WESTERN GEO-ENGINEERS
CALIF CONTRACTOR # 513857 A CORPORATION
REGISTERED GEOLOGISTS

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October 7, 1997

Mr. John Rutherford
Desert Petroleum
Inc. P.O. Box 1601
Oxnard, California 93032
(805) 644-6784 FAX (805) 654-0720

RE: September 1997 Quarterly Groundwater Sampling Report 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 September 1997 Quarterly Groundwater Sampling along with a grab soil sample obtained from the sites water meter box.

INTRODUCTION

A WEGE sample technician monitored and sampled the four existing groundwater monitoring wells on September 2 1997. During this site visit, free product was found in RS-1. Concern over a new leak (s), ie. high MTBE levels, prompted a Western Geo-Engineers geologist to conduct a site visit on August 6, 1997. At that time the site owner, Mr. Sharahn Shenazi, was interviewed about a recent tank test to determine the tanks eligibility for tank lining and about the station maintenance practices. A soil sample was obtained at approximately one foot below ground surface at the water meter box during that visit.

LOCATION

The site is an operating "Compare Price Gas Station" that retails regular unleaded, super unleaded gasoline and diesel. The site is located East of Highway 13 at 2844 Mountain Blvd., Oakland, California, west of Joaquin Miller Park.

GROUNDWATER SAMPLING

Table 1 is a summary of groundwater monitoring of this site since May 1990. The most recent sampling/monitoring, September 2, 1997 found 0.04 feet of free product in monitor well RS-1. RS-2 continues to contain high levels of dissolved gasoline range hydrocarbons. RS-3 and RS-4

contain minor amounts of dissolved gasoline range hydrocarbons. RS-2, RS-3 and RS-4 samples, were analyzed for Methyl tertiary Butyl Ether (MTBE). RS-2 continues to contained the highest concentration at 180 mg/L, all samples were confirmed with GC/MS 8260 method, see Appendix A for Laboratory report and Table 1 with Charts showing historic TPHg and MTBE levels for the wells.

GROUNDWATER GRADIENT "FLOW DIRECTION"

Figure 4 depicts groundwater elevations as measured on September 2, 1997. This figure show a gradient flow to the southwest, which concurs with the local topography and groundwater plume movement, see Figures2, 5 and 6.

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.

To evaluate the lateral extent of free product beneath the site a workplan was developed and approved (December 10, 1996) to perform a soil probe survey (SPS). The SPS was conducted on January 17, 1997 with findings submitted February 27, 1997 as part of the Interim Remedial Workplan.

MTBE

The charts presented with Table 1 show that MTBE was present in the groundwater since June 1995. The ratio as compared to gasoline concentrations in groundwater indicate that a leak was occurring at that time with substantial increases in September 1996 and May 1997. Concern of the increaseing MTBE prompted a site visit on August 6, 1997. A WEGE geologist interviewed the site owner, Mr. Sharahn Shenazi, concerning what may be the cause of elevated MTBE found during quarterly sampling. **Mr. Shenazi felt that the MTBE was introduced to the groundwater during washing down of the station.** The wash water would drain to the water meter box which is depressed in the station asphalt down slope of the pump islands, see Figure 3. Mr. Shenazi stated that he has had no inventory losses and that the product lines are double contained and the leak detectors indicate everything is fine. The three existing tanks are single walled steel and have been recently lined. During testing of the tanks prior to lining one tank (diesel tank) showed a pressure increase but then tested fine, see Appendix B.

The water meter box was inspected. The bottom of the box was not sealed and open to the subsurface, no odors were present and field screening with a MiniRae PID showed only 0.5 ppmv existed in the soils beneath the water meter. A soil sample was obtained at approximately one foot

beneath the station surface and approximately six inches below the water meter and chain of custody delivered to North State Environmental Analytical Laboratory (NSE). NSE analyzed the soil sample for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and MTBE, see Appendix C for procedures and Appendix A for laboratory report. The laboratory results showed 1.9 mg/Kg of TPHg, trace amounts of BTEX and MTBE below laboratory lower detection limits.

DISCUSSION

Free phase floating product exists at RS-1 and on August 6, 1997 at Soil Probe Hole M7. MTBE shown a dramatic increase in concentration at RS-2 in September 1996, which coincides with the first measurable presence of free phase floating product in RS-1. The stations washing practices drains the wash water to the water meter box. The soil sample obtained beneath the water meter box was below laboratory lower detection limits for MTBE. This certainly suggest that the MTBE influence was not caused by the "wash down" procedures. An interview with the station owner indicated that the existing three underground storage tanks are single walled steel and have recently been lined. The product dispensing piping is double walled and leak detectors have not indicated any leaks.

Based on the above Western Geo-Engineers feels that a new release has occurred at this site and continues to be the source for gasoline with MTBE being introduced into the shallow groundwater.

RECOMMENDATIONS

1. All tank and line tightness tests should be review from early 1995 to the present.
2. Review of tanks lining test procedures and comments.
3. Conduct a line tightness test.
4. Review inventory records from January 1995 to the present.
5. Relieve Desert Petroleum Inc. of involvement as a responsible party based on the following:
   - Desert Petroleum Inc. does not own or operate the site and has no control on how the site is operated and managed
   - Desert Petroleum Inc. has actively investigated and remediated this site since May 1990, with reasonable contaminant decline until mid 1994, see Tables 1 with associated graphs. This decline, projected, would have allowed site closure by mid 1996.
   - Desert Petroleum Inc. has performed source removal on three different occasions:
     a. July 1989 excavated and removed gasoline-tainted soils from west and southwest of the UST's.
     b. April 1994 removed the waste oil UST and limited over-excavation and removal of oil and gasoline tainted soils.
     c. Performed vapor extraction and groundwater treatment using the RSI S.A.V.E.
     d. October – December 1996 interim free product removal at RS-1 removing 30.4 gallons of gasoline and 1077 gallons of gasoline tainted groundwater.

TIME FRAME

December 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 September 2, 1997, see Appendix C.

SAMPLE PRESERVATION.

Each sample was placed into two, certified clean, glass, 40 ml VOAs with laboratory installed HCl preservative. The samples were then labeled and place on ice and Chain of Custody delivered to North State Environmental laboratories.

ANALYTICAL METHODS AND DHS LABORATORY SELECTED.

WEGE contracted North State Environmental (NSE), (ELAP Certificate No. 1753), P.O. Box 5624, South San South San Francisco, CA. 94083 (415) 588-2838, to perform the analysis of the groundwater samples.

NSE analyzed the samples for Total Petroleum Hydrocarbons as gasoline (TPHg) w/ BTEX distinction utilizing EPA Methods 8020 (GCFID) with 3050 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.

NSE noted that Methyl tertiary-Butyl Ether (MTBE) was evident in all samples. MTBE was confirmed for samples RS-2 RS-3 and RS-4 by EPA method 8260, see Table 1 and Appendix B. The detection limits in water are: TPH-G, 50 ug/L; Benzene, Toluene, Ethylbenzene and MTBE, 0.5 ug/L; Xylenes, 2 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, see Appendix C.

LIMITATIONS

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

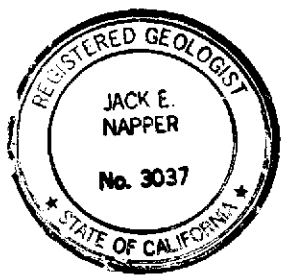
1. The observations and data collected by field personnel.
2. The results of laboratory analyses performed by a state certified analytical laboratory.
3. Our understanding of the regulations of Alameda County, the City of Oakland and the State of California.
4. References reviewed for this report.

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

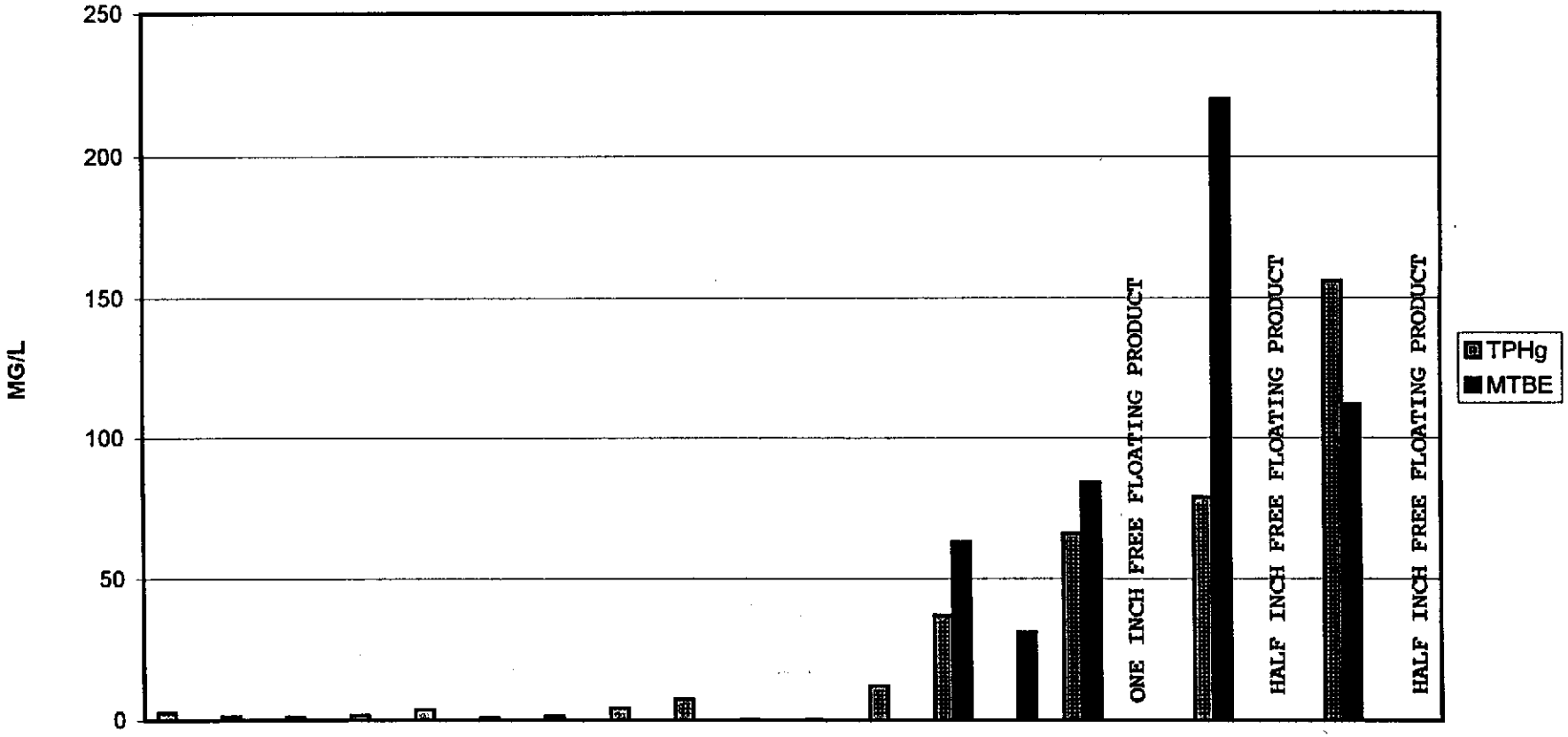
Jack E. Napper
Calif. Reg. Geologist

cc: Mr.Tom Peacock, Alameda County Health (510) 567-6774

TABLE 1
SUMMARY OF GROUNDWATER MONITORING
DP796
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 mg/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	63	RSI
	Nov-95	675.63	8.71	8.71	0.00	666.92	ND	660	16	140	330	31	RSI
	Feb-96	675.63	6.95	6.95	0.00	668.68	66	110	ND	12	21	84	RSI
	09/18/96	675.63	8.44	8.52	0.08	667.17	ONE INCH FREE PRODUCT						WEGE
	12/11/96	675.63	6.42	6.62	0.20	669.17	79	4000	37000	8000	45000	220	WEGE*
	02/21/97	675.63	6.88	6.92	0.04	668.74	1/2 INCH FLOATING PRODUCT						WEGE
	05/28/97	675.63	7.88	7.96	0.08	667.73	156	9400	51000	7000	45000	112	WEGE*
	09/02/97	675.63	8.34	8.38	0.04	667.28	1/2 INCH FLOATING PRODUCT						

DP796 - RS1



	MAY-90	MAY-91	OCT.-91	JAN.-92	JAN.-93	NOV. 93	Jan-94	May-94	Aug-94	Nov-94	Feb-95	Jun-95	Nov-95	Feb-96	12/11/96	02/21/97	05/28/97	09/02/97
TPHg	2.7	1.3	1.1	1.7	3.7	1.4	4.2	7.5	0.13	0.27	12	37	0	66	79	0	156	0
MTBE												63	31	84	220		112	

DATE SAMPLED

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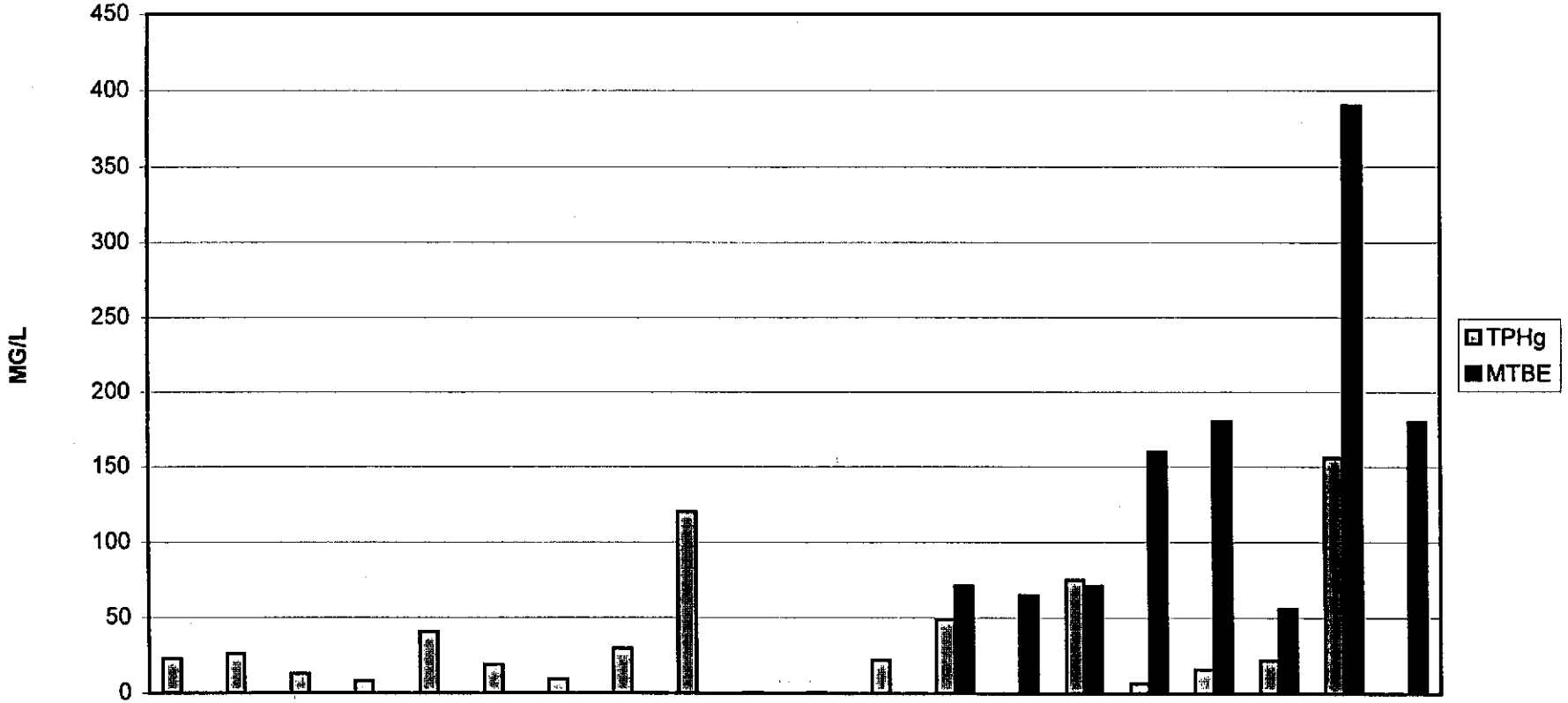
RS-2	MAY-90	689	7.06	7.06	0.00	681.94	23	7200	4800	300	3300		RSI
	MAY-91	689	7.14	7.14	0.00	681.86	26	14000	1800	750	2900		RSI
	OCT.-91	688.89	8.84	8.84	0.00	680.05	13	4300	910	300	2300		RSI
	JAN.-92	688.89	7.34	7.34	0.00	681.55	8.3	1800	920	140	1700		RSI
	JAN.-93	688.89	4.1	4.1	0.00	684.79	41	7000	210	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	71	RSI
	NOV.-95	675.25	7.64	7.64	0.00	667.61	ND	670	25	150	360	65	RSI
	FEB.-96	675.25	4.69	4.69	0.00	670.56	75	1400	170	59	460	71	RSI
	09/18/96	675.25	7.34	7.34	0.00	667.91	6.3	2000	48	350	570	160	WEGE
	12/11/96	675.25	5.08	5.08	0.00	670.17	16	2000	840	200	3200	180	WEGE
	02/21/97	675.25	5.42	5.42	0.00	669.83	22	2100	1300	600	5100	56	WEGE*
	05/28/97	675.25	6.4	6.4	0.00	668.85	156	4200	89	1000	6900	390	WEGE*
	09/02/97	675.25	6.93	6.93	0.00	668.32	ND	1300	25	360	1400	180	WEGE*

DP796 - RS2



	MAY-90	MAY-91	OCT.-91	JAN.-92	JAN.-93	NOV.93	JAN.-94	MAY-94	AUG.94	NOV.94	FEB.-95	JUN.-95	NOV.95	FEB.-96	12/11/96	02/21/97	05/28/97	09/02/97
TPHg	23	26	13	8.3	41	9.3	30	120	0.51	0.62	22	49	0	75	16	22	156	0
MTBE												71	65	71	180	56	390	180

DATE SAMPLED

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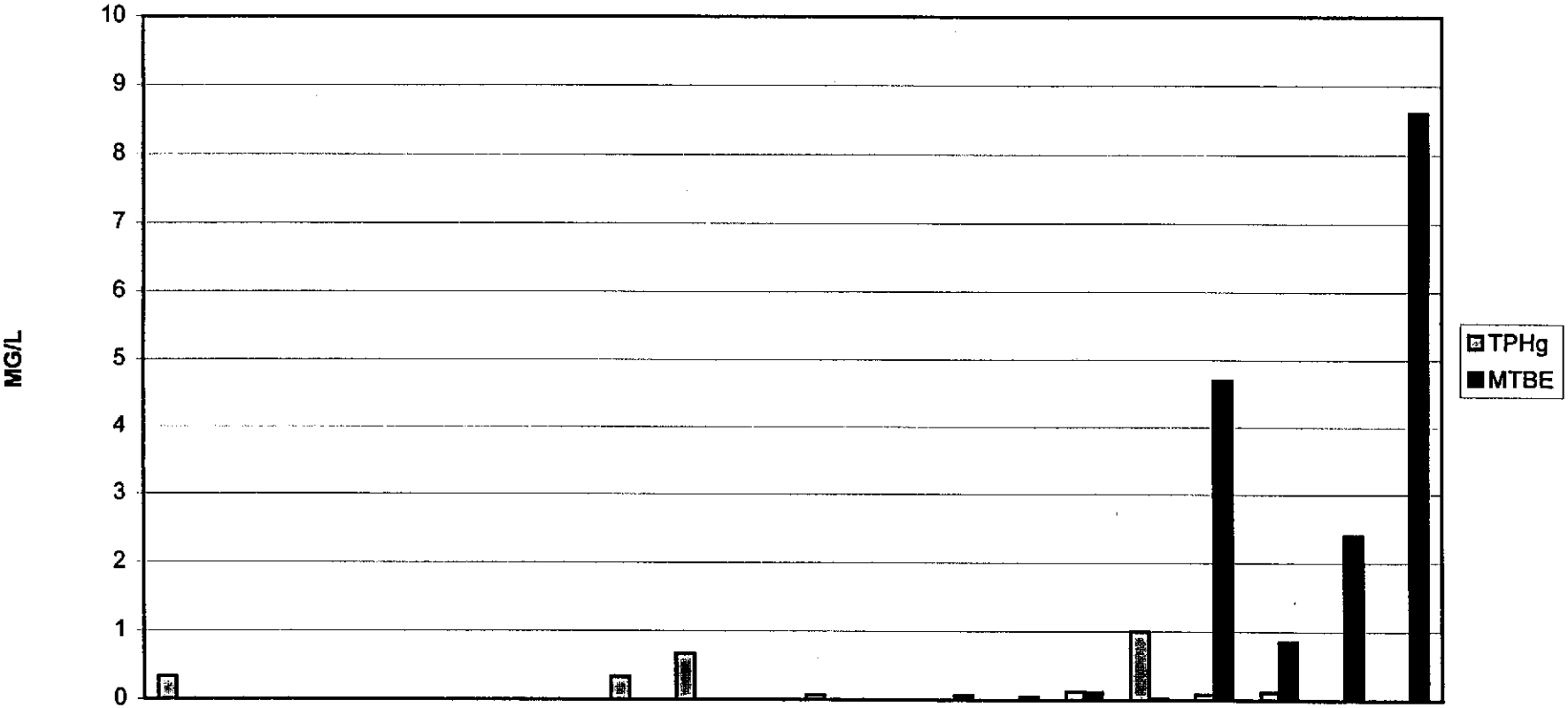
RS-3	MAY-90	670	6	6	0.00	664.00	0.33	2	1	1	150		RSI
	MAY-91	670	6.76	6.76	0.00	663.24	ND	0.4	ND	0.8	8		RSI
	OCT.-91	670	8.98	8.98	0.00	661.02	ND	ND	ND	ND	ND		RSI
	JAN.-92	670	6.81	6.81	0.00	663.19	ND	2.2	7.2	0.6	4		RSI
	JAN.-93	670	4.05	4.05	0.00	665.95	ND	ND	ND	ND	ND		RSI
	AUG.-93	670	7.19	7.19	0.00	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
	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	0.066	RSI
	NOV.-95	676.2	7.1	7.1	0.00	669.10	ND	ND	ND	ND	ND	0.044	RSI
	FEB.-96	676.2	4.48	4.48	0.00	671.72	0.12	ND	ND	ND	ND	0.11	RSI
	09/18/96	676.2	6.92	6.92	0.00	669.28	1	13	8.6	10	17	0.033	WEGE
	12/11/96	676.2	4.9	4.9	0.00	671.30	0.085	20	2	<0.5	14	4.7	WEGE
	02/21/97	676.2	4.94	4.94	0.00	671.26	0.12	5	2	2	6	0.85	WEGE*
	05/28/97	676.2	7.92	7.92	0.00	668.28	ND	6	ND	ND	ND	2.4	WEGE
	09/02/97	676.2	6.6	6.6	0.00	669.60	ND	0.9	ND	ND	ND	8.6	WEGE*

DP796 - RS3



	MAY-90	MAY-91	OCT.-91	JAN.-92	JAN.-93	NOV. 93	JAN.-94	MAY-94	AUG. 94	NOV. 94	FEB.-95	JUN.-95	NOV. 95	FEB.-96	12/11/96	02/21/97	05/28/97	09/02/97
TPHg	0.33	0	0	0	0	0	0.33	0.67	0	0.069	0	0	0	0.12	0.085	0.12	0	0
MTBE												0.066	0.044	0.11	4.7	0.85	2.4	8.6

DATE SAMPLED

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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	0.069	RSI
	NOV.-95	675.38	10.43	10.43	0.00	664.95	ND	ND	ND	ND	ND	0.047	RSI
	FEB.-96	675.38	7.44	7.44	0.00	667.94	0.96	ND	ND	0.6	ND	0.08	RSI
	09/18/96	675.38	9.58	9.58	0.00	665.80	<0.05	<0.5	<0.5	<0.5	<2	0.2	WEGE
	12/11/96	675.38	7.5	7.5	0.00	667.88	0.075	<0.5	0.6	<0.5	<2	0.104	WEGE
	02/21/97	675.38	8.26	8.26	0.00	667.12	ND	1	1	ND	1	0.19	WEGE*
	05/28/97	675.38	8.92	8.92	0.00	666.46	ND	6	ND	ND	ND	0.11	WEGE
	09/02/97	675.38	9.39	9.39	0.00	665.99	0.1	3	ND	ND	ND	0.039	WEGE*
WATER METER BOX													
							mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
	08/06/97	SOIL AT ONE FOOT DEPTH BELOW SURFACE					1900	0.45	0.6	6.5	9.9	ND	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)
* MTBE confirmed by GC/MS 8260 method.

-WEGE-

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND CA 95776-6003
(916) 668-5300,
FAX (916) 662-0273
Wege@mother.com

November 3, 1997

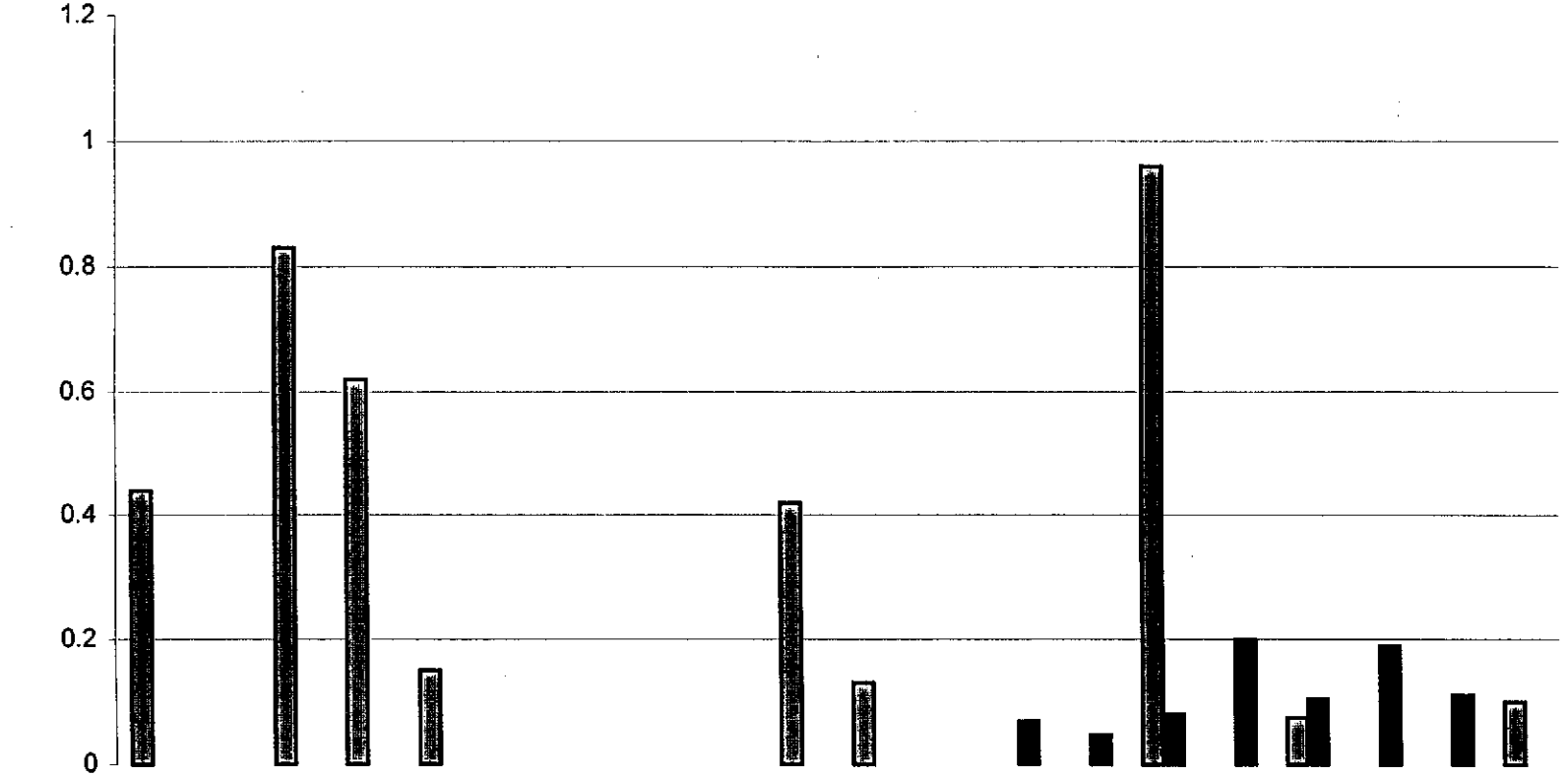
SITE: DESERT #796
2844 MOUNTAIN BLVD.
OAKLAND, CALIFORNIA

FINAL COPY SEPTEMBER 1997 QUARTERLY GROUNDWATER SAMPLING REPORT:

Mr. John Rutherford — 1 Report
DESERT PETROLEUM
P.O. Box 1601
Oxnard, CA 93031

Mr. Tom Peacock — 1 Report
ALAMEDA COUNTY ENVIRONMENTAL HEALTH
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

DP796 - RS4



	MAY-90	MAY-91	OCT.-91	JAN.-92	JAN.-93	NOV.-93	JAN.-94	MAY-94	AUG.-94	NOV.-94	FEB.-95	JUN.-95	NOV.-95	FEB.-96	12/11/96	02/21/97	05/28/97	09/02/97
TPHg	0.44	0	0.83	0.62	0.15	0	0	0	0.42	0.13	0	0	0	0.96	0.075	0	0	0.1
MTBE												0.069	0.047	0.08	0.104	0.19	0.11	

DATE SAMPLED

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

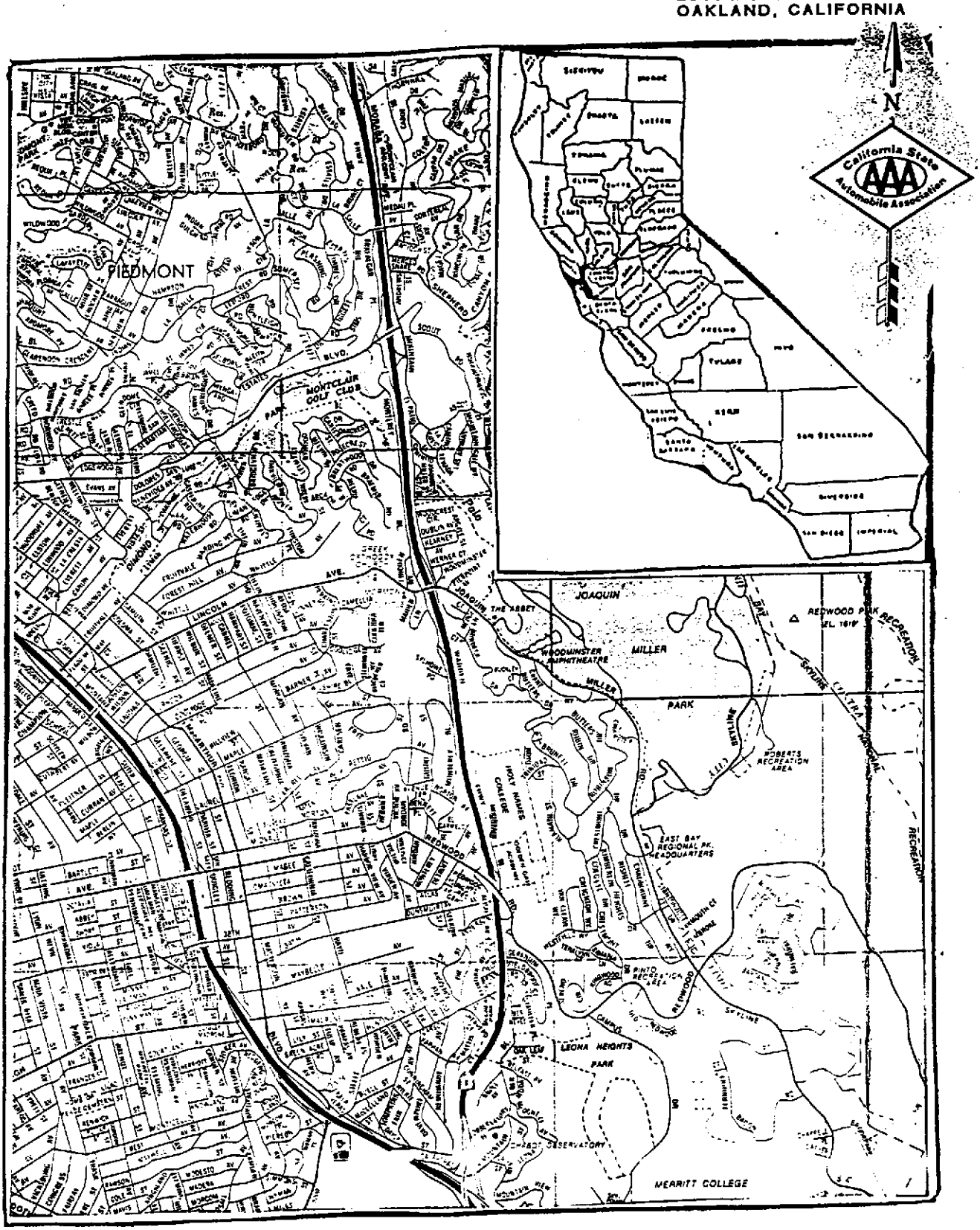


FIGURE 1

Location (AAA Map)

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

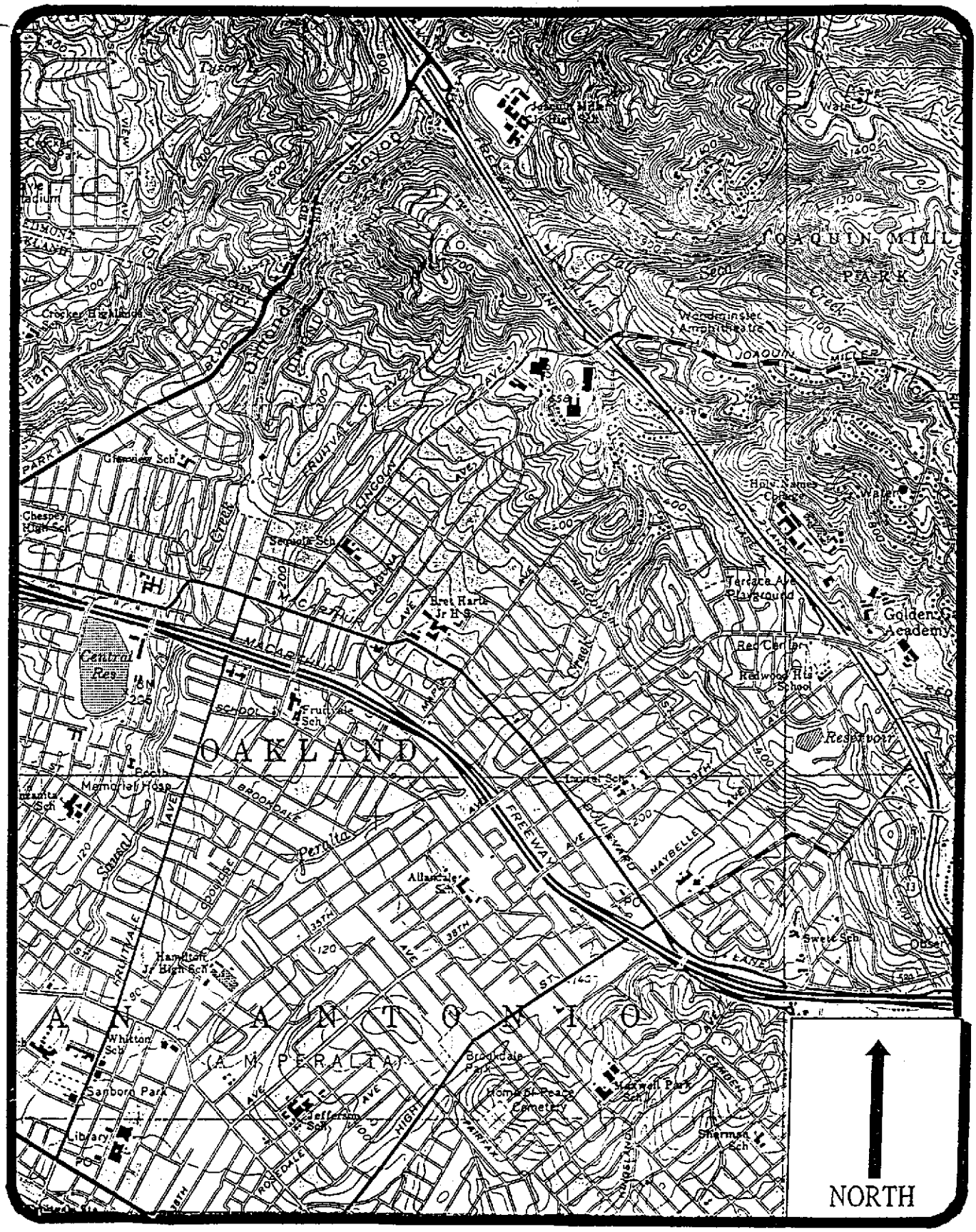


FIGURE 2, USGS TOPOGRAPHIC MAP

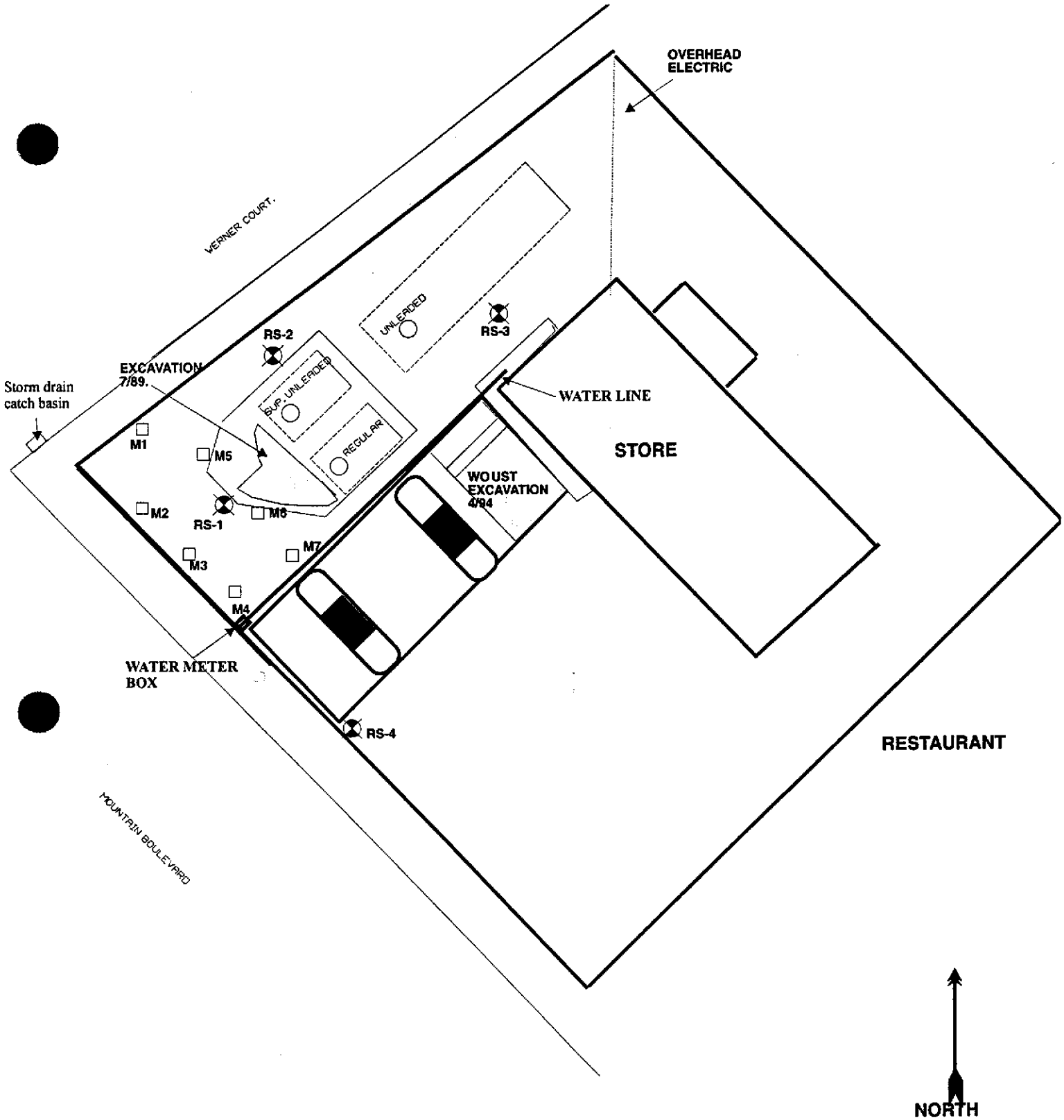


FIGURE 3

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SITE CONDITIONS
August 6, 1997.

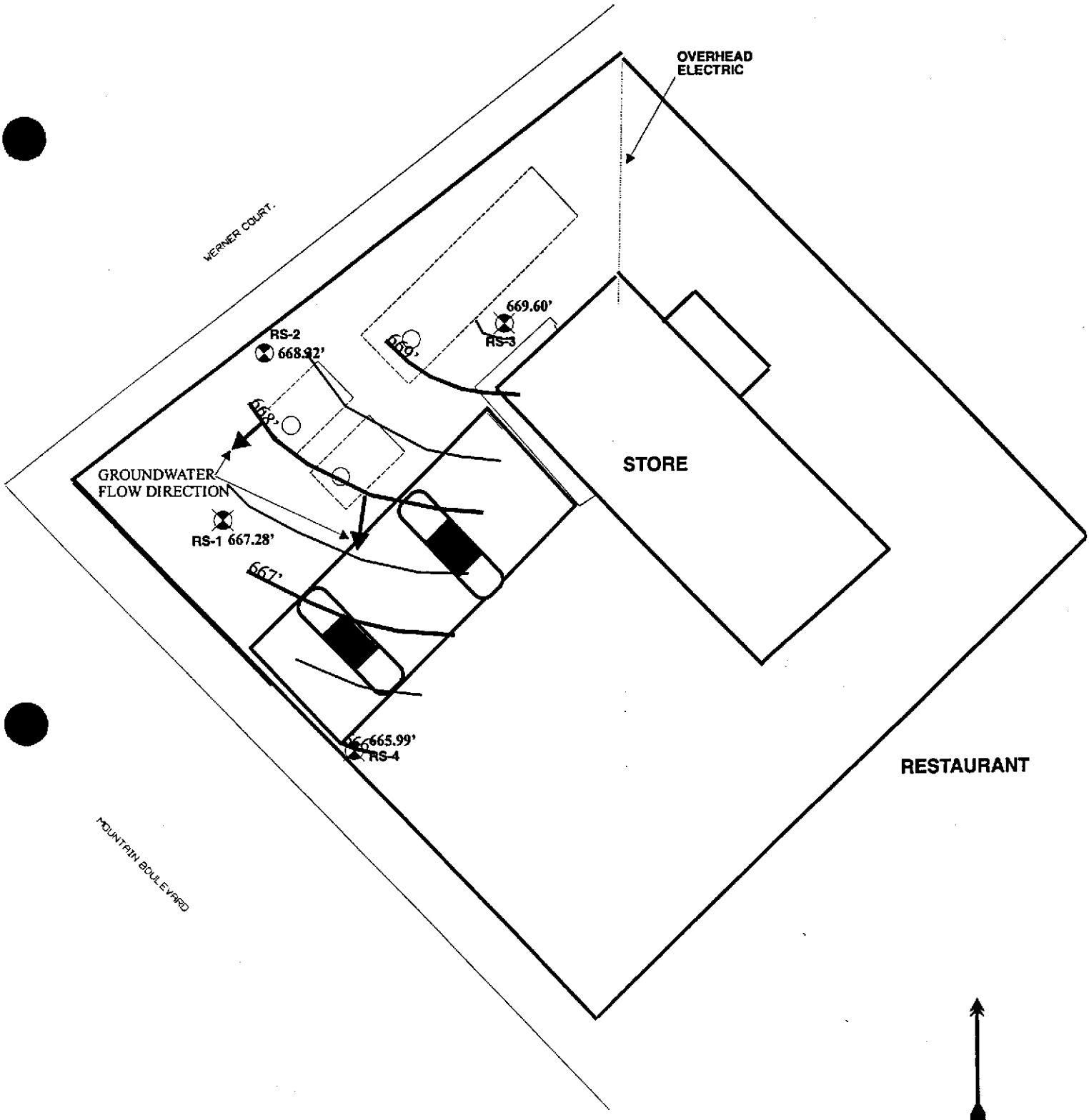


FIGURE 4

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

GROUNDWATER GRADIENT
September 2, 1997

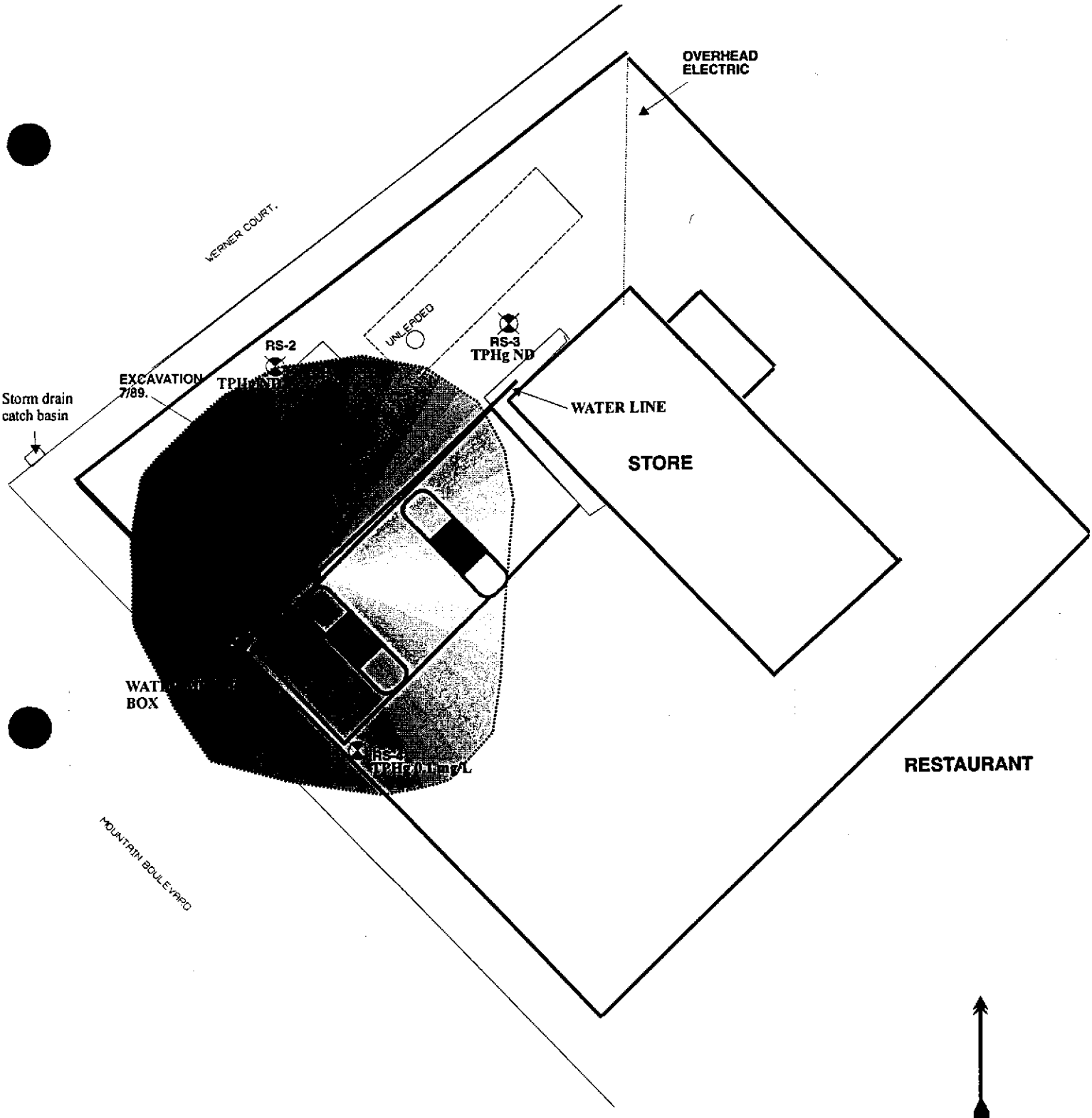


FIGURE 5

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SITE CONDITIONS - Gasoline Range Hydrocarbon Plume
September 2, 1997.

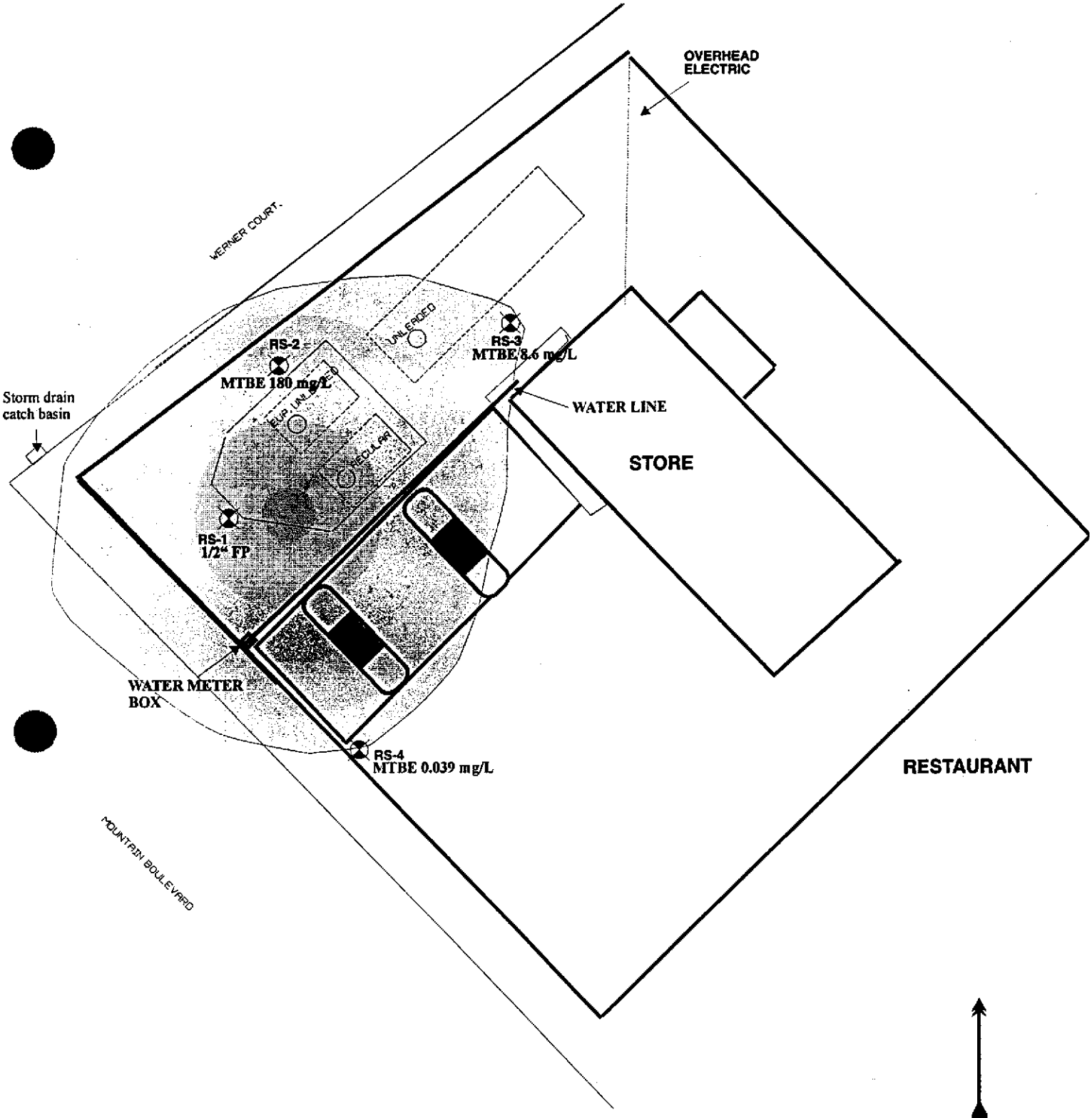


FIGURE 6

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

SITE CONDITIONS - MTBE Plume
September 2, 1997.

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

FAX

Date 10/7/97

Number of pages including cover sheet- 4

TO: GEORGE CONVERSE

Phone

Fax Phone 916-662-0273

FROM: John Stetz
North State Environmental
P.O. Box 5624
South San Francisco, CA 94083

Phone 415.266.4583
Fax Phone 415.588.1950

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

North State Environmental Analytical Laboratory

Phone: (415) 588-9652 Fax: (415) 588-1950

97-823

Chain of Custody / Request for Analysis

Lab Job No.: _____ Page ___ of ___

Client: Western Geo Engineers	Report to: Same	Phone: (916) 668-5300	Turnaround Time
Mailing Address: 1386 E. Beamer St. Woodland C.A. 95776	Billing to: Same	Fax: (916) 662-0273	
		PO# / Billing Reference:	Date: 9-4-97
			Sampler: Matt Penick

Project / Site Address: DP 796 Mountain Blvd. Oakland C.A.

Analysis Requested

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPHG/BTEX	MTBE	Comments / Hazards
1-	PS 2	W	2 / VOAs	HCL	9-2-97 / 12:48	X	X	
2-	PS 3				12:29	X	X	
3-	PS-4				1:15	X	X	

Relinquished by: Matt Penick	Date: 9-4-97	Time: 9:00	Received by: Ray Bates	Lab Comments
Relinquished by: Ray Bates	Date: 9/4/97	Time: 1:20PM	Received by: NSE Labs	
Relinquished by:	Date:	Time:	Received by:	

04-07-97 09:18A P.02

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 97-823
Client: Western Geo-Engineers
Project: DP 796 / Mountain Blvd

Date Reported: 10/06/97

Gasoline,BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 97-823-01	Client ID: RS-2			09/02/97	WATER
Gasoline	8015M	ND			09/10/97
Benzene	8020	1300	ug/L		
Ethylbenzene	8020	360	ug/L		
MTBE	8020	*180000	ug/L		
Toluene	8020	25	ug/L		
Xylenes	8020	1400	ug/L		
Sample: 97-823-02	Client ID: RS-3			09/02/97	WATER
Gasoline	8015M	ND			09/10/97
Benzene	8020	0.9	ug/L		
Ethylbenzene	8020	ND			
MTBE	8020	*8600	ug/L		
Toluene	8020	ND			
Xylenes	8020	ND			
Sample: 97-823-03	Client ID: RS-4			09/02/97	WATER
Gasoline	8015M	100	ug/L		09/10/97
Benzene	8020	3	ug/L		
Ethylbenzene	8020	ND			
MTBE	8020	*39	ug/L		
Toluene	8020	ND			
Xylenes	8020	ND			

*Confirmed by GC/MS method 8260.

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North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

Lab Number: 97-823
Client: Western Geo-Engineers
Project: DP 796 / Mountain Blvd

Date Reported:10/06/97

Gasoline,BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Reporting Limit	Unit	Blank	MS/MSD Recovery	RPD
Gasoline	8015M	50	ug/L	ND	95	1
Benzene	8020	0.5	ug/L	ND	103	4
Ethylbenzene	8020	0.5	ug/L	ND	104	5
Toluene	8020	0.5	ug/L	ND	101	4
Xylenes	8020	1.0	ug/L	ND	100	3
MTBE	8020	0.5	ug/L	ND	113	9

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

266 - 4583

North State Environmental Analytical Laboratory

Phone: (415) 588-9652 Fax: (415) 588-1950

Chain of Custody / Request for Analysis

Lab Job No.: _____ Page ___ of ___

Client: Western Geo Engineers	Report to: same	Phone: (916) 668-5300	Turnaround Time
Mailing Address: 1386 E. Beamer St. Woodland CA 95776	Billing to: same	Fax: (916) 662-0273	
		PO# / Billing Reference:	Date: 9-4-97
			Sampler: Matt Pernick

Project / Site Address: BP 796 Mountain Blvd. Oakland C.A.

Analysis Requested

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPHG/BTEX	MTBE						Comments/Hazards
BS2	7	2 /VOAs	HCL	9-2-97/ 12:48	X	X						
BS3	|	|	|	| 12:29	X	X						
BS1	|	|	|	| 1:15	X	X						

Relinquished by: Matt Pernick	Date: 9.1.97	Time: 9:00	Received by:	Lab Comments
Relinquished by:	Date: 9/1/97	Time: 12pm	Received by: NSE LABS	
Relinquished by:	Date:	Time:	Received by:	

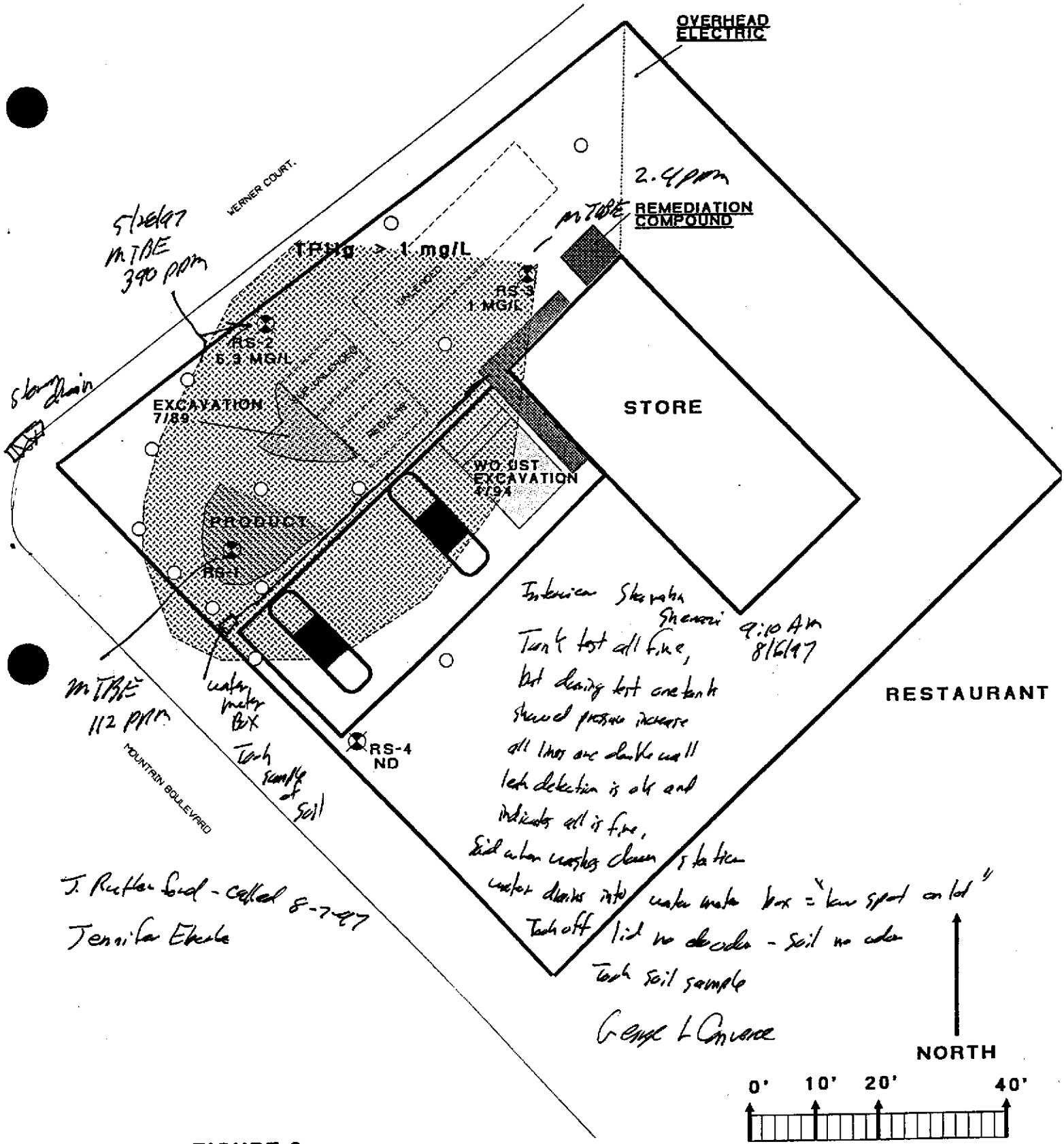

FIGURE 3

FORMER DESERT PETROLEUM #796
2844 MOUNTAIN BOULEVARD
OAKLAND, CALIFORNIA

TPHg IN GROUNDWATER PLUME
SEPTEMBER 18, 1996.

8-1-97

RP769 2844 Mountain Blvd Oakland

Jennifer Eberly 510 567-6761

Don Hwang 510 567-6746 — Tank Test Inspection

TPHg increase RS-1 RS-2

MTBE " RS-2

Tanks/Piping pass, ? Don Hwang "wang" 510 567-6746 Aug 1-4 out

9/9/97 Larry Seto

510 567 6774

9 AM Left voice mail concerning MTBE increase

9-16-97 Larry called back: suggest write report to Tom Peacock head of UST program - will assign someone to review the test.

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	6.42	6.62	0.20	669.17	79	4000	37000	8000	45000	220000*	WEGE
	02/21/97	675.63	6.92	6.96	0.04	668.70	1/2 INCH FREE PRODUCT						WEGE
	5/20						156	4600	51000	7000	45000	112,000*	
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
	02/21/97	675.25	5.42	5.42	0.00	669.83	22	2100	1300	600	5100	*56000	WEGE
	5/28						156	4200	89	1000	6700	370,000*	
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

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
	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
	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
	02/21/97	676.2	4.94	4.94	0.00	671.26	0.12	5	2	2	6	*850	WEGE
	5/26/97						ND	6	ND	ND	ND	2400	
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
	02/21/97	675.38	8.26	8.26	0.00	667.12	<0.05	1	1	<0.5	1	*190	WEGE
	5/26/97						ND	6	ND	ND	ND	110	

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.

97-710

North State Environmental Analytical Laboratory

Phone: (415) 588-9652 Fax: (415) 588-1950

Chain of Custody / Request for Analysis

Lab Job No.: _____ Page 1 of 1

Client: Desert Petroleum	Report to: George Concese	Phone: (916)668-5300	Turnaround Time: Normal
Mailing Address: Western Ca-Engineers, 1386 E. Beamer Street, Woodland, CA 95687-95776	Billing to: Western Ca-Eng.	Fax: (916)662-0273	
		PO# / Billing Reference:	Date:
			Sampler: C. Concese

Project / Site Address: ~~DP766~~ DP796

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	Analysis Requested: TPH-BTEX MTBE							Comments/Hazards
Western Metals Soil	Soil	1/Steel	None	8-6-97/0905	✓							if MTBE positive confirm w/ 8260

Relinquished by: [signature]	Date: 8/8/97	Time: 11:00AM	Received by: [signature] NSE LABS	Lab Comments
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 97-710
Client: Western Geo-Engineers
Project: DP 796

Date Reported: 08/14/97

Gasoline,BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 97-710-01	Client ID: WATER METER SOIL				SOIL
Gasoline	8015M	1900	mg/Kg	08/06/97	08/13/97
Benzene	8020	0.45	mg/Kg		
Ethylbenzene	8020	6.5	mg/Kg		
MTBE	8020	*ND	mg/Kg		
Toluene	8020	0.6	mg/Kg		
Xylenes	8020	9.9	mg/Kg		

*Confirmed by GC/MS method 8260.

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North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

Lab Number: 97-710
Client: Western Geo-Engineers
Project: DP 796

Date Reported:08/14/97

Gasoline,BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Reporting Limit	Unit	Blank	MS/MSD Recovery	RPD
Gasoline	8015M	0.5	mg/Kg	ND	89	10
Benzene	8020	.005	mg/Kg	ND	105	0
Ethylbenzene	8020	.005	mg/Kg	ND	95	2
Toluene	8020	.005	mg/Kg	ND	103	2
Xylenes	8020	.010	mg/Kg	ND	99	2
MTBE	8020	.005	mg/Kg	ND	88	3

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

Appendix C
Methods and Procedures
QA/QC

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

Gauging and Measuring Monitor Wells

Prior to sampling a well, WEGE personnel obtain three measurements:

1. the depth to groundwater (DTW);
2. the product thickness using a battery powered depth to water-product interface probe and/or by using a specially designed bailer;
3. the total depth of casing, to calculate the total water volume in the well.

The DTW-product interface probe is lowered into the well casing until the instrument signals when the top of free phase floating product (if present) and/or the top of water is reached. The distance from the top of free phase floating product and/or water to the top of casing is read from the tape that is attached to the probe. The probe is then lowered to the bottom of the well and the tape is read again. 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 and the difference between the top of groundwater and the base of the well is noted to establish water volume in the well. The probe and tape 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: BGS, Below Ground Surface; DTW, Depth to Water (from surface reference i.e. 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 by removing groundwater 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 are 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 borehole volumes, unless otherwise stated.

$$BV = (7.48/4) \times (CD2+P\ (BD2-CD)\ 2) \times (WD-GW)$$

BV borehole volume (gallons)
CD casing diameter (feet)
GW depth to groundwater (feet)
BD borehole diameter (feet)
WD well depth (feet)
P porosity of the gravel pack, 25%

Table of Common Boring and Casing Diameters

Boring diameter inches	Casing diameter inches	Volume gallons/ foot	3 Volumes X (WD-GW) gallons /foot
4	1	0.042	0.126
6	1	0.082	0.246
6	2	0.173	0.519
8	2	0.277	0.831
8	4	0.671	2.013
10	2	0.572	1.716
10	4	0.844	2.532

EXAMPLE: An 8 inch boring with 2 inch casing requires removal of 0.831 gallons of water per foot of water column.

The water collected during purging is either safely stored on- site in 55 gallon DOT 17H drums for later disposition, transported to an approved on-site/off-site treatment facility or to a sewer discharge system.

Collection of Water Sample for Analysis

The groundwater in the well is allowed to recover, to at least 80% of its volume prior to purging, if practical, before the groundwater sample is collected.

$$\text{Percent Recovery} = (1 - \frac{\text{Residual drawdown}}{\text{Maximum drawdown}}) \times 100.$$

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 are placed in ziplock bags and stored in a chest cooled to 4 °C with ice. The preserved samples are COC (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, i.e. TPH-d for diesel ranges 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.

Laboratory lower detection limits unless otherwise noted, due to matrix interference or elevated concentrations of target compounds, are as follows:

TPHg	50 ug/L	MTBE	0.5 ug/L
Benzene	0.5 ug/L	Toluene	0.5 ug/L
Ethyl Benzene	0.5 ug/L	Total Xylenes	1.0 ug/L

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, respectively.

Vapor Recovery System Monitoring and Sampling

INFLUENT SAMPLE

The influent sample is obtained from a sample port located on the

Sample ports are located at the orifice plate of the well adapter-venting tree. This lateral is under vacuum. A 1-liter tedlar bag fitted with a special septum "valve" and tubing bib is placed within an air tight vacuum sample box (ATVSB). Sterile poly tubing is then used to attach the intake port of the ATVSB to the tedlar bag.

Sterile poly tubing is also used to attach the intake of the ATVSB to the sample port of the orifice plate. The exhaust port for the ATVSB is then attached to a vacuum pump, which creates a vacuum inside the ATVSB allowing the tedlar bag to pull the sample from the valved manifold sample port without the danger of cross contamination, as could occur when using an in-line pump. Once the tedlar bag is filled, its valve is closed and locked and the appropriate label is placed on the tedlar bag.

The label for the tedlar bag sample show the date, time, sample ID# and analyses to be run.

The tedlar bag sample is Chain of Custody hand delivered to WEGE's laboratory that same day.

WEGE's laboratory analyzes the vapor samples by injection into a FID (Flame Ionizing Detector) chromatograph. The resulting chromatogram is compared to standard chromatograms of known TFH (Total Fuel Hydrocarbons, gasoline) and BTEX (benzene, toluene, ethylbenzene, and xylenes) concentrations. CO2 measurement is obtained with a Draager tube.

The standards are produced by injecting measured volumes of known density gasoline or BTEX compounds into tedlar bags filled with a measured amount of air, usually one liter. Injecting 10 microliters (ul) of 0.75-mg/L gasoline makes the gasoline standard into one liter of air, the density was previously determined by weighing a know volume of gasoline. The resulting concentration is 10 ul x 0.75 mg/L / 1l = 7.5 mg/L. The BTEX standard is made by injecting 5 ul of each compound into one liter of air, and using the following densities to calculate the concentration:

- Benzene, 0.88 mg/ul;
- Toluene, 0.87 mg/ul;
- Ethylbenzene, 0.87 mg/ul
- Xylenes, 0.87 mg/ul.

The following are the resulting concentrations: Benzene, 4.4 mg/l; Toluene, 4.35 mg/l; Ethylbenzene, 4.35 mg/l; and Xylenes 4.35 mg/l.

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 ug/liter. The first step is to convert this value to lbs/cf (pounds per cubic foot). 1 ug/l x 0.000001g/ug x 0.002205l/g x 28.32l/cf = 0.0000000621lb/cf

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

$V = Q \times T$ = 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 = 491.58oR @ STP.

Using the Ideal Gas Law P1V1/T1 = P2V2/T2
Solving for V2 =P1V1T2/P2T1
Assuming P1 = P2 = 14.7 lb/in^2, P cancels from the equation
Leaving V2 = V1T2/T1.

V1 = Q cf/m x 1440 min/day
T2 = 491.58oR T1 = 459.58 + T^{0F} at site.
V2 = Q cf/min x 1440 min/day x 491.58oR/(459.58o + T^{0F})

X lb/day = C ug/l x 0.0000000621 lb l/ug cf x Q cf/min x
1440 min/day x 491.58oR/(459.58o + T^{0F})
Q for the Influent sample = The well flow rate.

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) is 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 C of the sampling report.

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

WELL SAMPLING DATA SHEET

SITE DP 796	DATE	TIME 1:18
WELL RS-1	SAMPLED BY. MP	

WELL ELEVATION
PRODUCT THICKNESS
DEPTH TO WATER DTW: 8.38 DTB: 29.66
FLUID ELEVATION
BAILER TYPE Disposable Bailer
PUMP David LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
	1st bailer			X1000
	gal			
		TCST		
	NO			
		TM No sample		

FINAL VOLUME PURGED 25 gal
TIME SAMPLED
SAMPLE ID. RS-1
SAMPLE CONTAINERS 2 VOAs
ANALYSIS TO BE RUN TPHg / BTEX / MTBE
LABORATORY ~~KPFA~~ NES
NOTES: 1st bailer 1/2 inch Product

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

WELL SAMPLING DATA SHEET

SITE DP 796	DATE 9-2-97	TIME 12:04
WELL RS-2	SAMPLED BY. MP	

WELL ELEVATION
PRODUCT THICKNESS
DEPTH TO WATER DTW: 6.93 DTB: 25.02
FLUID ELEVATION
BAILER TYPE Disposable Bailer
PUMP David LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
12:27	1st bailer	76.2	7.93	.22 x1000
12:42	34 gal	72.6	7.94	.23
12:43		70.5	7.91	.22
12:44		70.8	7.92	.22
12:45		71.4	7.92	.22
12:46		72.2	7.91	.22
12:47		72.0	7.52	.22
			~~Sampled~~	

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FINAL VOLUME PURGED 35 3/4 gal
TIME SAMPLED 12:48
SAMPLE ID. RS-2
SAMPLE CONTAINERS 2 VOAs
ANALYSIS TO BE RUN TPHg / BTEX / MTBE
LABORATORY ~~WESN~~ NES
NOTES: 1st bailer clear No odo

3

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

WELL SAMPLING DATA SHEET

SITE DP 796	DATE	TIME 12:12
WELL RS-3	SAMPLED BY. mp	

WELL ELEVATION
PRODUCT THICKNESS
DEPTH TO WATER DTW: 6.60 DTB: 24.40
FLUID ELEVATION
BAILER TYPE Disposable Bailer
PUMP David LTT

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
12:15	1st bailer	77.8	8.01	.24 x1000
12:20	2 4 gal	73.8	7.99	.22
12:22		72.1	8.05	.21
12:25	10	70.9	8.03	.20
12:27		70.3	8.05	.19
12:29		70.8	8.05	.20
		~~Sampled~~		

FINAL VOLUME PURGED 35 1/2 gal
TIME SAMPLED 12:29
SAMPLE ID. RS-3
SAMPLE CONTAINERS 2 VOAs
ANALYSIS TO BE RUN TPHg / BTEX / MTBE
LABORATORY ~~XXXX~~ NES
NOTES: 1st bailer clear No oder

3

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

WELL SAMPLING DATA SHEET

SITE DP 796	DATE	TIME 12:00
WELL RS - 4	SAMPLED BY. mp	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER DTW: 9.39	DTB: 25.14	
FLUID ELEVATION		
BAILER TYPE Disposable Bailer		
PUMP David LTT		

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WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP.	pH	COND.
1:02	1st bailer	72.0	8.01	.23 x1000
1:06	10 gal	74.8	8.03	.23
1:10	20	74.7	8.09	.23
1:11		74.2	8.04	.23
1:12		74:5	8.05	.23
1:13		74.6	8.03	.23
1:14		74.5	8..04	.23
			Sampled	

FINAL VOLUME PURGED 31 3/4 gal
TIME SAMPLED 1:15
SAMPLE ID. RS-4
SAMPLE CONTAINERS 2 VOAs
ANALYSIS TO BE RUN TPHg / BTEX / MTBE
LABORATORY ~~WESN~~ NES
NOTES: 1st bailer Clear NO odor

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	2. Page 1 of 1	3. Document Number
CAD000005067	1	NH- № 3694

4. Generator's Name and Mailing Address
DESERT PEROLEUM
P.O. BOX 1601
OXNARD, CA 93032

Generator's Phone 916-668-5300

5. Transporter Company Name	6. US EPA ID Number	7. Transporter Phone
EVERGREEN ENVIRONMENTAL SERVICES	CAD982413262	510-795-4401

8. Designated Facility Name and Site Address	9. US EPA ID Number	10. Facility's Phone
Evergreen Oil, Inc. 6880 Smith Avenue Newark, CA 94560	CAD980887418	510-795-4401

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non-Hazardous waste, liquid Water and oil	001	TT	220	G
b.				

15. Special Handling Instructions and Additional Information

Handling Codes for Wastes Listed Above: 11a. 11b.

Do not ingest
Wear protective clothing
In case of emergency - 510-795-4401
DOT ERG 31

site location: 2844 Mountain Blvd
Oakland, CA

Inv. # 572454

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to state or federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: S.P. ~~Ste~~ [illegible]
Signature: [illegible]
Month 02 Day 03 Year 97

17. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name: Steven Ducharme
Signature: Steven Ducharme
Month 02 Day 03 Year 97

18. Discrepancy Indication Space

19. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 18

Printed/Typed Name
Signature
Month Day Year

WHITE – ORIGINAL (Return to Generator) YELLOW – TSDF (Retain Copy) PINK – TRANSPORTER COPY GOLDENROD – GENERATOR'S COPY