8,900	450	2,000	5,500	34,000
<u> </u>	5/2/94		19.84	78.22	NA	3,800	260	1,100	3,500	18,000
	7/1/94		19.18	78.88	NA	3,700	510	870	2,600	18000
	9/20/94		22.17	75.89	NA	4,500	300	1,200	4,000	19000
· [12/5/94		19.37	78.69	NA	4,700	340	1,400	4,500	22,000
	3/15/95		16.89	81.17	NA	5,600	350	1,900	6,300	29,000
	6/16/95		16.79	81.27	NA	4,400	270	1,600	4,700	27,000
	9/22/95		17.54	80.52	NA	6,700	390	1,800	6,400	3,700
	12/11/95		17.33	80.73	NA	3,500	190	1,500	3,700	35,400
	2/13/96		14.89	83.17	NA	4,800	190	1,100	3,500	30,500
	6/14/96		15.04	83.02	430	3,300	120	1,500	3,600	23,000
	9/23/96		16.61	81.45	860	3,700	150	1,000	4,300	29,000

Table 1
Summary of Groundwater Elevation Data and Analytical Results
Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Dete Sampled	Well Elevation	Depth to Water	Groundwater Elevation	MTBE	Benzene	Tolnene	Ethylbenzene	Xylenes	TPHg
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ng/l)
MW-3	2/5/92	101.50	21.85	79.65	NA	1,100	<1	<1	<1	5,900
(screened	9/11/92		21.13	80.37	NA	1,200	180	550	1,100	9,400
interval	12/22/92		20.88	80.62	NA	2,800	190	850	1,600	12,000
15 - 29	3/3/93		17.29	84.21	NA	2,200	360	570	900	11,000
ft bls)	6/23/93	97.66	17.88	79.78	NA	12,000	2,700	1,300	3,500	33000
[9/30/93		19.18	78.48	NA	1,100	160	690	670	4300
Ī	2/6/94		19.21	78.45	NA	4,800	430	1,500	2,900	20000
Ī	5/2/94		18.30	79.36	NA	680	48	310	540	4200
[7/1/94		18.63	79.03	NA ·	600	63	240	470	4600
[9/20/94		21.64	76.02	NA	2,200	130	670	930	8200
	12/6/94		19.15	78.51	NA	640	34	290	480	4000
[3/15/95		16.61	81.05	NA	980	47	370	780	4300
[6/16/95		16.58	81.08	NA	520	20	280	430	3,300
[9/22/95		17.02	80.64	NA	2,100	<100	840	1,600	3,800
	12/11/95		17.79	79.87	NA	610	22	350	550	6,920
	2/13/96		14.38	83.28	NA	1,000	33	500	870	28,900
	6/14/96		14.39	83.27	15	580	21	490	580	6,000
	9/23/96		16.11	81.55	80	950	20	700	780	10,000

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525 West A Street, Hayward, California

Well ID	Date	Well	Depth to	Groundwater	MTBE	Benzene	Tolnene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation (feet)	Water (feet)	Elevation (feet)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ng/l)
MW-4	2/5/92	100.50	21.31	79.19	NA	2,700	410	<1	3,400	16,000
(screened	9/11/92		20.62	79.88	NA	7,600	1,600	1,400	4,100	43,000
interval	12/22/92		20.37	80.13	NA	8,800	1,200	1,500	3,700	29,000
15 - 29	3/3/93		16.78	83.72	NA	5,000	1,500	680	1,700	17,000
ft bls)	6/23/93	97.10	17.45	79.65	NA	3,000	120	560	790	5,700
ſ	9/30/93		18.64	78.46	NA	7,000	2,100	970	2,600	21,000
ĺ	2/6/94		18.59	78.51	NA	7,200	1,600	990	3,200	24,000
	5/2/94		17.81	79.29	NA	2,200	440	470	1,200	10,000
	7/1/94		18.13	78.97	NA	2,000	370	350	930	8,200
ľ	9/20/94		21.13	75.97	NA	2,000	360	380	1,000	7,200
Ī	12/6/94		18.36	78.74	NA	2,300	400	440	1,100	9,000
Ī	3/15/95		14.89	82.21	NA	4,400	600	770	2,660	15,000
	6/16/95		14.68	82.42	NA	5,600	490	890	2,300	19,000
	9/22/95		16.60	80.50	NA	9,300	1,000	1,200	3,600	3,600
ſ	12/11/95		17.27	79.83	NA	1,600	57	. 390	510	6,720
	2/13/96		13.88	83.22	NA	7,200	500	650	2,000	11,700
	6/14/96		13.92	83.18	720	4,100	720	690	1,800	17,000
	9/23/96		15.56	81.54	2,100	7,400	540	1,500	2,800	32,000

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Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Date	Well	Depth to	Groundwater	MTBE	Benzene	Tolnene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation	Water	Elevation						
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(ug/f)	(ug/l)	(0g/l)
MW-5	2/5/92	100.48	20.93	79.55	NA	7,900	5,000	2,900	1,800	78,000
(screened	9/11/92		20.27	80.21	NA	4,700	400	1,400	4,100	49,000
interval	12/22/92		19.99	80.49	NA	8,600	340	2,200	4,800	34,000
15 - 29	3/3/93		16.49	83.99	NA	7,500	640	1,300	3,400	22,000
ft bls)	6/23/93	96.73	17.02	79.71	NA	5,800	120	1,100	2,100	15,000
[9/30/93		18.25	78.48	NA	7,600	410	1,000	4,400	25,000
[2/6/94	[18.26	78.47	NA	6,000	180	2,000	5,900	23,000
ſ	5/2/94		17.50	79.23	NA	1,300	29	440	770	8,000
	7/1/94	ĺ	17.79	78.94	NA	1,700	97	600	1,400	10,000
	9/20/94		20.77	75.96	NA	1,600	54	650	1,400	8,400
	12/5/94		18.02	78.71	NA	1,700	56	670	1,600	10,000
	3/15/95		14.70	82.03	NA	1,800	<50	620	1,400	5,300
	6/16/95		14.82	81.91	NA	1,100	11	180	320	5,300
	9/22/95		16.19	80.54	NA	1,400	11	180	310	4,000
	12/11/95		16.92	79.81	NA	2,800	<100	350	710	8,190
	2/13/96	1	13.57	83.16	NA	1,200	<10	270	360	1,200
	6/14/96		13.55	83.18	110	2,100	33	570	1,000	11,000
	9/23/96		15.19	81.54	100	1,800	11	470	510	9,800
						<u> </u>				

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525 West A Street, Hayward, California

Well ID	Date	Well	Depth 10	Groundwater	MIBE	Benzene	Tolnene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation	Water	Elevation						
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(n8\1)	(u g/ I)	(og/I)
MW-6	2/5/92	100.97	21.29	79.68	NA	5,400	3,500	3,600	10,000	51,000
(screened	9/11/92		20.56	80.41	NA	2,500	830	1,400	2,300	24,000
interval	12/22/92		20.31	80.66	NA	5,100	630	2,000	3,100	23,000
15 - 29	3/3/93		16.83	84.14	NA	4,400	820	1,400	2,400	18,000
ft bls)	6/23/93	97.09	17.30	79.79	NA	4,600	850	2,700	3,400	18,000
	9/30/93		19.05	78.04			NA - 0.03 ft of	free product		
	2/6/94		18.55	78.54	NA	4,600	690	2,100	2,500	20,000
ſ	5/2/94		17.74	79.35	NA	930	54	610	240	5,300
	7/1/94		18.09	79.00	NA	1,500	160	850	690	10,000
	9/20/94		21.05	76.04	NA	2,000	140	1,200	760	11,000
	12/5/94		18.33	78.76	NA	1,300	87	980	610	8,600
	3/15/95		14.91	82.18	NA	1,600	110	1,000	1,000	9,800
	6/16/95		15.11	81.98	NA	1,100	78	1,000	550	9,200
	9/22/95		16.44	80.65	NA	1,700	110	1,200	760	3,000
Ī	12/11/95		17.20	79.89	NA	990	110	1,000	520	13,200
İ	2/13/96		13.89	83.20	NA	1,100	48	750	560	12,500
	6/14/96		13.80	83.29	61	800	99	1,500	730	14,000
i	9/23/96		15.50	81.59	51	520	55	930	350	12,000
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Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Date	Well	Depth to	Groundwater	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation	Water	Elevation						
		(feet)	(fee)	(feet)	(ug/l)	(ug/l)	(ug/l)	(/ug/I)	(ug/l)	(ug/l)
MW-7	6/23/93	97.44	17.87	79.57	NA	4,200	71	4,400	5,600	29,000
(screened	9/30/93		18.94	78.50	NA	3,200	71	2,800	3,400	30,000
interval	2/6/94		19.11	78.33			NA - 0.06 ft of	free product		
10 - 29	5/2/94		18.11	79.33	NA	630	13	660	400	5,700
ft bls)	7/1/94		18.72	78.72	NA	180	99	160	520	3,100
	9/20/94		21.41	76.03	NA	540	6	750	730	6,100
	12/5/94		18.66	78.78	NA	280	<10	- 430	350	3,700
	3/14/95		15.23	82.21	NA	290	4	26	296	1,900
[6/16/95		15.17	82.27	NA	380	5	360	540	5,800
[9/21/95		16.83	80.61	NA	110	<1	220	220	4,020
	12/11/95		17.61	79.83	NA	120	31	400	330	3,750
	2/14/96		14.07	83.37	NA	190	<5	190	280	4,500
	6/14/96		14.26	83.18	11	85	<2	470	200	4,400
	9/23/96		15.94	81.50	15	76	<0.5	420	270	6,300
MW-8	6/23/93	97.61	17.64	79.97	NA	43	9	35	67	350
(screened	9/30/93		18.85	78.76	NA	190	340	170	720	2,700
interval	2/6/94		18.91	78.70	NA	<1	1	1	2	<100
10 - 29	5/2/94		18.11	79.50	NA	<1	3	<1	7	<100
ft bls)	7/1/94		18.43	79.18	NA	18	48	19	37	300
	9/20/94		21.43	76.18	NA	<1	<1	<1	<1	<100
ĺ	12/5/94		18.72	78.89	NA	<0.5	<0.5	<0.5	<0.5	<50
	3/14/95		14.83	82.78	NA	<0.5	<0.5	<0.5	1	<50
	6/16/95		14.92	82.69	NA	<0.5	<0.5	<0.5	<0.5	<50
	9/21/95		16.52	81.09	NA	2.3	1.3	2.7	9	<100
	12/11/95		17.52	80.09	NA	1.3	<1	<1	<3	<100
Í	2/14/96		14.27	83.34	NA	<1	<1	<1	<3 -	<100
	6/14/96		14.06	83.55	<1	<0.6	<2	4	<6	<500
	9/23/96		15.83	81.78	<0.5	<0.5	2.5	1.1	<1.5	<100
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Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Date Sampled	Well Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	MTBE (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)
MW-9	6/23/93	95.41	15.94	79.47	NA	14,000	1,200	2,800	12,000	12,000
(screened	9/30/93		17.05	78.36	NA	22,000	1,100	3,300	15,000	15,000
interval	2/6/94		17.07	78.34	NA	10,000	460	2,100	7,500	7,500
10 - 29	5/2/94		16.24	79.17	NA	5,400	270	1,300	4,700	4,700
ft bls)	7/1/94		16.59	78.82	NA	2,100	120	450	1,300	1,300
	9/20/94		19.61	75.80	NA	2,200	97	400	1,200	1,200
	12/5/94		16.85	78.56	NA	2,700	130	530	1,600	1,600
	3/14/95		14.18	81.23	NA	5,900	270	1,200	3,680	3,680
	6/15/95		14.09	81.32	NA	2,500	130	670	1,800	1,800
	9/21/95			95.41			NA - no a	P		
	12/11/95		15.58	79.83	NA	2,100	140	550	1,600	12,200
	2/14/96			95.41			NA - no a	access	· · · · /	<u> </u>
	6/14/96			95.41			Destro			
	9/23/96			95.41			Destro			
MW-10	6/23/93	97.11	17.39	79.72	NA	980	640	3,500	12,000	35,000
(screened	9/30/93		18.58	78.53	NA	230	12	100	680	4,000
interval	2/6/94		18.61	78.50	NA	69	12	220	120	2,000
10 - 29	5/2/94		17.83	79.28	NA	16	6	85	62	710
ft bls)	7/1/94		18.17	78.94	NA	52	43	120	210	2,000
	9/20/94		21.15	75.96	NA	34	16	270	560	2,800
	12/5/94		18.43	78.68	NA	30	13	260	430	2,700
Į.	3/14/95		15.93	81.18	NA	18	6	200	239	1,400
	6/15/95		15.97	81.14	NA	14	4	140	98	1,600
į	9/21/95		16.48	80.63	NA	37	17	240	380	4,680
	12/11/95		17.30	79.81	NA	2.8	1.3	36	19	670
į	2/14/96		14.02	83.09	NA	<5	<5	330	350	5,200
	6/14/96		13.89	83.22	<1	<0.6	<2	120	<6	1,700
	9/23/96		15.59	81.52	9	4	2.9	220	170	3,800

Table 1
Summary of Groundwater Elevation Data and Analytical Results
Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Date	Well	Depth to	Groundwater	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg
	Sampled	Elevation	Water	Elevation						
		(feet)	(feet)	(feet)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/I)
MW-11	2/10/95	92.68	11.80	80.88	NA	140	22	600	1,000	7,000
(screened	3/14/95		13.96	78.72	NA	200	17	750	1,276	6,000
interval	6/15/95		13.84	78.84	NA	450	63	1,600	2,200	13,000
5 - 25 ft bls)	9/21/95		13.13	79.55	NA	340	27	440	640	7,000
	12/11/95		13.73	78.95	NA	770	89	1,800	2,500	12,600
	2/14/96		10.42	82.26	NA	440	42	1,000	1,800	8,300
	6/14/96		10.61	82.07	36	570	99	3,000	3500	21,000
	9/23/96		12.29	80.39	40	55	81	3,000	3500	27,000
MW-12	2/10/95	99.03	16.30	82.73	NA	<0.5	<0.5	<0.5	<0.5	<50
(screened	3/14/95		15.69	83.34	NA	· <0.5	<0.5	<0.5	<0.5	<50
interval	6/15/95		15.55	83.48	NA	<0.5	<0.5	<0.5	<0.5	<50
10 - 30 ft bls)	9/21/95		17.58	81.45	NA	<1	<1	<1	3	<100
	12/11/95		18.36	80.67	NA	<1	1	1	1.5	<100
·	2/14/96		14.78	84.25	NA	<1	<1	<1	<3	<100
	6/14/96		14.99	84.04	<1	<0.6	<2	<1	<6	<500
	9/23/96		16.67	82.36	<0.5	<0.5	1.6	<0.5	<1.5	<100
MW-13	2/10/95	96.80	14.45	82.35	NA	<0.5	<0.5	<0.5	<0.5	<50
(screened	3/14/95		15.81	80.99	NA	<0.5	<0.5	<0.5	<0.5	<50
interval	6/15/95		15.79	81.01	NA	<0.5	<0.5	<0.5	<0.5	<50
10 - 30 ft bls)	9/21/95		15.50	81.30	NA	2.6	2.2	<1	9.4	<100
	12/11/95		16.60	80.20	NA	<1	<1	1	<3	<100
	2/14/96		12.92	83.88	NA	<1	<1	<i< td=""><td>7.3</td><td><100</td></i<>	7.3	<100
	6/14/96		12.91	83.89	<1	<0.6	<2	<1	<6	<500
	9/23/96		14.60	82.20	<0.5	<0.5	0.8	1	<1.5	<100

Table 1
Summary of Groundwater Elevation Data and Analytical Results
Former E-Z Serve Facility #100877
525 West A Street, Hayward, California

Well ID	Dute Sampled	Well Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	MTBE (ug/l)	Benzene (ug/l)	Tolnene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	TPHg (ag/l)
MW-14	2/10/95	99.01	16.28	82.73	NA	42	8	740	2100.0	12,000
(screened	3/14/95		14.87	84.14	NA	6	2	36	298.0	1,400
interval	6/15/95		14.72	84.29	NA	8	<0.5	6	26.0	660
10 - 30 ft bls)	9/21/95		17.61	81.40	NA	25	15	280	310.0	4,430
	12/11/95		18.30	80.71	NA	6.8	1	120	150.0	1,330
[2/14/96		14.87	84.14	NA	<1	<1	3.1	3.3	<100
1	6/14/96		14.90	84.11	3	19	8	240	80	1,900
	9/23/96		16.67	82.34	9.6	2.8	<0.5	690	96	6,400

NOTE:

TPHg = Total Petroleum Hydrocarbons as gasoline

MTBE = Methyl Tertiary Butyl Ether

NA = Not Analyzed for this constituent

APPENDIX A

BRE STANDARD OPERATING PROCEDURES FOR WELL PURGING AND SAMPLING

Revision No.: 0

Date: January 01, 1995

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BROWN & ROOT ENVIRONMENTAL CALIFORNIA

STANDARD OPERATING PROCEDURE for GROUNDWATER SAMPLING

OBJECTIVE:

The purpose of this SOP is to provide a concise guideline for the proper collection of groundwater samples. Implementation of the sampling procedures has a significant effect on the quality of the analytical data.

Sampling of existing monitoring wells and newly installed monitoring wells will consist of the following seven activities:

- Measurement of depth to water level and total depth of the well (to calculate well volume), if the total depth is not provided;
- Decontamination of sampling equipment;
- Evacuation of static water (purging);
- Measurement and recording of groundwater temperature, pH, and specific conductance:
- Collection of the sample;
- Sample preservation and;
- Sample handling and transportation to the laboratory.

DECONTAMINATION:

All sampling devices and monitoring equipment must be properly decontaminated prior to Equipment decontamination must be documented in the logbook. decontamination process will consist of the following activities:

- Alconox and tap water wash;
- Tap water rinse;

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• Reagent Grade Methanol rinse (the equipment shall be thoroughly wetted with Methanol);

- Analyte-free water rinse;
- Air dry.

WATER LEVEL MEASUREMENTS:

A complete round of water level measurements must be collected prior to any purging or sampling activities. Water level measurements, using an electronic water level indicator, should be taken to the nearest 0.01 foot. Where possible water level measurements shall be taken on the North Side of the monitoring well at the top of the casing, unless a measurement point has been previously established.

PURGING STATIC WATER:

- All information concerning the purging of static water including calculations must be recorded for each well. The type of equipment used to purge the well must be described in the logbook. If a pump is utilized information concerning the pump type and flow-rate must be included in the logbook.
- When a bailer is used for purging and/or sampling activities it must be lowered gently into the well such that the formation waters are disturbed as little as possible. It is very important that the turbidity of the sample not be increased by improper purging and/or sampling techniques.
- A minimum of three well volumes of the standing water column will be purged from the well prior to the collection of samples. Monitoring well purging will continue until groundwater temperature, pH, and specific conductance has stabilized for three measurements each following the removal of one well volume. If five well are removed then, only one set of water quality measurements is required on final purge volume. No more than five wells volumes shall be removed during purging activities. Over purging the well may result in the collection of non-representative groundwater samples.
- If the well does not recover quickly enough to permit the removal of three well volumes, the well will be pumped or bailed dry and sampled immediately following sufficient recovery. Generally, bailing the well dry once is adequate. Purging will be performed utilizing a properly decontaminated stainless steel or Teflon bailer or the appropriate pump. Utilization of a submersible pump is the preferable method of purging as repeatedly lowering the bailer into the monitoring well may oxygenate the formation waters and change the chemistry of the groundwater.

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LANYARDS:

- Lanyards may be disposable (braided or monofilament nylon) or reusable (stainless steel Teflon coated).
- A disposable lanyard must be changed for each monitor well." But the same lanyard may used for purging and sampling operations without decontamination between purging sampling activities.
- · Reusable lanyards shall be decontaminated between monitoring wells but do not require between purging and sampling operations.
- Lanyards must never come in contact with the ground or other surface which may contaminate the lanyard.

SAMPLE COLLECTION ORDER:

Samples shall be collected from the least to the most contaminated sampling locations within a site. This information can be obtained from historical data, the Site Manager, or OVA readings at the site.

Unless field conditions justify other sampling regimens, samples shall be collected in the following order:

- a. Volatile Organic Contaminants (VOCs)
- b. Extractable Organics [includes Total Recoverable Petroleum Hydrocarbons (TRPH), & Grease, Pesticides and Herbicides];
- c. Total Metals:
- d. Dissolved Metals:
- e. Microbiological;
- f. Inorganics (including Nutrients, Demands and Physical Properties); and
- g. Radionuclides.

SAMPLE PRESERVATION:

Samples must be preserved with the appropriate preservative and maintained on ice. A laboratory certified to perform hazardous waste testing by the State of California Department of Health Services (DOHS) will dispatch prepreserved sample containers for collection of samples. It is essential that the samples be maintained at 4 degrees centigrade until delivery to the laboratory facility. A notation must be made on the Chain of Custody form (COC) as well as in the logbook concerning sample preservation.

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SAMPLE HANDLING:

It is critical that proper custody procedures be followed throughout all phases of sample collection and handling. Some specific points of concern are as follows: The samples from a particular site must never be commingled with samples from another site. Samples from several sites must never be combined in the same sample cooler. Each sample group must also be under separate documentation (i.e., A COC must be generated for each site and for each sampling event). The Site Manager as well as the individual who releases the samples to the transporter must follow up to see if the samples were received at the laboratory facility.

QUALITY ASSURANCE QUALITY CONTROL:

- Trip Blanks will be utilized to verify that handling and transportation activities of the empty sample containers and collected samples has not contaminated the groundwater samples. Trip blanks will be prepared and dispatched by the analyzing Laboratory. Trip blanks will accompany the empty sample containers through sampling and return shipment of samples to the Laboratory.
- Equipment Blanks will be collected, in field, to assess the completeness of decontamination procedures for precleaned equipment and field cleaned equipment. Equipment blanks will consist of pouring analyte-free water over decontaminated sampling equipment and collecting the rinsate into the appropriate prepreserved containers.
- <u>Duplicates</u> will be collected to assess the representativeness and variability inherent in the sampling process. They shall be obtained by <u>DUPLICATING</u> (simultaneously or in rapid succession) the entire sample acquisition technique that was used to obtain the first sample.

DOCUMENTATION:

Documentation is an essential part of sample collection therefore field logbook, field forms, sample labels, and COC records must be complete and accurate. At a minimum, the following information must be included in the logbook:

- Equipment used to purge the well; include pump type and flow-rate if applicable.
- Volume of water purged from the well.
- Complete description of the decontamination procedures used to clean the sampling equipment. If the equipment was pre-cleaned at the warehouse or laboratory the lot associated with this cleaning must be recorded in the logbook.

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• The source of the analyte free water utilized on site. Include any lot numbers or batch numbers in the logbook.

- Note which well was sampled using the equipment blank bailer.
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor,) as it is being sampled.
- Sample temperature, pH, and specific conductance will be recorded for each sample.
- Weather conditions (e.g., air temperature, wind conditions, recent heavy rainfall, conditions) at the time of sampling will be recorded.
- The exact time of sample collection and the person who collected the sample.
- If any field forms are utilized the forms must be referenced in the logbook. For example following should be written in the logbook to reference a form: Refer to the water quality sheets for information concerning......

SAMPLE IDENTIFICATION:

Sample nomenclature must be unique and must always include the date of sample collection. All samples must be identified utilizing the following format:

project #/ sample id/ date (e.g. MJ50/MW-3/122094, MJ53/INF/122094, etc.)

For example, a sample collected for project site MJ50 for monitoring well MW-3 on December 20, 1994 would have the following sample id: MJ50-MW-3-122094.

CONTAINMENT AND DISPOSAL OF PURGE WATER:

Purge water will be collected into DOT 17-H 55 gallon drums. The drums will be transported to an appropriate treatment facility and properly disposed of. Drum removal and disposal practices shall be thoroughly documented.

APPENDIX B

WELL PURGING AND SAMPLING DOCUMENTATION LOGS

Site Name:	E-Z Serve	#100877		_	Job #:	MY40	
Location:		A Street, Ha	yward, CA	_	Date:	9/23/96	
Samplers:		s, V. Millar			Well ID:	MW-1	
Weather:	Overcast,	misty, 60 de	gF	_ _			•
WATER CO	LUMN INF	ORMATION	(ft.) [1]:				
a. Depth to	Water:		14.92		TOC Elevat	ion:	96.73
b. Total We	ll Depth:		32.10	-	Water Table	Elevation:	81.81
c. Height of	•	nn:	17.18	_	Well Diamet	ter:	4"
d. Well Casi	ing Volume	(gals):	11	_			
e. Well Scre	_	, .	20	[1]	All datum a	re relative t	o a
f. TOTAL W	ÆLL VÕLU	JME:		_	measurmer		
				_	the TOC.	•	
WELL PUR	GING DAT	A:					
a. Purge Me	thod:			2" Grundfros F	Redi-Flow sub	omersible pu	ımp
b. Purge Vo		jal, per well v	/ol.):	33.5 gai. (3x w		· · · · · · · · · · · · · · · · · · ·	
c. Field Wat				Accumet 1002		118733 cond	. meters
d. Pump Flo		· ·	• •	3.3 gpm	<u> </u>		
		ter Disposal:		17-H - 55 gallo	n drums		
		•					
Volume Removed				Specific			
(gal.)	Time	T°c	pH	Conductance	Description	Odor	Comments
8	1551	19.2	7.07	1.31	clear	slt fuel-like	
18	1554	19.0	7.20	1.30	clear	slt fuel-like	
25	1557	19.0	7.12	1.31	clear	slt fuel-like	
34	1559	19.3	7.12	1.31	clear	sit fuel-like	
Sample	1610						
Sample	1010	 		 			
Method: Sample Con	tainers:	N METHOD: Disposable 40 ml VOA	Teflon Baile vials				
Sample Pres	servation:			ees centigrade			·
Analyses:		EPA Method	1 8020 + M	TBE, EPA Metho	od 8015 mod	TPHg	
Laboratory:		Centrum An	alytical Lab	oratories, Inc. Id	cated in Red	llands, CA	····
COMMENTS	<u>}:</u>					<u>.</u>	
					······································		

Site Name:	E-Z Serve	#100877			Job #:	MY40	
Location:		A Street, Hay	ward, CA		Date:	9/23/96	
Samplers:	R. Roberts				Well ID:	MW-2	
Weather:		misty, 60 de	F				-
				••••			
WATER CO	LUMN INF	ORMATION	(ft.) [1]:				
a. Depth to \	Water:		16.61	_	TOC Elevat		98.06
b. Total Wel	l Depth:		32.30	_	Water Table	Elevation:	
c. Height of	water colun	nn:	15.69	-	Well Diame	ter:	4"
d. Well Casi			10	-	•		
e. Well Scre	•		14	[1]	All datum a	re relative t	o a
f. TOTAL W	_	ME:			measurmer	nt point loca	ated on
				-	the TOC.		
WELL PUR	GING DATA	A:					:
a. Purge Me				2" Grundfros F	Redi-Flow sub	omersible pu	ımp
b. Purge Vo		al. per well v	rol.):	31 gal. (3x wel			
c. Field Wat	er Quality	Aonitorina Ed	uipment:	Accumet 1002		Hi8733 cond	. meters
d. Pump Flo			•	2.4			
e. Method o				17-H - 55 gallo	n drums		
	, , u.g	•••• ••• •••••••••••••••••••••••••••••					
		<u> </u>	T T				
Volume				Consider			,
Removed	Time	T°c_	pH	Specific Conductance	Description	Odor	Comments
(gal.) 2	1706	19.0	6.88	1.46	It gray	fuel-like	
18	1709	18.8	6.92	1.42	It gray	fuel-like	
24	1714	18.3	6.92	1.42	It gray	fuel-like	
36	1718	18.1	6.97	1.43	it gray	fuel-like	
Sample	1734	İ					,
<u>'</u>							
SAMPLE Co Method: Sample Cor Sample Pre Analyses: Laboratory:	itainers:	EPA Metho	Teflon Baild vials E to 4 degr d 8020 + M	er ees centigrade TBE, EPA Meth poratories, Inc. le			
COMMENT	<u>8:</u>						

Site Name:	E-Z Serve	#100877		Job #: <u>MY40</u>				
Location:		A Street, Hay	ward, CA	-	Date:	9/23/96		
Samplers:	R. Roberts			-	Well ID:	MW-3		
Weather:		misty, 60 deg	F	- -				
WATER CO	I IIMN INF	ORMATION (ft.) [1]:					
a. Depth to		,	16.11		TOC Elevati	tion: 97.66		
b. Total We			32.10	-		e Elevation: 81.55		
c. Height of	•	nn:	15.99	=	Well Diamet		4"	
d. Well Cas			10	-				
e. Well Screen Length: 14					All datum a	re relative t	to a	
f. TOTAL WELL VOLUME:					measumen			
				-	the TOC.	•		
WELL PUR	GING DATA	A :						
a. Purge Me				2" Grundfros F	Redi-Flow sub	mersible pu	ımp	
		al, per well v	ol.):	31 gal. (3x wel	l volume)			
b. Purge Vol. (@gal. per well vol.): c. Field Water Quality Monitoring Equipment:				Accumet 1002	pH, Hanna F	118733 cond	l. meters	
	c. Field Water Quality Monitoring Equipment: d. Pump Flow Rate (gpm):							
e. Method o				17-H - 55 gallo	n drums			
Volume								
Removed				Specific				
(gal.)	Time	T°c	pН	Conductance	Description	Odor	Comments	
5	1404	20.5	6.97	1.26	it gray	fuel-like		
14	1405	19.7	6.97	1.25	clear	fuel-like	<u> </u>	
16	1406	19.4	6.94	1.25	clear	fuel-like		
27	1411	19.2	6.94	1.25	clear	fuel-like		
29	1412	19.2	6.87	1.25	clear	fuel-like	<u> </u>	
35	1416	19.2	6.89	1.26	clear	fuel-like	<u></u>	
Sample	1448							
SAMPLE C	OLLECTIO	N METHOD:						
Method:		Disposable 1	Teflon Baile	er				
Sample Cor	ntainers:	40 ml VOA	/ials					
Sample Pre		HCL and ICI	E to 4 degr	ees centigrade				
Analyses:				TBE, EPA Meth				
Laboratory:		Centrum An	alytical Lat	oratories, Inc. k	ocated in Red	llands, CA		
COMMENT	S:							
	- <u></u>							

GROUNDWATER SAMPLE COLLECTION RECORD

Site Name:				•••	Job #:	MY40		
Location:		A Street, Ha	yward, CA	_	Date:	9/23/96 MW-4		
Samplers:	R. Roberts		<u></u>	_	Well ID:	MVV-4		
Weather:	Overcast,	misty, 60 de	gF	_				
WATER CO	LUMN INF	ORMATION	(ft.) [1]:					
a. Depth to	Water:		15.58	_	TOC Elevati	-	97.10	
b. Total We			32.11					
c. Height of	water colur	nn:	16.55	_	Well Diamet	er:	4"	
d. Well Casing Volume (gals):				_				
e. Well Scr	en Length:		14	[1]	All datum a			
f. TOTAL V	VELL VOLU	ME:		_	measurmenthe TOC.	t point loc	ated on	
WELL PUR	GING DAT	۸.						
a, Purge Me		n.		2" Grundfros F	Redi-Flow sub	mersible or	amo	
		jal. per well v	wi).	32 gal. (3x we				
		Monitoring Ed		Accumet 1002		118733 cond	l. meters	
d. Pump Flo		womitoring ma	4	3.2 gpm				
		ter Disposai:		17-H - 55 gallo	n drums	· · · · ·		
Volume								
Removed	Time	T*c	pH	Specific Conductance	Description	Odor	Comments	
(gal.) 7	Time 1619	19.0	6.86	1.39	clear	fuel-like		
11	1621	18.7	7.10	1.38	clear	fuel-like		
15	1640	21.8	7.06	1.47	clear	fuel-like		
18	1642	20.4	7.12	1.34	clear	fuel-like	1	
37	1648	19.0	6.89	1.38	clear	fuel-like		
Sample	1648							
				<u> </u>			<u> </u>	
i	OLLECTIO	N METHOD:						
Method:			Teflon Baile	er			 	
Sample Co		40 mi VOA		non continueds			 	
Sample Pre	servation:			ees centigrade	ad 9015 man	TDUA		
Analyses:				TBE, EPA Meth				
Laboratory:		Centrum Ar	iaiyucai Lat	ooratories, Inc. l	ocateu III Ret	nanus, CA		

COMMENTS: refilled generator with gasoline during purging from 1621 to 1640

	#100877			Job #:	MY40		
525 West	West A Street, Hayward, Ca		-	Date:	9/23/96		
			•	Well ID:	MW-4		
		F	-				
LUMN INF	ORMATION ((ft.) [1]:					
Water:		15.56		TOC Elevation	on:	97.10	
		32.11	- -	Water Table	Elevation:	81.54	
	nn:	16.55	-	Well Diamete	er:	4"	
ng Volume	(gais):	11	•				
en Length:		14	measurment point located			to a	
ELL VOLU	ME:					ated on	
			_	the TOC.			
GING DATA	A:						
thod:			2" Grundfros F	tedi-Flow sub	mersible pu	ımp	
er Quality N	Monitoring Eq	uipment:	Accumet 1002	pH, Hanna H	118733 cond	. meters	
d. Pump Flow Rate:							
e. Method of Purge Water Disposal:			17-H - 55 gallo	n drums			
			Specific	5	04		
					Description Odor		
Time	T°c					CONTRICENTS	
1619	19.0	6.86	1.39	clear	fuel-like	Constitution	
1619 1621	19.0 18.7	6.86 7.10	1.39 1.38	clear clear	fuel-like fuel-like	CONTREMA	
1619 1621 1640	19.0 18.7 21.8	6.86 7.10 7.06	1.39 1.38 1.47	clear clear clear	fuel-like fuel-like fuel-like	Congress	
1619 1621 1640 1642	19.0 18.7 21.8 20.4	6.86 7.10 7.06 7.12	1.39 1.38 1.47 1.34	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Constitution	
1619 1621 1640	19.0 18.7 21.8	6.86 7.10 7.06	1.39 1.38 1.47	clear clear clear	fuel-like fuel-like fuel-like	Constitution	
1619 1621 1640 1642 1648	19.0 18.7 21.8 20.4	6.86 7.10 7.06 7.12	1.39 1.38 1.47 1.34	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Consideration	
1619 1621 1640 1642	19.0 18.7 21.8 20.4	6.86 7.10 7.06 7.12	1.39 1.38 1.47 1.34	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Consideration	
1619 1621 1640 1642 1648	19.0 18.7 21.8 20.4	6.86 7.10 7.06 7.12	1.39 1.38 1.47 1.34	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Consideration	
1619 1621 1640 1642 1648	19.0 18.7 21.8 20.4 19.0	6.86 7.10 7.06 7.12	1.39 1.38 1.47 1.34	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Consideration	
1619 1621 1640 1642 1648	19.0 18.7 21.8 20.4 19.0	6.86 7.10 7.06 7.12 6.89	1.39 1.38 1.47 1.34 1.38	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Consideration	
1619 1621 1640 1642 1648 1648	19.0 18.7 21.8 20.4 19.0 N METHOD: Disposable	6.86 7.10 7.06 7.12 6.89	1.39 1.38 1.47 1.34 1.38	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Controller	
1619 1621 1640 1642 1648	19.0 18.7 21.8 20.4 19.0 N METHOD: Disposable 40 ml VOA	6.86 7.10 7.06 7.12 6.89	1.39 1.38 1.47 1.34 1.38	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like	Contracts	
1619 1621 1640 1642 1648 1648	19.0 18.7 21.8 20.4 19.0 N METHOD: Disposable 40 ml VOA HCL and ICI	6.86 7.10 7.06 7.12 6.89 Teflon Baile vials	1.39 1.38 1.47 1.34 1.38	clear clear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like		
1619 1621 1640 1642 1648 1648 OLLECTIO	19.0 18.7 21.8 20.4 19.0 N METHOD: Disposable 40 ml VOA v HCL and ICI EPA Method	6.86 7.10 7.06 7.12 6.89 Fefion Baile vials to 4 degree	1.39 1.38 1.47 1.34 1.38 ees centigrade	clear clear clear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like		
1619 1621 1640 1642 1648 1648 OLLECTIO	19.0 18.7 21.8 20.4 19.0 N METHOD: Disposable 40 ml VOA v HCL and ICI EPA Method	6.86 7.10 7.06 7.12 6.89 Fefion Baile vials to 4 degree	1.39 1.38 1.47 1.34 1.38	clear clear clear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like	Contribute	
1619 1621 1640 1642 1648 1648 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and ICI EPA Method Centrum An	7.10 7.06 7.12 6.89 Feflon Baile vials E to 4 degree 1 8020 + M ² alytical Lab	1.39 1.38 1.47 1.34 1.38 Per Sees centigrade TBE, EPA Methoratories, Inc. Id	clear clear clear clear clear dear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like fuel-like		
1619 1621 1640 1642 1648 1648 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and ICI EPA Method Centrum An	7.10 7.06 7.12 6.89 Feflon Baile vials E to 4 degree 1 8020 + M ² alytical Lab	1.39 1.38 1.47 1.34 1.38 ees centigrade	clear clear clear clear clear dear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like fuel-like		
1619 1621 1640 1642 1648 1648 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and ICI EPA Method Centrum An	7.10 7.06 7.12 6.89 Feflon Baile vials E to 4 degree 1 8020 + M ² alytical Lab	1.39 1.38 1.47 1.34 1.38 Per Sees centigrade TBE, EPA Methoratories, Inc. Id	clear clear clear clear clear dear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like fuel-like		
1619 1621 1640 1642 1648 1648 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and ICI EPA Method Centrum An	7.10 7.06 7.12 6.89 Feflon Baile vials E to 4 degree 1 8020 + M ² alytical Lab	1.39 1.38 1.47 1.34 1.38 Per Sees centigrade TBE, EPA Methoratories, Inc. Id	clear clear clear clear clear dear clear clear	fuel-like fuel-like fuel-like fuel-like fuel-like fuel-like		
Date: 9/23/96							

la.,	= - - - - - - - - - -	#400077			Job#:	MY40	
Site Name:				-	Date:	9/23/96	
Location:		A Street, Hay	ward, CA	-	Well ID:	MW-5	·····
Samplers:	R. Roberts			=	Well ID.	MIAA-O	
Weather:	Overcast,	misty, 60 dec) F	-			
WATER CO a. Depth to \		ORMATION (15.19	_	TOC Elevati		96.73
b. Total Wel			32.48	_	Water Table Elevation: 81.54		
c. Height of	water colun	าก:	17.29	_	Well Diameter: 4"		
d. Well Casi	ng Volume (gais):		_				
e. Well Scre	en Length:		14	[1]	[1] All datum are relative to a		
f. TOTAL W	ELL VOLU	ME:		measurment point located			ited on
				_	the TOC.		
WELL PUR	GING DATA	A:					
a. Purge Me	thod:			2" Grundfros F		mersible pu	mp
b. Purge Vo	l. (@0	al. per well v	ol.):	34 gal. (3x wel			
c. Field Wat	er Quality N	Monitoring Eq	juipment:	Accumet 1002	pH, Hanna I	118733 cond	. meters
d. Pump Fio	w Rate:			3.9 gpm			
e. Method of		ter Disposal:		17-H - 55 gallo	n drums		
Volume Removed				Specific			
(gal.)	Time	T°c	pН	Conductance	Description	Odor	Comments
			6.65	1.32	sit cloudy	sit fuel-like	
5	1526	21.8	0.03				
	1526 1527	21.8 19.8	6.72	1.29	sit cloudy	sit fuel-like	
5						sit fuel-like	
5 15	1527	19.8	6.72	1.29	sit cloudy		
5 15 19	1527 1529	19.8 19.8	6.72 6.71	1.29 1.31	sit cloudy clear	sit fuel-like	
5 15 19	1527 1529	19.8 19.8	6.72 6.71	1.29 1.31	sit cloudy clear	sit fuel-like	
5 15 19	1527 1529	19.8 19.8	6.72 6.71	1.29 1.31	sit cloudy clear	sit fuel-like	
5 15 19 38	1527 1529 1534	19.8 19.8	6.72 6.71	1.29 1.31	sit cloudy clear	sit fuel-like	
5 15 19 36 Sample	1527 1529 1534 1540	19.8 19.8	6.72 6.71 6.67	1.29 1.31 1.31	sit cloudy clear	sit fuel-like	
5 15 19 36 Sample SAMPLE Co	1527 1529 1534 1540	19.8 19.8 19.8	6.72 6.71 6.67	1.29 1.31 1.31	sit cloudy clear	sit fuel-like	
5 15 19 38 Sample SAMPLE Comethod: Sample Comethod:	1527 1529 1534 1540 OLLECTIO	19.8 19.8 19.8 N METHOD: Disposable 40 ml VOA	6.72 6.71 6.67 Teflon Baile vials	1.29 1.31 1.31	sit cloudy clear	sit fuel-like	
5 15 19 36 Sample SAMPLE Co	1527 1529 1534 1540 OLLECTIO	19.8 19.8 19.8 N METHOD: Disposable 40 ml VOA HCL and IC	6.72 6.71 6.67 Teflon Baile vials E to 4 degree	1.29 1.31 1.31	sit cloudy clear clear	sit fuel-like sit fuel-like	
5 15 19 38 Sample SAMPLE Community Control Con	1527 1529 1534 1540 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and IC EPA Method	6.72 6.71 6.67 Teflon Baild vials E to 4 degree d 8020 + M	1.29 1.31 1.31 ees centigrade	slt cloudy clear clear	sit fuel-like slt fuel-like	
5 15 19 38 Sample SAMPLE Community Method: Sample Correst Sample Present Analyses: Laboratory:	1527 1529 1534 1540 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and IC EPA Method	6.72 6.71 6.67 Teflon Baild vials E to 4 degree d 8020 + M	1.29 1.31 1.31	slt cloudy clear clear	sit fuel-like slt fuel-like	
5 15 19 38 Sample SAMPLE Community Control Con	1527 1529 1534 1540 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and IC EPA Method	6.72 6.71 6.67 Teflon Baild vials E to 4 degree d 8020 + M	1.29 1.31 1.31 ees centigrade	slt cloudy clear clear	sit fuel-like slt fuel-like	
5 15 19 38 Sample SAMPLE Community Method: Sample Correst Sample Present Analyses: Laboratory:	1527 1529 1534 1540 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and IC EPA Method	6.72 6.71 6.67 Teflon Baild vials E to 4 degree d 8020 + M	1.29 1.31 1.31 ees centigrade	slt cloudy clear clear	sit fuel-like slt fuel-like	
5 15 19 38 Sample SAMPLE Community Method: Sample Correst Sample Present Analyses: Laboratory:	1527 1529 1534 1540 OLLECTIO	N METHOD: Disposable 40 ml VOA HCL and IC EPA Method	6.72 6.71 6.67 Teflon Baild vials E to 4 degree d 8020 + M	1.29 1.31 1.31 ees centigrade	slt cloudy clear clear	sit fuel-like slt fuel-like	

Site Name:	E-Z Serve	#100877			Job #:	MY40		
Location:		A Street, Hay	ward, CA	-	Date: 9/23/96			
Samplers:	R. Roberts		<u>,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, </u>	_	Well ID:	MW-6		
Weather:		misty, 60 deg	F	-				
		×		_				
WATER CO	LUMN INFO	ORMATION ((ft.) [1]:					
a. Depth to \	Nater:		15.50	_	TOC Elevati		97.09	
b. Total Wel	l Depth:		32.10	_ _	Water Table			
c. Height of	water colun	าก:	16.60	Well Diameter: 4			<u>4"</u>	
d. Well Casi	ng Volume	(gals):	11	- -				
e. Well Scre	en Length:		14	[1] All datum are relative to a				
f. TOTAL W	ELL VOLU	ME:	<u></u>	-	measurmen	t point loca	ited on	
					the TOC.			
WELL PUR		A :						
a. Purge Me				2" Grundfros F		mersible pu	mp	
		al. per well v		32 gal. (3x wel	l volume)			
	•	Monitoring Eq	uipment:	Accumet 1002	pH, Hanna F	118733 cond	. meters	
d. Pump Flo				3 gpm	<u>.</u>			
e. Method o	f Purge Wa	ter Disposal:		17-H - 55 gaile	n drums			
Volume		I						
Removed	i			Specific				
(gal.)	Time	T°c	pH pH	Conductance	Description	Odor	Comments	
5	1457	20.5	7.31	1.33	clear	slt fuel-like		
7	1458	20.0	7.03	1.31	clear	slt fuel-like		
15	1500	20.4	6.73	1.31	clear	slt fuel-like		
20	1503	20.1	6.83	1.31	clear	slt fuel-like		
30	1504	19.9	6.91	1.31	clear	slt fuel-like		
35	1507	19.9	6.88	1.31	clear	slt fuel-like		
Sample	1515							
Ĺ							<u> </u>	
Method:		N METHOD: Disposable		er				
Sample Cor		40 ml VOA						
Sample Pre	servation:			ees centigrade		Trent to		
Analyses:				TBE, EPA Meth			<u> </u>	
Laboratory:		Centrum An	alytical Lat	ooratories, Inc. le	ocated in Rec	ilanos, CA		
							•	
COMMENT	S:							
COMMENT	S <u>:</u>			-				
COMMENT	S:							
COMMENT	\$ <u>:</u>							

Site Name:	E-Z Serve	#100877		Job #: MY40				
Location:		A Street, Hay	ward, CA	•	Date:	9/23/96		
Samplers:	R. Roberts			-	Well ID:	MW-7		
Weather:		misty, 60 deg	F	•				
				-				
WATER CO	LUMN INFO	ORMATION ((ft.) [1]:					
a. Depth to			15.94		TOC Elevati	on:	97.44	
b. Total We			30.06		Water Table	Elevation:	81.50	
c. Height of		าก:	14.12	_	Well Diamet	er:	2"	
d. Well Cas			2	-		·		
e. Well Scre			14	[1]	All datum a	re relative t	o a	
f. TOTAL W	_	ME:		•	measurmen	t point loca	ited on	
				•	the TOC.	-		
WELL PUR	GING DATA	A :						
a. Purge Me				2" Grundfros R	edi-Flow sub	mersible pu	mp	
b. Purge Vo		al, per well v	ol.):	7 gal. (3x well				
c. Field Wa	er Quality N	ionitorina Eq	uipment:	Accumet 1002	pH, Hanna F	118733 cond.	. meters	
d. Pump Flo			•	0.8 gpm				
e. Method o		ter Disposal:		17-H - 55 gallo	n drums			
	T	1	l	I				
Volume	1	1	1	0				
Removed	-	T°c	pН	Specific Conductance	Description	Odor	Comments	
(qal.)	1251	22.9	7.74	1.28	dk gray	slt fuel-like		
5	1253	21.0	7.19	1.27	sit cloudy	slt fuel-like		
8	1257	19.9	6.98	1.30	sit cloudy	slt fuel-like		
	1237	19.5	0.00	1.00	on orday	1		
	 	 						
	 	 						
Sample	1309	 	-					
Campie	1008	<u> </u>						
SAMPLE COLLECTION METHOD: Method: Sample Containers: Sample Preservation: Analyses: Laboratory: Comments: Disposable Teflon Bail 40 ml VOA vials HCL and ICE to 4 degrees EPA Method 8020 + M Centrum Analytical Lai				ees centigrade TBE, EPA Meth				
	<u> </u>		***					
 		<u> </u>						

Site Name:	E-Z Serve #100877				Job #: MY40		
Location:		A Street, Hay	ward, CA		Date:	9/23/96	
Samplers:	R. Roberts				Well ID:	MW-8	
Weather:		misty, 60 dec	у F	-			
<u> </u>				_			
WATER CO		ORMATION (700 Flores		07.04
a. Depth to \			15.83		TOC Elevati		97.61
b. Total Wel	•		32.15	_	Water Table		
c. Height of			16.32	-	Well Diameter: 2"		
d. Well Casi		(gais):				- <u>-</u>	
e. Well Screen Length: f. TOTAL WELL VOLUME:			19	ព្រ			
f. TOTAL W	ELL VOLU	ME:	E: measurement point the TOC.			nt point iod	ated on
WELL PURGING DATA: a. Purge Method:					1116 1 CC.		
				2" Grundfros F	Redi-Flow sub	mersible pu	mp
		al. per well v	ol.):	8 gal. (3x well		***	
b. Purge Vol. (@gal. per well vol.): c. Field Water Quality Monitoring Equipment d. Pump Flow Rate;				Accumet 1002		II8733 cond	. meters
				3.3 gpm			
e. Method of		ter Disposal:		17-H - 55 gallo	n drums		·····
<u> </u>							
Volume Removed				Specific	_		
(qal.)	Time	T*c	pH	Conductance	Description	Odor	Comments
3	1331	22.5	7.21	1.40	cloudy bwn		
7	1332	21.3	7.10	1.38	cloudy bwn		
9.5	1333	20.9	7.12	1.39	cloudy bwn	sit fuel-like	
			ļ	<u> </u>			
				<u> </u>			
			ļ	ļ			
Sample	1333		<u> </u>	<u> </u>			
	<u> </u>		<u> </u>				
SAMPLE CO		Disposable :		er			
Sample Con		40 ml VOA					
Sample Pres	servation:			ees centigrade			
Analyses:				TBE, EPA Meth			
Laboratory:		Centrum An	alytical Lat	oratories, Inc. le	cated in Red	lands, CA	
COMMENTS	3:						
	······································	<u></u>		***************************************			
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					· · · · · · · · · · · · · · · · · · ·		

Site Name:	E-Z Serve	#100877		Job #: <u>MY40</u>				
Location:		Street, Hay	ward, CA	.	Date:	9/23/96		
Samplers:	R. Roberts			_	Well ID:	MW-10		
Weather:		nisty, 60 deg	F	_				
				-				
WATER CO	LUMN INFO	RMATION (ft.) [1]:					
a. Depth to \		·	15.59			OC Elevation: 97.11		
b. Total Wel			31.80		Water Table Elevation: 81.52			
	leight of water column: 16.21			_	Well Diamete	∍r:	2"	
d. Well Casi	Well Casing Volume (gals): 3			_				
	. Well Screen Length: 19				All datum ar			
r. TOTAL WELL VOLUME:				-	measuremei	nt point lo	ated on	
				•	the TOC.			
WELL PUR	SING DATA	\:						
a. Purge Me		-		2" Grundfros F	Redi-Flow sub	mersible pu	mp	
		al, per well vo	ol.):	8 gal. (3x well	volume)			
c. Field Wat	p. Purge Vol. (@gal. per well vol.): c. Field Water Quality Monitoring Equipment:				pH, Hanna H	18733 cond	. meters	
	Pump Flow Rate:			3 gpm				
e. Method of		er Disposai:		17-H - 55 gallo	n drums	· · · · · · · · · · · · · · · · · · ·		
o. moaros o	i aigo rrai	or oropious.						
	i i		<u> </u>	1				
Volume	1							
Removed		T	рН	Specific Conductance	Description	Odor	Comments	
(lal)	1059	<u>T*c</u> 19.4	7.19	1.03	cloudy gray	fuel-like		
<u>2</u> 6	1100	19.7	7.21	1.01	cloudy gray	fuel-like		
8	1101	19.7	7.10	1.01	cloudy gray			
1	1101	10.7	7.10	1.01	Ground Brus			
1	 		 					
			<u> </u>					
Comple	1111			<u> </u>				
Sample	1111							
SAMPLE COLLECTION METHOD: Method: Sample Containers: Sample Preservation: Analyses: Laboratory: COMMENTS: Disposable Teflon Baile 40 ml VOA vials HCL and ICE to 4 degrees EPA Method 8020 + M Centrum Analytical Lat				ees centigrade TBE, EPA Meth	od 8015 mod ocated in Red	TPHg lands, CA		

Site Name:	E-Z Serve	#100877		Job #: MY40				
Location:	525 West	525 West A Street, Hayward, C		_	Date:	9/23/96		
Samplers:	R. Roberts			-	Well ID:	MW-12		
Weather:	Overcast,	misty, 60 deg	F	-				
WATER CO		ORMATION (
a. Depth to '			16.77		TOC Elevat		99.03	
b. Total We	•		30.00	_	Water Table			
c. Height of			13.23	-	Well Diame	er:	2"	
d. Well Casi		(gals):	2	_	AH 4-4			
e. Well Screen Length: 20 f. TOTAL WELL VOLUME:				_ [1]	All datum a			
					measurements the TOC.	nt point io	cated on	
WELL PUR	GING DATA	۸.			the 100.	•		
a. Purge Me		٠.		2" Grundfros F	Redi-Flow sub	omersible pi	ump	
		al, per well v	ol.):	6 gal. (3x well				
b. Purge Vol. (@gal. per well vol.): c. Field Water Quality Monitoring Equipment:				Accumet 1002		118733 cond	d. meters	
d. Pump Flow Rate: e. Method of Purge Water Disposal:			2.5 gpm					
				17-H - 55 gallo	n drums			
Volume Removed				Specific	Beccrintion	Odor	Comments	
(gal.)	Time	T*c	pH	Conductance	Description	+	Comments	
3	1140	21.7	8.01	0.87	cloudy tan	no	 	
5	1141	20.3 19.8	7.30 7.16	0.87	cloudy tan	no	 	
8	1142	18.0	7.10	0.07	Goddy tail	110		
_	<u> </u>	-					 	
	<u> </u>			 		 	 	
Sample	1156					 	 	
Jampie	1130			-				
SAMPLE Co Method: Sample Cor		N METHOD: Disposable 40 ml VOA		er		4		
Sample Pre				ees centigrade	··········			
Analyses:	301 4 811011.			TBE, EPA Meth	od 8015 mod	l TPHa		
Laboratory:	,			poratories, Inc. I				
COMMENT	g.	<u> </u>	diyildar <u>L</u> ui	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			• • •	
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Site Name:	E-Z Serve	#100877		Job#: MY40				
Location:		A Street, Hay	ward, CA	-	Date:	9/23/96		
Samplers:	R. Roberts			-	Well ID:	MW-11		
Weather:		misty, 60 deg	} F	_				
				_				
WATER CO	LUMN INF	ORMATION	(ft.) [1]:					
a. Depth to	Water:		12.29		TOC Elevation		92.68	
b. Total We	il Depth:		25.00		Water Table	e Elevation: 80.39		
c. Height of	water colun	nn:	12.71	_	Well Diamet	er:	2"	
d. Well Casing Volume (gals):				_				
e. Well Screen Length: 20				[1]	Ali datum a			
f. TOTAL W	f. TOTAL WELL VOLUME:				measureme	nt point lo	cated on	
				-	the TOC.			
WELL PUR	GING DATA	A :						
a. Purge Me	ethod:			2" Grundfros F	Redi-Flow sub	mersible pu	ımp	
b. Purge Vo				6 gal. (3x well				
c. Field Wat	ler Quality N	Monitoring Eq	juipment:	Accumet 1002	pH, Hanna H	18733 cond	. meters	
d. Pump Flo	w Rate:			3 gpm				
e. Method o	f Purge Wa	ter Disposal:		17-H - 55 gallo	n drums			
l					<u>,</u>			
Volume Removed				Specific				
(gal.)	Time	Ì T°c) pH	Conductance	Description	Odor	Comments	
2	0930	20.0	6.54	1.23	gray-brown	fuel-like		
6	0932	20.3	6.63	1.29	gray-brown	fuel-like		
9	0932	20.6	6.60	1.29	gray-brown	fuel-like		
	<u> </u>							
	<u> </u>							
 		<u> </u>						
Sample	0944							
		<u> </u>						
SAMPLE C	OLLECTIO							
Method:		Disposable 40 ml VOA		7 1				
Sample Cor				ana anntigrada				
Sample Pre	servation:			ees centigrade	ad 9015 mad	TDUa		
Analyses:				TBE, EPA Meth coratories, Inc. le				
Laboratory:		Centium An	arytical Lat	אומנטוופט, וווט. וו	Jealeu III Reu	iaiius, CA		
COMMENT	S:							
								
			·					
H								

Site Name:	E-Z Serve	#100877		Job#: <u>MY40</u>					
Location:	525 West /	A Street, Hay	ward, CA	_	Date:	9/23/96			
Samplers:	R. Roberts			_	Well ID:	MW-13			
Weather:	Overcast,	misty, 60 deç) F	- -					
WATER CO	LUMN INFO	ORMATION ((ft.) [1]:						
a. Depth to \			14.60		TOC Elevati	on:	96.80		
b. Total Wei			30.00	Water Table Elevation: 82.20					
c. Height of		ın·	15.40	-	Well Diamet		2"		
d. Well Casi			2	•					
•	e. Well Screen Length: 20				All datum a	re relative 1	o a		
	r. TOTAL WELL VOLUME:				measureme				
				-	the TOC.				
WELL PUR	GING DATA	λ:							
				2" Grundfros F	Redi-Flow sub	mersible pu	ımp		
a. Purge Method: b. Purge Vol. (@gal. per well vol.): c. Field Water Quality Monitoring Equipment:				7.4 gal. (3x we			<u> </u>		
				Accumet 1002		li8733 cond	. meters		
K	•			1.7 gpm			<u> </u>		
d. Pump Flow Rate: e. Method of Purge Water Disposal:					n drums				
				17-H - 55 gallon drums					
	I "						1		
Volume	1		Ì	0					
Removed (gal.)	Time	T°c	pH	Specific Conductance	Description	Odor	Comments		
3	1018	19.2	7.28	1.20	cloudy gray	no			
5	1019	19.5	7.10	1.20	cloudy gray	no			
7	1020	19.6	7.04	1.19	cloudy tan	no			
8	1021	19.6	7.16	1.20	cloudy tan	no	† · · · · · · · · · · · · · · · · · · ·		
		,,,,,,	1,,,,	13-3					
	<u> </u>		 						
Sample	1032								
SAMPLE Co Method: Sample Con		METHOD: Disposable		er					
Sample Pres				es centigrade					
Analyses:	scivation.			BE, EPA Meth	od 8015 mod	- TPHa			
Laboratory:				oratories, Inc. le					
Ī		Ochtrain Air	arytical Eas	oratorico, mo. ii	Journal III I I I I	iditao, ort			
COMMENTS	3:								
						<u>.</u>			
						 			
	····								
	····					J			

Site Name:	E-Z Serve	#100877			Job #:	MY40	
Location:		A Street, Hay	ward, CA	_	Date:	9/23/96	
Samplers:	R. Roberts		<u> </u>		Well ID:	MW-14	
Weather:	Overcast,	misty, 60 deg) F	-			
WATER CO		ORMATION					
a. Depth to \			16.67	-	TOC Elevati		99.01
b. Total Wel							
c. Height of water column: 13.33 d. Well Casing Volume (gals): 2			13.33	-	Well Diamet	er:	2"
				-			
e. Well Screen Length: f. TOTAL WELL VOLUME:			20	_ [1]	All datum a		
f. TOTAL W	f. TOTAL WELL VOLUME: WELL PURGING DATA:			-	measureme the TOC.	nt point lo	cated on
WELL PUR	GING DATA	A:					
a. Purge Me		-44		2" Grundfros F	Redi-Flow sub	mersible pu	ımp
b. Purge Vol		ıal, per well v	/ol.):	6.4 gal. (3x we			
				Accumet 1002		18733 cond	meters
c. Field Water Quality Monitoring Equipmentd. Pump Flow Rate:e. Method of Purge Water Disposal:				3 gpm			<u> </u>
				3 gpm 17-H - 55 gallon drums			
Volume Removed	Time		рН	Specific Conductance	Description	Odor	Comments
(qal.)	1216	21.5	7.77	1.15		fuel like	Continents
5	1217	20.2	7.24	1.12	dk gry bwn dk gry bwn	fuel like	
9	1217	19.9	7.11	1.13	It bwn	fuel like	
8	1210	19.5	1.11	1.13	IL DWII	Incline	<u></u>
	 	 					
				<u> </u>		· · · · · · · · · · · · · · · · · · ·	
Sample	1231	1					
SAMPLE CO Method: Sample Con		N METHOD: Disposable	Teflon Baile	er			
•				non contigrado	· · · · · · · · · · · · · · · · · · ·		
Sample Pres	servation.			ees centigrade TBE, EPA Meth	od 9015 mod	TOUG	
Analyses:				oratories, Inc. k			· · · · · · · · · · · · · · · · · · ·
Laboratory:		Centrum An	alytical Lab	oratones, inc. i	ocated in Red	lands, CA	
COMMENTS	3:				**		
					····		
1							

APPENDIX C

LABORATORY ANALYTICAL REPORT AND CHAIN OF CUSTODY

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY . CHEMICAL AND BIOLOGICAL ANALYSES

Client: Brown & Root

455 Fairway Dr., Ste. 200

Deerfield Beach, FL 33441

Date Sampled: Date Received:

09/23/96

Job Number:

09/25/96 10843

Project: EZ Serve #100877

CASE NARRATIVE

The following information applies to samples which were received on 09/25/96:

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D. Laboratory Director

ELAP # 1184

DL: Detection Limit - The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected - The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed - Per client request, this analyte was not on the list of compounds to be analyzed for.



Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:

Brown & Root

Project:

EZ Serve #100877

· Job No.:

10843

Matrix: Analyst: Water

JLW

Date Sampled:

09/23/96

Date Received:

09/25/96 09/28/96

Date Analyzed: Batch Number:

015GW1016

	Detection	Petroleum Hydrocarbons as
	, Limit	Gasoline
Sample ID	mg/L	mg/L
Method Blank	0.10	ND .
877-EQUIP BLANK	0.10	ND
877-MW-11	0.10	27
877-MW13	0.10	ND
877-MW10	0.10	3.8
877-MW12	0 10	ND
877-MW14	0.10	6.4
877-MW7	0.10	6.3
877-MW8	0.10	ND
877-MW3	0.10	10
877-MW6	0.10	12
877-MW5	0.10	9.8
877-MW1	0.10	20
877-MW4	0.10	32
877-MW2	0.10	29
877-DUPE	0.10	11
TRIP BLANK	0.10	ND



QC Sample Report - EPA 8015M Gasoline

Matrix: Water

Batch #: 8015GW1016

Batch Accuracy Results

Sample ID: Laboratory Conf	rol Sampl	8		
Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	5.0	91	70 - 130	Pass

Analytical Notes:	

Batch Precision Results

Analytical Notes:	
1	
1	
1	

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



EPA 8020 - BTEX and MtBE

Client:

Brown & Root

Project:

EZ Serve #100877

Job No.: Matrix: 10843 Water

Analyst: JLW

Date Sampled:

09/23/96

Date Received:

09/25/96

Date Analyzed:

09/28/96

Batch Number:

8020W1184

	Methyl-tert Butyl Ether	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Surrogate (BFB)
Detection Limit:	0.0005	0.0005	0.0005	0.0005	0.0015	Limit: >50%
Sample ID	mg/L	mg/L	mg/L	mg/L	mg/L	
Method Blank	ND	ND	ND	ND	ND	89 %
877-EQUIP BLANK	ND	ND	ND	МD	ND	91 %
877-MW-11	0.040	0.055	0.081	3.0	3.5	95 %
877-MW13	ND	ND	8000.0	0.0010	ND	88 %
877-MW10	0.0090	0.0040	0.0029	0.22	0.17	92 %
877-MW12	ND	ND	0.0016	ND	ND	87 %
877-MW14	0.0096	0.0028	ND	0.69	0.096	101 %
877-MW7	0.015	0.076	ND	0.42	0.27	96 %
877-MW8	ND	ND	0.0025	0.0011	ND	86 %
877-MW3	0.080	0.95	0.020	0.70	0.78	96 %
877-MW6	0.051	0.52	0.055	0.93	0.35	97 %
877-MW5	0.10	1.8	0.011	0.47	0.51	93 %
877-MW1	0.27	5.2	0.086	0.70	1.1	92 %
877-MW4	2.1	7.4	0.54	1.5	2.8	87 %
877-MW2	0.86	3.7	0.15	1.6	4.3	91 %
877-DUPE	0.0076	1.0	0.029	0.83	0.96	83 %
TRIP BLANK	ND	ND	ND	ND	ND	88 %



QC Sample Report - EPA 8020

Matrix: Soil

Batch #: 8020W1184

Batch Accuracy Results

Sample I	ID:	Laborator	y Control	Samp	ole

Analyte	Spike Concentration mg/L	% Recovery LCS		Acceptance Limits	% Recovery	Pass/Fail
Benzene	0.10	93	70	-	130	Pass
Toluene	0.10	92	70	-	130	Pass
Ethyl Benzene	0.10	94	70	-	130	Pass
m-, p-Xylene	0.20	96	70	-	130	Pass
o-Xylene	0.10	93	70	-	130	Pass

Batch Precision Results

MS/MSD Sample ID:Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Benzene	0.093	0.100	7%	25%	Pass
Toluene	0.092	0.093	1%	25%	Pass
Ethyl Benzene	0.094	0.096	2%	25%	Pass
m-, p-Xylene	0.191	0.191	0%	25%	Pass
o-Xylene	0.093	0.093	0%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate 290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

													Ana	lyses	Req	ueste	ed				· · · · · · · · · · · · · · · · · · ·		
Project No.:			F	Project Na		11					.	l _a					۵				Tum-e	round time	
MY	<u>40</u>			EZ	<u>SEX</u>	WE #	1008.	++	- 6	<u>ا ا</u>	2	l E	1		RC R▲		COD	Chrome				L DI (C) (4	
Project Man	. •		_ F	phone.		Fax:				3 8	Screen	3	ł	_	5		Conductivity	5	: 1		24 Hr. RUSH*		
	ld Lamb		95	4)57	<u>0 -58</u>	385 (95 Fairwa	×4)570	-597			(§	8		8	윤		\$	훈				nai TAT	
Client Name	Brown + Roo	+	_ /	Address:	455	Fairwar	y Drive	<u>.</u>			1 3	&		6270 625	S S		8	Fluoride			Requir	is prior approval,	
Company)	Environmen	ta)	<u> </u>	<u> جاد ۽</u>	200 Deerfield Beach, F					5 1		1 2	Ŧ		ဗြ		SST	[₽			ed/2ion	ni charges apply	
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Dan samp		Time sampled	Sample matrix	Site loc	ation	334 Containe # and ty	rs: pe	GCMS: 8260 8240 8010 324.2 eoso: Destinidas DCBs Prest/PCB	8015M: Diesel Fuel	8015M Gasoline 8020 Gas/BTEX	418.1 (TRPH)	Semivotatiles:	Metals: TT.C(CAM) PP	Lead Only	₹ SD: #5	Flashpoint			Specia	emarks/ Instructions	
1	877-BLANK	9/2	3/2	0937	WATE	EZ 3ER # 100	VE 377	1-401	74			X			-						1	ude. SE in	
2	877- HWII			0944				3-40m	2			X		_				_			807	<u> </u>	
3	877-MW13			1032								X	1_	\downarrow	_		_	<u> </u>			Ana	14515	
4	877-MW10			1111			<u> </u>					X		igspace	1	_	<u> </u>						
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290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Page 2 of 2

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	constitutes authorization to perform the analyses specified above un he Terms and Conditions set forth on the back hereof.										Received for Laboratory by:				Datey Time		□ Courier □ PS/Fed Ex □ Hand carried							d 	Lab	disposal fee \$5				
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