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Janaury 24, 1997

Mr. John Rutherford
Desert Petroleum Inc.
P.O. Box 1601
Oxnard, California 93032
(805) 644-6784
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RE: December, 1996 Quarterly Groundwater Sampling Report **with results of the product area defining Soil Prove Survey** for Former Desert Petroleum Station #796, 2844 Mountain Boulevard, Oakland, California.

Dear Mr. Rutherford:

As you requested Western Geo-Engineers (WEGE) has performed the quarterly monitoring/sampling of this site. The following report represents WEGE's December, 1996 Quarterly Ground Water Sampling and the completion of the December 10, 1996 workplan to delineate the extent of free product around RS-1.

INTRODUCTION

A WEGE sample technician monitored and sampled the four existing groundwater monitoring wells on September 18, 1996. During this site visit, free product was found in RS-1.

GROUNDWATER SAMPLE RESULTS, December 11, 1996

Table 1 is a summary of groundwater monitoring of this site since May, 1990. The most recent sampling/monitoring, December 11, 1996 found 0.2 feet of free product in monitor well RS-1. RS-2 contains high levels of dissolved gasoline range hydrocarbons. RS-3 and RS-4 contain minor amounts of dissolved gasoline range hydrocarbons.. MTBE was tested for in RS-1, RS-2, RS-3 and RS-4. RS-1 contained the highest concentration at 220 mg/L, this sample was confirmed with GC/MS 8260 method, see Appendix A for Laboratory report.

LOCATION

The site is an operating ARCO service station that retails regular unleaded, super unleaded gasoline and diesel and is also an operating garage performing automobile maintenance. The site is located East of Highway 13 at 2844 Mountain Blvd., Oakland, California, west of Joaquin Miller Park.

GROUNDWATER GRADIENT "FLOW DIRECTION"

Figure 4 depicts groundwater elevations as measured on December 11, 1996. This figure shows a gradient flow to the southwest, which concurs with the local topography, see Figure 2.

GROUNDWATER QUALITY

WEGE obtained groundwater samples from monitor wells RS-1, RS-2, RS-3, RS-4 on December 11, 1996. RS-1 contained 0.2 feet of free phase product, see Table 1 and Figure 5 and Appendix A.

INTERIM PRODUCT RECOVERY

Commencing on October 1, 1996, weekly purging and venting of RS-1 was being utilized for removal of free phase product and interim migration control. This purging was terminated on December 3, 1996 to evaluate more cost effective product removal measures. RS-2 and RS-3 were also purged of water and vented for approximately 15 minutes each visit. As of December 3, 1996 a calculated 30.4 gallons of gasoline range hydrocarbons had been removed by venting, bailing free product and while purging 1077 gallons of groundwater from RS-1, RS-2 and RS-3, see Table 2.

[redacted] NEAR MONITOR WELL RS-1

As outlined in WEGE's December 10, 1996 workplan, free product delineation was accomplished using the WEGE [redacted] (SPS) [redacted], see Appendix B for SPS results and methods.

Seven holes were driven near RS-1 to define the extent of free product, it origin(s) and if the free product was leaving the site, see Figure 3 (M1 through M7).

Groundwater was encountered between the ten and fifteen foot depth and contained dissolved gasoline range hydrocarbons and MTBE in all test holes. [redacted]

Soil plugs obtained from the five foot depth of the SPS test holes indicate gasoline range hydrocarbon exist southwest of the UST area out to RS-1 and at test hole M7, west of the product dispensing piping of the western most pump island, see Figure 4 of Appendix B. M1 + M2

Soil plugs obtained from the ten foot depth of the SPS test holes indicate gasoline range hydrocarbon exist to the western property line of the site, see Figure 5 of Appendix B. + = higher conc to the E, near pump E.

M1 + M2

The results of this study indicate that the free product found on groundwater at RS-1 is limited to the area around RS-1 and M7 and is [redacted] from the product lines between the UST and the pump islands.

TIME FRAME

March, 1997 — Monitoring and sampling groundwater from wells RS-1, RS-2, RS-3 and RS-4.

HEALTH AND SAFETY

This site is being treated as a class D site, normal common sense is to be used.

SAMPLE METHODS

A WEGE technician working directly under California Registered Geologist #3037 using approved methods gauged, purged and sampled the monitor wells on December 11, 1996, see Appendix C.

SAMPLE PRESERVATION.

Each sample was placed into two, certified clean, glass, 40 ml VOAs with laboratory installed HCl preservative and 1 liter amber.

ANALYTICAL METHODS AND DHS LABORATORY SELECTED.

WEGE contracted American Environmental Network (AEN), DHS #1172, 3440 Vincent Road, Pleasant Hill, CA 94523 (510) 930-9090 to perform the analysis of the ground water samples. NO-It was North State Env.

AEN analyzed the samples for Total Petroleum Hydrocarbons as gasoline (TPHg) w/ BTEX distinction utilizing EPA Methods 8020 (GCFID) with 3050 extraction method and TPH as diesel and oil range utilizing EPA Methods 8015 with 3510 extraction method as described on page 17, Table 2 of the TRI-REGIONAL BOARD STAFF RECOMMENDATIONS FOR PRELIMINARY EVALUATION AND INVESTIGATION OF UNDERGROUND TANK SITES, 10 AUGUST 1990. See App A

AEN noted that Methyl Tert Butly Ether (MTBE) was evident in the samples (RS-2, RS-3 and RS-4), see Table 1 and Appendix B. The detection limits in water are: TPH G & D 50 ug/L; Benzene, Toleuene and Ethylbenzene 0.5 ug/L, Xylenes 2 ug/L and MTBE 5 ug/L.

RINSEATES AND PURGED GROUNDWATER STORAGE/TREATMENT.

All rinseates and purged water produced from the groundwater sampling and weekly purging of the wells is transferred into 55 gallon DOT H17 drums for later removal by Evergreen Services to be recycled.

LIMITATIONS

The information presented in this report is based on the following:

1. The observations and data collected by field personnel.
2. The results of laboratory analyses performed by a state certified analytical laboratory.
3. Our understanding of the regulations of Alameda County, the City of Oakland and the State of California.
4. References reviewed for this report.

Changes in groundwater conditions can occur due to variations in rainfall, temperature, local and regional water use, and local construction practices. In addition, variations in the soil and groundwater conditions could exist beyond the points explored in this investigation.

State Certified Laboratory analytical results are included in this report. This laboratory follows EPA and State of California approved procedures; however, WEGE is not responsible for errors in these laboratory results.

The services performed by Western Geo-Engineers, a corporation under California Registered Geologist #3037 and/or Contractors License #513857, have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California, the City of Oakland and Alameda County. Our work and/or supervision of remediation and/or abatement operations, active or preliminary at this site is no way meant to imply that we are owners or operators of this site. Please note that the known contamination of soil and/or groundwater must be reported to the appropriate agencies in a timely manner. No other warranty expressed or implied, is made.

Sincerely yours,

George L. Converse
Project Manager/Geologist-WEGE

Jack E. Napper
Calif. Reg. Geologist

cc: Ms. Jennifer Eberle, Alameda County Health

DP796, Dec., 1996 RPT

TABLE 1

SUMMARY OF GROUNDWATER MONITORING

DP 796

2844 MOUNTAIN BOULEVARD, OAKLAND, CALIFORNIA 94602

WELL	DATE	CASING ELEVATION	DEPTH TO TOP FLUID	DEPTH TO TOP WATER	FREE PRODUCT THICKNESS	GROUND WATER ELEVATION	TPH GASOLINE mg/L	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	MTBE ug/L	SAMPLED BY
RS-1	MAY-90	689.25	7.2	7.2	0.00	682.05	2.7	370	420	40	320		RSI
	MAY-91	689.25	8.35	8.35	0.00	680.9	1.3	580	130	62	240		RSI
	OCT.-91	689.17	10.22	10.22	0.00	678.95	1.1	140	100	45	210		RSI
	JAN.-92	689.17	8.06	8.06	0.00	681.11	1.7	9.9	31	9.7	170		RSI
	JAN.-93	689.17	5.3	5.3	0.00	683.87	3.7	650	9.2	51	170		RSI
	AUG.-93	689.17	8.56	8.56	0.00	680.61	0.9	14	0.6	2.1	8		RSI
	NOV.-93	689.17	8.44	8.44	0.00	680.73	1.4	9.6	ND	0.9	5		RSI
	JAN.-94	689.17	6.88	6.88	0.00	682.29	4.2	95	3.1	58	130		RSI
	MAY-94	675.63	7.87	7.87	0.00	667.76	7.5	270	11	37	96		RSI
	AUG.-94	675.63	16.28	16.28	0.00	659.35	0.13	12	0.5	2.6	5		RSI
	NOV.-94	675.63	8.02	8.02	0.00	667.61	0.27	4.7	0.7	0.6	15		RSI
	FEB.-95	675.63	6.51	6.51	0.00	669.12	12	81	2.3	1	12		RSI
	JUN.-95	675.63	7.34	7.34	0.00	668.29	37	460	ND	ND	ND	63000	RSI
	NOV.-95	675.63	8.71	8.71	0.00	666.92	ND	660	16	140	330	31000	RSI
	FEB.-96	675.63	6.95	6.95	0.00	668.68	66	110	ND	12	21	84000	RSI
	09/18/96	675.63	8.44	8.52	0.08	667.17	ONE INCH FREE PRODUCT						WEGE
	12/11/96	**675.63**	**6.62**	**6.62**	**0.20**	**669.17**	79	4000	37000	8000	45800	220000*	WEGE
RS-2	MAY-90	689	7.06	7.06	0.00	681.94	23	7200	4800	300	3300		RSI
	MAY-91	689	7.14	7.14	0.00	681.86	26	14000	1800	750	2900		RSI
	OCT.-91	688.89	8.84	8.84	0.00	680.05	13	4300	910	300	2300		RSI
	JAN.-92	688.89	7.34	7.34	0.00	681.55	8.3	1800	920	140	1700		RSI
	JAN.-93	688.89	4.1	4.1	0.00	684.79	41	7000	210	1200	4200		RSI
	AUG.-93	688.89	7.32	7.32	0.00	681.57	19	5300	62	810	1600		RSI
	NOV.-93	688.89	7.34	7.34	0.00	681.55	9.3	2400	3.9	46	800		RSI
	JAN.-94	688.89	5.52	5.52	0.00	683.37	30	4900	ND	880	2600		RSI
	MAY-94	675.25	6.4	6.4	0.00	668.85	120	3300	330	ND	2200		RSI
	AUG.-94	675.25	22.11	22.11	0.00	653.14	0.51	7.3	3.8	3.5	32		RSI
	NOV.-94	675.25	9.82	9.82	0.00	665.43	0.62	6.6	3.9	1.1	47		RSI
	FEB.-95	675.25	4.81	4.81	0.00	670.44	22	228	80	2	463		RSI
	JUN.-95	675.25	5.8	5.8	0.00	669.45	49	1300	160	200	1600	71000	RSI
	NOV.-95	675.25	7.64	7.64	0.00	667.61	ND	670	25	150	360	65000	RSI
	FEB.-96	675.25	4.69	4.69	0.00	670.56	75	1400	170	59	460	71000	RSI
	09/18/96	675.25	7.34	7.34	0.00	667.91	6.3	2000	48	350	570	160000	WEGE
	12/11/96	**675.25**	**5.08**	**5.08**	**0.00**	**670.17**	16	2000	**840**	**200**	**3200**	**180000**	**WEGE**
RS-3	MAY-90	670	6	6	0.00	664.00	0.33	2	1	1	150		RSI
	MAY-91	670	6.76	6.76	0.00	663.24	ND	0.4	ND	0.8	8		RSI
	OCT.-91	670	8.98	8.98	0.00	661.02	ND	ND	ND	ND	ND		RSI
	JAN.-92	670	6.81	6.81	0.00	663.19	ND	2.2	7.2	0.6	4		RSI
	JAN.-93	670	4.05	4.05	0.00	665.95	ND	ND	ND	ND	ND		RSI
	AUG.-93	670	7.19	7.19	0.00	662.81	ND	30	6	2.4	5		RSI
	NOV.-93	670	7.12	7.12	0.00	662.88	ND	4.8	0.4	0.6	2		RSI
	JAN.-94	670	5.42	5.42	0.00	664.58	0.33	25	3.2	3.9	12		RSI
	MAY-94	676.2	5.78	5.78	0.00	670.42	0.67	34	4	28	70		RSI
	AUG.-94	676.2	5.86	5.86	0.00	670.34	ND	ND	ND	ND	ND		RSI
	NOV.-94	676.2	5.08	5.08	0.00	671.12	0.069	2.5	3.1	1	4		RSI

TABLE 1

SUMMARY OF GROUNDWATER MONITORING

DP 796

2944 MOUNTAIN BOULEVARD, OAKLAND, CALIFORNIA 94602

WELL	DATE	CASING ELEVATION	DEPTH TO TOP FLUID	DEPTH TO TOP WATER	FREE PRODUCT THICKNESS	GROUND WATER ELEVATION	TPH GASOLINE mg/L	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	MTBE ug/L	SAMPLED BY
	FEB.-95	676.2	4.51	4.51	0.00	671.69	ND	0.3	0.4	ND	1		RSI
	JUN.-95	676.2	5.29	5.29	0.00	670.91	ND	ND	ND	ND	ND	66	RSI
	NOV.-95	676.2	7.1	7.1	0.00	669.10	ND	ND	ND	ND	ND	44	RSI
	FEB.-96	676.2	4.48	4.48	0.00	671.72	0.12	ND	ND	ND	ND	110	RSI
	09/18/96	676.2	6.92	6.92	0.00	669.28	1	13	8.6	10	17	33	WEGE
	12/11/96	**676.2**	**4.9**	**4.9**	**0.00**	**671.30**	**0.085**	**20**	**2**	**<0.5**	**14**	**4700**	**WEGE**
RS-4	MAY-90	689.06	8.34	8.34	0.00	680.72	0.44	9	11	9	49		RSI
	MAY-91	689.06	9.5	9.5	0.00	679.56	ND	8	4	3	5		RSI
	OCT.-91	689.1	10.82	10.82	0.00	678.28	0.83	280	120	24	170		RSI
	JAN.-92	689.1	9.31	9.31	0.00	679.79	0.62	34	8.3	2.1	21		RSI
	JAN.-93	689.1	6.89	6.89	0.00	682.21	0.15	32	1.7	5.8	13		RSI
	AUG.-93	689.1	9.68	9.68	0.00	679.42	ND	0.9	0.7	ND	0		RSI
	NOV.-93	689.1	9.83	9.83	0.00	679.27	ND	ND	ND	ND	ND		RSI
	JAN.-94	689.1	8.17	8.17	0.00	680.93	ND	1.7	ND	0.81	2		RSI
	MAY-94	675.38	8.69	8.69	0.00	666.69	ND	ND	ND	ND	1		RSI
	AUG.-94	675.38	9.04	9.04	0.00	666.34	0.42	6.5	4.1	1.9	40		RSI
	NOV.-94	675.38	8	8	0.00	667.38	0.13	4.1	0.7	1.7	8		RSI
	FEB.-95	675.38	7.93	7.93	0.00	667.45	ND	6	1.2	3.5	13		RSI
	JUN.-95	675.38	8.61	8.61	0.00	666.77	ND	ND	ND	ND	ND	69	RSI
	NOV.-95	675.38	10.43	10.43	0.00	664.95	ND	ND	ND	ND	ND	47	RSI
	FEB.-96	675.38	7.44	7.44	0.00	667.94	0.96	ND	ND	0.6	ND	80	RSI
	09/18/96	675.38	9.58	9.58	0.00	665.80	<0.05	<0.5	<0.5	<0.5	<2	200	WEGE
	12/11/96	**675.38**	**7.5**	**7.5**	**0.00**	**667.88**	**0.075**	**<0.5**	**0.6**	**<0.5**	**<2**	**104**	**WEGE**

MTBE Methyl t-Butyl Ether TPH Total Petroleum Hydrocarbons mg/L Milligrams per liter (ppm)

ND or < Below laboratory detection limits ug/L Micrograms per liter (ppb)

* confirmed by GC/MS 8260 method.

TABLE 2

VENTING RS-1, RS-2 & RS-3

FORMER DESERT PETROLEUM STATION #796

2844 MOUNTAIN BLVD.

OAKLAND, CALIFORNIA

DATE		TIME	DEPTH TO WATER FEET	VACUUM FEET WATER	FLOW CFM	AVERAGE FLOW CFM	TPH GASOLINE mg/L	CO2 PERCENT	CALCULATED POUNDS AS GASOLINE	ACCUMULATIVE POUNDS AS GASOLINE 0	GALLONS WATER PURGED	TOTAL GALLONS PURGED	TOTAL FLOATING PRODUCT THICKNESS	DISSOLVED TPHg* IN WATER	GALLONS GASOLINE RECOVERED	ACCUM. GALLONS RECOVERED	TOTAL ACCUMULAT GALLONS O GASOLINE RECOVERED
10/01/96	RS-1 *	14.75	9.4	18.75	29.3												
		15		20.15	32.8	31.06	166.32	3	4.812	4.81	30	30	0.52	75	0.02	0.02	0.8
	RS-2 *	15.25	7.64	18.75	27.4												
		15.5		19.69	32.8	30.11	134.59	3.5	3.775	8.59	30	60	0	6.3	0.00	0.02	1.4
	RS-3 *	15.5	7.1	18.28	38.8												
		15.75		17.72	38.8	38.80	150.3	6	5.432	14.02	25	85	0	1	0.00	0.02	2.3
	RS-1 *	15.75		19.69	32.8												
		16		19.69	32.8	32.79	173.65	4	5.304	19.32	25	110	0	75	0.03	0.05	3.1
10/08/96	RS-1	12.5	8.94	18.75	29.3												
		12.75	12.15	20.15	32.8	31.06	136.08	2.9	3.937	23.26	40	150	0	75	0.04	0.10	3.8
	RS-2	13.25	7.8	18.75	27.4												
		13.75	19.8	19.69	32.8	30.11	141.44	3.7	7.935	31.20	30	180	0	6.3	0.00	0.10	5.1
	RS-3	14	7.2	18.28	38.8												
		14.5	8.32	17.72	38.8	38.80	116.5	3.1	8.421	39.62	25	205	0	1	0.00	0.10	6.4
	RS-1	14.75	10.7	19.69	32.8												
		15	19.24	19.69	32.8	32.79	112.38	3	3.433	43.05	30	235	0	75	0.07	0.17	7.1
10/15/96	RS-1	13.5	9	20.62	32.8												
		14	13.24	20.15	32.8	32.79	179.04	4.5	10.938	53.99	35	270	0	75	0.08	0.24	8.9

TABLE 2
VENTING RS-1, RS-2 & RS-3
FORMER DESERT PETROLEUM STATION #796
2844 MOUNTAIN BLVD.
OAKLAND, CALIFORNIA

DATE		TIME	DEPTH TO WATER FEET	VACUUM FEET WATER	FLOW CFM	AVERAGE FLOW CFM	TPH GASOLINE mg/L	CO2 PERCENT	CALCULATED POUNDS AS GASOLINE	ACCUMULATIVE POUNDS AS GASOLINE 0	GALLONS WATER PURGED	TOTAL GALLONS PURGED	TOTAL FLOATING PRODUCT THICKNESS	DISSOLVED TPHg* IN WATER	GALLONS GASOLINE RECOVERED	ACCUM. GALLONS RECOVERED	TOTAL ACCUMULAT GALLONS O GASOLINE RECOVERED
	RS-2	14.25	7.8	21.09	32.8												
		14.75	19	18.47	38.8	35.80	136.13	4	9.078	63.07	35	305	0	6.3	0.01	0.25	10.3
	RS-3	14.75	7.25	22.50	41.5												
		15.25	8.92	17.34	44.0	42.74	103.1	3.5	8.209	71.28	25	330	0	1	0.00	0.25	11.7
∞																	
	RS-1	15.5	11.32	20.15	32.8												
		15.75	19.2	20.15	32.8	32.79	80.7	2.5	2.465	73.74	25	355	0	75	0.10	0.35	12.2
10/21/96	RS-1	14.25	8.05	19.69	35.9												
		14.75	13.35	20.15	32.8	34.36	128.69	3.5	8.237	81.98	25	380	0	75	0.11	0.46	13.6
	RS-2	15	7.82	7.50	46.4												
		15.25	13.42	18.75	41.5	43.93	117.98	3	4.828	86.81	20	400	0	6.3	0.01	0.47	14.4
	RS-3	15.75	7.3	17.34	46.4												
		16	8.6	17.34	44.0	45.19	106.36	3	4.477	91.28	25	425	0	1	0.00	0.47	15.1
	RS-1	16.75	7.3	19.97	32.8												
		17	8.6	19.97	32.8	32.79	11.7	0.5	0.357	91.64	25	450	0	75	0.13	0.60	15.3
10/29/96	RS-1	13.5	8.05	19.69	35.9												
		14	13.35	20.15	32.8	34.36	192.99	4	12.353	103.99	35	485	0.17	75	0.14	0.74	17.4
	RS-2	14.5	7.82	7.50	46.4												
		15	13.42	18.75	41.5	43.93	105.37	3	8.623	112.62	25	510	0	6.3	0.01	0.75	18.8

TABLE 2
VENTING RS-1, RS-2 & RS-3
FORMER DESERT PETROLEUM STATION #796
2844 MOUNTAIN BLVD.
OAKLAND, CALIFORNIA

DATE		TIME	DEPTH TO WATER FEET	VACUUM FEET WATER	FLOW CFM	AVERAGE FLOW CFM	TPH GASOLINE mg/L	CO2 PERCENT	CALCULATED POUNDS AS GASOLINE	ACCUMULATIVE POUNDS AS GASOLINE 0	GALLONS WATER PURGED	TOTAL GALLONS PURGED	TOTAL FLOATING PRODUCT THICKNESS	DISSOLVED TPHg* IN WATER	GALLONS GASOLINE RECOVERED	ACCUM. GALLONS RECOVERED	TOTAL ACCUMULAT GALLONS O GASOLINE RECOVERED
	RS-3	15	7.3	17.34	46.4												
		15.5	8.6	17.34	44.0	45.19	66.74	2.5	5.618	118.24	25	535	0	1	0.00	0.76	19.7
	RS-1	15.75	7.3	19.97	32.8												
		16	8.6	19.97	32.8	32.79	130.36	3	3.982	122.22	25	560	0.063	75	0.16	0.92	20.5
11/05/96	RS-1	13.5	8.05	19.69	35.9												
		13.75	13.35	20.15	32.8	34.36	151.79	3	4.858	127.08	30	590	0.021	75	0.17	1.08	21.4
	RS-2	14	7.82	7.50	46.4												
		14.25	13.42	18.75	41.5	43.93	100.47	3	4.111	131.19	25	615	0	6.3	0.01	1.10	22.1
	RS-3	14.5	7.3	17.34	46.4												
		14.75	8.6	17.34	44.0	45.19	94.63	2.8	3.983	135.17	30	645	0	1	0.00	1.10	22.7
	RS-1	15	7.3	19.97	32.8												
		15.25	8.6	19.97	32.8	32.79	67.06	2	2.048	137.22	20	665	0.025	75	0.19	1.29	23.2
11/12/96	RS-1	13.5	8.05	20.62	32.8												
		13.75	13.35	20.15	35.9	34.36	85.42	1.5	2.734	139.95	25	690	0.42	75	0.21	1.50	23.9
	RS-2	14	7.82	20.62	35.9												
		14.25	13.42	17.34	44.0	39.96	99.28	3	3.695	143.65	25	715	0	6.3	0.02	1.51	24.5
	RS-3	14.5	7.3	17.34	35.9												
		14.75	8.6	17.81	38.8	37.36	130.21	3	4.532	148.18	26	741	0	1	0.00	1.52	25.2

TABLE 2
VENTING RS-1, RS-2 & RS-3
FORMER DESERT PETROLEUM STATION #796
2844 MOUNTAIN BLVD.
OAKLAND, CALIFORNIA

DATE		TIME	DEPTH TO WATER FEET	VACUUM FEET WATER	FLOW CFM	AVERAGE FLOW CFM	TFH GASOLINE mg/L	CO2 PERCENT	CALCULATED POUNDS AS GASOLINE	ACCUMULATIVE POUNDS AS GASOLINE 0	GALLONS WATER PURGED	TOTAL GALLONS PURGED	TOTAL FLOATING PRODUCT THICKNESS	DISSOLVED TPHg* IN WATER	GALLONS GASOLINE RECOVERED	ACCUM. GALLONS RECOVERED	TOTAL ACCUMULAT GALLONS O GASOLINE RECOVERED
	RS-1	15	7.3	21.09	38.8												
		15.25	8.6	20.53	38.8	38.80	108.46	2	3.920	152.10	18	759	0.21	75	0.22	1.74	26.1
11/19/96	RS-1	13.5	7.25	22.50	35.9												
		13.75	13.35	20.15	25.4	30.66	17.3	0.45	0.494	152.59	25	784	0.17	75	0.23	1.96	26.4
	RS-2	14	6.16	21.09	32.8												
		14.25	13.42	22.50	35.9	34.36	88.79	2.5	2.842	155.43	25	809	0	6.3	0.02	1.98	26.9
	RS-3	14.25	5.92	22.50	29.3												
		14.5	8.6	22.03	29.3	29.33	82.34	2.75	2.250	157.68	25	834	0	1	0.00	1.98	27.2
	RS-1	14.75	8.2	20.86	32.8												
		15	17.6	21.56	29.3	31.06	17.3	0.45	0.501	158.19	25	859	0.02	75	0.24	2.23	27.5
11/25/96	RS-1	10	6.72	22.97	27.4												
		10.25	12.84	22.97	27.4	27.44	14.82	0.5	0.379	158.56	34	893	0.75	75	0.27	2.50	27.9
	RS-2	10.5	5.7	21.00	32.8												
		10.75	17.64	19.22	35.9	34.36	99.85	2	3.196	161.76	25	918	0	6.3	0.02	2.52	28.4
	RS-3	11	5.72	22.31	25.4												
		11.25	6.2	21.70	27.4	26.42	26.83	0.8	0.660	162.42	25	943	0	1	0.00	2.52	28.5
	RS-1	11.5	9.06	20.62	25.4												
		11.75	15.3	21.09	27.4	26.42	31.13	0.5	0.766	163.19	27	970	0.08	75	0.28	2.80	28.9

TABLE 2
VENTING RS-1, RS-2 & RS-3
FORMER DESERT PETROLEUM STATION #796
2844 MOUNTAIN BLVD.
OAKLAND, CALIFORNIA

DATE		TIME	DEPTH TO WATER FEET	VACUUM FEET WATER	FLOW CFM	AVERAGE FLOW CFM	TPH GASOLINE mg/L	CO2 PERCENT	CALCULATED POUNDS AS GASOLINE	ACCUMULATIVE POUNDS AS GASOLINE 0	GALLONS WATER PURGED	TOTAL GALLONS PURGED	TOTAL FLOATING PRODUCT THICKNESS	DISSOLVED TPHg* IN WATER	GALLONS GASOLINE RECOVERED	ACCUM. GALLONS RECOVERED	TOTAL ACCUMULAT GALLONS O GASOLINE RECOVERED
12/03/96	RS-1	13.5	7.42	22.03	29.3												
		13.75	14.52	21.56	27.4	28.38	4.99	0.13	0.132	163.32	30	1000	0.5	75	0.29	3.10	29.2
	RS-2	14	5.84	20.81	32.8												
		14.25	17.4	18.75	38.8	35.80	104.81	2	3.495	166.81	25	1025	0	6.3	0.02	3.12	29.8
	RS-3	14.5	5.82	22.03	25.4												
		14.75	6.72	21.56	25.4	25.40	30.43	0.6	0.720	167.53	27	1052	0	1	0.00	3.12	29.9
	RS-1	15	9.58	21.47	29.3												
		15.25	16.26	21.37	29.3	29.33	32.93	0.75	0.900	168.43	25	1077	0.01	75	0.31	3.43	30.4

* CONCENTRATIONS INFERRED FROM 11/12/96 LAB
CFM CUBIC FEET PER MINUTE Hg MERCURY - mg/L PARTS PER MILLION, MILLIGRAMS PER LITER
TPH TOTAL FUEL HYDROCARBONS CO2 CARBON DIOXIDE

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

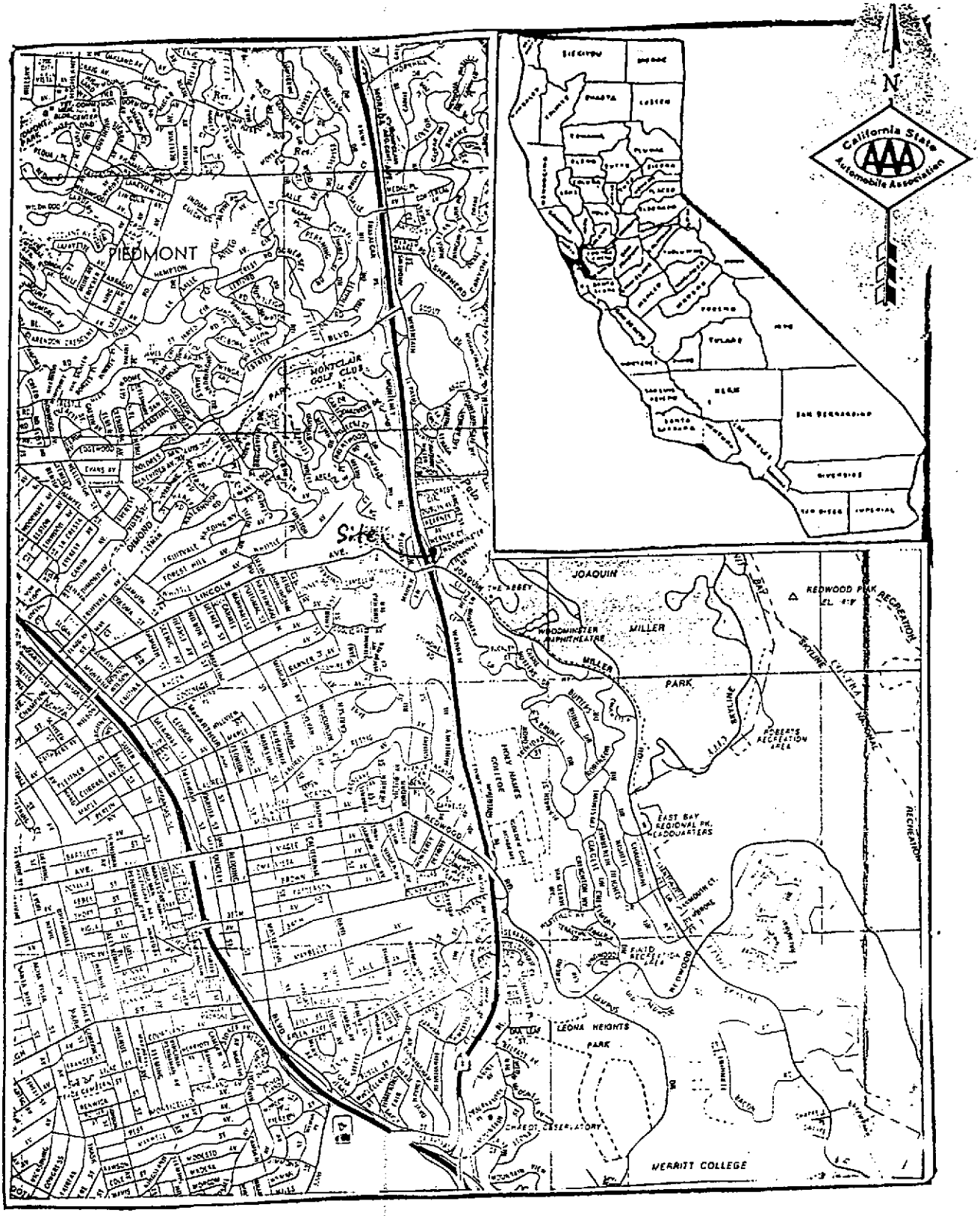


FIGURE 1

Location (AAA Map)

FORMER DESERT PETROLEUM
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

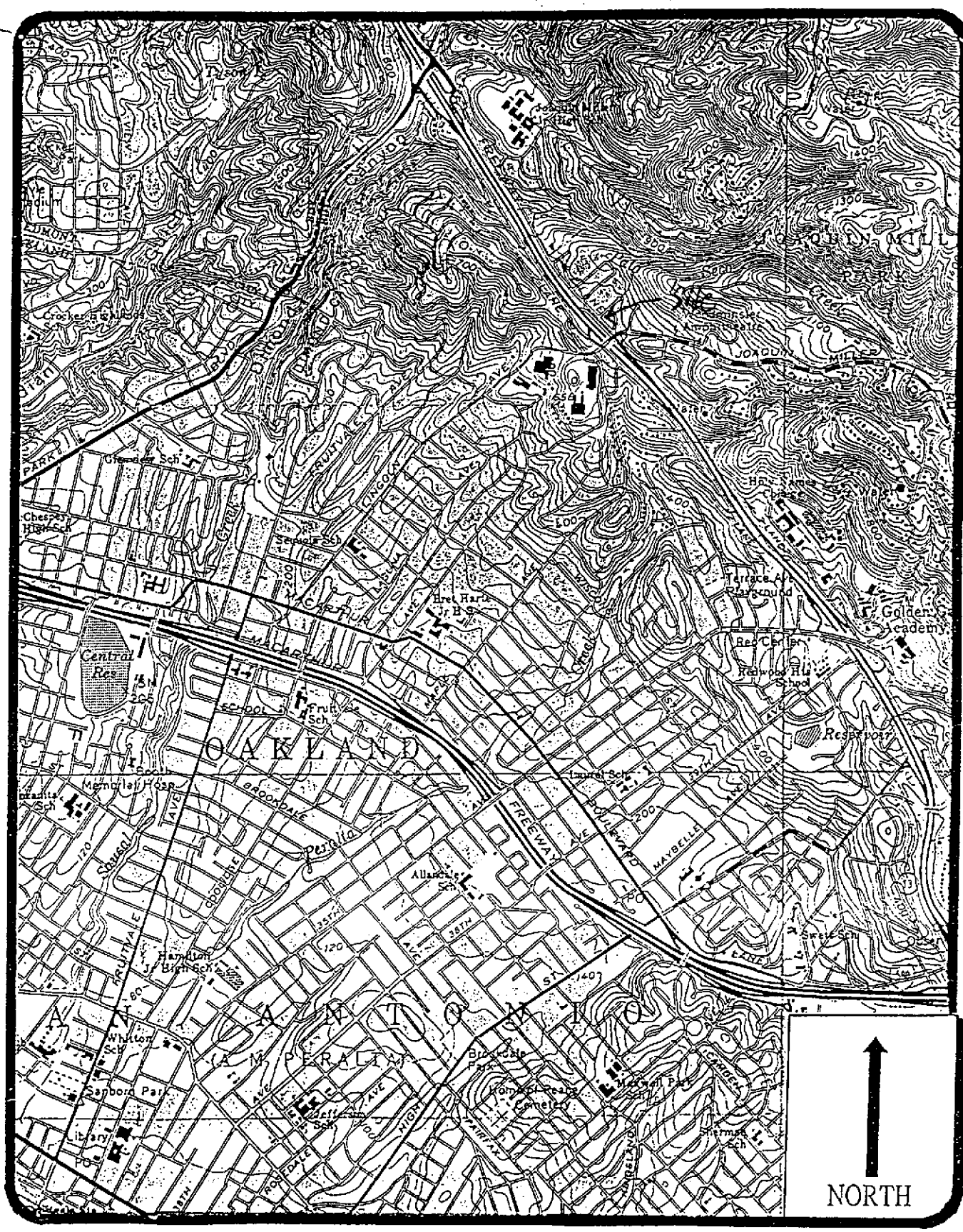


FIGURE 2, USGS TOPOGRAPHIC MAP

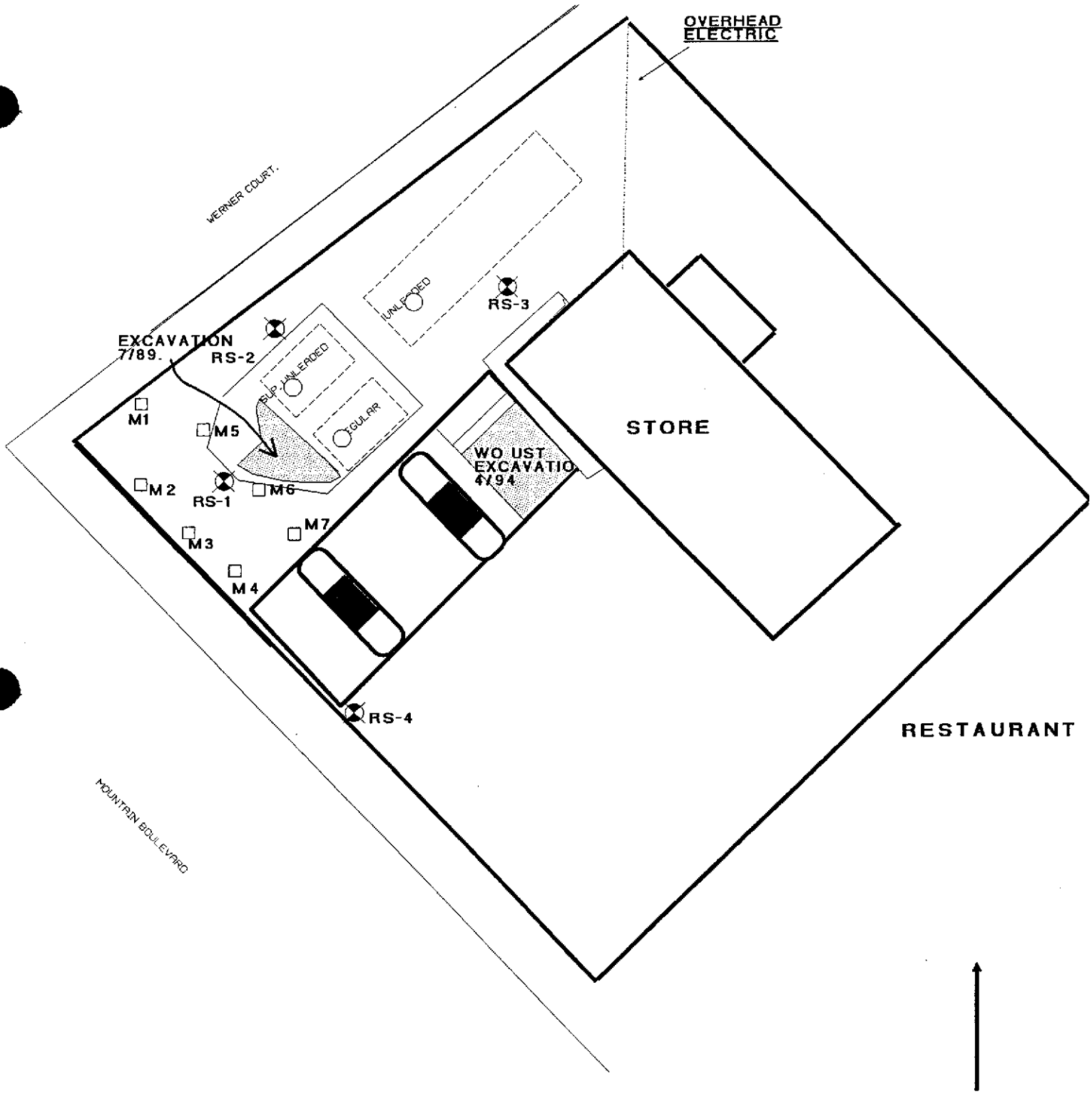


FIGURE 3

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SITE CONDITIONS
JANUARY 17, 1997.

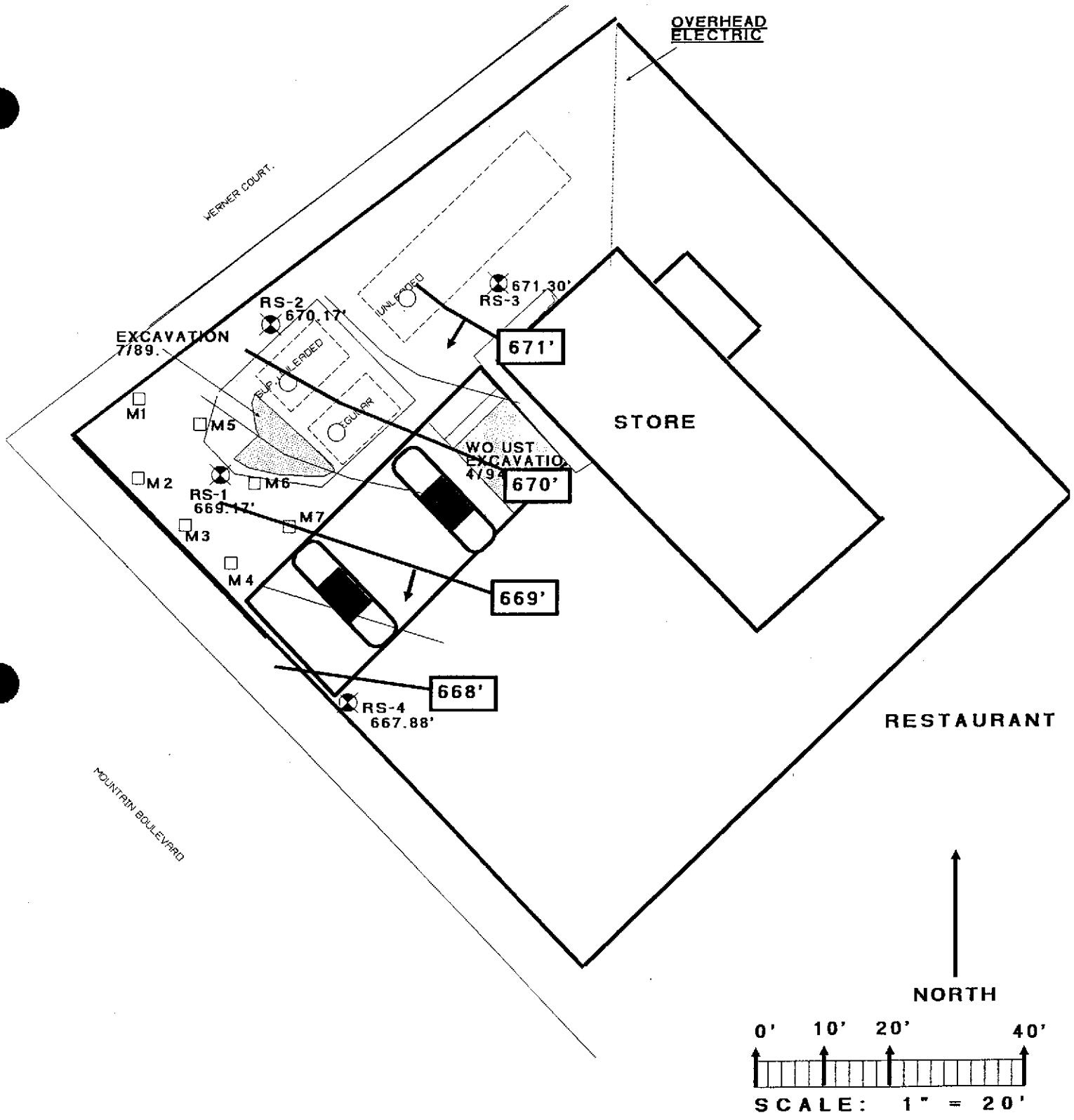


FIGURE 4

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER CONDITIONS
DECEMBER 11, 1996.

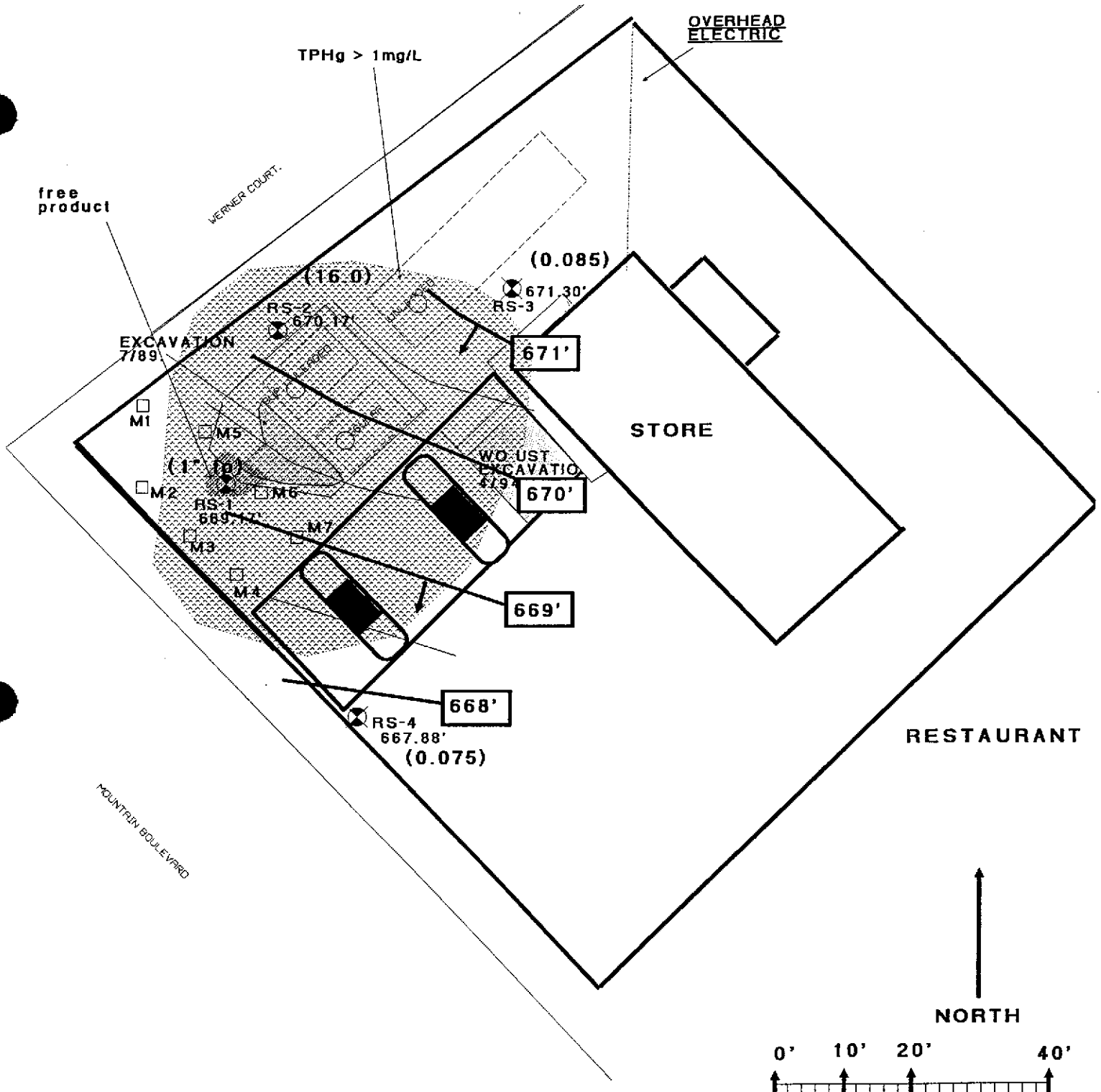


FIGURE 5

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER PETROLEUM HYDROCARBON PLUME (TPHg)
DECEMBER 11, 1996.

North State Environmental Analytical Laboratory

Chain of Custody/Request for Analysis 96-926

(415) 588-9652

Client: Western Geo-Engineers	Phone: 916 668 5300	Report to: George Canciss	Turnaround Time
Mailing Address: 1386 E. Beamer St Woodland, CA 95776		Billing to: WEGE	8 Hr ☐ 24 Hr ☐ 40 Hr ☐ 5 Days ✓
Site Address: DP 796		PO # / Billing Reference:	Other ☐
Sampler: Matt Penick	Date: 12-13-96		

Sample ID:	Sample Description	Container # / type	Sampling Time/Date	ANALYSIS REQUESTED: TPH-D	TPH-G	BTEX	O+G	MTBE					Remarks
RS-1	water	2 / VOA	1:15 / 12-11-96	✓	✓	✓		✓					
RS-2		2 / VOA	1:37		✓	✓		✓					
RS-3		2 / VOA	2:02		✓	✓		✓					
RS-4		2 / VOA	2:47		✓	✓		✓					

Relinquished by: George Canciss	Date: 12/13/96	Time: 1:50	Received by:		Yes / No
Relinquished by:	Date: 12/13/96	Time: 7:10 P	Received by: Edward C. Cuevas	Were samples Preserved ?	✓
Relinquished by:	Date:	Time:	Received in lab by:	In good condition ?	✓

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

Postmarked 1/27/97
Received 1/29/97

Lab No:	96-926	Date Sampled:	12-11-96
Client:	Western Geo-Engineers	Date Analyzed:	12-19-96
Project:	DP-796	Date Reported:	12-23-96

MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by Method 8020
Gasoline range hydrocarbons by EPA method 8015M

SAMPLE NO	CLIENT ID	ANALYTE	METHOD	RESULT
96-926-01	RS-1 WATER	MTBE	8020	*220000 ug/L
		Benzene	8020	4000 ug/L
		Toluene	8020	37000 ug/L
		Ethylbenzene	8020	8000 ug/L
		Xylenes	8020	45000 ug/L
		Gasoline	8015M	79000 ug/L
96-926-02	RS-2 WATER	MTBE	8020	180000 ug/L
		Benzene	8020	2000 ug/L
		Toluene	8020	840 ug/L
		Ethylbenzene	8020	200 ug/L
		Xylenes	8020	3200 ug/L
		Gasoline	8015M	16000 ug/L
96-926-03	RS-3 WATER	MTBE	8020	4700 ug/L
		Benzene	8020	20 ug/L
		Toluene	8020	2.0 ug/L
		Ethylbenzene	8020	ND
		Xylenes	8020	14 ug/L
		Gasoline	8015M	85 ug/L
96-926-04	RS-4 WATER	MTBE	8020	104 ug/L
		Benzene	8020	ND
		Toluene	8020	0.6 ug/L
		Ethylbenzene	8020	ND
		Xylenes	8020	ND ug/L
		Gasoline	8015M	75 ug/L

P.O.Box 5624 • South San Francisco, California 94083 • 415-588-2838 FAX 588-1950

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

Lab No:	96-926	Date Sampled:	12-11-96
Client:	Western Geo-Engineers	Date Analyzed:	12-19-96
Project:	DP-796	Date Reported:	12-23-96

Quality Control/Quality Assurance Summary-Water

Analyte	Method	Reporting Limit		Blank	MS/MSD Recovery	RPD
MTBE	8020	0.5	ug/L	ND	73	7
Benzene	8020	0.5	ug/L	ND	57	1
Toluene	8020	0.5	ug/L	ND	70	1
Ethylbenzene	8020	0.5	ug/L	ND	74	1
Xylenes	8020	1.0	ug/L	ND	73	1
Gasoline	8015M	50	ug/L	ND	120	4

*MTBE confirmed by GC/MS Method 8260.

ELAP Certificate NO: 1753

Reviewed and Approved:

John A. Murphy
Laboratory Director

P.O.Box 5624 • South San Francisco, California 94083 • 415-588-2838 FAX 588-1950

North State Environmental Analytical Laboratory

Chain of Custody/Request for Analysis 96-926

(415) 588-9652

Client: Western Geo - Engineers	Phone: 916 668 5300	Report to: George Cencich	Turnaround Time
Mailing Address: 1386 E. Beamer St Woodland, CA 95776		Billing to: WEGE	8 Hr ☐ 24 Hr ☐ 40 Hr ☐ 5 Days ✓
Site Address: DP 796		PO # / Billing Reference:	Other ☐
Sampler: Matt Pennick	Date: 12-13-96		

Sample ID:	Sample Description	Container # / type	Sampling Time/Date	ANALYSIS REQUESTED: TPH-D	TPH-G	BTEX	O+G	MTBE					Remarks
RS-1	water	2 / VOA	1:15 / 12-11-96	~~✓~~	✓	✓		✓					
RS-2		2 / VOA	1:37		✓	✓		✓					
RS-3		2 / VOA	2:02		✓	✓		✓					
RS-4		2 / VOA	2:47		✓	✓		✓					

Relinquished by: Steve Comeau	Date: 12/13/96	Time: 1:50	Received by:		Yes / No
Relinquished by:	Date: 12/13/96	Time: 7:10 P	Received by:	Were samples Preserved ?	✓
Relinquished by:	Date:	Time:	Received in lab by:	In good condition ?	✓

TABLE DP 796
DATE SAMPLED 01/17/97

GW

HOLE	HOLE DEPTH	TFH PPM	BENZENE ppb	TOLUENE ppb	ETHYLB ppb	XYLENES ppb	MTBE ppb
TABLE DP 796							
DATE SAMPLED		01/17/97					
HOLE	HOLE DEPTH	TFH PPM -MTBE	BENZENE ppb	TOLUENE ppb	ETHYLB ppb	XYLENES ppb	MTBE ppb
1	15	0.488	14	<1	<2	<6	13813
2	15	0.443	96	<1	<2	<6	15560
3	15	22.799	5425	4576	1416	11441	35668
4	15	11.500	946	435	513	4346	31678
5	15	7.197	355	53	<2	<6	15763
6	15	13.361	2197	1906	137	775	60934
7	15	NOT RUN, FLOATING PRODUCT					

SOIL

			MG/KG TPH WITHOUT MTBE	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	5	CLAY	0.2	<0.02	<0.03	<0.03	<0.11	<0.06
1	10	CLAY	4.7	<0.01	<0.01	<0.01	<0.02	0.33
1	15	CLAY	5.9	<0.02	<0.04	<0.04	<0.12	8.29
2	5	CLAY	0.8	0.02	<0.01	<0.01	<0.02	0.34
2	10	CLAY	8.9	2.08	<0.01	<0.01	<0.04	8.15
2	15	CLAY	0.8	0.00	<0.01	<0.01	<0.03	9.97
3	5	CLAY	1.8	0.06	<0.01	<0.01	0.19	1.62
3	10	CLAY	101.9	1.88	1.38	4.11	40.05	40.59
3	15	CLAY	22.4	0.35	0.13	0.37	2.43	33.14
4	5	CLAY	2.2	0.07	<0.01	<0.01	<0.04	0.88
4	10	CLAY	58.7	1.15	4.98	2.02	20.66	47.98
4	15	CLAY	1.6	0.04	<0.01	<0.01	<0.04	10.23
5	5	CLAY	11.8	0.02	<0.01	<0.01	<0.03	11.48
5	10	CLAY	5.8	0.14	<0.01	<0.01	<0.03	32.99
5	15	CLAY	0.4	0.05	<0.01	<0.01	<0.03	14.36
6	5	CLAY	9.1	0.16	0.07	<0.01	<0.03	15.40
6	10	CLAY	92.0	3.07	28.79	2.27	23.48	275.63
7	5	CLAY	33.0	0.17	<0.01	<0.01	<0.03	43.41
7	10	CLAY	259.2	3.99	0.05	6.38	63.32	199.26

TFH = TOTAL FUEL HYDROCARBONS (GASOLINE RANGE)
PPM = MILLIGRAMS/KILOGRAM (SOIL) = MILLIGRAMS/LITER (WATER)
ETHYLB = ETHYLBENZENE

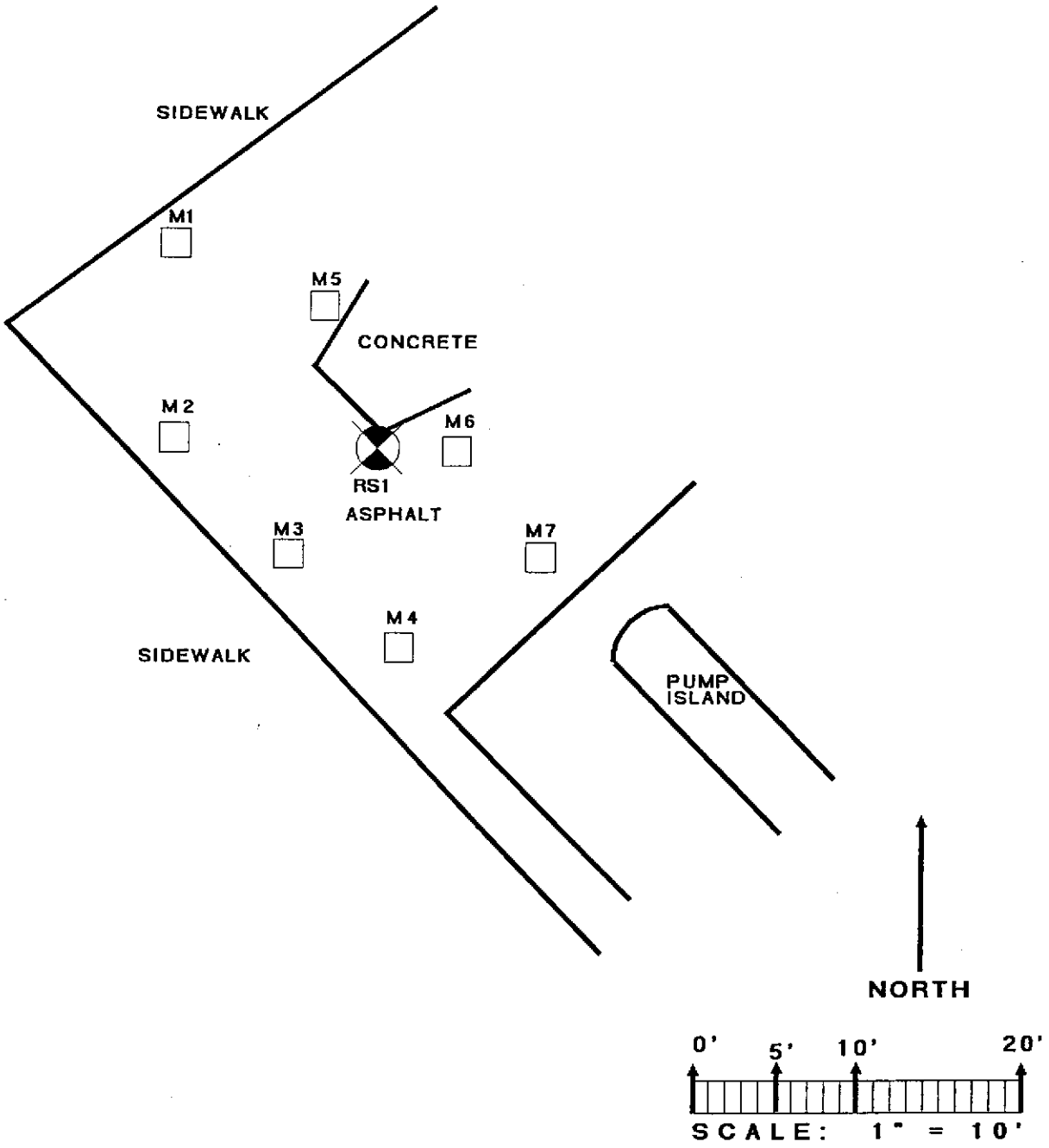


FIGURE 1

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SOIL PROBE SURVEY HOLE
LOCATIONS: JANUARY 17, 1997

GROUNDWATER MONITORING WELL.
RS-2 (16) well disignation with mg/L TPHg in water.

M1 SOIL PROBE TEST HOLE, JANUARY 17, 1997.

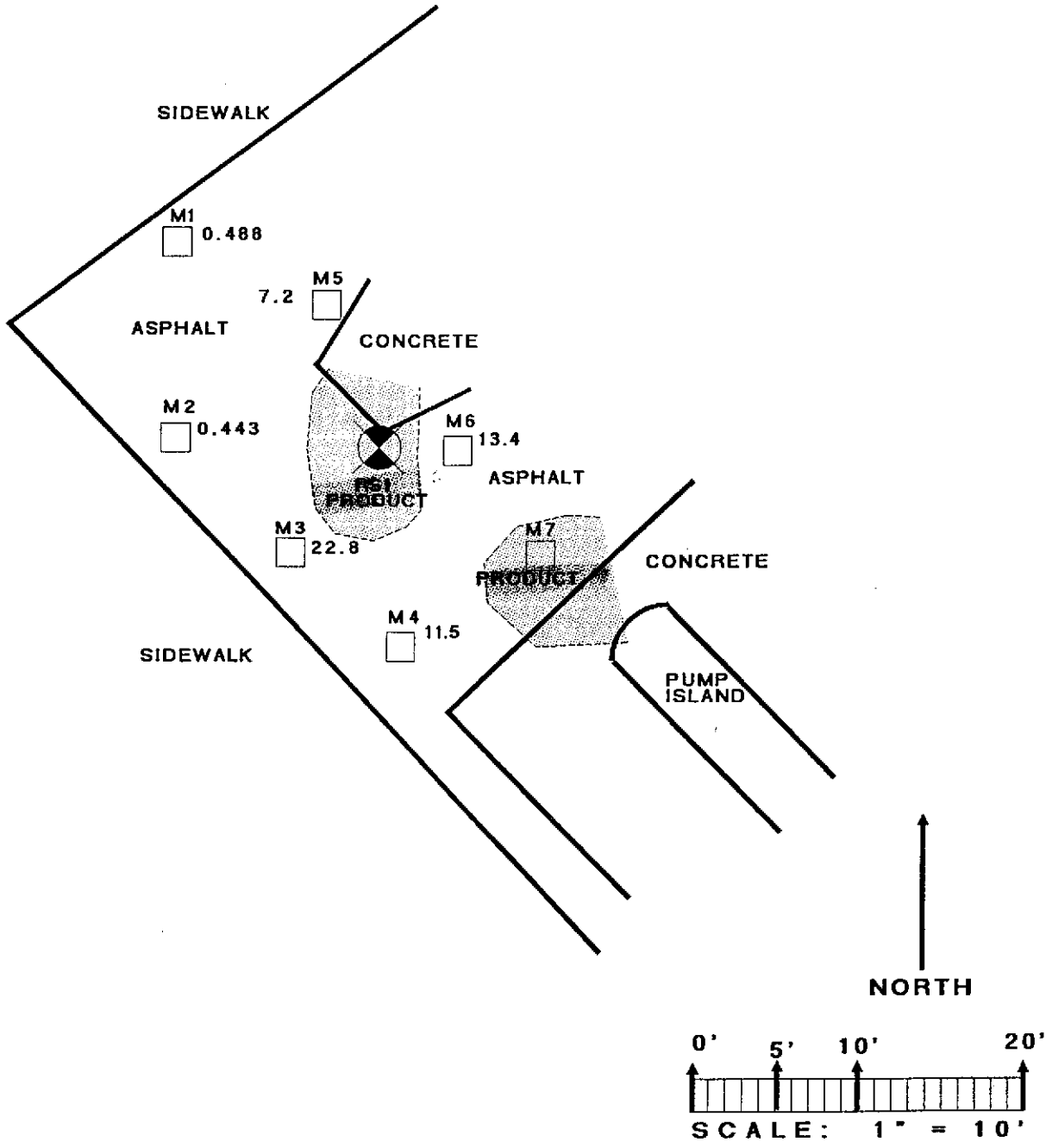


FIGURE 2 - **GROUNDWATER SAMPLES**

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SOIL PROBE SURVEY TOTAL
PETROLEUM HYDROCARBONS
GASOLINE RANGE: JANUARY 17, 1997

0.488 mg/L TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

RS-1 GROUNDWATER MONITORING WELL.

M1 SOIL PROBE TEST HOLE, JANUARY 17, 1997.

PPm

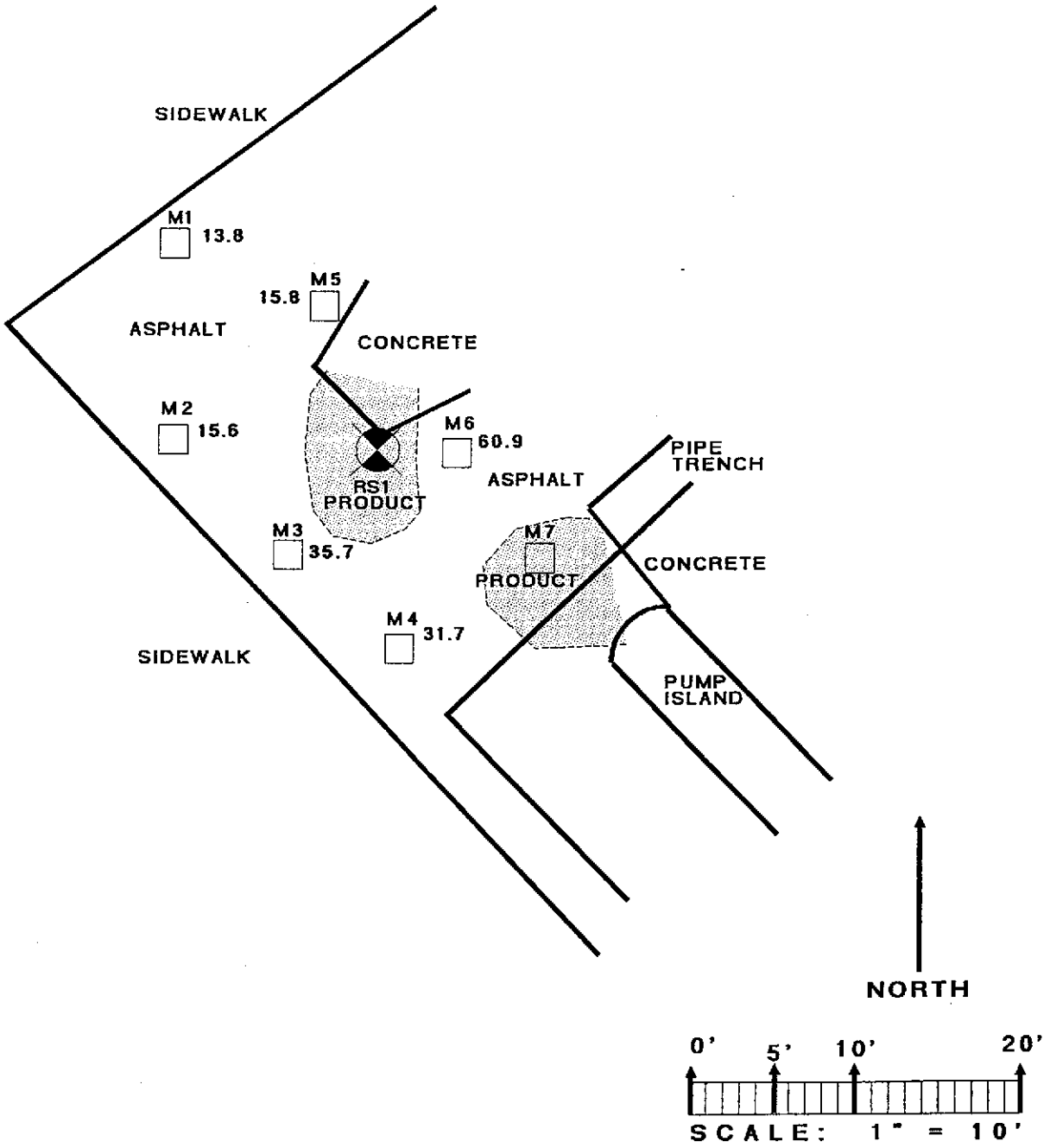


FIGURE 3 - GROUNDWATER SAMPLES

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SOIL PROBE SURVEY, MTBE:
JANUARY 17, 1997

13.8 ppb METHYL t-BUTYL ETHER (MTBE)

RS-1 GROUNDWATER MONITORING WELL.

M1 SOIL PROBE TEST HOLE, JANUARY 17, 1997.

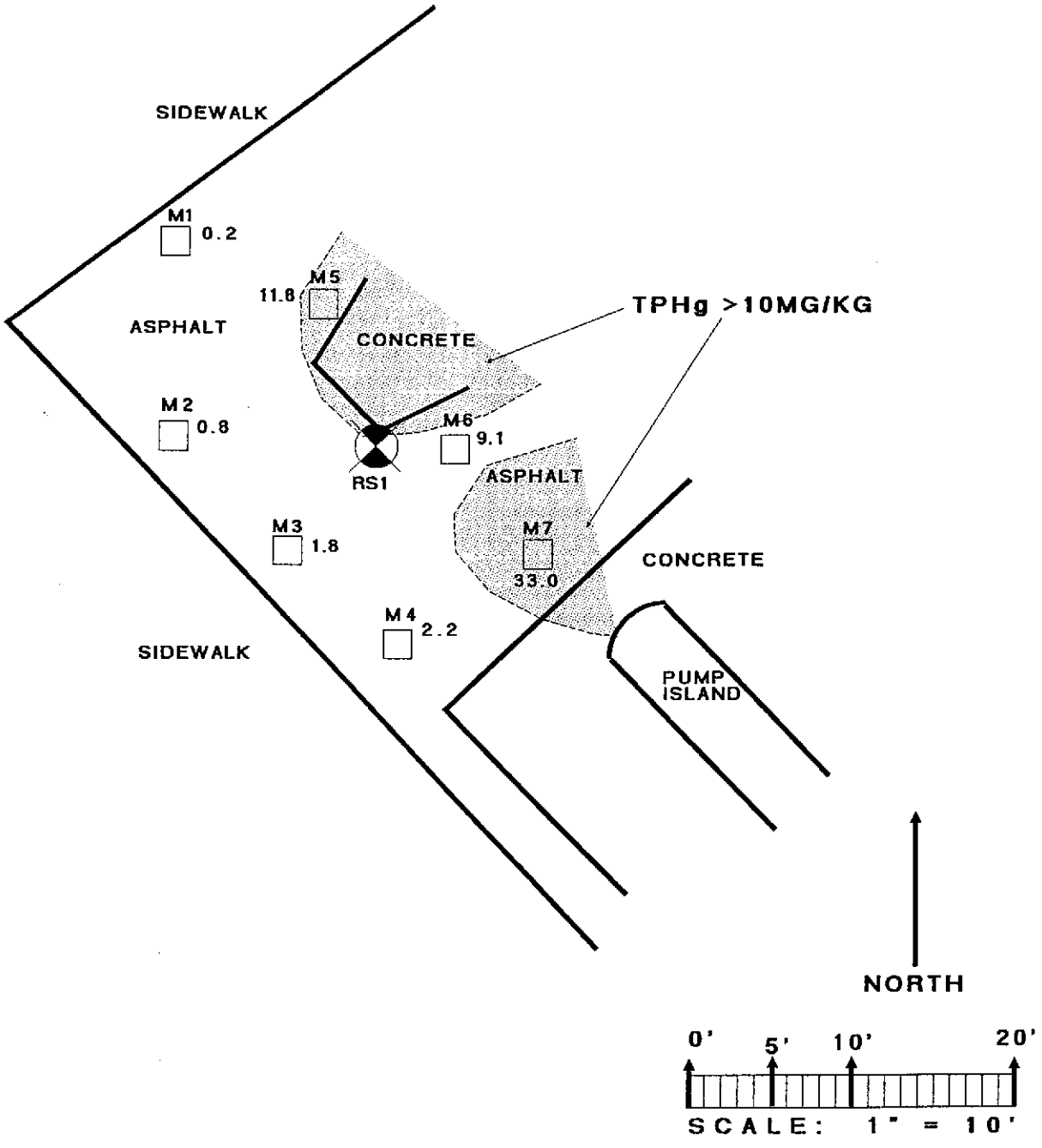


FIGURE 4 - SOIL SAMPLES 5 FEET

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SOIL PROBE SURVEY TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE: JANUARY 17, 1997

0.2 mg/kg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

RS-1 GROUNDWATER MONITORING WELL.

M1 SOIL PROBE TEST HOLE, JANUARY 17, 1997.

ppm

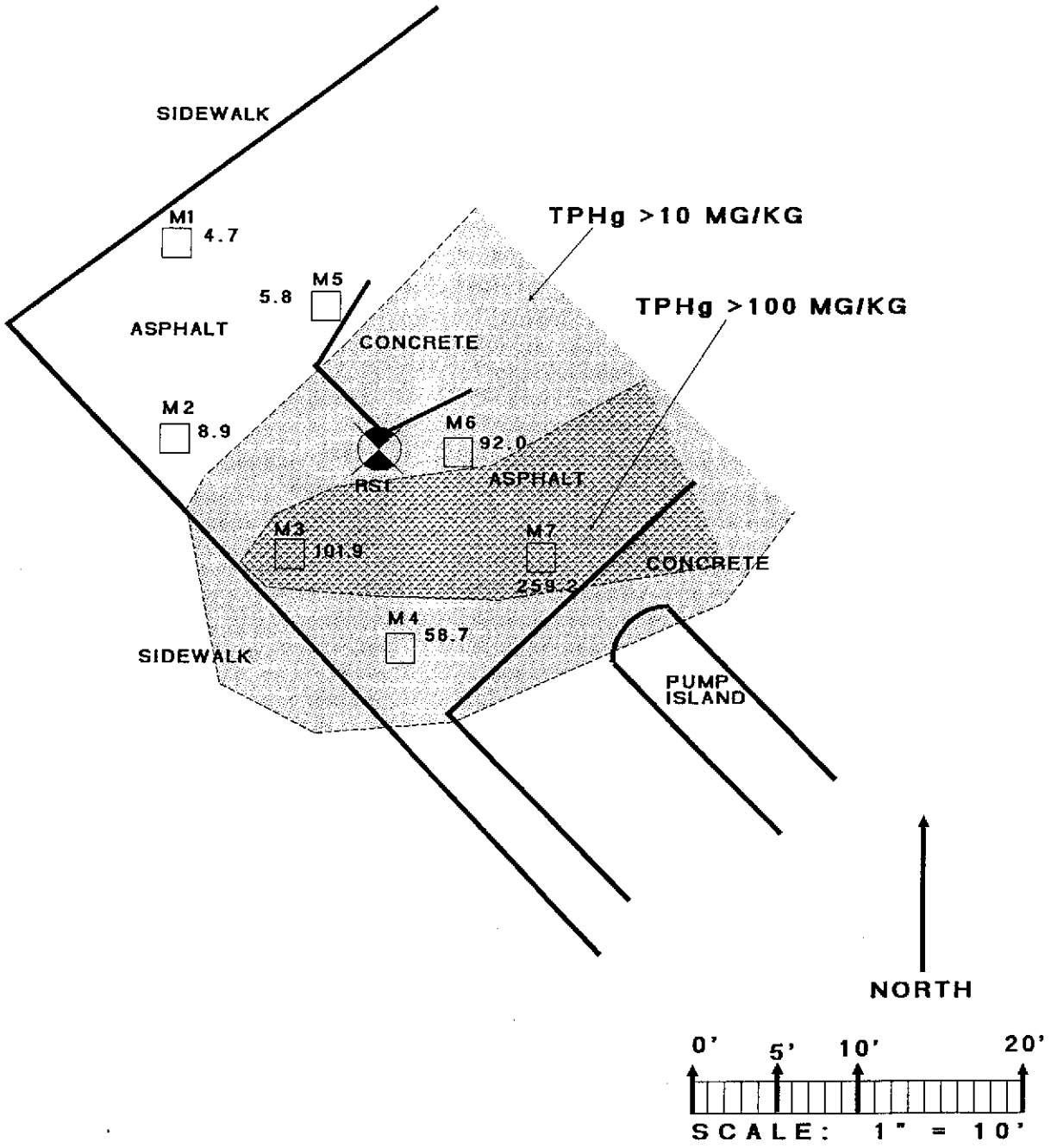


FIGURE 5 - **SOIL SAMPLES 10 FEET**

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

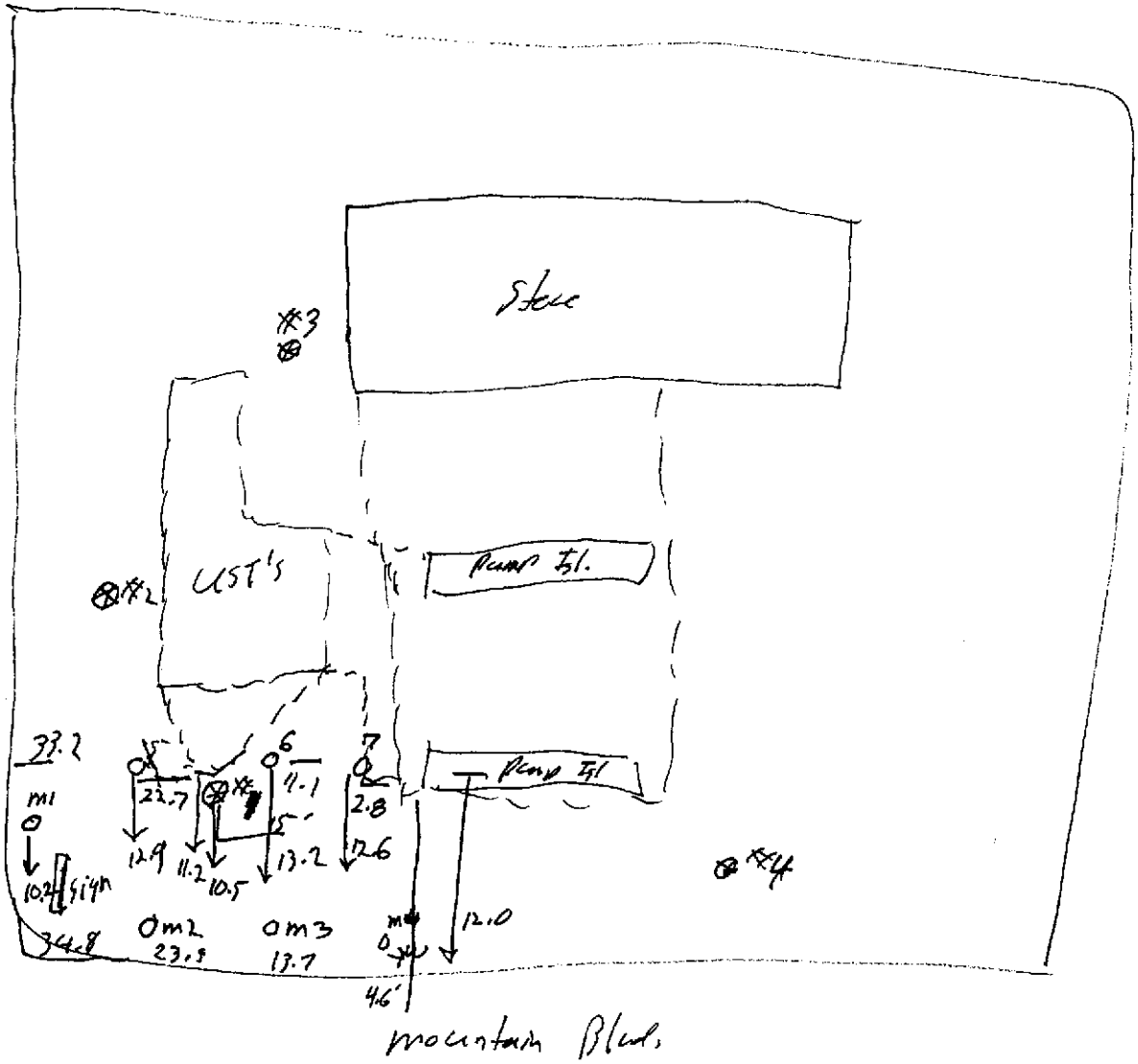
SOIL PROBE SURVEY TOTAL
PETROLEUM HYDROCARBONS
GASOLINE RANGE: JANUARY 17, 1997

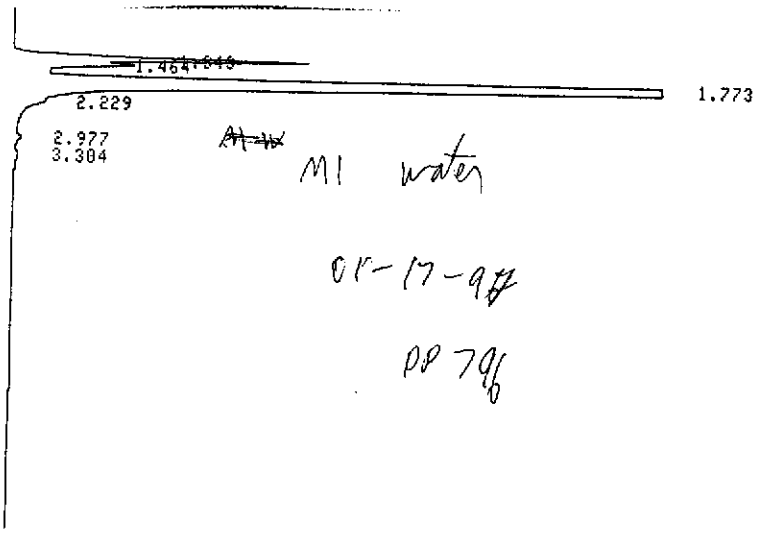
4.7 mg/Kg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

RS-1 GROUNDWATER MONITORING WELL.

M1 SOIL PROBE TEST HOLE, JANUARY 17, 1997.

ppm


Werner
Store
#3
#2
USTs
Pump Isl.
Pump Isl
#1
#4
33.2
MW1
10.2
Sign
34.8
6
11.1
22.7
12.9
11.2
10.5
13.2
7
2.8
12.6
MW4
12.0
46'
Om2
23.9
Om3
13.7
Mountain Blvd.



CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 19

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.343	43129				
2	1.464	19273	V			
3	1.773	920860	SV			
4	2.229	518	T			
5	2.977	1033	T			
6	3.304	1109	T	1	0.004	BENZEN
TOTAL		985921			0.004	

CHROMATOGRAM 101 MEMORIZED

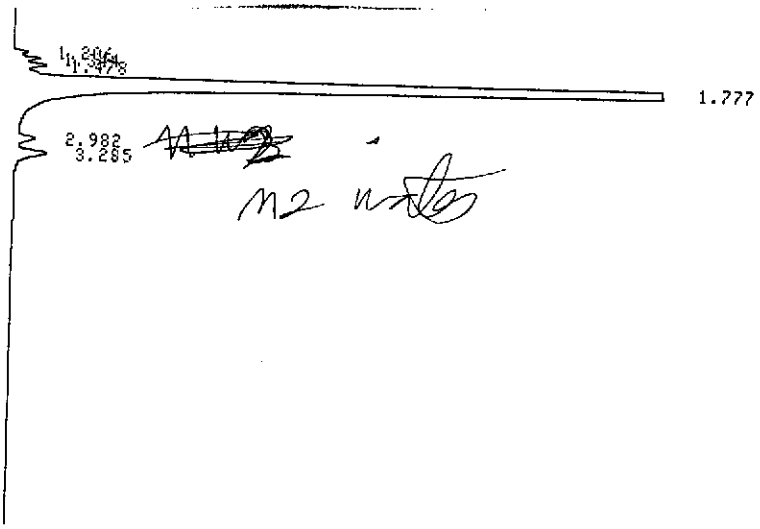
223-02037-02

CR501 CHROMATOPAC

CHANNEL NO 2
SAMPLE NO 0
REPORT NO 20

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.883	28			0.1679	
2	2.007	295			1.7812	
3	2.532	4826	V		29.1501	
4	3.442	11406	V		68.9007	
TOTAL		16554			100	



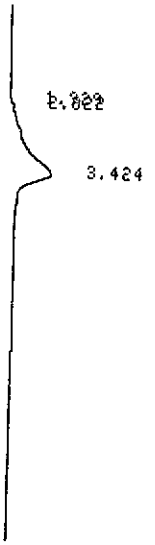
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 21

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.286	1719				
2	1.344	3418	V			
3	1.478	5299	V			
4	1.777	1037338	SV			
5	2.982	3475	T			
6	3.285	7685	TV	1	0.0276	BENZEN
TOTAL		1058933			0.0276	

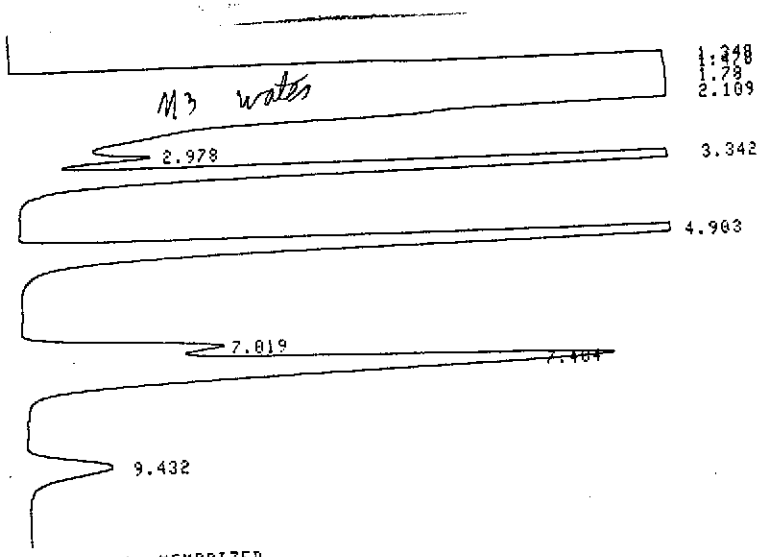
2234-02037-02



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 22

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.929	54			0.1126	
2	2.022	308			0.6369	
3	3.424	47939	V		99.2504	
TOTAL		48301			100	



CHROMATOGRAM 1 MEMORIZED

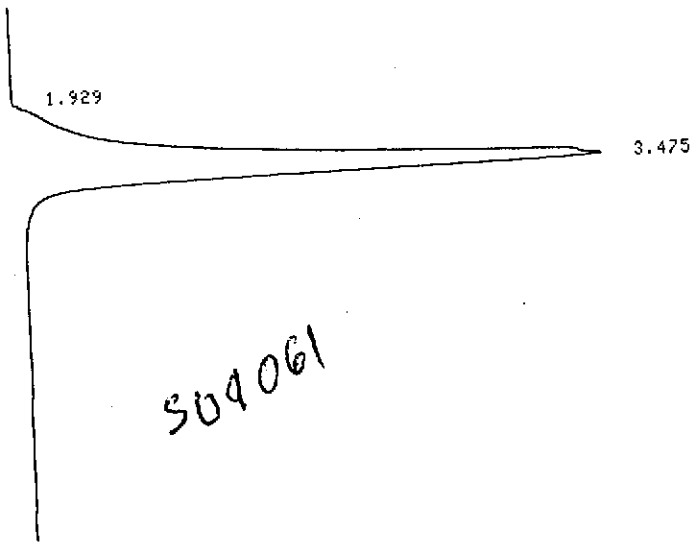
CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 23

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.348	604272				
2	1.478	696259	V			
3	1.78	2377870	V			
4	2.109	433389	V			
5	2.978	45446	V			
6	3.342	433991	V	1	1.5586	BENZEN
7	4.903	369033		2	1.7864	TOLUEN
8	7.019	89077		3	0.5187	ETHYL-
9	7.484	343761	V	4	3.9747	M/PXYL
10	9.432	50747	V	5	0.5872	M-XLYL
	TOTAL	5443764			8.3455	

223-02037-02

Shimadzu

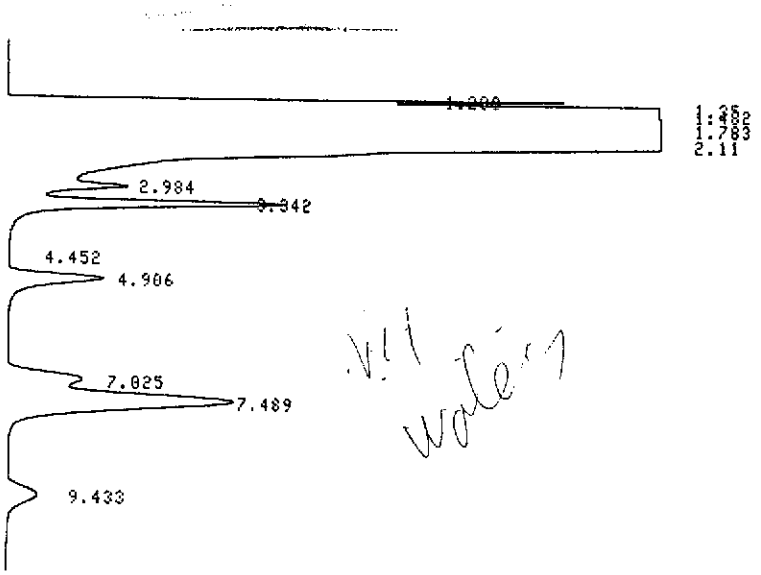


S09061

CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 24

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.929	60			0.0117	
					99.9883	



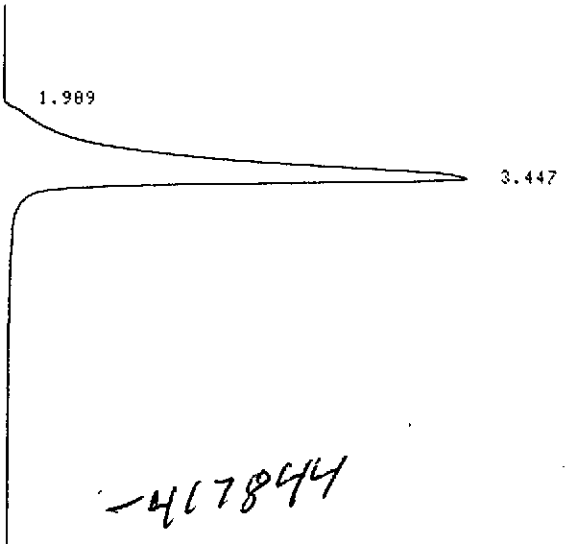
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 27

FILE 8
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.209	53506				
2	1.35	266567	V			
3	1.482	338216	V			
4	1.783	2111847	V			
5	2.11	397476	V			
6	2.984	36265	V			
7	3.342	75671	V	1	0.2718	BENZEN
8	4.452	373				
9	4.906	35119	V	2	0.1624	TOLUEN
10	7.025	32289		3	0.188	ETHYL-
11	7.489	131801	V	4	1.5239	M/PXYL
12	9.433	18048		5	0.2088	M-XLYL
	TOTAL	3497176			2.3549	

CHROMATOGRAM 101 MEMORIZED

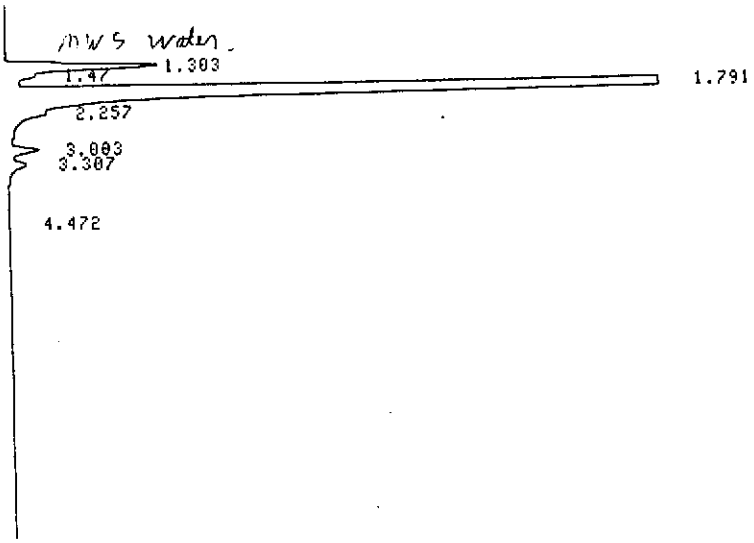


CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 28

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.909	26			0.0063	

223-0237-02

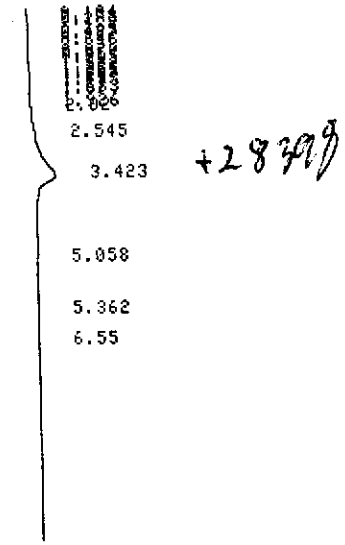


CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 41

FILE 0
METHOD 44
SAMPLE WT 100

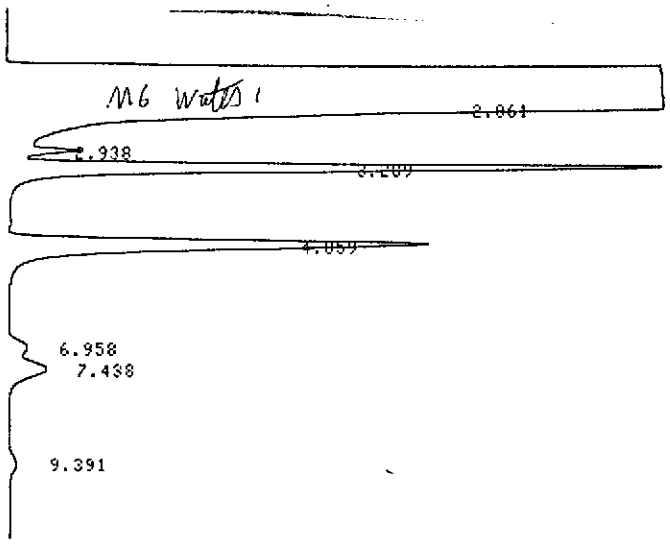
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.303	33703				
2	1.47	4398	V			
3	1.791	1050877	SV			
4	2.257	1033	T			
5	3.003	5482	T			
6	3.307	4279	TV	1	0.0154	BENZEN
7	4.472	386				
	TOTAL	1100158			0.0154	



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 42

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.104	11			0.0262	
2	0.178	20	V		0.0491	
3	0.203	23	V		0.0572	
4	0.425	17			0.0437	
5	0.497	32	V		0.079	
6	0.646	41	V		0.1024	
7	0.879	42			0.1045	
8	0.954	32	V		0.08	
9	1.015	63	V		0.1567	
10	1.122	66	V		0.1652	
11	1.221	20	V		0.0507	
12	1.275	10	V		0.0254	
13	1.338	21			0.0514	



223-02037.02

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1 FILE 0
SAMPLE NO 0 METHOD 44
REPORT NO 51 SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.298	1375788				
2	1.732	4062295	V			
3	2.061	282146	SV			
4	2.938	8527	T			
5	3.289	175744	V	1	0.6311	BENZEN
6	4.859	153682		2	0.7106	TOLUEN
7	6.958	8618		3	0.0502	ETHYL-
8	7.438	22259	V	4	0.2574	M/PXYL
9	9.391	4478		5	0.0518	M-XLYL
	TOTAL	6093535			1.7011	

CHROMATOGRAM 101 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 2 FILE 9
SAMPLE NO 0 METHOD 41
REPORT NO 52

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.95	292			0.4555	
2	3.388	63850	V		99.5444	
	TOTAL	64142			100	

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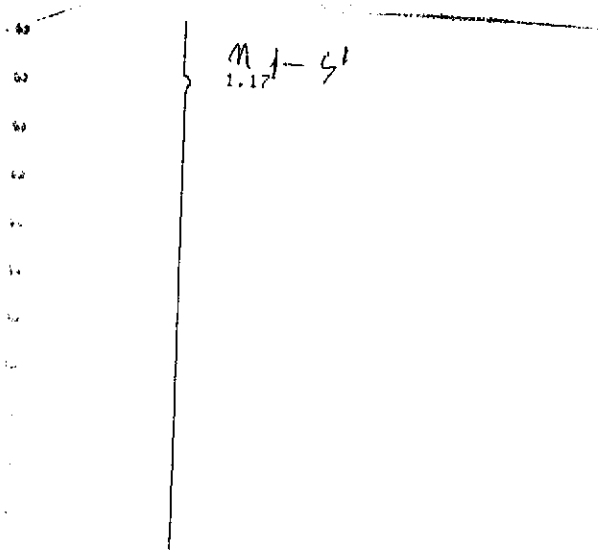


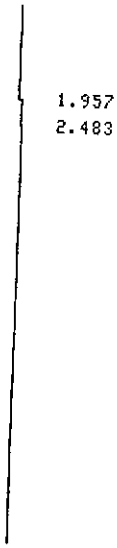
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 57

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.17	1522				
TOTAL		1522			0	

CHROMATOGRAM 101 MEMORIZED



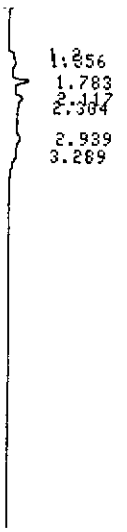
CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 58

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.957	336			27.5725	
2	2.483	883	V		72.4275	
TOTAL		1219			100	

223-02037-02

Shimadzu



MB-10

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 7

FILE 9
METHOD 44
SAMPLE WT 100

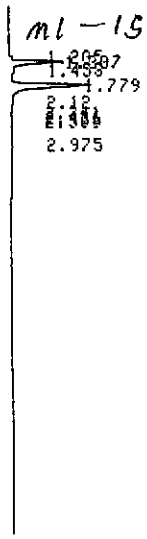
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.2	856				
2	1.356	1268	V			
3	1.783	2534				
4	2.117	2258	V			
5	2.304	628	V			
6	2.939	1576				
7	3.289	412		1	0.0015	BENZEN
	TOTAL	9530			0.0015	

CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 8

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.625	11			0.0124	
2	1.921	48			0.0555	
3	2.015	238			0.2741	
4	3.409	86599	V		99.658	
	TOTAL	86897			100	

223-02037-02



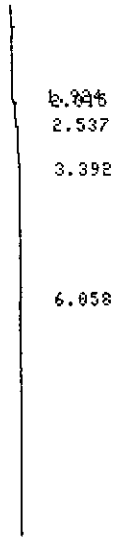
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 9

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO.	CONC	NAME
1	1.205	408				
2	1.307	5709	V			
3	1.458	757	V			
4	1.779	11773	V			
5	2.12	527	V			
6	2.341	207	V			
7	2.436	66	V			
8	2.508	22	V			
9	2.975	590				
	TOTAL	20058			0	

223-02037-02



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 10

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.924	62			0.1251	
2	2.015	278	V		0.5477	
3	2.537	3821	V		7.7494	
4	3.392	13956	V		28.3013	
5	6.058	31202	V		63.2765	
	TOTAL	49311			100	

1.213
1.344
1.48
1.642
1.787
2.092
2.333
2.436
2.691
3.379

M2

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 33

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.213	1023				
2	1.344	2977	V			
3	1.48	2253	V			
4	1.642	2140	V			
5	1.787	2585	V			
6	2.092	1327	V			
7	2.333	775	V			
8	2.436	247	V			
9	2.691	268	V			
10	3.379	471				
	TOTAL	14866		1	0.0017	BENZEN
					0.0017	

223-0203Y-02

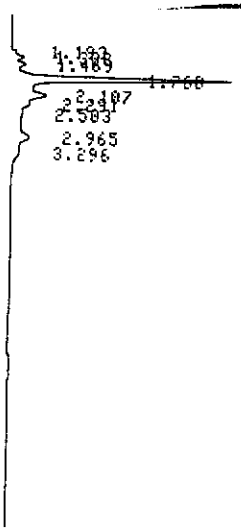
2.537
2.725
3.465

3944

CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 8
REPORT NO 34

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.923	18				
2	2.814	332			0.248	
3	2.537	2890	V		4.5174	
4	2.725				28.4695	



M2-10

CHROMATOGRAM 1 MEMORIZED

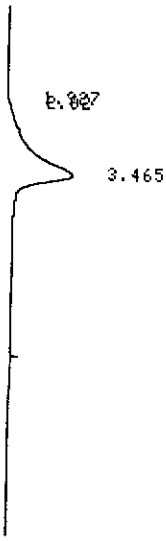
CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0

FILE 0
METHOD 44

REPORT NO 11

SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.193	594				
2	1.388	2002	V			
3	1.469	2459	V			
4	1.768	34888	V			
5	2.107	10470	V			
6	2.291	4247	V			
7	2.503	3387	V			
8	2.965	7509	V			
9	3.296	3590	V	1	0.0129	BENZEN
	TOTAL	69144			0.0129	



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 12

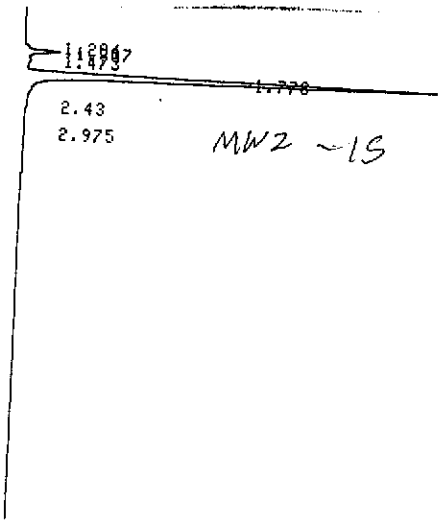
FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.927	55			0.0833	
2	2.02	239			0.3642	
3	3.465	65240	V		99.5525	
	TOTAL	65534			100	

223-02037-02

Kimadzu

223-02037-02

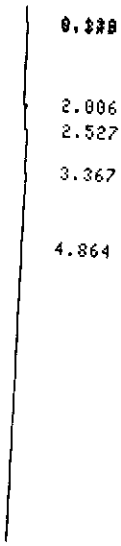


CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 13

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.204	527				
2	1.387	3958	V			
3	1.473	1038	V			
4	1.778	58912	SV			
5	2.43	33	T			
6	2.975	293				
TOTAL		64760			0	

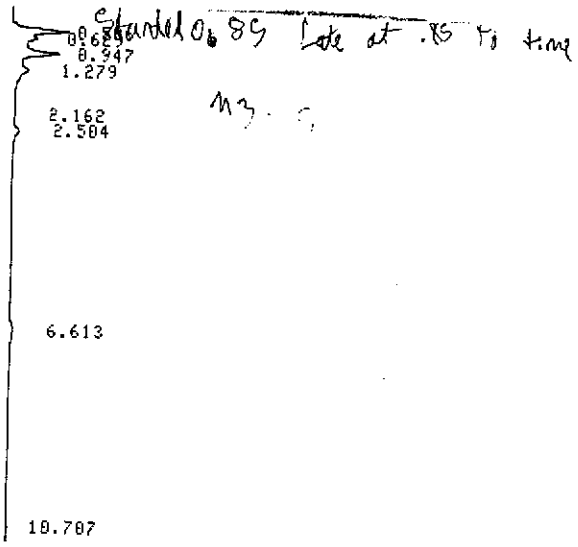


CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 14

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.138	29			0.2166	
2	2.006	288			2.1764	
3	2.527	3247	V		24.5558	
4	3.367	7625	V		57.6723	
5	4.864	2033	V		15.3789	
TOTAL		13222			100	

223-02037-02



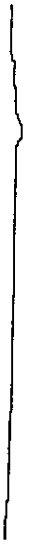
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 55

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.506	9536				
2	0.629	3898	V			
3	0.947	11443	V			
4	1.279	5188	V			
5	2.162	195				
6	2.504	1573				
7	6.613	1597		3	0.0093	ETHYL-
8	10.707	97				
	TOTAL	33448			0.0093	

CHROMATOGRAM 101 MEMORIZED



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 56

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.037	31			0.2048	
2	1.168	409			2.6626	
3	1.691	2992	V		19.4583	
4	2.613	11945	V		77.6742	
	TOTAL	15377				

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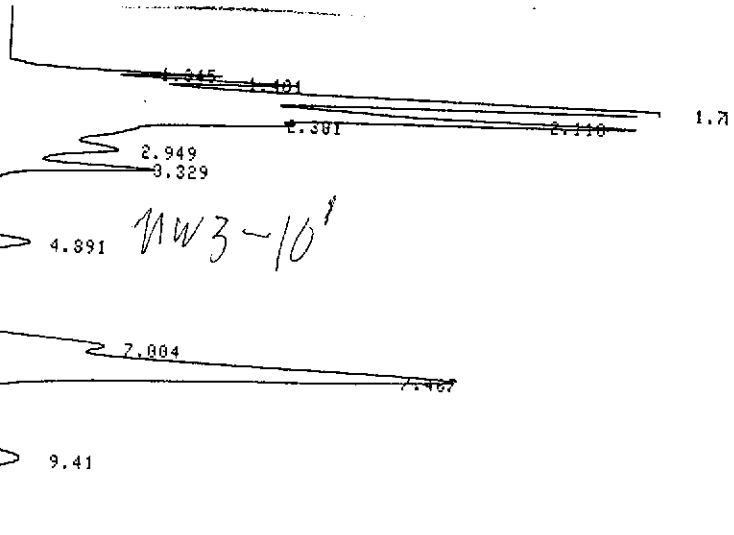
⊕ Shimadzu



CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 15

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.345	29633				
2	1.481	46964	V			
3	1.78	266587	V			
4	2.118	232436	V			
5	2.301	127720	V			
6	2.949	59269	V			
7	3.329	49174	V			
8	4.891	18169		1	0.1766	BENZEN
9	7.004	53743		2	0.084	TOLUEN
10	7.467	276251	V	3	0.3129	ETHYL-
11	9.41	28459	V	4	3.1941	M/PXYL
				5	0.3293	M-XLYL
	TOTAL	1188404			4.0969	

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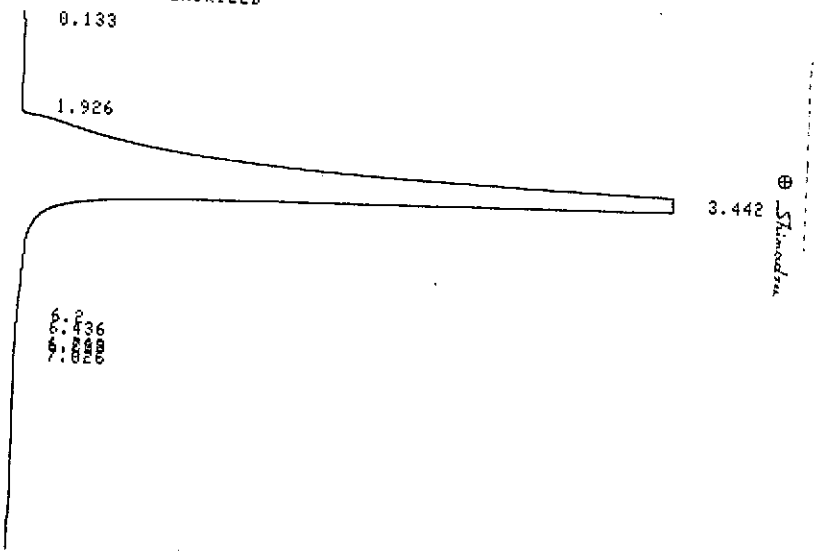
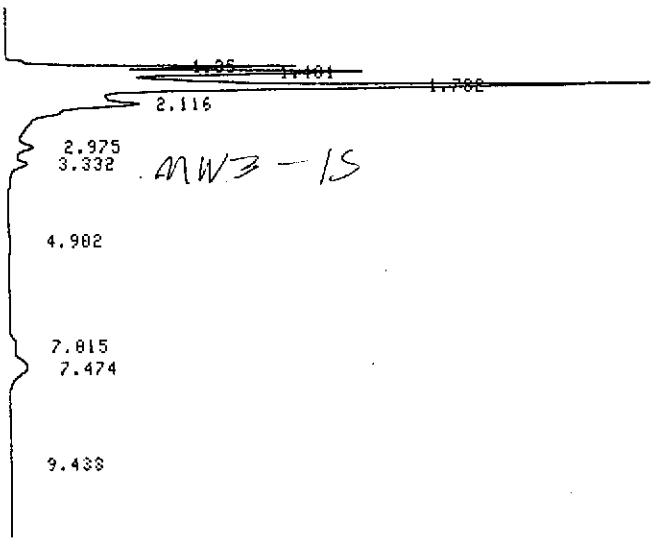
CHROMATOGRAM 101 MEMORIZED



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 16

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.926	52			0.0063	
2	3.442	818885	S		99.9836	
3	6.2	24	T		0.003	
4	6.436	46	TV		0.0056	
5	7.026	12	TV		0.0015	



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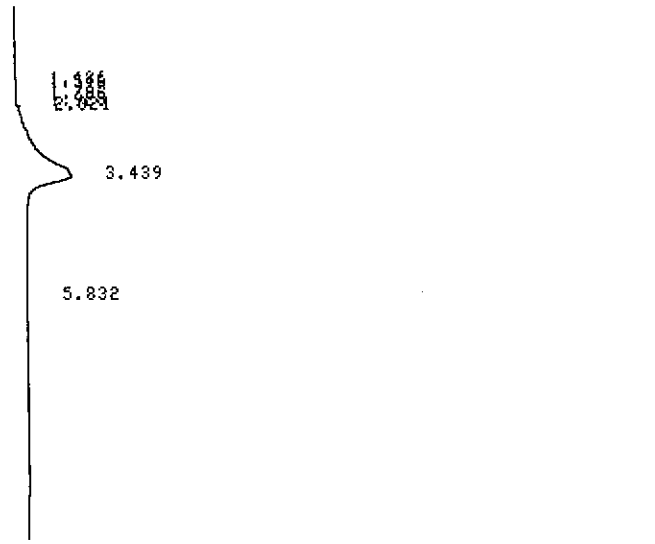
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 17

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.35	36782				
2	1.481	59521	V			
3	1.782	141933	V			
4	2.116	64493	V			
5	2.975	9181	V			
6	3.332	5974	V	1	0.0215	BENZEN
7	4.902	1130		2	0.0052	TOLUEN
8	7.015	3179		3	0.0185	ETHYL-
9	7.474	11157	V	4	0.129	M/PXYL
10	9.438	897		5	0.0104	M-XLYL
	TOTAL	334246			0.1846	



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 18

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.486	12			0.0205	
2	1.546	39			0.0651	
3	1.723	29			0.0492	
4	1.796	12	V		0.0208	
5	1.928	72			0.1202	
6	2.021	253			0.4232	
7	3.439	57416	V		95.8457	

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223-02037-02

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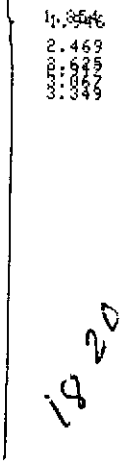
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 53

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.277	15582				
2	1.404	4166	V			
3	1.574	1513	V			
4	1.722	4207	V			
5	2.058	1465	V			
6	2.225	1350	V			
7	2.58	232	V			
8	3.283	1347		1	0.0048	BENZEN
	TOTAL	29863			0.0048	

CHROMATOGRAM 101 MEMORIZED



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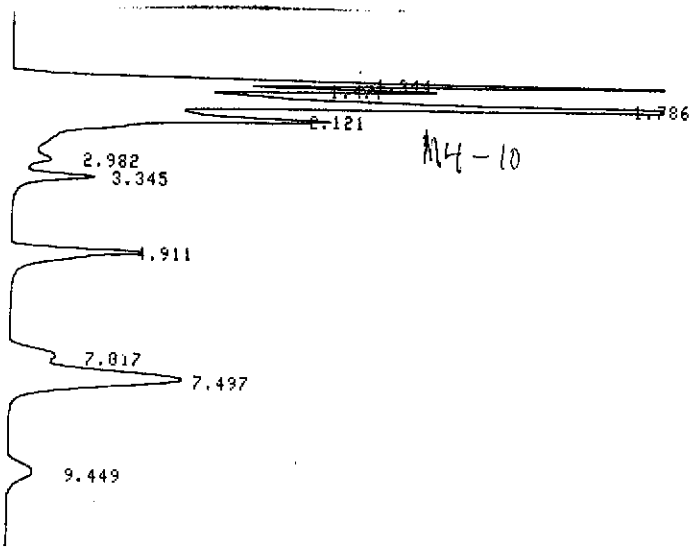
CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 54

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.854	59			0.7548	
2	1.946	256			3.2535	
3	2.469	2622	V		33.2682	
4	2.625	1509	V		19.1384	
5	2.917	615	V		7.8032	



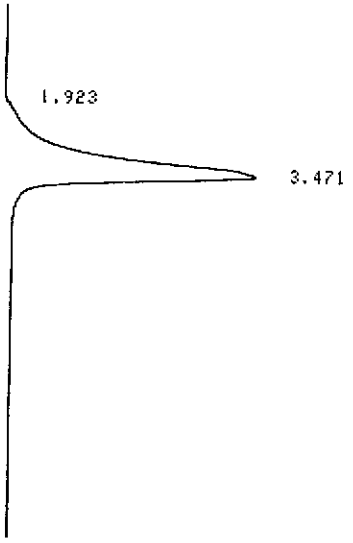
223-02037-02

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 29

FILE 0
METHOD 44
SAMPLE WT 100

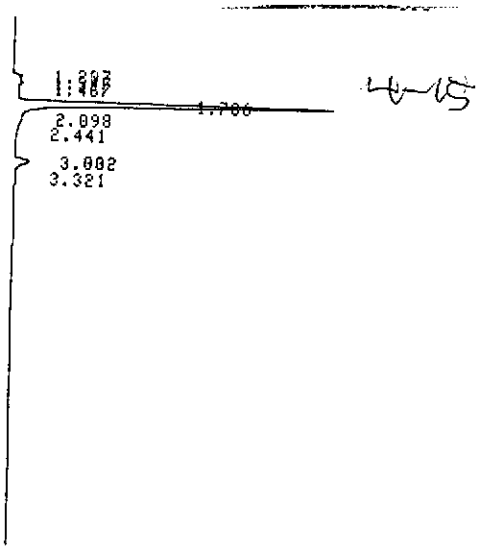
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.344	104226				
2	1.477	69523	V			
3	1.786	236121	V			
4	2.121	143150	V			
5	2.982	15976	V			
6	3.345	22645	V	1	0.0813	BENZEN
7	4.911	49064		2	0.2269	TOLUEN
8	7.017	19764		3	0.1151	ETHYL-
9	7.497	101489	V	4	1.1735	M/PXYL
10	9.449	16297		5	0.1886	M-XLYL
	TOTAL	778254			1.7853	



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 30

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.923	67				
2	3.471	209489			0.0321	



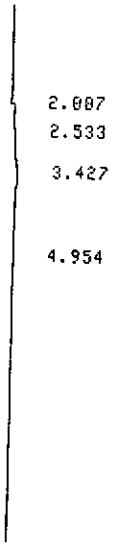
4-15

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 31

FILE 0
METHOD 44
SAMPLE WT 100

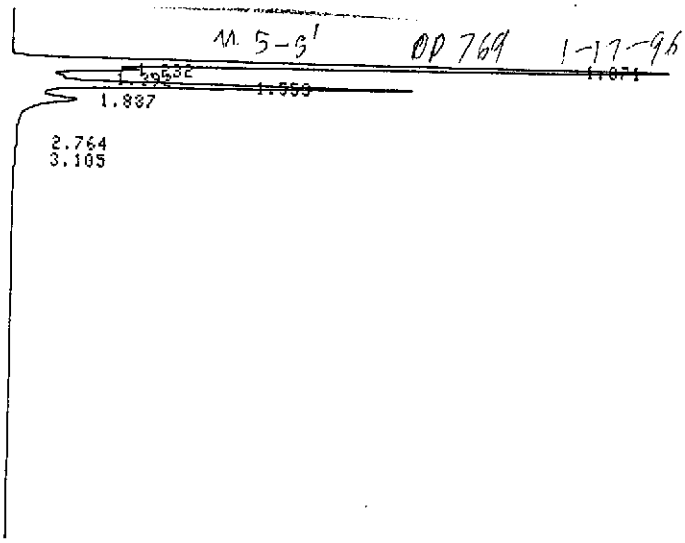
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.207	921				
2	1.347	1258	V			
3	1.467	948	V			
4	1.786	45275	SV			
5	2.098	218	T			
6	2.441	24	T			
7	3.082	3234				
8	3.321	624	V	1	0.0022	BENZEN
	TOTAL	52502			0.0022	



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 32

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.007	329			2.1201	
2	2.533	2885	V		18.6133	
3	3.427	10922	V		70.4613	
4	4.954	1365	V		8.8853	
	TOTAL	15500			100	



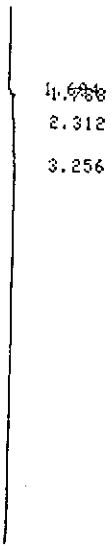
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 49

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.071	117579				
2	1.232	17151	V			
3	1.392	7035	V			
4	1.553	65000	V			
5	1.887	24283	SV			
6	2.764	520	T			
7	3.105	503	TV			
TOTAL		232072			0	

CHROMATOGRAM 101 MEMORIZED

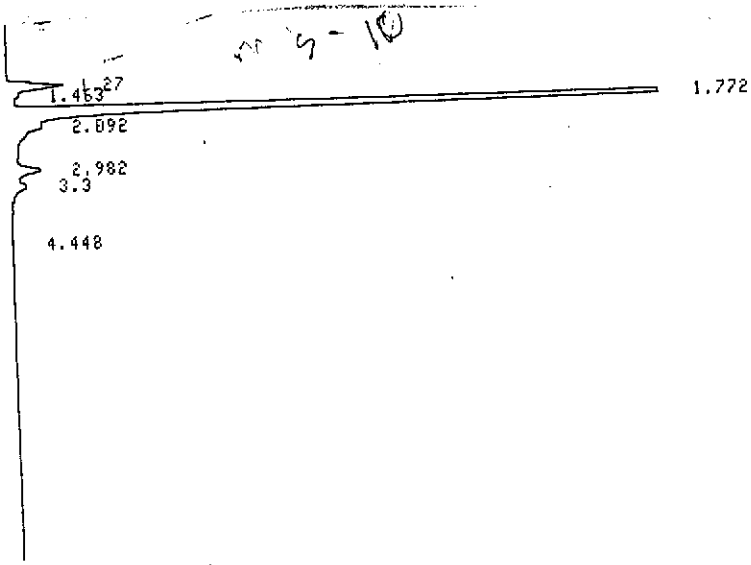


CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 50

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.694	55			0.5562	
2	1.788	265			2.6988	
3	2.312	2874	V		29.2206	
4	3.256	6640	V		67.5243	
TOTAL		9834			100	

223-02037-02

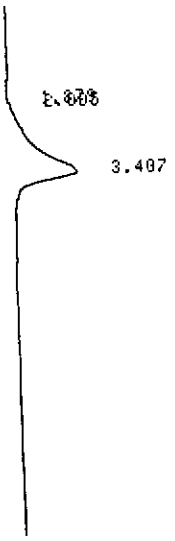


CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 35

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.27	11367				
2	1.463	1189	V			
3	1.772	221429	SV			
4	2.092	1023	T			
5	2.982	6408				
6	3.3	3673	V	1	0.0132	BENZEN
7	4.448	146				
	TOTAL	245236			0.0132	



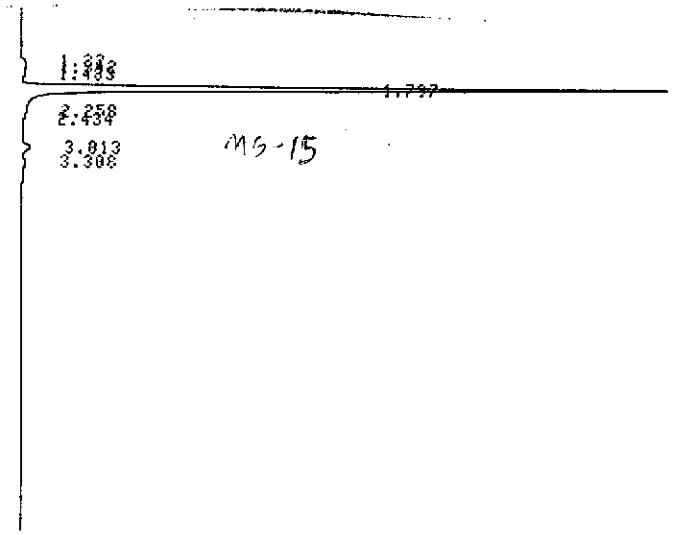
CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 36

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.005	236			0.3047	
2	3.407	77274	V		99.6953	
	TOTAL	77510			100	

223-02037-02

Shimadzu



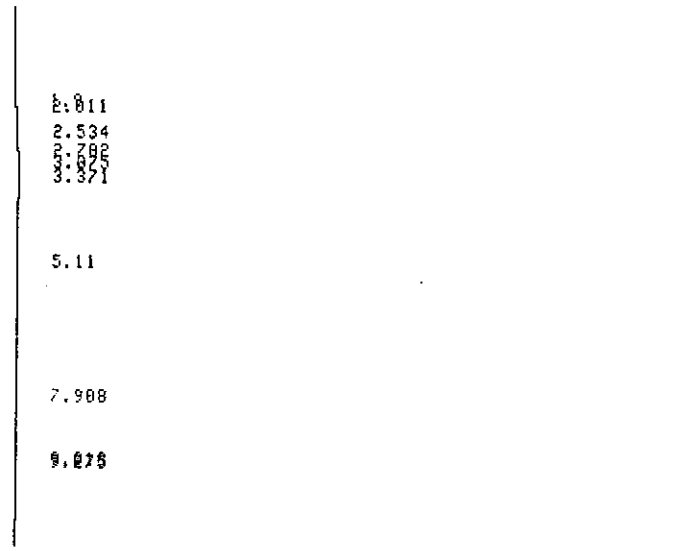
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 37

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.22	558				
2	1.342	919	V			
3	1.483	466	V			
4	1.797	88978	SV			
5	2.258	189	T			
6	2.434	18	T			
7	3.013	1985				
8	3.308	1252	V	1	0.0045	BENZEN
	TOTAL	94366			0.0045	

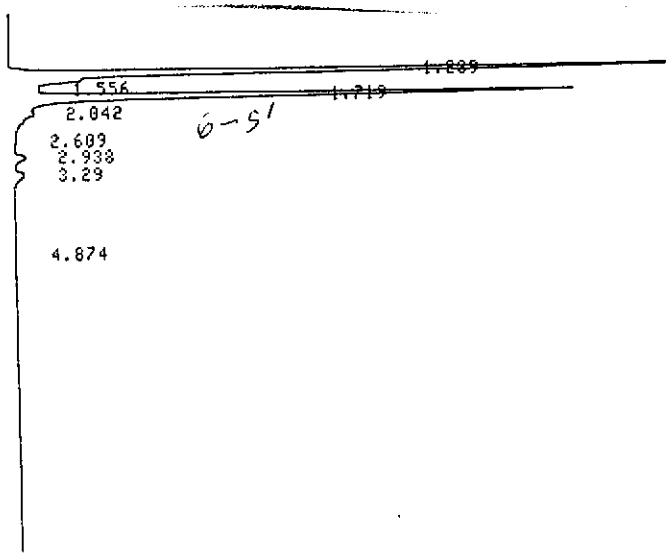
CHROMATOGRAM 101 MEMORIZED



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 38

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.9	14			0.2053	
2	2.011	277			4.0068	
3	2.534	2128	V		30.6528	
4	2.702	1294	V		18.7104	
5	3.075	1025	V		14.8121	
6	3.371	1953	V		28.2321	
7	5.11	159			2.3043	



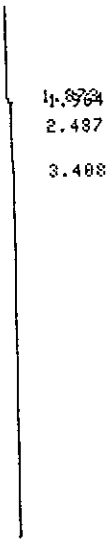
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 47

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.239	113064	S			
2	1.556	102	T			
3	1.719	86306	V			
4	2.042	8482	V			
5	2.609	815	V			
6	2.938	3128	V			
7	3.29	3507	V	1	0.0126	BENZEN
8	4.874	769		2	0.0036	TOLUEN
	TOTAL	216172			0.0161	

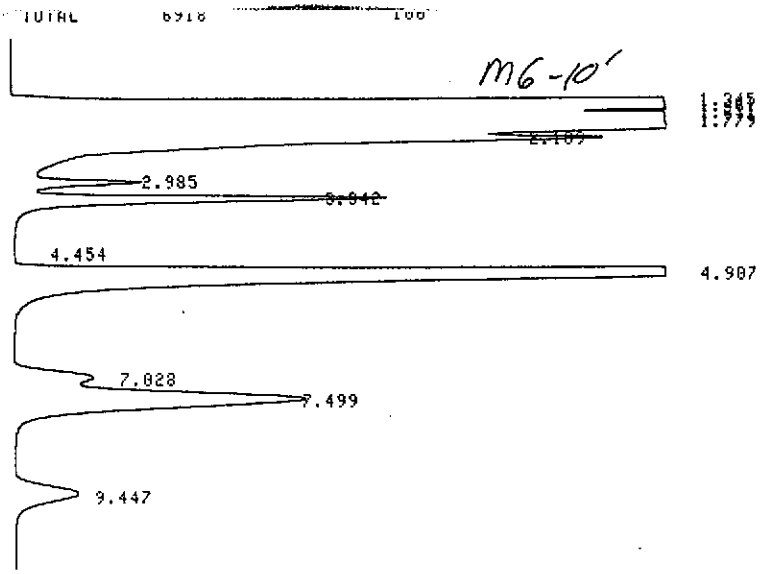
CHROMATOGRAM 101 MEMORIZED



CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 48

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.873	49			2.1713	
2	1.964	257			11.3678	
3	2.487	834	V		36.8469	
4	3.408	1123			49.614	
	TOTAL	2264			100	

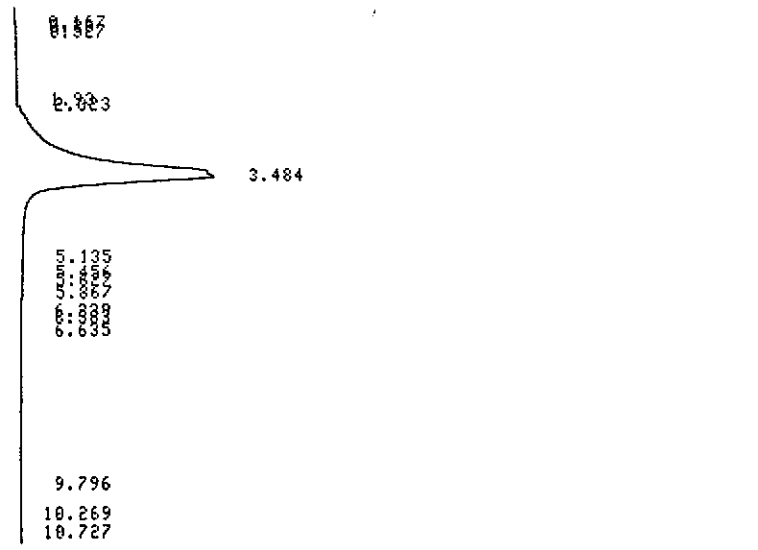


CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 39

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.345	331458				
2	1.461	212866	V			
3	1.611	38066	V			
4	1.779	2116922	V			
5	2.109	210892	V			
6	2.985	31594	V			
7	3.342	94243	V	1	0.3384	BENZEN
8	4.454	522				
9	4.907	442953	V	2	2.0482	TOLUEN
10	7.028	34725		3	0.2022	ETHYL-
11	7.499	169890	V	4	1.9643	M/PXYL
12	9.447	38679	V	5	0.4475	M-XLYL
	TOTAL	3772807			5.0007	



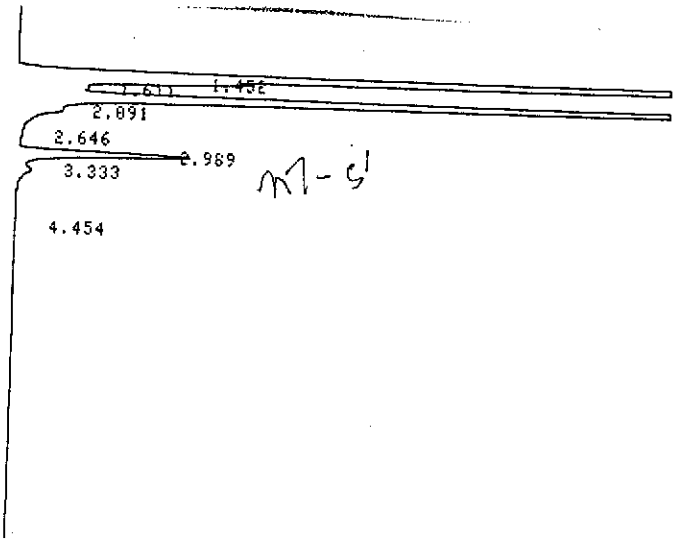
CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 40

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.167	60			0.0326	
2	0.38	50	V		0.0272	
3	0.527	11	V		0.0058	
4	1.93	47			0.0257	
5	2.023	322	V		0.1757	
6	3.484	182748	SV		99.5822	
7	5.456	39	T		0.0212	
8	5.627	31	TV		0.0169	
9	5.867	40	TV		0.0217	
10	6.239	43	TV		0.0232	

223-020037-02

⊕ Shimadzu



223-02037-02

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 45

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.309	479194	S			
2	1.452	4432	T			
3	1.611	342	T			
4	1.781	267229	SV			
5	2.091	973	T			
6	2.646	57	T			
7	2.989	35175	T			
8	3.333	4218	TV	1	0.0151	BENZEN
9	4.454	127				
	TOTAL	791745			0.0151	

CR501 CHROMATOPAC
CHANNEL NO 2
SAMPLE NO 0
REPORT NO 46

FILE 9
METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.013	431			3.3711	
2	2.535	3229	V		25.2791	
3	3.075	3987	V		31.2172	
4	3.358	3179	V		24.8893	
5	7.918	43			0.3363	
6	8.775	1321			10.3458	
7	9.158	188	V		1.4708	
8	9.331					

223-02037-0

APPENDIX C.

METHODS AND PROCEDURES, QA/QC

This Appendix documents the specific methods, procedures, and materials used to collect and analyze groundwater samples and monitoring the vapor recovery system.

Gauging and Measuring Monitor Wells.

Prior to sampling a well, WEGE personnel obtain three measurements: the depth to groundwater (DTW) and the product thickness using a battery powered depth to water-product interface probe and or by using a specially designed bailer. And the vacuum influence at the well head, using a water manometer that is attached to a sample port in the well head. The DTW probe is lowered into the well casing until the instrument signals that the top of water has been reached. The distance from the top of water to the top of casing is read from the tape that is attached to the probe. The tape is calibrated in 0.01 foot intervals for accuracy to 0.01 foot. The measured distance is subtracted from the established elevation at the top of casing to determine the elevation of groundwater with respect to mean sea level. The probe is washed with TSP (Tri Sodium Phosphate) and rinsed in distilled water before each measurement. WEGE has designed and built bailers that will collect a sample of the contents of a well to show the exact thickness of any floating product. Some of the abbreviations used in water sampling and or measuring or monitoring are: DTW, Depth to Water (from surface reference ie usually TOC); TOC, Top of Casing; MSL, Mean Sea Level; AMSL and BMSL, Above and Below MSL; BS, Below Surface; TOW, Top of Water; TSP, Tri Sodium Phosphate.

Purging Standing Water from Monitor Wells

If no product is present, WEGE personnel purge the well. This is accomplished by removing groundwater from the well until the water quality parameters (temperature, pH, and conductivity) stabilize, or until the well is emptied of water. Periodic measurements of groundwater temperature, pH, and conductivity were taken with a Hydac Monitor or other meter and recorded along with the volume of groundwater removed from the well. Purging is done by one or more methods singularly or in combination. Bailers, pneumatic or electric sample pumps, or vacuum pump tanks or trucks may be used. The usual amount of water removed is three well volumes. The water collected during purging is either safely stored onsite for later disposition, transported to an approved onsite or offiste sewer discharge system, or an approved onsite or offsite treatment system.

Collection of Water Sample for Analysis

The well is allowed to recover after purging and a groundwater sample is collected. A fresh bailer is used to collect enough water for the requirements of the laboratory for the analyses needed or required. The water samples are decanted from the bailer into the appropriate number and size containers. These containers are furnished pre-cleaned to exact EPA protocols, with and without preservatives added, by the analytical laboratory or a chemical supply company. The bottles are filled, with no headspace, and then capped with plastic caps with teflon liners.

The vials or bottles containing the groundwater samples are labeled with site name, station, date, time, sampler, and analyses to be performed, and documented on a chain of custody form. They were placed in ziplock bags and stored in a chest cooled to 4°C with ice. The preserved samples are chain of custody delivered to the chosen laboratory.

Analytical Results

TPH is the abbreviations used for Total Petroleum Hydrocarbons used by the laboratories for water and soil analyses. The letter following TPH indicates a particular distinction or grouping for the results. The letters "g", "d", "k", or "o" indicate gasoline, diesel, kerosene, or oil, respectively, ie TPH-d for diesel range TPH.

BTEX or MTBE are acronyms or abbreviations used for Benzene, Toluene, Ethylbenzene and all of the Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE), respectively.

MBTEX is the designation for the combination of the above five compounds.

The less than symbol, <, used with a "parts per value" indicates the lower detection limit for a given analytical result and the level, if present, of that particular analyte is below or less than that lower detection limit.

Other abbreviations commonly used are ppm, ppb, mg/Kg, ug/Kg, ml/l and ul/l are parts per million, parts per billion, milligrams per kilogram, micrograms per kilogram, milliliters per liter, microliters per liter, respectivily.

Chain of Custody Documentation

All water samples that are collected by WEGE and transported to a certified analytical laboratory are accompanied by chain-of-custody (COC) documentation. This documentation is used to record the movement and custody of a sample from collection in the field to final analysis and storage. Samples to be analyzed at the certified laboratory were logged on the COC sheet provided by the laboratory. The same information provided on the sample

labels (site name, sample location, date, time, and analysis to be performed) are also noted on the COC form. Each person relinquishing custody of the sample set signs the COC form indicating the date and time of the transfer to the recipient. A copy of the COC follows the samples or their extracts throughout the laboratory to aid the analyst in identifying the samples and to assure analysis within holding times.

Copies of the COC documentation are included with the laboratory results in Appendix A of this report.

INTERIM PRODUCT REMOVAL

Monitor wells RS-1 is depleted of groundwater and free phase product twice once a week and RS-2 and RS-3 are depleted of groundwater once a week using LTT vacuum truck that pulls and estimated 17-20 feet of water vacuum. The purged water and product are stored on site in 55 gallon 17 H DOT drums. The drums are emptied by Evergreen Environmental Services and the purged fluids are transported to their recycling facility.

VENTING PROCEDURES

WEGE is using LTT vacuum trucks to pull an estimated 17 - 20 feet of water vacuum on RS-1, RS-2 AND RS-3, for 0.25 hours weekly and exhaust directly to atmosphere. This vacuum generates a flow rate of approximately 30 cfm. A WEGE technician monitors the ambient air surrounding the exhaust with a photo-ionizing detector.

COLLECTING VAPOR SAMPLES

The sample is obtained from a sample port located, prior to the vacuum pump from a sample port on the flow meter orifice. Sterile poly tubing was used to attach a one liter tedlar bag, fitted with a special septum "valve" and tubing bib, to the sample port. The sample port is on the vaccum side of the pump and therefore a vacuum greater than the well vacuum must be exerted on the outside of the tedlar bag to "fill" the bag with the vapor sample. A special vacuum box, in which the tedlar bag is sealed inside, is used to exert a high vacuum to the exterior of the bag, thereby pulling a sample into the bag. Once the tedlar bag is filled, its valve is closed and locked and the appropriate label is placed on the bag.

The label shows the date, time, sample ID# and analyses to be run and the sampler's initials. The tedlar bag samples are then placed within a cooler, and are hand delivered to WEGE's laboratory that same day.

The vapor sample is then injected into an FID (Flame Ionizing Detector) chromatograph and the resulting chromatogram compared to standard chromatograms of known TPHg (Total Petroleum Hydrocarbons, gasoline) and BTEX (benzene, toluene, ethylbenzene,

and xylenes) concentrations.

Carbon dioxide (CO_2) concentration is measured from the tedlar bag samples by connecting a Dräger tube and pump to the inlet/outlet of the tedlar bag. CO_2 reading in percent is then obtained and recorded on the chrmoatogram produced from the GC-FID analysis.

FLOW RATES

Flow rates are measured at the site using an orifice plate. A one inch orifice-sampling manifold is placed directly on the casing of the monitor well, carefully avoiding any vacuum leaks. An orifice plate restricts the flow causing a pressure drop across the orifice. By measuring the resulting pressure change across the orifice it is possible to calculate the air flow rate. The flow rate is calculated by the pressure drop (millimeters (mm) mercury or water) across a square edge orifice plate.

Ve = CK sqr(P) Q = AVe

Where:

Ve= velocity in feet per minute (fpm)
C = Orifice Coefficient = 0.65 (for orifice used)
K = Constant = 794.6 for mm water or 2929.8 for mm mercury.
P = Pressure differential across the orifice
Q = Flow rate in cubic feet per minute (CFM)
A = Area orifice in square feet. 1" = 0.00545 ft2

Q = A X 0.65 X 794.6 X sqr(P)

CALCULATIONS

To calculate the pounds (lb) per day the concentration is multiplied by the volume of air produced in one day.

The lab reports the Concentrations (C) of the air sampling in μg/liter. The first step is to convert this value to lbs/cf (pounds per cubic foot). 1 ug/l x 0.000001g/ug x 0.0022051/g x 28.321/cf = 0.00000006211b/cf

The volume of air produced in one day, equals the flow rate (Q)x the time of flow.

V = Q x T = cf/day = cf/min x 1440min/day

The volume must be corrected to standard temperature and pressure(STP).

P = Pressure = 14.7 lb/in^2 @ STP
V = Volume cf
T = Temperature in degrees above absolute Zero = 491.58^{o}R @

STP.

Using the Ideal Gas Law $P_1V_1/T_1 = P_2V_2/T_2$
Solving for $V_2 = P_1V_1T_2/P_2T_1$
Assuming $P_1 = P_2 = 14.7$ lb/in², P cancels from the equation leaving $V_2 = V_1T_2/T_1$.

V_1 = Q cf/m x 1440 min/day
T_2 = 491.58°R T_1 = 459.58 + T°F at site.
V_2 = Q cf/min x 1440 min/day x 491.58°R/(459.58° + T°F)

X lb/day = C ug/l x 0.0000000621 lb l/ug cf x Q cf/min x 1440 min/day x 491.58°R/(459.58° + T°F)
Q for the Influent sample = The well flow rate.

North State Environmental Analytical Laboratory

Chain of Custody/Request for Analysis

(415) 588-9652

Client: Western Gas Engineers	Phone: 916 666 7xx	Report to: [illegible]	Turnaround Time
Mailing Address: [illegible] Lincoln, CA 95776		Billing to: [illegible]	8 Hr ☐ 24 Hr ☐
			40 Hr ☐ 5 Days ✓
Site Address: DF 7A		PO # / Billing Reference:	Other ☐
Sampler: M. H. [illegible]	Date: 12-5-96		

Sample ID:	Sample Description	Container # / type	Sampling Time/Date	ANALYSIS REQUESTED: TPH-D	TPH-G	BTEX	O+G	[illegible]					Remarks
R-1	[illegible]	3 / VOA	11:[illegible] / 12-4-96	~~✓~~	✓	✓		✓					
R-2	"	3 / VOA	1:37		✓	✓		✓					
R-3	"	3 / VOA	[illegible]		✓	✓		✓					
R-4	"	3 / VOA	2:47		✓	✓		✓					

Relinquished by: [illegible]	Date: 12-4-96	Time: 1:30	Received by: [illegible]		Yes / No
Relinquished by:	Date:	Time:	Received by:	Were samples Preserved ?	✓
Relinquished by:	Date:	Time:	Received in lab by:	In good condition ?	✓

WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA
(916) 668-5300, FAX (916)

WELL SAMPLING DATA SHEET

SITE DP 796	DATE 12-11-96	TIME 1:00
WELL RS-1	SAMPLED BY. mp	

WELL ELEVATION
PRODUCT THICKNESS
DEPTH TO WATER DTP: 6.42 DTB: 29.66
FLUID ELEVATION DTW: 6.62 GW = 669.17
BAILER TYPE disposable bailer
PUMP Paul LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
	1st bailer			X1000

FINAL VOLUME PURGED 25 gal
TIME SAMPLED 1:15
SAMPLE ID. RS-1
SAMPLE CONTAINERS 2 VOAs 2 Ambers
ANALYSIS TO BE RUN TPHg/BTEX TPHd MTBE
LABORATORY AEN
NOTES: 1st bailer 1 in Product
Pumped Dry
1:17 Air sample for box sampled on recharge

WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA
(916) 668-5300, FAX (916)

WELL SAMPLING DATA SHEET

SITE DP 796	DATE 12-17-96	TIME 1:25
WELL RS-2	SAMPLED BY. mp	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER DTW: 5.08 DTB: 25.0		
FLUID ELEVATION GW = 670.17		
BAILER TYPE disposable bailer		
PUMP Paul LTT		

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
1:27	1st bailer	72.3	mel	.13 X1000
1:28	25	71.1		.14
1:30		72.3		.14
1:33		72.3		.13
1:35		72.4		.13
		Sampled		

FINAL VOLUME PURGED	26 1/4 gal
TIME SAMPLED	1:37
SAMPLE ID.	RS-2
SAMPLE CONTAINERS	2 VOAs 2 Ambers
ANALYSIS TO BE RUN	TPHg/BTEX TPHd MTBE
LABORATORY	AEN
NOTES:	1st bailer clear No odor

1:38 All sample taken

WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA
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WELL SAMPLING DATA SHEET

SITE DP 796	DATE 12-17-96	TIME 1:47
WELL RS-3	SAMPLED BY. mp	

WELL ELEVATION
PRODUCT THICKNESS
DEPTH TO WATER DTW: 4.90 DTB: 24.40
FLUID ELEVATION 67.30
BAILER TYPE disposable bailer
PUMP Paul LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
1:47	1st bailer	68.5	mal	.12 X1000
1:53	25	68.7		.12
1:55		70.5		.12
1:57		71.1		.12
1:59		70.8		.12
2:01		71.1		.12
		Sampled		

FINAL VOLUME PURGED 26 1/2 gal
TIME SAMPLED 2:02
SAMPLE ID. RS-3
SAMPLE CONTAINERS 2 VOAs 2 Ambers
ANALYSIS TO BE RUN TPHg/BTEX TPHd MTBE
LABORATORY AEN
NOTES: 1st bailer clear No odor

2:03 Air Sample taken

WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA
(916) 668-5300, FAX (916)

WELL SAMPLING DATA SHEET

SITE DP 796	DATE 12-12-96	TIME 2:29
WELL RS-4	SAMPLED BY. mp	

WELL ELEVATION	
PRODUCT THICKNESS	
DEPTH TO WATER	DTW: 7.50 DTB: 25.32
FLUID ELEVATION	667.88
BAILER TYPE	disposable bailer
PUMP	Paul LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
2:31	1st bailer	70.4	mal	.13 X1000
2:37	25	69.3		.13
2:40		70.2		.13
2:42		71.0		.13
2:44		70.8		.13
2:46		70.7		.13
		sampled		

FINAL VOLUME PURGED	26 1/2 gal
TIME SAMPLED	2:47
SAMPLE ID.	RS-4
SAMPLE CONTAINERS	2 VOAs 2 Ambers
ANALYSIS TO BE RUN	TPHg/BTEX TPHd MTBE
LABORATORY	AEN
NOTES:	1st bailer clear No odor

Lawrence Tank Testing

D.L. Lawrence
Owner

P.O. Box 407 Downieville, California 95936 (916) 289-3109

CUSTOMER NAME AND ADDRESS: WESTERN GEO ENGINEERS
1386 EAST BEAMER ST WOODLAND CA

DATE 11-19-96

INVOICE NO.

SITE ADDRESS: FORMER SHELL # DP#796
MOUNTIAN BLVD OAKLAND CA.

PHONE NO.

TECHNICIAN'S NAME PAUL

DESCRIPTION OF WORK PERFORMED PURGE + VAC

LABOR CHARGES TIME HRS MIN	MILES	AMOUNT
	480	
VAC 1150		F20 10
	AIR SAMPLE	
VAC 480	F20 8	MMHG
VAC	480	F20 8 MMHG
	AIR SAMPLE	
VAC		F20 MMHG
	NO AIR	= DTW 17.6

MATERIALS USED	QTY.	PRICE	TOTAL
6 MMHG			
	hr	min	
LABOR			

RS-1 DTW 7.25 VAC 25 IN H2O - A
RS-1 = 1530 VAC 480 F20 12 MMHG = 15
RS-2 DTW 6.16 VAC 25 IN H2O 1355
RS-2 1410 VAC 480 F20 12 MMHG
RS-3 DTW 5.92 VAC 25 IN H2O 1415
RS-3 1430 VAC 470 F20 8 MMHG - AIR SAMPLE
RS-1 DTW 8.20 VAC 25 IN H2O = 1445
RS-1 = 1500 VAC 460 F20 8 MMHG

TRAVEL TIME: STOCKTON - OAKLAND

MILEAGE: 77

TOTAL TIME

RATES:

	ARRIVAL TIME HRS	MIN
LABOR AT $45 PER HOUR		
TRAVEL TIME AT $45 PER HOUR	12	15
MILEAGE AT .40 PER MILE		

TOTAL

$

LABOR

DUMP ON SITE

2 BARRELS

Lawrence Tank Testing

D.L. Lawrence
Owner

P.O. Box 407 Downieville, California 95936 (916) 289-3109

CUSTOMER NAME AND ADDRESS: WESTERN GEO ENGINEERS
1386 EAST BEAMER ST WOODLAND CA
SITE ADDRESS: FORMER ~~CHEVRON~~ DP #796
MOUNTIAN BLVD. OAKLAND CA.
PHONE NO.

DATE 11-25-96
INVOICE NO.
TECHNICIAN'S NAME PAUL

DESCRIPTION OF WORK PERFORMED WELL S 330AL

RS-1= DTP 6.72 = DTW 7.50 = AIR SAMP
RS-1= 1000 VAC 490 mmH2O FLO 7
RS-2= DTW 5.70 VAC 25GAL H2O 1025 VAC
RS-2= 1040 VAC 410 mmH2O FLO
RS-3= DTW= 5.72 = VAC 25 GAL H2O = 1050 VAC
RS-3= 1105 VAC 463 mmH2O-FLO
RS-1= DTW 9.06 1" PRODUCT = 1120 VAC
RS-1= 1125 VAC 450 mmH2O FLO 7
TRAVEL TIME: STOCKTON-OAKLAND-SAC.
MILEAGE:

LABOR CHARGES			
	TIME HRS MIN	MILES	AMOUNT
	mmHg		
1045 VAC			
4-18	mmHg	FLO	
12	mmHg	AIR SAMPLE	
1050 VAC		476 mmHg FLO	6 mmHg
7	mmHg	AIR SAMPLE	
1120 VAC 4 1/2 mmHg		FLO	6 mmHg
	mmHg	AIR SAMPLE	

MATERIAL CHARGES			
MATERIALS USED	QTY.	PRICE	TOTAL
490 mmH2O	7		mmHg
10 mmHg			
AIR SAMPLE			
	6		mmHg

TOTAL TIME
RATES:
LABOR AT $45 PER HOUR
TRAVEL TIME AT $45 PER HOUR
MILEAGE AT $1 PER MILE

ARRIVAL TIME HRS MIN: 0900

LABOR total
TOTAL
LABOR

DUMP ON SITE

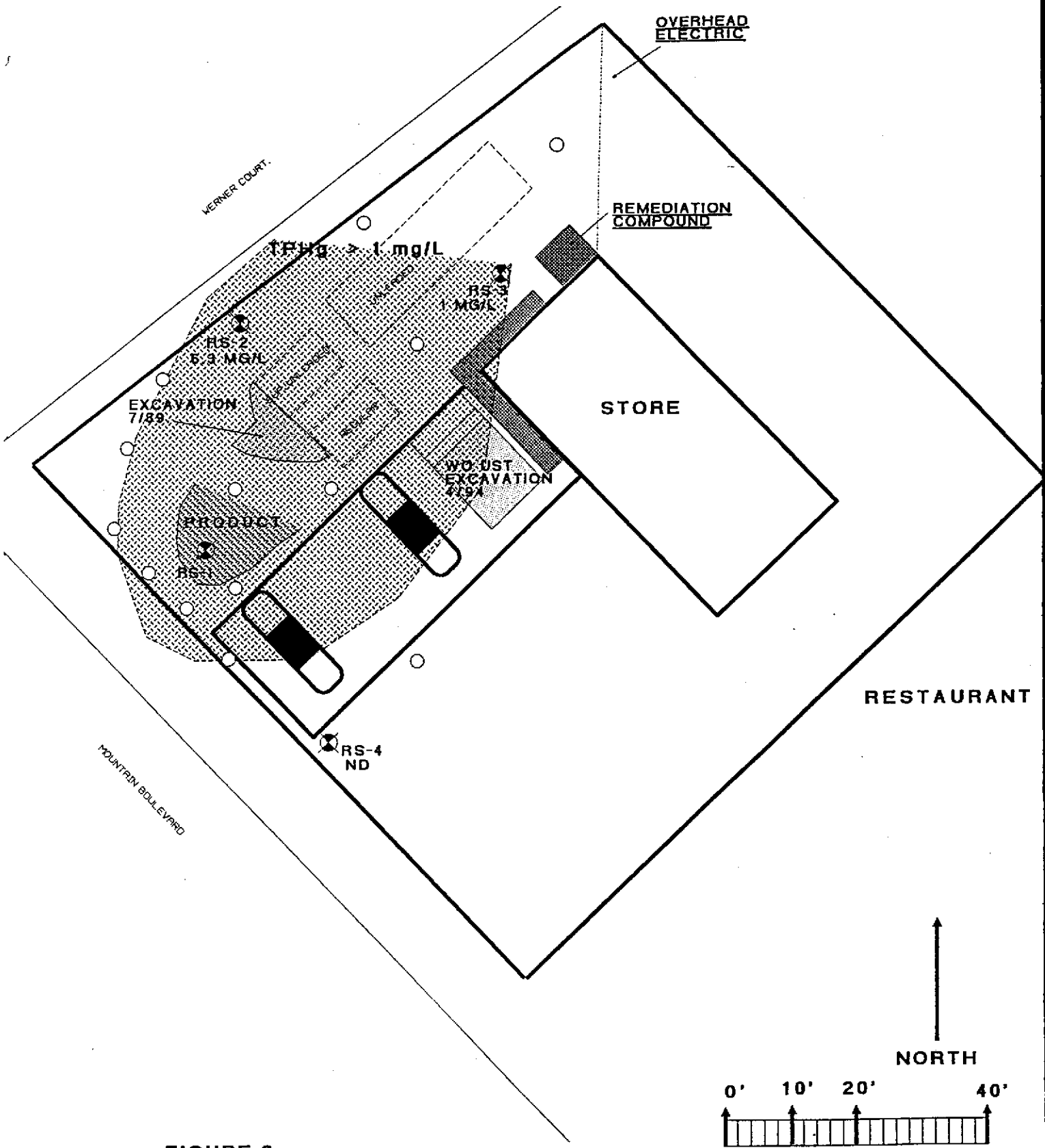

FIGURE 3

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

TPHg IN GROUNDWATER PLUME
SEPTEMBER 18, 1996.