FIRST QUARTER 2002
GROUNDWATER SAMPLING REPORT/UPDATE STATUS
WITH
WASTEWATER DISCHARGE REPORT (APPENDIX I)

AT

FORMER DESERT SITE DP 793
4035 PARK BLVD.
OAKLAND, CA.

FOR

DESERT PETROLEUM

March 13, 2002

BY

-WEGE-
WESTERN GEO-ENGINEERS
1386 E. BEAMER STREET
WOODLAND, CALIFORNIA 95776
(530) 668-5300

TABLE OF CONTENTS

List of Tables

List of Figures

Table of Contents Continued

List of Appendices

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND CA 95776-6003
(530) 668-5300.
FAX (530) 662-0273
wege@mother.com

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

March 13, 2002

Dear Mr. Thompson:

The following report documents the first quarter 2002 sampling at DP793, 4035 Park Blvd., Oakland, California. Also included is a discussion on the present site conditions and the cost to enhance dissolved oxygen within the groundwater plume.

1.0 SITE LOCATION AND NUMBERS

Former Desert Petroleum #793 is a non-active service station, located on the northwest corner of the intersection of Park Boulevard and Hampel Street at 4035 Park Blvd., Oakland, California (Figure 1). The site is located in projected section 32; T1S; R3W; MDB&M at an approximate elevation of 210 feet above mean sea level (Figure 2).

East Bay Municipal Utility District - Sewer Discharge Permit #50435501
Alameda County Local Oversite STID 1248
San Francisco Bay Regional Board (Region 2) Case # 01-0170
Facility/Leak Site ID# T0600100158

2.0 LOCAL GEOLOGY

2.1 Geomorphology

The site is located on the western slope of the Berkeley Hills. The Berkeley Hills are a northwest-southeast trending range within the Coastal Range Province of California. Erosion of the Coastal Ranges has filled the valleys within and bordering the Coastal Range with sequences of gravels, silts, sands, and clays.

2.2 Stratigraphy

2.1.1 Station Property

The native soil from surface to 13 feet below ground surface (BGS) consists of dark brown silty clay. The dark brown clay is underlain by light brown stiff clay that includes subrounded to rounded metavolcanic gravel. This clay extends to approximately 23 feet BGS at the northwest

corner of the site. A fine to medium sand, clayey sand, and silty sand underlies the gravel and clay.

2.1.2 Backyard Sewer Lateral Route

Assessments performed along the sewer lateral as it leaves the site and routes through the residential area towards Brighton Avenue show the subsurface to consist of fill from a couple of inches thick to two feet thick. Beneath the fill is a sequence of clay formations that vary from light brown to dark gray to approximately the 6 foot depth. Silty clay then extends to approximately the 14-foot depth. Beneath the silty clay is sand with occasional gravel. This sand is 11 feet thick at RS5 and is underlain by silty clay, see Figure 11.

2.1.3 Brighton Avenue

Construction of the receptor trench along the eastern curb area of Brighton Avenue revealed two separate sequences of lithology. North of the storm drain catch basin the sequence consists of; clay to the four foot depth, silty clay to the seven foot depth, fine silty sand to the 9 foot depth, medium sand to the 10 foot depth, silty caly to the 11 ½ foot depth, gravel to the 12 foot depth underlain by clay to the 16 foot depth. South of the storm catch basin is a sequence of silty clays and clays to depth, see Figure 12.

3.0 COLLECTION AND ANALYSIS OF GROUNDWATER SAMPLES

Groundwater samples were collected on February 19, 2002. Samples were analyzed for Total Petroluem Hydrocabons as gasoline, Benzene, Toluene, Ethylbenzene, Xylenes and Methyl tert-Butal Alcohol using EPA method 8260B, see Table 1. Figure 3 shows the positions of the groundwater monitoring wells, the receptor trench and previous sample locations.

3.1 Depth to Water Measurements

On February 19, 2002 depth to water was measured at each well using a product/water interface probe. Measurements are referenced to the surveyed elevation at the top of casing at each well. Table 1 shows the elevation of groundwater with respect to mean sea level for all wells through February 19, 2002.

4.0 RESULTS OF QUARTERLY GROUNDWATER MONITORING

4.1 Groundwater Gradient and Flow Direction

Figure 4 shows the groundwater elevation gradients and flow direction that were derived from the depth to water measurements of the monitor wells on February 19, 2002, prior to purging the wells

for sampling, see Table 1 and Appendix A. On February 15, 2001 submersible pump was placed into onsite well RS-5 to try and capture contaminated groundwater beneath the site and adjoining properties. The pump rate was set at approximately 2 gpm. As shown on groundwater elevation chart generated for each well, pumping from RS5 lowered the water levels in RS-8 and RS-10, see Appendix B. Table 1 shows the groundwater elevations for the wells during the assessment of this site.

The current flow direction is northwest to west. The hydraulic gradient averages 0.09 feet/linear foot downgradient of RS-8 to the receptor trench well T1, see Figure 4. The present flow direction and hydraulic gradient are consistent with previous determinations by WEGE. Also evident on Figure 4 is the rain induced groundwater high mound that accumulates in the previously excavated former UST and product dispensing areas.

4.2 Results of Certified Analysis of Groundwater Samples

The results of the certified analyses of groundwater samples collected on February 19, 2002 are shown in Table 1.

TPH-G concentrations in water samples from the eight monitor wells, the receptor trench well and three recovery wells ranged from a maximum of 64 mg/l at trench well T1, to below laboratory lower detection limits of 50 ug/L in wells MW1, RS2, RS6, RS9, RS10, R1 and R3 respectively.

Benzene concentrations ranged from a maximum of 8.6 mg/L in T1 to below the laboratory lower detection limits (0.5 ug/L) at wells MW1, RS2, RS6, RS9, RS10, R1 and R3, see Appendix C - Laboratory Report.

Analysis results for Oxygenant Methyl-t-Butyl Ether (MTBE) was below the laboratory lower detection limit in wells MW1, RS2, RS5, RS6, RS8, RS9, RS10, R1, R2, and R3. **The wells locted within Brighton Street, RS7 and the trench well T1, contained 11 and 55 ug/L MTBE respectively.** This indicates that the MtBE source(s) are the cars parked along Brighton Street. During the September 16, 1998 all Fuel Oxygenants; MTBE, Di-isopropyl Ether (DIPE), tertiary Butyl Alcohol (TBA), Ethyl-t-Butyl Ether (ETBE) and t-Amyl Methyl Ether (TAME) were confirmed with EPA Method 8260. These analytes were below laboratory lower detection limits.

Figure 5 (August 26, 1999) shows the lateral distribution of the hydrocarbon plume with benzene distinction in groundwater prior to pumping from RS-5 and T1.

Figure 6 (May 31, 2001) shows the lateral distribution of the hydrocarbon plume with benzene distinction in groundwater during pumping from RS-5 and T1.

Figure 7 (December 18, 2001) shows the lateral distribution of the hydrocarbon plume with benzene distinction in groundwater as determined from groundwater samples after termination of pumping from RS-5 and T1.

Figure 8 (February 19, 2002) shows the most recent lateral distribution of the hydrocarbon plume with benzene distinction in groundwater as determined from groundwater samples, no pumping from RS-5 and T1.

Appendix D contains charts developed for wells MW1, RS2, RS5, RS6, RS7, RS8, RS9, RS10 and trench well T1 showing TPHg & Benzene concentration reductions with time, with the exception of T1 which showed an increase in both TPHg and Benzene for the February 19, 2002 sampling.

5.0 WEEKLY PURGING OF RECEPTOR TRENCH

Commencing on May 4, 2000, weekly pumping of the receptor trench has been performed for approximately 4 hours per week, see Table 3. During purging the depth to water within the trench is lowered an average of one feet. Immediately after purging ceases, the water level in the trench recovers to its original depth. Weekly purging of the receptor trench was suspended on July 19, 2001 at the request of Desert Petroleum. 62,511 gallons of contaminated groundwater had been removed from the trench, processed through two, in series, activated carbon water scrubs and discharged to the sanitary sewer, see Table 3.

6.0 PUMPING ON-SITE WELL RS-5

On February 15, 2001 a submersible pump with a pump bypass was placed into RS-5. The pump rate was adjusted to 1.5 gpm and allowed to continuously pump from RS-5 for one week. 3223 gallons were pumped from RS-5 through the two in series water carbon units and discharged to the sewer. On February 22, 2001 the pump was inspected and showed a slimy growth covering the pump and discharge line that was below the water level. The pump was cleaned and placed back into RS-5 and continued to discharge from RS-5 through the water carbon units to sewer until July 19, 2001. **On July 19, 2001 Desert Petroleum requested suspension of further pumping at the site.** The pump was removed and the site secured. From February 15 through July 19, 2001, 78,919 gallons of gasoline contaminated groundwater was recovered from RS-5 and treated through carbon before being discharged to the sewer, see Table 3.

The pumping from RS-5 lowered the groundwater at this well by at least 15 feet, when compared to the previous water measurements. This created a cone of influence out to offsite wells RS-8 and RS-10, see Chart - Appendix B. Recirculating the pumped groundwater, before it leaves the well (RS-5) has increased the dissolved oxygen in RS-5 from 0.7 mg/L (August 26, 1999) to 3.1 mg/L (March 8, 2001). This should aid in the biodegradation of the hydrocarbon plume, see Table2.

7.0 BIODEGRADATION OF HYDROCARBONS

During the December 18, 2001 sampling of wells, field measurements were obtained to determine the availability of electron receptors to aid in the natural attenuation of the hydrocarbon plume. Along with pH, temperature and electrical conductivity, dissolved oxygen, nitrate, sulfate and ferrous iron were also measured. Water samples were obtained after the wells were purged and allowed to recovery and analyzed in the filed using a Hach DR/2000 Spectrophotometer, see Appendix E. The following methods were used:

Dissolved Oxygen, high range (0 to 13 mg/L O_2) - Method 8166 for water and wastewater.
Nitrate, high range (0 to 30 mg/L NO_3) - Method 8039 for water, wastewater and seawater.
Sulfate, (0 to 70 mg/L SO_4) - Method 8051 for water and wastewater.
Ferrous Iron, (0 to 3.00 mg/L Fe_2) - Method 8146 for water, wastewater and seawater.

Table 2 represents the results of electron acceptor field analysis obtained December 18, 2001 compared to results obtained August 26, 1999.

7.1 Dissolved Oxygen

Readings for dissolved oxygen obtained prior to pumping the receptor trench and RS5 indicated two areas of oxygen depletion (<1 mg/L), the entire north half of the site (4035 Park Avenue) and the area excavated for the receptor trench along the eastern curb of Brighton Avenue, see Figure 7-1. Readings obtained during the December 18, 2001 monitoring round show that dissolved oxygen has increased substantially and even exceeds 5 mg/L in the over-excavated area on site. The lowest Dissolved Oxygen level encountered is associated with well RS5 at 1.4 mg/L, compared to 0.7 mg/L at RS5 in August 1999. All other dissolved oxygen measurements were at 2.5 mg/L or greater, see Appendix E - Figure 7.

7.2 Sulfate

Appendix E - Figure 8 represents sulfate measurements obtained during the December 18, 2001 quarterly monitoring. Comparing sulfate measurements obtained in August 1999, Appendix E - Figure 8-1, to the December 2001 measurements, Appendix E-Figure 8, the sulfate has been depleted at the receptor trench and beneath Brighton Avenue, but is being replenished at well location RS8.

7.3 Nitrate

Appendix E-Figure 9 represents nitrate measurements obtained during the December 18, 2001 quarterly monitoring. Comparing nitrate measurements obtained in August 1999, Appendix E-Figure 9-1, to the December 2001 measurements, Appendix E-Figure 9, the nitrate is being replenished all along the petroleum plume area.

7.4 Ferrous Iron

Appendix E-Figure 10 represents ferrous iron measurements obtained during the December 18, 2001 quarterly monitoring. The measurements obtained in August 1999, Appendix E-Figure 10-1, and the December 2001 measurements, Appendix E-Figure 10, indicate that ferrous iron is oxidized, as the site becomes more aerobic.

8.0 SUMMARY

Since the installation and weekly purging of the receptor trench (T1) the TPHg concentrations in down gradient wells RS-7 and RS-9 have decreased, see Table 1 with charts RS-7. The weekly purging of the receptor trench was limited to a maximum daily discharge of 5 gpm, thus removing approximately 1200 to 2000 gallons per week. Although this does lower the water level in the trench, after pumping has ceased the water level rebounds to it original depth allowing for the gradient migration of TPHg contaminated groundwater to continue.

Pumping from RS-5 has shown to create a cone of influence off-site downgradient out to RS-8 and RS-10. Pumping has increased the dissolved oxygen in RS-5 and hydrocarbon concentrations have declined in R1, R3, RS-5, RS-8 and RS-10.

The lowest hydrocarbon concentrations were observed while the weekly pumping of the trench well and the continuous pumping of RS5 was occurring, Figure 6 (May 31, 2001). The most recent sampling, Figure 8 (February 19, 2001) shows a continue decrease in hydrocarbons upgradient, at the site, but an increase in hydrocarbon concentrations associated with the receptor trench and Brighton Avenue excavation wells, T1 and RS7 respectively. The most down gradient well, RS9 is now below laboratory lower detection limits, indicating a barrier for lateral migration along Brighton Avenue.

Previous sampling, September 2, 1999, showed that aerobic bacteria (hydrocarbon degraders) exist in the groundwater associated with the hydrocarbon plume. A workplan to augment the groundwater with oxygen (air sparging) and nutrients (phosphate and ammonium sulfate) dated August 29, 2000 was presented with the August 29, 2000, Third Quarter 2000 report. This workplan along with the May 31, 2001 conditions were discussed during a meeting at Alameda County Health that involved Mr. Thompson, Desert Petroleum, Mr. Seery, Alameda County Health and Mr. Converse, Western Geo-Engineers on November 13, 2001. The meeting concluded that nutrient augmentation was not necessary at this time, but enhanced dissolved oxygen was needed. Due to neighborhood concerns, i.e. residential homes and apartments, air sparging and/or using a mechanical delivery device would create to much noise and a more passive oxygen delivery system was warranted, i.e. hydrogen peroxide or Oxygen Release Compound (ORC), see Appendix F. An amended workplan was presented in Appendix G of the 4th Quarater 2001 report, dated January 7, 2002 and suggested that ORC would be the most beneficial means of enhancing dissolved oxygen in the groundwater plume. Western Geo-Engineers then requested Regenisis Inc. to perform a basic model using ORC to determine how to apply and the amount needed. The Regenisis model indicated that a one-time application (would last approximately one year) of approximately 9,690 pounds of ORC would be needed, at a cost of $77,520.00 for materials, which does not include installation costs. Upon receipt of the Regenisis model, WEGE projected how much hydrogen peroxide would be necessary to increase the dissolved oxygen in the plume from 2 mg/L to 8 mg/L. This simple model indicated that 18 gallons of 35% solution hydrogen peroxide would be necessary per application, at a cost of $1,160.00 per monthly application or $13,920.00 for one year, see Appendix H.

Further communications from Mr. Scott Seery with Mr. Converse occurred during the week of February 25 - March 1, 2002. Mr. Seery suggested another meeting to discuss remediation options prior to approving the amended workplan presented with the January 7, 2002 report.

9.0 LIMITATIONS

This report is based upon the following:

A. The observations of field personnel.
B. The results of laboratory analyses performed by a state certified laboratory.
C. Referenced documents.
D. Our understanding of the regulations of the State of California, Alameda County and the City of Oakland.
E. Changes in groundwater conditions can occur due to variations in rainfall, temperature, local and regional water use, and local construction practices.
F. 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. Western Geo-Engineers is a corporation under California Registered Geologist #3037 and/or Contractors License #513857. The services performed by Western Geo-Engineers 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 and the Oakland area. Our work and/or supervision of remediation and/or abatement operations, active or preliminary, at this site is in no way meant to imply that we are owners or operators of this site. Known or suspected 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,

George Converse
Geologist

REGISTERED GEOLOGIST
JACK E. NAPPER
No. 3037

Jack E. Napper
Cal. Reg. Geologist #3037

cc: Mr. Scott O. Seery, Alameda County Health (510) 567-6783
Mr. Leroy Griffin, Oakland Fire Dept.

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL		TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)											
(CALIFORNIA PUBLIC HEALTH GOAL)							(1)	(150)	(300)	(1800)	(13)	
RS-1	12/14/89	228.15	24.25	203.9		19000	2600	2700	200	1200		
RS-1	12/90					15000	3500	330	170	760		
RS-1	2/91			--		6900	910	200	39	540		
RS-1	6/91					1600	56	180	12	26		
RS-1	9/91					4100	730	7.6	5.1	24		
RS-1	12/91					8300	950	160	71	190		
RS-1	11/9/92	228.15	17.05	211.1		1700	730	9.6	16	14		
RS-1	4/7/94	228.15	13	215.15		860	84	12	16	110		
RS-1	6/19/94	228.15	13.37	214.78		1400	150	12	52	87		
RS-1	9/17/94	228.15	16.33	211.82		310	30	1.8	2.8	3.9		
RS-1	3/12/95	228.15	4.66	223.49		ND	ND	ND	ND	ND		
		DESTROYED BY OVER-EXCAVATION OF UST-DISPENSER AREAS (8/14/95										
		REPLACED WITH MW-1 9/5/95.										
MW-1	10/4/95	229.5	12.38	217.12		ND	ND	ND	ND	ND		
MW-1	12/21/95	229.5	13.40	216.1		< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
MW-1	03/27/96	229.5	5.53	223.97		< 50	< 0.5	< 0.5	< 0.5	< 2	< 50	
MW-1	06/11/96	229.5	9.02	220.48		< 50	< 0.5	< 0.5	< 0.5	< 2	< 50	
MW-1	09/04/96	229.5	11.84	217.66		< 50	< 0.5	< 0.5	< 0.5	< 2	< 5	
MW-1	12/11/96	229.5	12.98	216.52		< 50	< 0.5	0.9	< 0.5	< 1	< 0.5	
MW-1	2/21/97	229.5	9.50	220		< 50	< 0.5	0.9	< 0.5	< 1	< 0.5	*
MW-1	5/28/97	229.5	11.18	218.32		< 50	3	3	< 0.5	< 1	< 0.5	*
MW-1	9/2/97	229.5	13.00	216.5		< 50	5	< 0.5	< 0.5	< 1	< 0.5	*
MW-1	11/24/97	229.5	14.12	215.38		< 50	5	< 0.5	< 0.5	< 1	< 0.5	*
MW-1	2/25/98	229.5	6.41	223.09		< 50	< 0.5	< 0.5	< 0.5	< 1	< 0.5	*
MW-1	7/8/98	229.5	7.28	222.22		< 50	< 0.5	< 0.5	< 0.5	< 1	< 1	*
MW-1	9/16/98	229.5	10.96	218.54		< 50	< 0.5	< 0.5	< 0.5	< 1	< 1	*
MW-1	11/24/98	229.5	12.24	217.26		52	2.3	5.2	< 0.5	5.4	11	*
MW-1	2/23/99	229.5	7.14	222.36		< 50	< 0.5	5	< 0.5	< 1	< 0.5	
MW-1	5/5/99	229.5	7.00	222.5		< 50	2	<0.5	< 0.5	< 1	8	
MW-1***	8/26/99	229.5	11.41	218.09		<50	4.1	<0.5	< 0.5	< 1	<1	
MW-1	11/10/99	229.5	13.27	216.23		<50	<0.5	<0.5	< 0.5	< 1	<0.5	
MW-1	2/9/00	229.5	13.76	215.74		<50	<0.5	<0.5	0.5	< 1	0.5	
MW-1	6/30/00	229.5	10.63	218.87		<50	<0.5	<0.5	< 0.5	< 1	< 0.5	
MW-1	8/8/00	229.5	11.77	217.73		62	1	2	< 0.5	2	< 0.5	
MW-1	11/16/00	229.5	13.33	216.17		<50	<0.5	<0.5	< 0.5	< 1	< 0.5	
MW-1	3/8/01	229.5	12.30	217.2		<50	<0.5	<0.5	< 0.5	< 0.5	< 0.5	****
MW-1	5/31/01	229.5	11.88	217.62		<50	<0.5	<0.5	< 0.5	< 0.5	< 0.5	****
MW-1	12/18/01	229.5	13.74	215.76		<50	<0.5	<0.5	< 0.5	< 0.5	< 0.5	****
MW-1	2/19/02	229.5	14.42	215.08		<50	<0.5	<0.5	< 0.5	< 0.5	< 0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)		TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)											
(CALIFORNIA PUBLIC HEALTH GOAL)							(1)	(150)	(300)	(1800)	(13)	
RS-2	12/14/89	227.39										
RS-2	6/19/94	227.39	10.89	216.50								
RS-2	3/12/95	227.39	5.26	222.13		ND	ND	ND	ND	ND		
RS-2	10/4/95	227.39	15.05	212.34		ND	ND	ND	ND	ND		
RS-2	12/21/95	227.39	9.95	217.44		< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
RS-2	03/27/96	227.39	6.28	221.11		< 50	< 0.5	< 0.5	< 0.5	< 2	< 50	
RS-2	06/11/96	227.39	8.00	219.39		< 50	1.2	2.8	< 0.5	< 2	< 50	
RS-2	09/04/96	227.39	9.89	217.50		< 50	< 0.5	< 0.5	< 0.5	< 2	< 5	
RS-2	12/11/96	227.39	8.38	219.01		< 50	< 0.5	< 0.5	< 0.5	< 1	6	
RS-2	2/21/97	227.39	6.96	220.43		< 50	< 0.5	< 0.5	< 0.5	< 1	< 0.5	*
RS-2	5/28/97	227.39	10.02	217.37		< 50	3	3	< 0.5	< 1	< 0.5	*
RS-2	9/2/97	227.39	11.46	215.93		< 50	< 0.5	< 0.5	< 0.5	< 1	< 0.5	*
RS-2	11/24/97	227.39	10.43	216.96		< 50	< 0.5	1	< 0.5	3	< 0.5	*
RS-2	2/25/98	227.39	3.57	223.82		< 50	< 0.5	< 0.5	< 0.5	< 1	< 0.5	*
RS-2	7/8/98	227.39	8.83	218.56		< 50	< 0.5	< 0.5	< 0.5	< 1	< 1	*
RS-2	9/16/98	227.39	10.60	216.79		< 50	< 0.5	< 0.5	< 0.5	< 1	< 1	*
RS-2	11/24/98	227.39	13.27	214.12		140	2.8	19	2.6	3.3	15	*
RS-2	2/23/99	227.39	4.06	223.33		< 50	< 0.5	< 0.5	< 0.5	< 1	< 0.5	
RS-2	5/5/99	227.39	7.70	219.69		< 50	0.7	< 0.5	< 0.5	< 1	6	
RS-2***	8/26/99	227.39	11.42	215.97		200	15	23	1.7	23	9	*
RS-2	11/10/99	227.39	15.94	211.45		< 50	<0.5	<0.5	<0.5	< 1	<0.5	
RS-2	2/9/00	227.39	8.91	218.48		< 50	<0.5	<0.5	<0.5	< 1	<0.5	
RS-2	6/30/00	227.39	9.79	217.60		52	2	<0.5	<0.5	< 1	<0.5	
RS-2	8/8/00	227.39	10.71	216.68		60	<0.5	<0.5	<0.5	< 1	<0.5	
RS-2	11/16/00	227.39	10.39	217.00		< 50	<0.5	<0.5	<0.5	< 1	<0.5	
RS-2	3/8/01	227.39	6.62	220.77		< 50	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-2	5/31/01	227.39	10.09	217.30		< 50	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-2	12/18/01	227.39	6.99	220.40		< 50	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-2	2/19/02	227.39	8.08	219.31		< 50	<0.5	<0.5	<0.5	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL		TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)											
(CALIFORNIA PUBLIC HEALTH GOAL)							(1)	(150)	(300)	(1800)	(13)	
RS-5	12/14/89	227.61	25.97	201.64		57000	3100	4300	670	3400		
RS-5	2/91	227.61	FLOATING PRODUCT									
RS-5	6/91	227.61	FLOATING PRODUCT									
RS-5	9/91	227.61	FLOATING PRODUCT									
RS-5	12/91	227.61	FLOATING PRODUCT									
RS-5	11/9/92	227.61	20.73	206.88		50000	650	4800	1100	15000		
RS-5	4/7/94	227.61	18.16	209.45		27000	5000	8700	550	2800		
RS-5	6/19/94	227.61	18.11	209.5		20000	2100	5300	470	2500		
RS-5	9/17/94	227.61	19.63	207.98		9300	230	340	110	700		
RS-5	3/12/95	227.61	14.54	213.07		93000	6400	2000	19000	10000		
RS-5	10/4/95	227.61	17.53	210.08		16000	420	2100	320	1800		
RS-5	12/21/95	227.61	17.47	210.14		48000	3500	9200	840	4800	56	
RS-5	03/27/96	227.61	13.51	214.1		68000	4900	18000	1700	11000	< 3000	
RS-5	06/11/96	227.61	14.25	213.36		66000	6300	20000	2100	12000	< 3000	
RS-5	09/04/96	227.61	16.50	211.11		31000	2100	11000	1100	6800	400	
RS-5	12/11/96	227.61	15.88	211.73		85000	7000	21000	1800	8900	570	
RS-5	2/21/97	227.61	13.76	213.85	sh	100000	5000	22000	1700	7300	<0.5	*
RS-5	5/28/97	227.61	15.77	211.84		52000	4500	19000	2100	10000	<0.5	*
RS-5	9/2/97	227.61	17.47	210.14		38000	2200	9400	1300	5800	<0.5	
RS-5	11/24/97	227.61	18.67	208.94		45000	4000	16000	1900	9700	<0.5	*
RS-5	2/25/98	227.61	10.53	217.08		160000	2700	31000	5300	28000	<0.5	*
RS-5	7/8/98	227.61	13.75	213.86		45000	2800	12000	2000	8500	<10	*
RS-5	9/16/98	227.61	15.80	211.81		49000	1400	7500	1700	8600	<5	*
RS-5	11/24/98	227.61	16.64	210.97		89000	5300	15000	2800	13000	<10	
RS-5	2/23/99	227.61	12.36	215.25		19000	1900	11000	2500	4800	<25	*
RS-5	5/5/99	227.61	12.78	214.83		78000	2000	10000	3000	15000	540	*
RS-5***	8/26/99	227.61	16.06	211.55		35000	870	4000	1900	8300	<1	*
RS-5	11/10/99	227.61	17.54	210.07		40000	1000	5600	1800	8100	<0.5	
RS-5	2/9/00	227.61	16.31	211.3		46000	1400	6900	2700	11000	<0.5	
RS-5	6/30/00	227.61	15.15	212.46		37000	810	5200	2200	9100	<2.5	*
RS-5	8/8/00	227.61	16.10	211.51		14000	330	500	1400	6500	<0.5	
RS-5	11/16/00	227.61	17.38	210.23		23000	430	2300	1100	4800	<0.5	*
RS-5	3/8/01	227.61	27.72	199.89		11000	360	260	140	1500	2.6	****
RS-5	5/31/01	227.61	22.96	204.65		7500	26	11	38	470	<5	****
RS-5	12/18/01	227.61	15.61	212		12000	610	1200	100	1500	<5	****
RS-5	2/19/02	227.61	14.80	212.81		22000	460	1700	680	4000	<5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL	TPH-G (UG/L)	BENZENE (UG/L) (1)	TOLUENE (UG/L) (150)	ETHYL-BENZENE (UG/L) (300)	XYLENES (UG/L) (1800)	MTBE (UG/L) (13)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)											
RS-6	12/14/89	227.22	22.52	204.7	11000	1400	1700	160	860		
RS-6	2/91	227.22	FLOATING PRODUCT								
RS-6	6/91	227.22			95000	4200	4200	650	3700		
RS-6	9/91	227.22	FLOATING PRODUCT								
RS-6	12/91	227.22			64000	3700	2300	730	4100		
RS-6	11/9/92	227.22	19.43	207.79	19000	1600	710	500	1600		
RS-6	4/7/94	227.22	14.42	212.8	16000	1200	1300	290	1100		
RS-6	6/19/94	227.22	14.45	212.77	23000	1300	2200	590	2200		
RS-6	9/17/94	227.22	19.52	207.7	24000	630	790	250	1100		
RS-6	3/12/95	227.22	8.90	218.32	3200	450	13	82	230		
RS-6	10/4/95	227.22	17.78	209.44	3700	170	250	38	290		
RS-6	12/21/95	227.22	14.98	212.24	3100	120	30	16	150	58	
RS-6	03/27/96	227.22	10.00	217.22	6900	180	440	79	360	< 300	
RS-6	06/11/96	227.22	12.00	215.22	7400	220	150	30	100	<1000	
RS-6	09/04/96	227.22	15.00	212.22	1400	68	2.6	7.7	9.2	14	
RS-6	12/11/96	227.22	12.36	214.86	1800	39	16	10	18	< 0.5	
RS-6	2/21/97	227.22	10.00	217.22	2100	71	85	25	40	< 0.5	*
RS-6	5/28/97	227.22	13.56	213.66	1700	34	12	11	16	< 0.5	*
RS-6	9/2/97	227.22	16.35	210.87	940	34	71	9	55	< 0.5	*
RS-6	11/24/97	227.22	15.72	211.5	490	9	6	1	7	< 0.5	*
RS-6	2/25/98	227.22	6.26	220.96	1400	22	47	5	52	< 0.5	*
RS-6**	7/8/98	227.22	11.41	215.81	1500	83	9	84	2	<10	*
RS-6	7/30/98	227.22			<50	<0.5	<0.5	<0.5	<1		
RS-6	9/16/98	227.22	13.42	213.8	990	23	<0.5	<0.5	<1	<1	*
RS-6	11/24/98	227.22	15.91	211.31	3400	5.3	<0.5	<0.5	14	<0.5	
RS-6	2/23/99	227.22	7.00	220.22	1000	3.4	3.2	1.6	7.3	<0.5	
RS-6	5/5/99	227.22	10.29	216.93	1100	50	10	80	15	2	
RS-6***	8/26/99	227.22	13.72	213.5	690	44	2.5	30	31	<5	
RS-6	11/10/99	227.22	13.90	213.32	1800	2	2	0.9	16	< 0.5	
RS-6	2/9/00	227.22	12.77	214.45	410	3	3	4	7	< 0.5	
RS-6	6/30/00	227.22	12.69	214.53	660	7	2	5	6	< 0.5	
RS-6	8/8/00	227.22	14.72	212.5	660	2	3	2	6	< 0.5	
RS-6	11/16/00	227.22	15.28	211.94	560	1	2	1	5	< 0.5	
RS-6	3/8/01	227.22	10.10	217.12	2200	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-6	5/31/01	227.22	12.96	214.26	630	<0.5	<0.5	<0.5	<0.5	<5	****
RS-6	12/18/01	227.22	10.88	216.34	56	0.53	<0.5	<0.5	0.56	<0.5	****
RS-6	2/19/02	227.22	11.08	216.14	<50	<0.5	<0.5	0.6	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level) DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL	TPH-G (UG/L)	BENZENE (UG/L) (1)	TOLUENE (UG/L) (150)	ETHYL-BENZENE (UG/L) (300)	XYLENES (UG/L) (1800)	MTBE (UG/L) (13)	
(CALIFORNIA PUBLIC HEALTH GOAL)											
RS-7	12/14/89	195.99									
RS-7	7/90	195.99			5600000	24000	210000	50000	740000		
RS-7	2/91	195.99	FLOATING PRODUCT								
RS-7	6/91	195.99	FLOATING PRODUCT								
RS-7	9/91	195.99	FLOATING PRODUCT								
RS-7	12/91	195.99			270000	11000	22000	2000	13000		
RS-7	11/9/92	195.99	4.62	191.37	81000	12000	16000	1900	13000		
RS-7	4/7/94	195.99	4.03	191.96	74000	16000	16000	1400	8500		
RS-7	6/19/94	195.99	4.07	191.92	83000	22000	19000	1500	9500		
RS-7	9/17/94	195.99	4.05	191.94	270000	13000	15000	2100	1100		
RS-7	3/12/95	195.99	3.72	192.27	35000	5100	560	6300	3600		
RS-7	10/4/95	195.99	4.03	191.96	96000	14000	14000	1300	7000		
RS-7	12/21/95	195.99	3.95	192.04	70000	9300	12000	860	5600	210	
RS-7	03/27/96	195.99	3.80	192.19	64000	8900	14000	1100	8300	< 3000	
RS-7	06/11/96	195.99	3.79	192.2	65000	12000	17000	1600	9700	<5000	
RS-7	09/04/96	195.99	3.99	192	20000	4900	2100	670	4400	100	
RS-7	12/11/96	195.99	3.78	192.21	17000	4400	7500	570	4600	180	
RS-7	2/21/97	195.99	3.82	192.17	93000	31000	47000	3800	23000	<0.5	*
RS-7	5/28/97	195.99	3.82	192.17	52000	12000	8200	2000	11000	<0.5	*
RS-7	9/2/97	195.99	3.96	192.03	28000	6100	2800	950	3800	<50	
RS-7	11/24/97	195.99	3.76	192.23	18000	4300	5900	600	2900	<0.5	*
RS-7	2/25/98	195.99	3.70	192.29	13000	4300	7100	1100	5800	<0.5	*
RS-7**	7/8/98	195.99	3.76	192.23	45000	10000	3400	2000	8000	<10	*
RS-7	7/30/98	195.99			72000	12000	2100	2000	9100		
RS-7	9/16/98	195.99	3.83	192.16	5000	6500	160	<2.5	500	<5	*
RS-7	11/24/98	195.99	3.77	192.22	19000	2100	1100	500	2100	<0.5	
RS-7	2/23/99	195.99	3.70	192.29	83000	6500	9900	1200	7000	<10	
RS-7	5/5/99	195.99	3.88	192.11	47000	7400	4800	1300	7400	540	
RS-7***	8/26/99	195.99	4.16	191.83	15000	3400	91	950	970	<5	
RS-7	11/10/99	195.99	4.12	191.87	10000	2900	170	630	1200	<0.5	
RS-7	2/9/00	195.99	3.98	192.01	9400	1400	120	480	600	<0.5	
RS-7	6/30/00	195.99	4.04	191.95	8200	3300	190	430	540	<0.5	
RS-7	8/8/00	195.99	4.06	191.93	11000	2300	150	430	520	<0.5	
RS-7	11/16/00	195.99	4.04	191.95	5400	1500	40	240	200	<0.5	
RS-7	3/8/01	195.99	3.94	192.05	12000	3300	260	480	850	17	****
RS-7	5/31/01	195.99	4.01	191.98	10000	1900	120	320	620	<100	****
RS-7	12/18/01	195.99	4.81	191.18	2700	450	21	86	120	2.3	****
RS-7	2/19/02	195.99	3.91	192.08	20000	2600	360	570	1900	11	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)	TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)						(1)	(150)	(300)	(1800)	(13)	
RS-8	12/14/89										
RS-8	09/04/96										
RS-8	12/11/96										
RS-8	2/21/97										
RS-8	5/28/97										
RS-8	9/2/97										
RS-8	11/24/97										
RS-8	2/25/98										
RS-8	7/8/98										
RS-8	9/16/98										
RS-8	11/24/98										
RS-8	2/23/99										
RS-8	5/5/99										
RS-8***	8/26/99	214.67	7.25	207.42	160000	24000	35000	4200	24000	<5	
RS-8	11/10/99	214.67	8.69	205.98	150000	21000	29000	3000	14000	<0.5	
RS-8	2/9/00	214.67	7.23	207.44	14000	1900	3200	270	2300	<0.5	
RS-8	6/30/00	214.67	3.99	210.68	6400	570	870	150	770	<0.5	
RS-8	8/8/00	214.67	7.52	207.15	100000	24000	40000	2300	9900	<0.5	*
RS-8	11/16/00	214.67	6.14	208.53	110000	14000	21000	2100	9600	<20	*
RS-8	3/8/01	214.67	9.40	205.27	10000	740	840	220	990	<2	****
RS-8	5/31/01	214.67	6.83	207.84	730	11	29	4.2	31	<5	****
RS-8	12/18/01	214.67	7.14	207.53	4500	230	370	77	750	<0.5	****
RS-8	2/19/02	214.67	7.69	206.98	780	33	21	5.1	45	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)	TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)						(1)	(150)	(300)	(1800)	(13)	
RS-9	12/14/89										
RS-9***	09/04/96										
RS-9***	12/11/96										
RS-9***	2/21/97										
RS-9***	5/28/97										
RS-9***	9/2/97										
RS-9***	11/24/97										
RS-9***	2/25/98										
RS-9***	7/8/98										
RS-9***	9/16/98										
RS-9***	11/24/98										
RS-9***	2/23/99										
RS-9***	5/5/99										
RS-9***	8/26/99	195.63	7.46	188.17	17000	3500	1200	360	1600	180	*
RS-9	11/10/99	195.63	7.91	187.72	2800	520	62	46	130	<0.5	
RS-9	2/9/00	195.63	6.09	189.54	3400	650	74	64	130	<0.5	
RS-9	6/30/00	195.63	6.77	188.86	3000	600	79	74	120	<0.5	
RS-9	8/8/00	195.63	7.32	188.31	4900	500	430	160	530	<0.5	
RS-9	11/16/00	195.63	6.33	189.3	3000	350	220	90	220	<0.5	
RS-9	3/8/01	195.63	4.93	190.7	<50	3.4	<0.5	<0.5	<0.5	<0.5	****
RS-9	5/31/01	195.63	4.01	191.62	510	96	6	6.2	9.1	5.5	****
RS-9	12/18/01	195.63	4.81	190.82	210	11	1.8	3.9	7.6	<0.5	****
RS-9	2/19/02	195.63	4.99	190.64	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)		TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
		(All concentrations in parts per billion (ug/L, ppb)) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)							(1)	(150)	(300)	(1800)	(13)	
RS-10	12/14/89											
RS-10***	09/04/96											
RS-10***	12/11/96											
RS-10***	2/21/97											
RS-10***	5/28/97											
RS-10***	9/2/97											
RS-10***	11/24/97											
RS-10***	2/25/98											
RS-10***	7/8/98											
RS-10***	9/16/98											
RS-10***	11/24/98											
RS-10***	2/23/99											
RS-10***	5/5/99											
RS-10***	8/26/99	208.46	3.76	204.7		5100	160	340	190	1000	32	*
RS-10	11/10/99	208.46	3.83	204.63		500	7	2	2	4	<0.5	
RS-10	2/9/00	208.46	0.31	208.15		100	4	3	1	6	<0.5	
RS-10	6/30/00	208.46	2.22	206.24		640	5	2	4	2	<0.5	
RS-10	8/8/00	208.46	2.46	206		460	2	2	2	7	<0.5	
RS-10	11/16/00	208.46	2.46	206		360	1	1	2	<1	<0.5	
RS-10	3/8/01	208.46	2.82	205.64		53	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-10	5/31/01	208.46	4.93	203.53		210	<0.5	<0.5	1.5	5	<5	****
RS-10	12/18/01	208.46	2.10	206.36		<50	<0.5	<0.5	<0.5	<0.5	<0.5	****
RS-10	2/19/02	208.46	2.29	206.17		<50	<0.5	<0.5	<0.5	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABACRATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL	TPH-G (UG/L)	BENZENE (UG/L) (1)	TOLUENE (UG/L) (150)	ETHYL-BENZENE (UG/L) (300)	XYLENES (UG/L) (1800)	MTBE (UG/L) (13)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)											
R1	12/14/89										
R1	09/04/96	227.69	15.00	212.69	1800	1100	3	29	< 10	< 30	
R1	12/11/96	227.69	10.30	217.39	<50	<0.5	< 0.5	< 0.5	< 1	4	
R1	2/21/97	227.69	11.88	215.81	2500	670	9	3	13	<0.5	*
R1	5/28/97	227.69	14.03	213.66	24000	4300	36	2000	370	<0.5	*
R1	9/2/97	227.69	14.98	212.71	4400	320	6	340	72	20	
R1	11/24/97	227.69	14.06	213.63	100	39	1	18	10	<0.5	
R1	2/25/98	227.69	8.93	218.76	1200	400	8	13	150	<0.5	
R1	7/8/98	227.69	11.36	216.33	68	14	< 0.5	< 0.5	< 1	<1	*
R1	9/16/98	227.69	13.30	214.39	16000	3400	92	< 0.5	410	<1	*
R1	11/24/98	227.69	10.72	216.97	340	19	1.6	35	9.7	<0.5	
R1	2/23/99	227.69	9.34	218.35	60	16	0.6	5.6	1.2	<0.5	
R1	5/5/99	227.69	11.30	216.39	1300	290	3	150	1	15	
R1	8/26/99	227.69	13.97	213.72	6500	630	<0.5	1300	<1	<1	
R1	11/10/99	227.69	13.73	213.96	480	12	4	22	9	<0.5	
R1	2/9/00	227.69	13.10	214.59	<50	8	<0.5	1	<1	<0.5	
R1	6/30/00	227.69	13.42	214.27	2600	350	35	1900	220	<0.5	
R1	8/8/00	227.69	14.25	213.44	10000	910	76	2100	390	<0.5	
R1	3/8/01	227.69	13.72	213.97	<50	<0.5	<0.5	<0.5	<0.5	<0.5	**
R1	3/8/01	227.69	13.72	213.97	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****
R1	5/31/01	227.69	15.77	211.92	3800	400	16	470	67	<5	****
R1	12/18/01	227.69	9.90	217.79	<50	<0.5	<0.5	1.5	<0.5	<0.5	****
R1	2/19/02	227.69	10.86	216.83	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)	TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)						(1)	(150)	(300)	(1800)	(13)	
R2	12/14/89										
R2	09/04/96	230.68	13.44	217.24	14000	7600	<10	170	190	<100	
R2	12/11/96	230.68	12.42	218.26	488	300	1	< 0.5	30	16	
R2	2/21/97	230.68	10.50	220.18	5700	2100	5	2	10	3	*
R2	5/28/97	230.68	13.10	217.58	36000	14000	63	260	220	<0.5	*
R2	9/2/97	230.68	14.16	216.52	30000	12000	330	1000	790	47	
R2	11/24/97	230.68	14.71	215.97	41000	15000	830	1500	4200	<0.5	*
R2	2/25/98	230.68	7.39	223.29	800	400	<0.5	<0.5	15	<0.5	*
R2	7/8/98	230.68	11.27	219.41	290	31	< 0.5	1	< 1	2	*
R2	9/16/98	230.68	13.73	216.95	6600	11000	24	<0.5	35	<1	*
R2	11/24/98	230.68	11.67	219.01	6100	<0.5	36	<0.5	21	<0.5	
R2	2/23/99	230.68	7.55	223.13	1100	310	3	2	26	<0.5	
R2	5/5/99	230.68	10.89	219.79	11000	5300	7	36	7	8	
R2	8/26/99	227.28	13.14	214.14	6700	940	33	190	240	<1	*
R2	11/10/99	227.28	14.42	212.86	5100	2600	160	1800	8100	<0.5	*
R2	2/9/00	227.28	12.45	214.83	4700	1400	110	130	340	<0.5	
R2	6/30/00	227.28	12.94	214.34	7100	3200	110	300	480	<0.5	
R2	8/8/00	227.28	13.58	213.7	30000	13000	250	1000	2700	<0.5	
R2	11/16/00	227.28	14.33	212.95	44000	17000	230	790	3600	<0.5	
R2	3/8/01	227.28	11.15	216.13	2300	640	8.6	61	170	<2	****
R2	5/31/01	227.28	13.38	213.9	2200	580	12	72	100	<25	****
R2	12/18/01	227.28	12.35	214.93	4900	2000	120	44	280	<5	****
R2	2/19/02	227.28	11.32	215.96	2100	1200	<5	14	<5	<5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)	TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
	(All concentrations in parts per billion [ug/L, ppb]) (AMSL = Above mean sea level)										
(CALIFORNIA PUBLIC HEALTH GOAL)						(1)	(150)	(300)	(1800)	(13)	
R3	12/14/89										
R3	09/04/96	230.32	9.90	220.42	<50	<0.5	<0.5	<0.5	<2	<5	
R3	12/11/96	230.32	8.18	222.14	<50	<0.5	<0.5	<0.5	<1	5	
R3	2/21/97	230.32	6.76	223.56	340	35	59	8	54	<0.5	*
R3	5/28/97	230.32	9.98	220.34	<50	<0.5	<0.5	<0.5	<1	<0.5	*
R3	9/2/97	230.32	10.86	219.46	<50	4	<0.5	<0.5	<1	<0.5	*
R3	11/24/97	230.32	11.20	219.12	not enough water to sample. No sample						
R3	2/25/98	230.32	3.42	226.9	<50	<0.5	<0.5	<0.5	<1	<0.5	*
R3	7/8/98	230.32	8.78	221.54	140	<0.5	<0.5	4	24	<1	*
R3	9/16/98	230.32	10.38	219.94	<50	<0.5	<0.5	<0.5	<1	<1	*
R3	11/24/98	230.32	11.12	219.2	not enough water to sample. No sample						
R3	2/23/99	230.32	3.95	226.37	<50	<0.5	<0.5	<0.5	<1	<0.5	*
R3	5/5/99	230.32	7.58	222.74	80	9	<0.5	<0.5	<1	6	
R3	8/26/99	227.25	10.76	216.49	<50	2	<0.5	<0.5	<1	1	*
R3	11/10/99	227.25	11.09	216.16	140	3	4	1	11	<0.5	
R3	2/9/00	227.25	8.76	218.49	<50	2	<0.5	<0.5	<1	<0.5	
R3	6/30/00	227.25	9.67	217.58	<50	0.7	<0.5	1	1	<0.5	
R3	8/8/00	227.25	10.44	216.81	72	<0.5	<0.5	<0.5	<1	<0.5	
R3	11/16/00	227.25	10.26	216.99	110	4	1	<0.5	3	<0.5	
R3	3/8/01	227.25	6.54	220.71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****
R3	5/31/01	227.25	10.01	217.24	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****
R3	12/18/01	227.25	6.79	220.46	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****
R3	2/19/02	227.25	7.86	219.39	<50	<0.5	<0.5	<0.5	<0.5	<0.5	****

TABLE 1
GROUNDWATER ELEVATIONS AND CERTIFIED ANALYTICAL LABAORATAORY RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL	DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL	TPH-G (UG/L)	BENZENE (UG/L)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
(CALIFORNIA PUBLIC HEALTH GOAL)						(1)	(150)	(300)	(1800)	(13)	
T 1	12/14/89										
T 1	09/04/96										
T 1	12/11/96										
T 1	2/21/97										
T 1	5/28/97										
T 1	9/2/97										
T 1	11/24/97										
T 1	2/25/98										
T 1	7/8/98										
T 1	9/16/98										
T 1	11/24/98										
T 1	2/23/99										
T 1	5/5/99										
T 1***	8/26/99	195.11	2.44	192.67	40000	7200	5000	950	8100	53	*
T 1	11/10/99	195.11	2.23	192.88	46000	5600	3600	910	6500	<0.5	
T 1	2/9/00	195.11	2.22	192.89	35000	2900	5700	720	6600	<0.5	
T 1	6/30/00	195.11	2.22	192.89	30000	3400	3200	950	4600	<5	
T 1	8/8/00	195.11	2.73	192.38	8900	1600	760	260	870	<5	
T 1	11/16/00	195.11	2.72	192.39	4000	1300	92	80	290	<0.5	
T 1	3/8/01	195.11	2.12	192.99	25000	4400	3400	770	3200	26	****
T 1	5/31/01	195.11	2.30	192.81	8900	940	210	340	1500	<50	****
T 1	12/18/01	195.11	2.20	192.91	48000	3700	5500	1200	5300	24	****
T 1	2/19/02	195.11	1.96	193.15	64000	8600	6000	1700	6800	55	****

ND BELOW LABORATORY DETECTION LIMITS
TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
* MTBE results confirmed by EPA Method 8260 (GC/MS)
** LAB REPORT HAD RS-6 AND RS-7 MISLABELED, RESAMPLE ON 7/30/98 CONFIRMED.
*** WELL CASING ELEVATION SURVEY 8-27-99, WADE HAMMOND No.6163,BENCH MARK CITY OF OAKLAND
**** SAMPLES ANALYZED USING EPA METHOD 8260B

TABLE 2
GROUNDWATER ELEVATIONS AND ELECTRON ACCEPTOR RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

(All concentrations in parts per million [mg/L, ppm] unless otherwise noted)
(AMSL = Above mean sea level)

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	FIELD MEASUREMENTS: DEPTH TO GROUND WATER (FEET)	GROUND WATER ELEVATION (FEET AMSL)	DISSOLVED OXYGEN O2 (MG/L)	SULFATE SO4 (MG/L)	NITRATE NO3 (MG/L)	FERROUS IRON FE2 (MG/L)	TEMPERATURE (F)	pH	CERTIFIED LABORATORY RESULTS DISSOLVED IN WATER: TOTAL PETROLEUM HYDROCARBONS GASOLINE (MG/L)	CARBON DI OXIDE CO2 (MG/L)	METHANE CH4 (MG/L)	AEROBIC HYDROCARBON DEGRADING BACTERIA CFU/ML	ORTHO-PHOSPHATE PO4 (MG/L)	AMMONIA as NITROGEN N (MG/L)
MW-1	8/26/99	229.57	11.41	218.16	4.9	35	0	0.25	75.4	6.55	<0.05					
	9/2/99	229.57	11.65	217.92					72.9	8.16		0.13	<0.00001	10	<1	<0.5
	3/8/01	229.57	12.30	217.27	4.9				67.6	7.33	<0.05					
	12/18/01	229.57	13.74	215.83	4.4	61	7.6	0	67.1	7.63	<0.05					
RS-2	8/26/99	227.39	11.42	215.97	0.7	46	2.7	0.65	80.9	6.97	0.2					
	9/2/99	227.39	12.00	215.39								nm	nm	nm	nm	nm
	12/18/01	227.39	6.99	220.4	4.6	>77	11.4	0.07	67.6	7.75	<0.05					
RS-5	8/26/99	227.61	16.06	211.55	0.7	31	1.3	0.92	71.7	7.08	35					
	9/2/99	227.61	16.26	211.35					68.4	7.15		0.16	0.00021	3000	<1	<0.5
	3/8/01	227.61	27.72	199.89	3.1				59.7	7.46	11					
	12/18/01	227.61	15.61	212	1.4	37	8.2	>3.3	66.6	6.83	12					
RS-6	8/26/99	227.22	13.72	213.5	1.2	76	0.3	>3.3	77.8	6.66	0.69					
	9/2/99	227.22	14.14	213.08					69	6.69		0.36	<0.00001	400	<1	<0.5
	12/18/01	227.22	10.88	216.34	4.3	>77	0	0	66.7	6.84	0.056					
RS-7	8/26/99	195.99	4.16	191.83	0.3	>77	0.8	1.27	73.4	6.99	15					
	9/2/99	195.99	4.14	191.85								nm	nm	nm	nm	nm
	12/18/01	195.99	4.81	191.18	2.5	1	6	0.07	68.1	6.82	2.7					
RS-8	8/26/99	214.67	7.25	207.42	2.6	0	0	0.54	69.2	6.7	160					
	9/2/99	214.67	7.38	207.29					71.7	5.74		0.058	0.000018	6600	<1	<0.5
	3/8/01	214.67	9.40	205.27	2.2				63.3	6.97	10					
	12/18/01	214.67	7.14	207.53	4.2	49	9.2	0.08	67.3	6.98	0.23					
RS-9	8/26/99	195.63	7.46	188.17	2.1	7	0	0.59	73.5	6.95	17					
	9/2/99	195.63	7.61	188.02					70.9	6.98		0.25	0.0021	10000	<1	<0.5
	3/8/01	195.63	4.93	190.7	8.1				62.7	6.89	<0.05					
	12/18/01	195.63	4.81	190.82	WATER TO CLOUDY, LIGHT GREY				68.3	6.8	0.21					
RS-10	8/26/99	208.46	3.76	204.7	4.2	nm	nm	nm	70.9	8.03	5.1					
	9/2/99	208.46	3.96	204.5					73.3	7.24		0.1	0.000037	8800	<1	<0.5
	3/8/01	208.46	2.82	205.64	3.5				61.5	6.16	0.053					
	12/18/01	208.46	2.10	206.36	4.3	46	4.1	0	66.9	6.54	<0.05					
R1	8/26/99	227.69	13.97	213.72	0.4	9	0	>3.3	70.6	6.38	6.5					
	9/2/99	227.69	14.18	213.51								nm	nm	nm	nm	nm
	12/18/01	227.69	9.90	217.79	5.2	14	4.2	0	66.4	7.24	<0.05					
R2	8/26/99	227.28	13.14	214.14	0.4	>77	0.8	0.3	72.7	6.65	6.7					
	9/2/99	227.28	13.23	214.05								nm	nm	nm	nm	nm
	12/18/01	227.28	12.35	214.93	2.8	>77	1.3	0.07	66.5	6.69	4.9					
R3	8/26/99	230.32	10.76	219.56	2.5	>77	0.7	0.05	75	6.95	<0.05					
	9/2/99	230.32	10.87	219.45								nm	nm	nm	nm	nm
	12/18/01	230.32	6.79	223.53	5.5	>77	6.2	0	67.1	6.91	<0.05					
T-1	8/26/99	195.11	2.44	192.67	0.8	32	0.5	0.03	75.3	7.29	40					
	9/2/99	195.11	2.20	192.91					78.1	7.57		0.11	0.00019	1300	<1	<0.5
	3/8/01	195.11	2.18	192.93	3.1						25					
	12/18/01	195.11	2.20	192.91	2.8	0	4.3	0.6	66.3	6.52	48					

TABLE 2
GROUNDWATER ELEVATIONS AND ELECTRON ACCEPTOR RESULTS FROM WATER SAMPLES
DESERT PETROLEUM, INC. SITE #793
4035 PARK BOULEVARD, OAKLAND, CALIFORNIA

(All concentrations in parts per million [mg/L, ppm] unless otherwise noted)
(AMSL = Above mean sea level)

ID#	DATE SAMPLED	WELL CASING ELEVATION (FEET AMSL)	FIELD MEASUREMENTS: DEPTH TO GROUND WATER (FEET)	FIELD MEASUREMENTS: GROUND WATER ELEVATION (FEET AMSL)	FIELD MEASUREMENTS: DISSOLVED OXYGEN O2 (MG/L)	FIELD MEASUREMENTS: SULFATE SO4 (MG/L)	FIELD MEASUREMENTS: NITRATE NO3 (MG/L)	FIELD MEASUREMENTS: FERROUS IRON FE2 (MG/L)	FIELD MEASUREMENTS: TEMPERATURE (F)	FIELD MEASUREMENTS: pH	CERTIFIED LABORATORY RESULTS DISSOLVED IN WATER: TOTAL PETROLEUM HYDROCARBONS GASOLINE (MG/L)	CARBON DI OXIDE CO2 (MG/L)	METHANE CH4 (MG/L)	AEROBIC HYDROCARBON DEGRADING BACTERIA CFU/ML	ORTHO-PHOSPHATE PO4 (MG/L)	AMMONIA as NITROGEN N (MG/L)
T 2	8/26/99	195.3	CAR		nm	nm	nm	nm	nm	nm	NA					
	9/2/99	195.3	CAR									nm	nm	nm	nm	nm
T 3	8/26/99	202.38	CAR		nm	nm	nm	nm	nm	nm	NA					
	9/2/99	202.38	CAR									nm	nm	nm	nm	nm
T 4	8/26/99	197.46	CAR		nm	nm	nm	nm	nm	nm	NA					
	9/2/99	197.46	CAR									nm	nm	nm	nm	nm
LF-1	8/26/99	226.59	CAR		nm	nm	nm	nm	nm	nm	NA					
	9/2/99	226.59	CAR						nm	nm		nm	nm	nm	nm	nm

NA NOT ANALYZED
nm NOT MEASURED
CAR CAR PARKED OVER WELL, NO ACCESS
MG/L milligrams per liter (ppm)
F degrees Fahrenheit
CFU/ML colony forming units per mil
< below laboratory lower detection limits.
AMSL ABOVE MEAN SEA LEVEL

TABLE 3
WASTEWATER DISCHARGE PERMIT # 5043550 1
FORMER DP #793
4035 PARK BLVD., OAKLAND, CALIFORNIA

WASTEWATER SOURCE ID	DATE	METER READING IN GALLONS #35635668 314110	NEW METER IN GALLONS #47083426	GALLONS DISCHARGED BETWEEN VISITS	ACCUMULATIVE GALLONS DISCHARGED	AVERAGE DISCHARGE PER MINUTE IN GALLONS	EPA METHOD 624 BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	7420 LEAD ug/L
BAKER TANK	1/25/00	314110		0	0	0.00					
BAKER TANK	1/26/00	315050		940	940	0.65	<1	<1	<1	<1	<50
BAKER TANK	1/28/00	321120	1098330	6070	7010	2.11					
BAKER TANK	2/2/00		1102560	4230	11240	0.59					
BAKER TANK	2/3/00		1107482.2	4922	16162	3.42	<1	<1	<1	<1	<50
BAKER TANK	2/7/00		1107482.2	0	16162	0.00					
BAKER TANK AND 1/4LY SAMPLES	2/9/00		1109680	2198	18360	0.76	EPA METHOD 624				239.2
F1 (PSP No. 1)	3/23/00		1109720	40	18400	0.00	<1	<1	<1	<2	<5
F1 (PSP No. 1)	5/4/00		1110780	1060	19460	0.02					
F1 (PSP No. 1)	5/12/00		1111700	920	20380	0.08					
F1 (PSP No. 1)	5/18/00		1113359	1659	22039	0.19					
F1 (PSP No. 1)	5/25/00		1113840	481	22520	0.05					
F1 (PSP No. 1)	5/31/00		1115111	1271	23791	0.15					
F1 (PSP No. 1)	6/16/00		1115823	712	24503	0.03					
F1 (PSP No. 1)	6/28/00		1116293	470	24973	0.03					
F1 (PSP No. 1)	6/30/00		1116303	10	24983	0.00	EPA METHOD 624				200.7
F1 (PSP No. 1)	7/5/00		1116313	10	24993	0.00	<1	<1	<1	<2	<2
F1 (PSP No. 1)	7/13/00		1117816	1503	26496	0.13					
F1 (PSP No. 1)	7/20/00		1118892	1076	27572	0.11					
F1 (PSP No. 1)	7/27/00		1118892	0	27572	0.00					
F1 (PSP No. 1)	8/3/00		1120336	1444	29016	0.14					
F1 (PSP No. 1)	8/10/00		1121041	705	29721	0.07					
F1 (PSP No. 1)	8/17/00		1121041	0	29721	0.00					
F1 (PSP No. 1)	8/24/00		1121860	819	30540	0.08	EPA METHOD 624				200.7
F1 (PSP No. 1)	8/30/00		1122720	860	31400	0.10	<1	<2	<1	<2	<2
F1 (PSP No. 1)	9/7/00		1123270	550	31950	0.05					
F1 (PSP No. 1)	9/14/00		1123819	549	32499	0.05					
F1 (PSP No. 1)	9/21/00		1123819	0	32499	0.00					
F1 (PSP No. 1)	10/5/00		1124153	334	32833	0.02					
F1 (PSP No. 1)	10/12/00		1124660	507	33340	0.05					
F1 (PSP No. 1)	10/19/00		1125904.3	1244	34584	0.12					
F1 (PSP No. 1)	10/26/00		1127167	1263	35847	0.13					
F1 (PSP No. 1)	11/9/00		1128367.2	1200	37047	0.06					
F1 (PSP No. 1)	11/16/00		1129779.5	1412	38460	0.14					
F1 (PSP No. 1)	11/22/00		1130940.5	1161	39621	0.13					
F1 (PSP No. 1)	12/1/00		1134147	3207	42827	0.25	EPA METHOD 624				200.7
F1 (PSP No. 1)	12/7/00		1134289	142	42969	0.02	<1	<1	<1	<2	<2

TABLE 3
WASTEWATER DISCHARGE PERMIT # 5043550 1
FORMER DP #793
4035 PARK BLVD., OAKLAND, CALIFORNIA

WASTEWATER SOURCE ID	DATE	METER READING IN GALLONS #35635668 314110	NEW METER IN GALLONS #47083426	GALLONS DISCHARGED BETWEEN VISITS	ACCUMULATIVE GALLONS DISCHARGED	AVERAGE DISCHARGE PER MINUTE IN GALLONS	EPA METHOD 624 BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	7420 LEAD ug/L
F1 (PSP No. 1)	12/14/00		1134431	142	43111	0.01					
F1 (PSP No. 1)	12/21/00		1134573	142	43253	0.01					
F1 (PSP No. 1)	12/28/00		1134714.8	142	43395	0.01					
F1 (PSP No. 1)	1/11/01		1134714.8	0	43395	0.00	no discharge, could not access trench well				
F1 (PSP No. 1)	1/18/01		1135243.8	529	43924	0.05					
F1 (PSP No. 1)	1/25/01		1136144	900	44824	0.09					200.7
F1 (PSP No. 1)	2/8/01		1136659	515	45339	0.03					<2
F1 (PSP No. 1)	2/15/01		1137441.4	782	46121	0.08					
F1 (PSP No. 1)	2/22/01		1141123.6	3682	49804	0.37	start discharge from RS5				
F1 (PSP No. 1)	3/1/01		1150736.5	9613	59417	0.95	EPA METHOD 624				
F1 (PSP No. 1)	3/8/01		1158901.1	8165	67581	0.81	<1	<1	<1	<2	
F1 (PSP No. 1)	3/14/01		1162321.2	3420	71001	0.40					
F1 (PSP No. 1)	3/21/01		1162321.4	0	71001	0.00	no discharge, pump removed for repair				
F1 (PSP No. 1)	4/4/01		1163471.7	1150	72152	0.06					
F1 (PSP No. 1)	4/12/01		1164723.5	1252	73404	0.11	EPA METHOD 8260B				
F1 (PSP No. 1)	4/19/01		1173267	8544	81947	0.85	<0.5	<0.5	<0.5	<0.5	
F1 (PSP No. 1)	5/3/01		1181423.5	8157	90104	0.40					
F1 (PSP No. 1)	5/10/01		1188209.3	6786	96889	0.67					
F1 (PSP No. 1)	5/16/01		1189899.1	1690	98579	0.20					
F1 (PSP No. 1)	5/24/01		1198018.4	8119	106698	0.70					
F1 (PSP No. 1)	5/31/01		1199647.8	1629	108328	0.16					
F1 (PSP No. 1)	6/6/01		1204217.2	4569	112897	0.53					
F1 (PSP No. 1)	6/14/01		1210661.4	6444	119341	0.56					
F1 (PSP No. 1)	6/21/01		1214600	3939	123280	0.39					
F1 (PSP No. 1)	6/28/01		1219387.7	4788	128068	0.47					
F1 (PSP No. 1)	7/5/01		1223625.4	4238	132305	0.42					
F1 (PSP No. 1)	7/12/01		1228500	4875	137180	0.48	EPA METHOD 8260B				
F1 (PSP No. 1)	7/19/01		1232750.7	4251	141431	0.42	<0.5	<0.5	<0.5	<0.5	
REMOVE PUMP AND DISCONTINUE SEWER DISCHARGE ON July 19, 2001, COMMENCE 1/4LY DISCHARGE											MTBE
F1 (PSP No. 1) 1/4LY SAMPLES	12/18/01			238	137418	5.00	<0.5	<0.5	<0.5	<0.5	<0.5
F1 (PSP No. 1) 1/4LY SAMPLES	2/19/02			246	141677	5.00	<0.5	<0.5	<0.5	<0.5	<0.5

< BELOW LABORATORY LOWER DETECTION LIMITS

ug/L micrograms per liter (parts per billion)

Note: water meter #47083426 did not function during initial test, substitute meter #35635668 used until cleaned and tested. Re-installed January 28, 2000.
WATER DISCHARGED TO SEWER IS FROM WEEKLY PURGING OF T1, CONTINUOUS DISCHARGE FROM WELL RS5 AND PURGED WATER FROM 1/4LY SAMPLING.

TABLE 4
RECEPTOR TRENCH GROUNDWATER REMOVAL
FORMER DP #793
4035 PARK BLVD., OAKLAND, CALIFORNIA

PURGING BY	DATE PURGED	METER READING IN GALLONS RS5	METER READING IN GALLONS TRENCH	DEPTH TO TOP OF WATER IN FEET	GALLONS PURGED T1	ACCUMULATED GALLONS REMOVED FROM TRENCH GALLONS	Accumulated gallons removed from RS5 Gallons	TOTAL GALLONS REMOVED	RECEPTOR TRENCH WATER ANALYSIS EPA METHOD 8020 TPHg ug/L	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	MTBE ug/L
WEGE	8/9/99			6.47	200	200								
WEGE	8/10/99			5.02	1730	1930								
WEGE	8/11/99			7.89	960	2890								
WEGE	8/12/99			8.12	800	3690								
WEGE	8/13/99			8.87	600	4290								
WEGE	9/2/99			2.2	3600	7890	*		40000	7200	5000	950	8100	53
WEGE	9/16/99			2.27	5131	13021								
WEGE	9/23/99			4.26	3351	16372								
WEGE	9/30/99			4.69	1734	18106								
WEGE	10/7/99			4.78	293	18400								
WEGE	1/25/00				0	18400								
WEGE	1/26/00				0	18400								
WEGE	1/28/00		1098330.0		0	18400								
WEGE	2/23/00		1102560.0		0	18400			35000	2900	5700	720	6600	<0.5
WEGE	2/29/00		1109680.0	2.22	0	18400								
WEGE	3/23/00		1109720.0		0	18400				1020	6500	1010	5090	
WEGE	5/4/00		1110780.0		1060	19460								
WEGE	5/12/00		1111700.0	2.19	920	20380								
WEGE	5/18/00		1113359.0	2.18	1659	22039								
WEGE	5/25/00		1113840.0		481	22520								
WEGE	5/31/00		1115111.0	2.15	1271	23791								
WEGE	6/16/00		1115823.0		712	24503								
WEGE	6/28/00		1116293.0	2.22	470	24973								
WEGE	6/30/00		1116303.0		10	24983			30000	3400	3200	950	4600	<5
WEGE	7/5/00		1116313.0		10	24993								
WEGE	7/6/00		1116313.0		0	24993								
WEGE	7/13/00		1117816.0		1503	26496								
WEGE	7/20/00		1118892.0	2.29	1076	27572								
WEGE	7/27/00		1118892.0	2.21	0	27572								
WEGE	8/3/00		1120336.0	2.9	1444	29016								
WEGE	8/10/00		1121041.0	2.75	705	29721			8900	1600	760	260	870	<5
WEGE	8/17/00		1121041.0	2.73	0	29721								
WEGE	8/24/00		1121860.0	2.75	819	30540								
WEGE	8/30/00		1122720.0	2.75	860	31400								
WEGE	9/7/00		1123270.0	2.78	550	31950								
WEGE	9/14/00		1123810.0	2.79	540	32490								
WEGE	9/21/00		1123810.0		0	32490								
WEGE	10/5/00		1124253.0	2.81	443	32933								
WEGE	10/12/00		1124660.0	2.4	407	33340								
WEGE	10/19/00		1125904.3		1244	34584								

TABLE 4
RECEPTOR TRENCH GROUNDWATER REMOVAL
FORMER DP #793
4035 PARK BLVD., OAKLAND, CALIFORNIA

PURGING BY	DATE PURGED	METER READING IN GALLONS RS5	METER READING IN GALLONS TRENCH	DEPTH TO TOP OF WATER IN FEET	GALLONS PURGED T1	ACCUMULATED GALLONS REMOVED FROM TRENCH GALLONS	Accumulated gallons removed from RS5 Gallons	TOTAL GALLONS REMOVED	RECEPTOR TRENCH WATER ANALYSIS EPA METHOD 8020 TPHg ug/L	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	MTBE ug/L
WEGE	10/26/00		1127167.0	2.22	1263	35847								
WEGE	11/9/00		1128367.2	2.87	1200	37047								
WEGE	11/16/00		1129779.5		1412	38459			4000	1300	92	80	290	<0.5
WEGE	11/22/00		1130940.5	2.72	1161	39620								
WEGE	12/1/00		1132147.0	2.21	1207	40827								
WEGE	12/7/00		1132147.0	2.21	0	40827								
WEGE	12/14/00		1132823.0	2.55	676	41503								
WEGE	12/21/00		1134087.4	2.3	1264	42767								
WEGE	12/28/00		1134714.8	2.32	627	43394								
WEGE	1/11/01		1134714.8	2.32	0	43394								
WEGE	1/18/01		1135243.8	2.3	529	43923								
WEGE	1/25/01		1136144.0	2.46	900	44824								
WEGE	2/8/01		1136659.0	2.3	515	45339								
WEGE	2/15/01		1137441.4	2.38	782	46121								
WEGE	2/22/01	1140664.5	1141123.6	2	459	46580	3223.1							
WEGE	3/1/01	1150033.2	1150736.5	2.18	703	47283	12132.7							
WEGE	3/8/01	1158270.7	1158901.1	2.18	630	47914	19666.9		25000	4400	3400	770	3200	26
WEGE	3/14/01	1161991.1	1162321.2	2.49	330	48244	22756.9							
WEGE	3/21/01	1162321.4	1162321.4	2.49	0	48244	22757.1							
WEGE	4/4/01	1162321.4	1163471.7	2.54	1150	49394	22757.1							
WEGE	4/12/01	1163471.7	1164723.5	2.16	1252	50646	22757.1							
WEGE	4/19/01	1172032.3	1173267.0	2.45	1235	51881	30065.9							
WEGE	4/26/01	1179315.2	1180276.0	2.25	961	52841	36114.1							
WEGE	5/3/01	1180334.5	1181423.5	2.3	1089	53930	36172.6							
WEGE	5/10/01	1188209.3	1188209.3	2.29	0	53930	42958.4							
WEGE	5/16/01	1188209.3	1189899.1	2.29	1690	55620	42958.4							
WEGE	5/24/01	1197065.0	1198018.4	2.13	953	56574	50124.3							
WEGE	5/31/01	1198878.6	1199647.3	2.3	769	57342	50984.5		8900	940	210	340	1500	<50
WEGE	6/6/01	1203386.1	1204217.2	2.32	831	58173	54723.3							
WEGE	6/14/01	1210661.4	1210661.4	2.31	0	58173	61167.5							
WEGE	6/21/01	1214124.2	1214600.0	3.41	476	58649	64630.3							
WEGE	6/28/01	1218305.1	1219387.7	2.37	1083	59732	68335.4							
WEGE	7/5/01	1222739.6	1223625.4	3.5	886	60618	71687.3							
WEGE	7/12/01	1227553.1	1228500.0	3	947	61565	75615.0							
WEGE	7/19/01	1231804.3	1232750.7	3.61	946	62511	78919.3		CEASE PUMPING					
WEGE	12/18/01	purged water from 1/4ly			238			137417.5	48000	3700	5500	1200	5300	24
WEGE	2/19/02	purged water from 1/4ly			30			141460.2	64000	8600	6000	1700	6800	55

ɔer liter (parts per billion)
s per liter (parts per million)
WESTERN GEO-ENGINEERS

< BELOW LABORATORY LOWER DETECTION LIMITS
mg/Kg milligrams per kilogram (parts per million)
TPHg TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE
MTBE METHYL TERTIARY BUTYL ETHER
* SAMPLED ON AUGUST 26, 1999

TABLE 5 POUNDS HYDROCARBONS

DP 793

4035 PARK BLVD, OAKLAND, CA

Pounds TPHg in soil and in groundwater AUGUST 1999.

		soil density=	1.9						pounds
Square	Thickness	Cubic	Upper	Lower	Average con	kg Soil	mg	pounds	per
Feet		feet	mg/kg	mg/kg	mg/kg		TPHg	TPHg	interval
TPHg in soil 5 - 10 foot depth 8/99									
2165	5	10825	50	1	25.5	582409.9	14851452.39	32.7	
1945	5	9725	100	50	75	523227.4	39242052.56	86.5	
700	5	3500	290	100	195	188308.1	36720069.75	81.0	
325	5	1625	1000	100	550	87428.74	48085805.63	106.0	
100	5	500	2000	1000	1500	26901.15	40351725	89.0	
440	5	2200	4000	1000	2500	118365.1	295912650	652.4	1047.6
TPHg in soil 10-15 foot depth AUGUST 1999									
5006	5	25030	50	1	25.5	1346672	34340125.01	75.7	
1599	5	7995	100	50	75	430149.4	32261204.14	71.1	
2815	5	14075	1000	100	550	757267.4	416497054.9	918.2	
240	5	1200	1200	1000	1100	64562.76	71019036	156.6	1221.6
TPHg in soil 15-20 foot depth AUGUST 1999									
1926	5	9630	50	1	25.5	518116.1	13211961.8	29.1	
1044	5	5220	100	50	75	280848	21063600.45	46.4	
1250	5	6250	1000	100	550	336264.4	184945406.3	407.7	483.3
TPHg in soil 20-25 foot depth AUGUST 1999									
2900	5	14500	10	1	5.5	780133.4	4290733.425	9.5	9.5
TPHg in soil 25-30 foot depth AUGUST 1999									
410	5	2050	50	1	25.5	110294.7	2812515.233	6.2	
175	5	875	100	50	75	47077.01	3530775.938	7.8	
145	5	725	1000	100	550	39006.67	21453667.13	47.3	
80	5	400	1600	1000	1300	21520.92	27977196	61.7	123.0
Total pounds TPHg in Soil AUGUST 1999								2884.9	
MASS GROUNDWATER CONTAMINATION AUGUST 1999									
		PORES	0.3						
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds	
Feet		feet	mg/l	mg/l	mg/l	water	TPHg	TPHg	
10520	16	168320	1	0.05	0.525	1429895	750695	1.66	
8650	16	138400	10	1	5.5	1175722	6466470	14.26	
2000	16	32000	40	10	25	271843	6796080	14.98	
2550	16	40800	100	10	55	346600	19063004	42.03	
750	16	12000	160	100	130	101941	13252356	29.22	
Total Calculated Mass TPHg in Groundwater AUGUST 1999								102.14	

MASS GROUNDWATER CONTAMINATION DECEMBER 2001									
		PORES	0.3						
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds	
Feet		feet	mg/l	mg/l	mg/l	water	TPHg	TPHg	
4825	16	77200	1	0.05	0.525	655822	344306	0.76	
4984	16	79744	10	1	5.5	677433	3725883	8.21	
120	16	1920	12	10	11	16311	179417	0.40	
1240	16	19840	48	10	29	168543	4887741	10.78	
495	10	4950	48	48	48	42051	2018436	4.45	trench

Total Calculated Mass TPHg in Groundwater DECEMBER 2001				
				24.59

MASS BENZENE GROUNDWATER CONTAMINATION AUGUST 1999								
assumption: free product contains 287 mg/L of benzene								
		PORES	0.3					
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds
Feet		feet	mg/l	mg/l	mg/l	water	Benzene	Benzene
6775	16	108400	0.1	0.0005	0.05025	920869	46274	0.10
7800	16	124800	1	0.1	0.55	1060188	583104	1.29
2000	16	32000	7.2	1	4.1	271843	1114557	2.46
2000	16	32000	10	1	5.5	271843	1495138	3.30
1200	16	19200	24	10	17	163106	2772801	6.11
Total Calculated Mass Benzene in Groundwater 1999								13.25

MASS BENZENE GROUNDWATER CONTAMINATION DECEMBER 2001									
assumption: free product contains 287 mg/L of benzene									
		PORES	0.3						
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds	
Feet		feet	mg/l	mg/l	mg/l	water	Benzene	Benzene	
3940	16	63040	0.001	0.0005	0.00075	535531	402	0.00	
5265	16	84240	0.5	0.001	0.2505	715627	179265	0.40	
2170	16	34720	1	0.5	0.75	294950	221212	0.49	
450	16	7200	2	1	1.5	61165	91747	0.20	
970	16	15520	3.7	1	2.35	131844	309833	0.68	
495	10	4950	3.7	3.7	3.7	42051	155588	0.34	trench
Total Calculated Mass Benzene in Groundwater 2001								2.11	

ESTIMATED POUNDS GROUNDWATER TPHg REDUCTION FROM 1999 TO 2001 77.5
ESTIMATED POUNDS GROUNDWATER BENZENE REDUCTION FROM 1999 TO 2001 11.1

ESTIMATED % REDUCTION TPHg 75.9
ESTIMATED % REDUCTION BENZENE 84.1

Cost Estimate per treatment	unit cost	amount	subtotal		ORC cost	peroxide
liters of groundwater treated		1781168				treatments
53 gallon drum 35% peroxide	$514.62	1	$514.62		$77,520.0	150.63
pump truck	$175.00	1	$175.00			
Geotechnichain	$55.00	6	$330.00			
PPE	$25.00	1	$25.00			
DTW	10	1	$10.00			
ph,Cond, Temp	10	1	$10.00			
Dissolved Oxygen	20	6	$120.00	$1,184.62		

To raise depleted oxygen from 2 ppm to 8 ppm - 1,781,168 liters (no reactions calculated) with 35% hydrogen peroxide

ratio O to H2O2	2.125		
killograms Oxygen	10.6870057		
killogram peroxide	22.7098871		
litter peroxide	16.3380483		
35 percent sol	46.680138		
gallons peroxide	12.3492428	treatment per drum	4.3

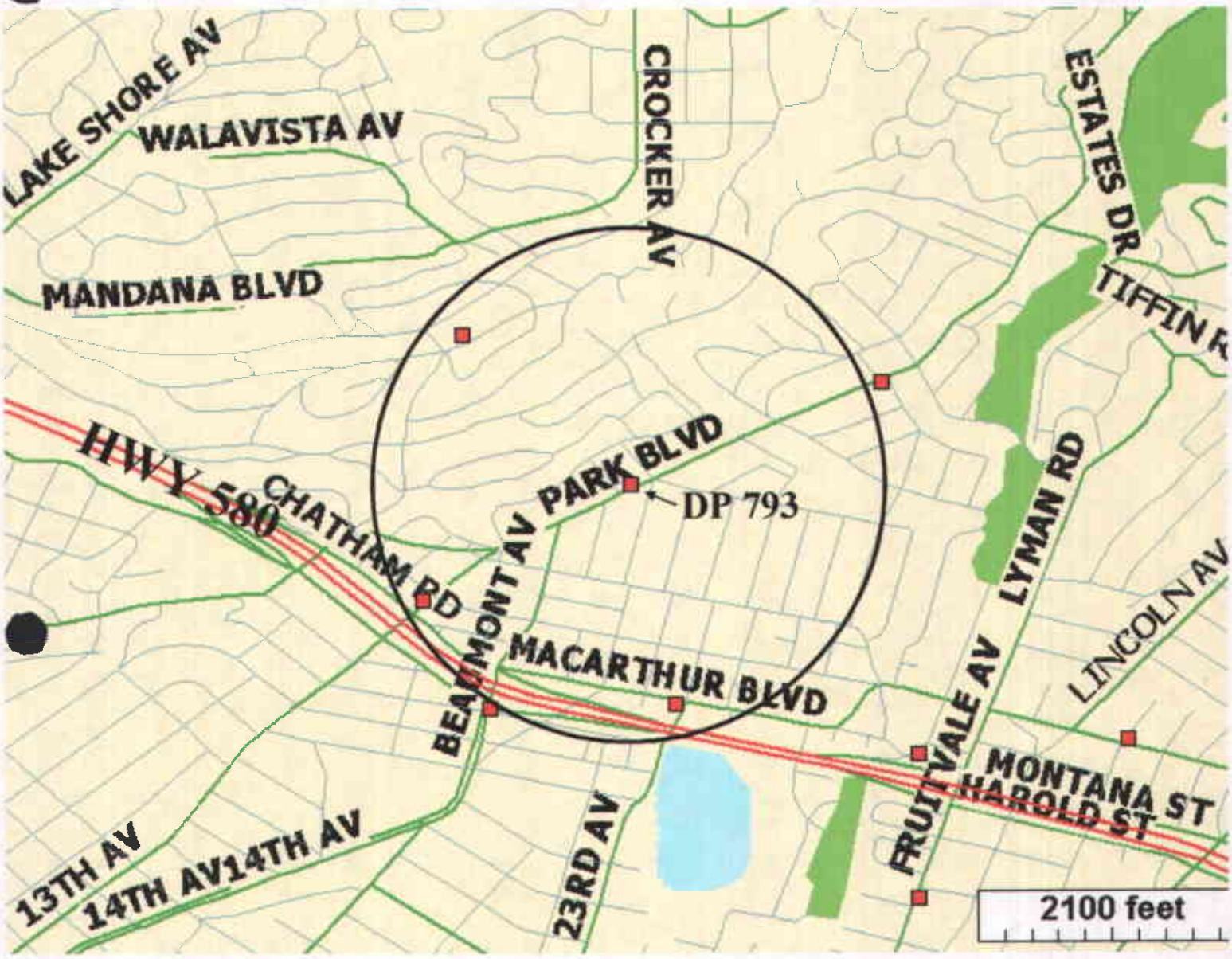


FIGURE 1
GEOTRACKER
AREA WELL & LUST MAP
DP 793
4035 PARK BLVD.
OAKLAND, CA

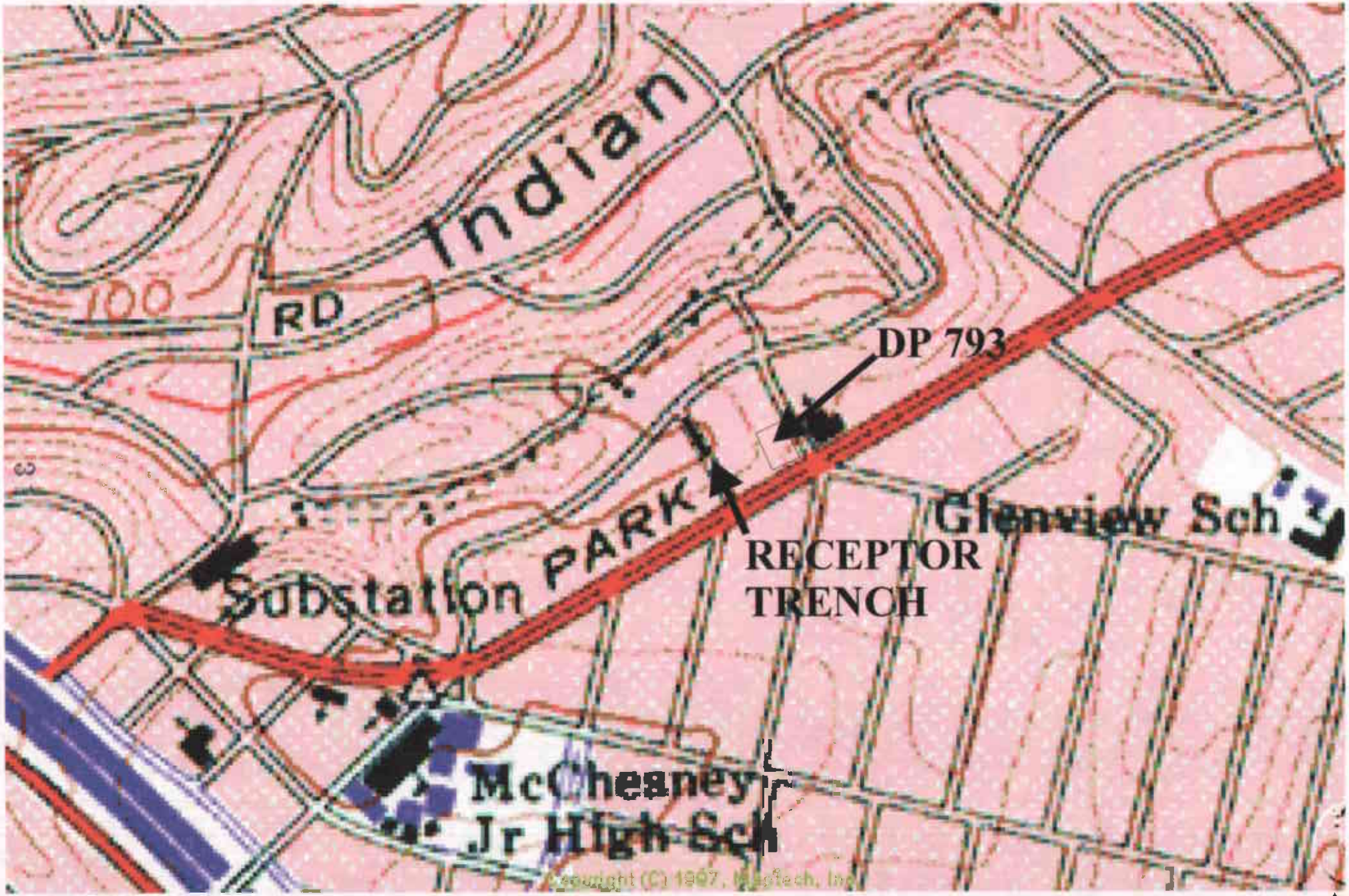


FIGURE 2
PORTION OF OAKLAND EAST 7.5 MINUTE USGS TOPOGRAPHIC MAP

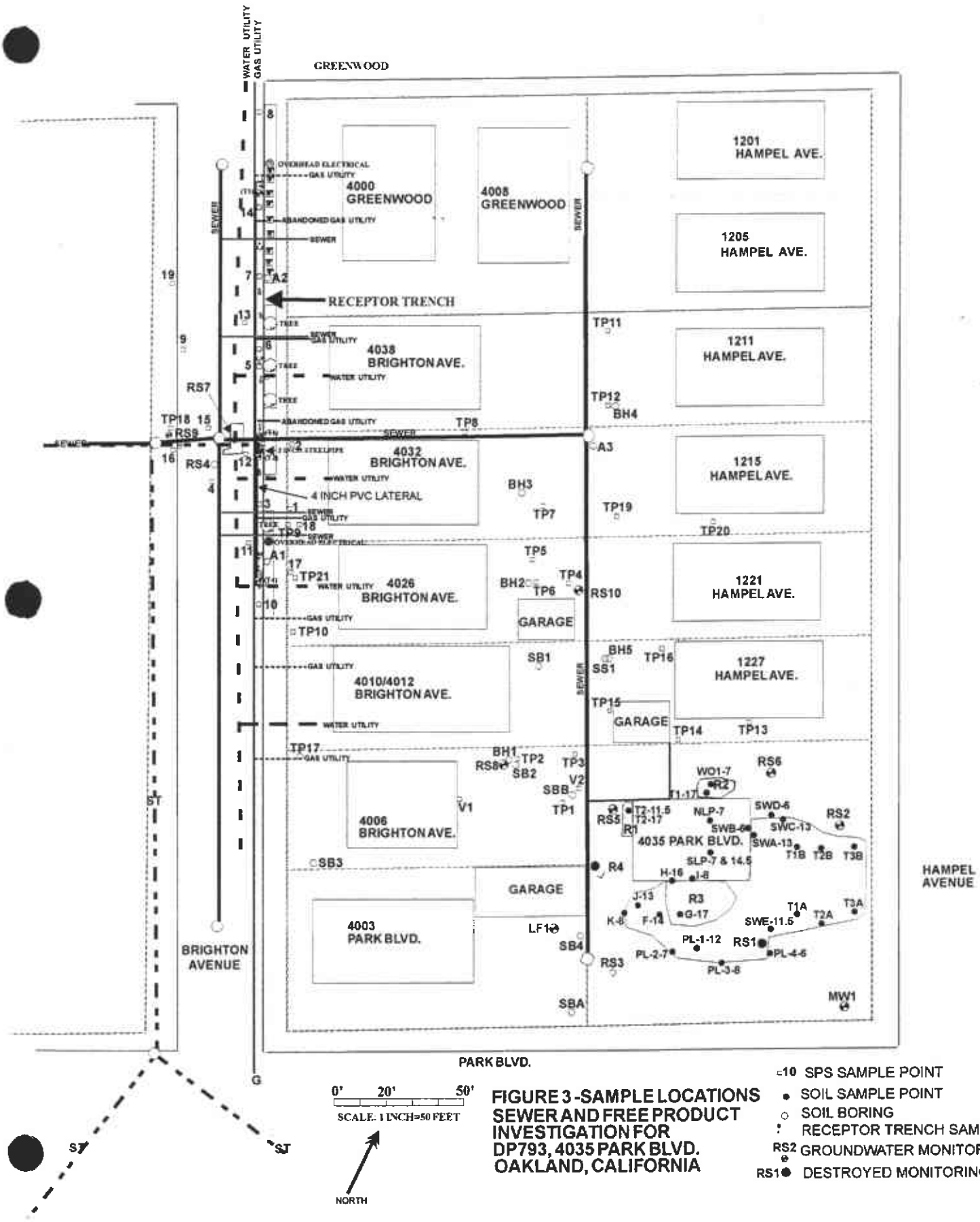


FIGURE 3 - SAMPLE LOCATIONS SEWER AND FREE PRODUCT INVESTIGATION FOR DP793, 4035 PARK BLVD. OAKLAND, CALIFORNIA

- =10 SPS SAMPLE POINT
- • SOIL SAMPLE POINT
- ○ SOIL BORING
- ! RECEPTOR TRENCH SAMPLE POIN
- RS2 GROUNDWATER MONITORING WEL
- RS1 DESTROYED MONITORING WELL

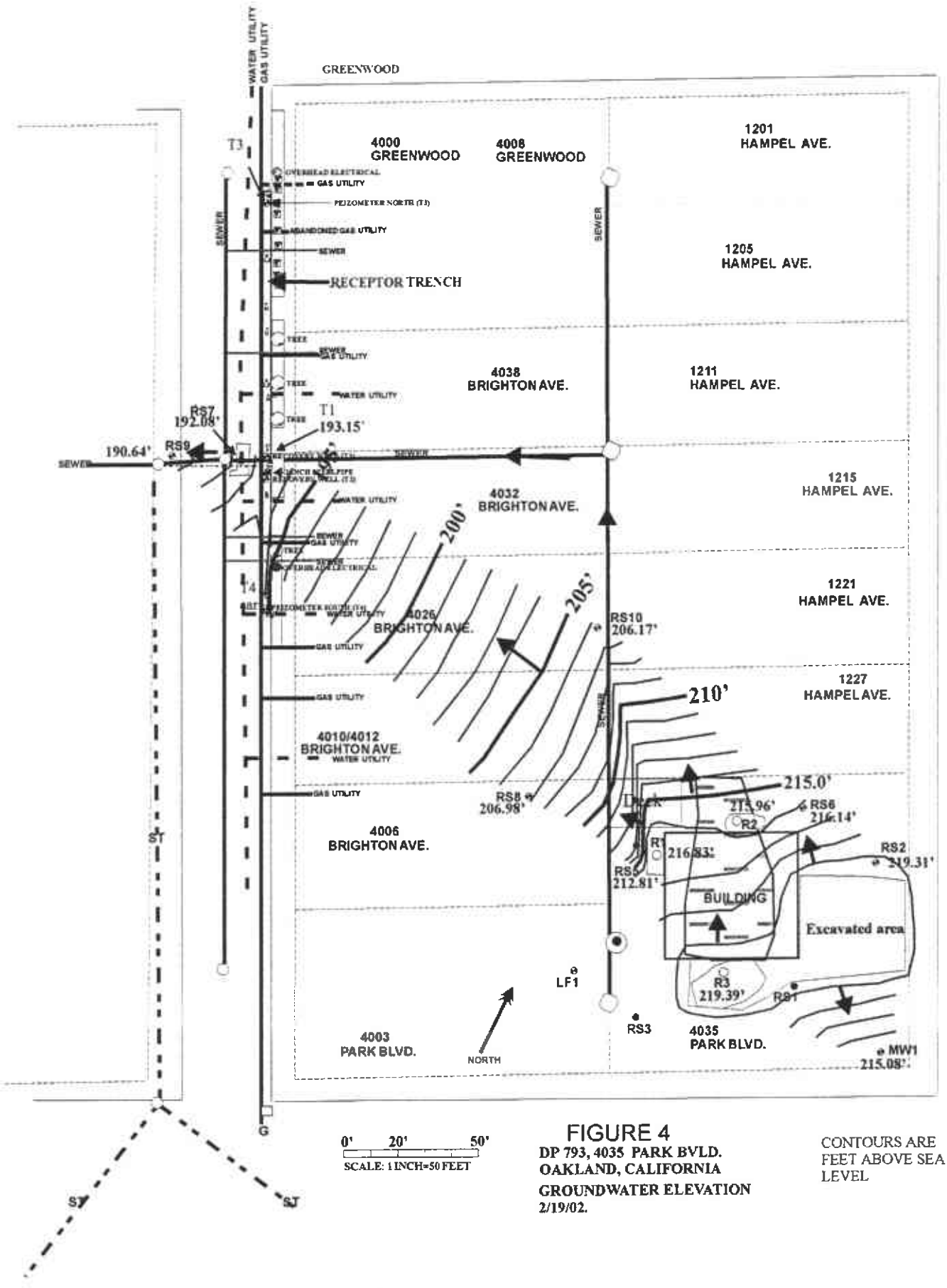


FIGURE 4
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION
2/19/02.

CONTOURS ARE FEET ABOVE SEA LEVEL

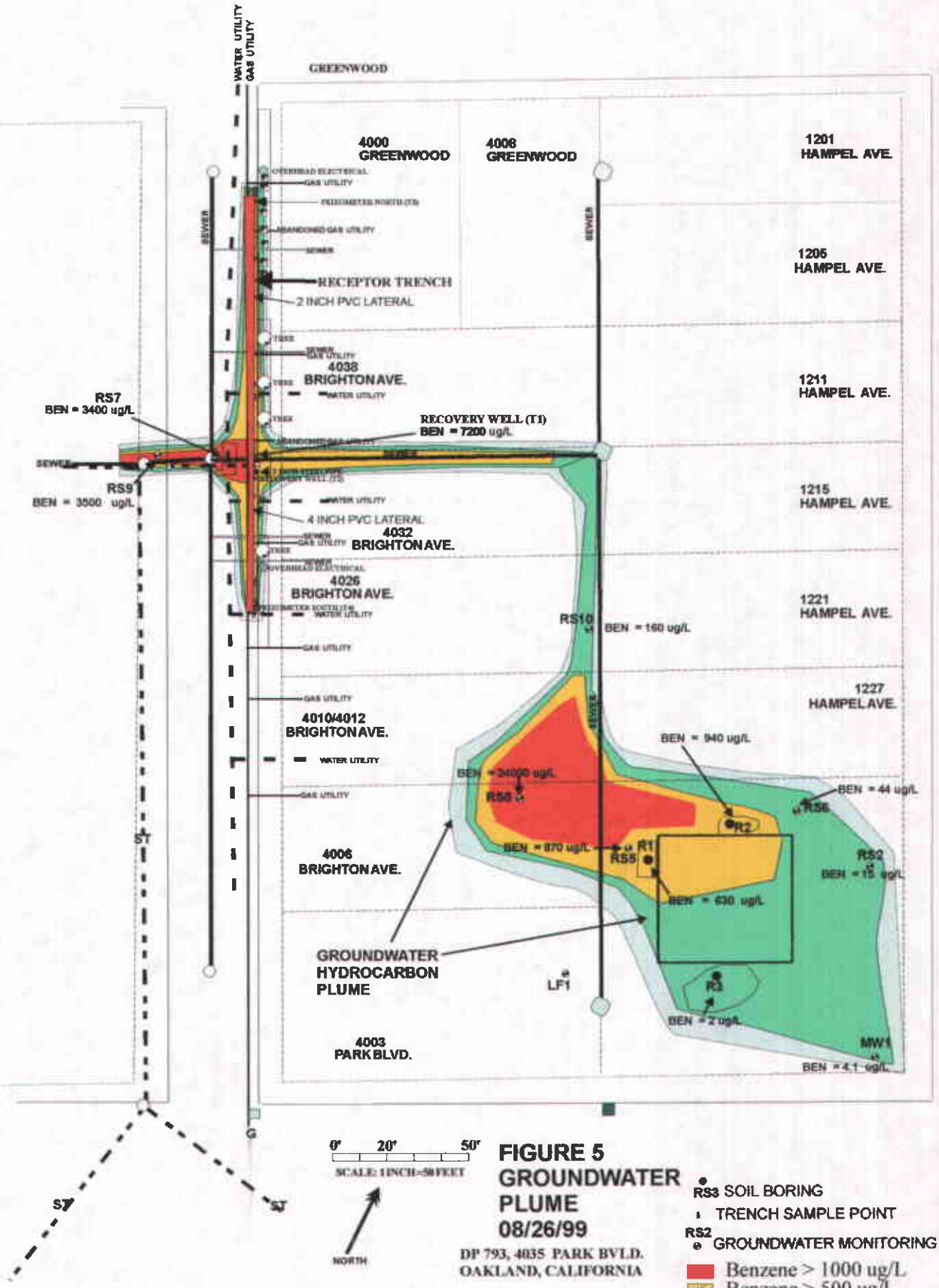


FIGURE 5
GROUNDWATER PLUME
08/26/99

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL
Benzene > 1000 ug/L
Benzene > 500 ug/L
Benzene > 1 ug/L
TPHg Groundwater Plume

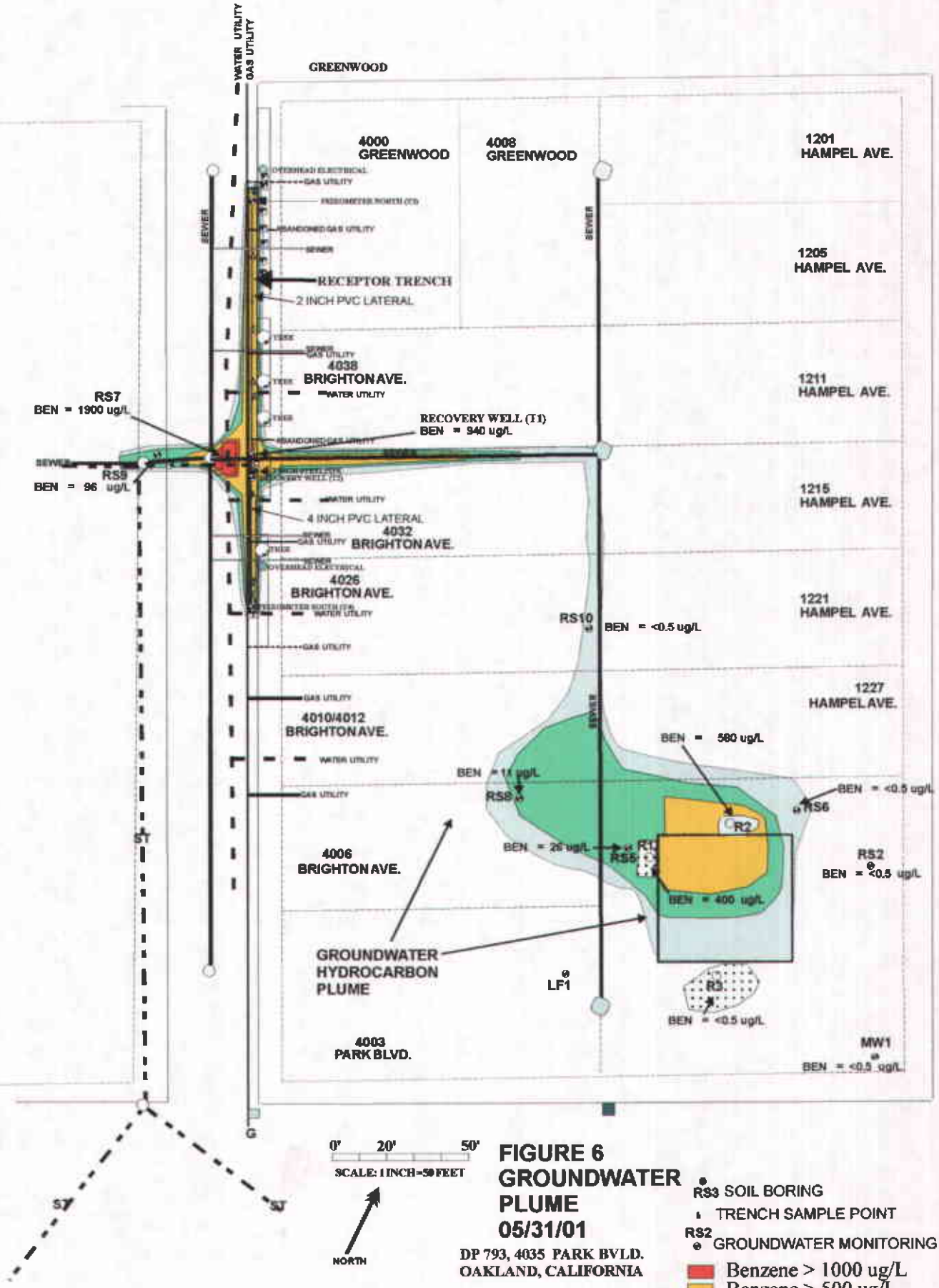


FIGURE 6
GROUNDWATER PLUME
05/31/01

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL

- Benzene > 1000 ug/L
- Benzene > 500 ug/L
- Benzene > 1 ug/L
- TPHg Groundwater Plume

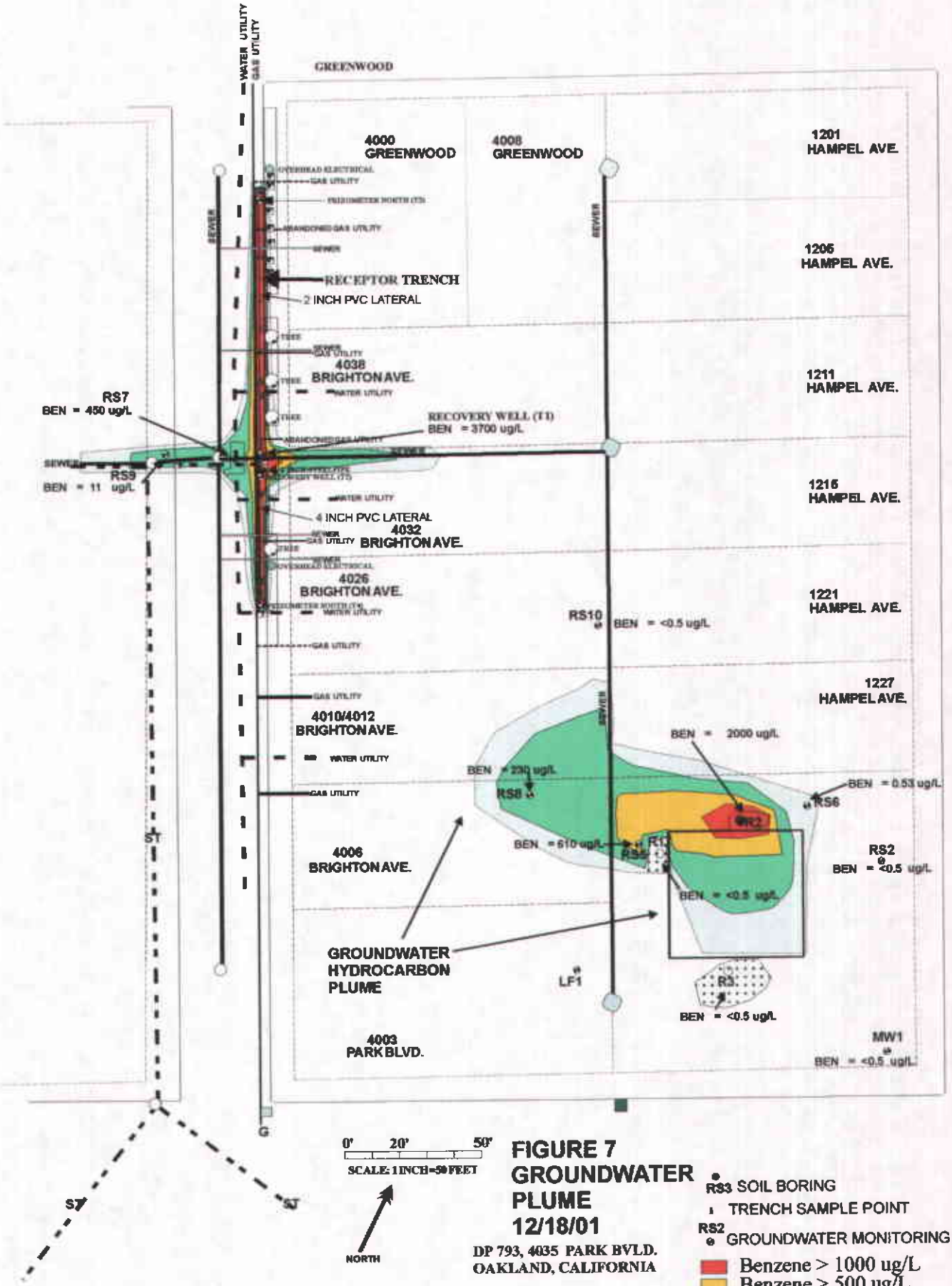


FIGURE 7
GROUNDWATER PLUME
12/18/01

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL

- Benzene > 1000 ug/L
- Benzene > 500 ug/L
- Benzene > 1 ug/L
- TPHg Groundwater Plume

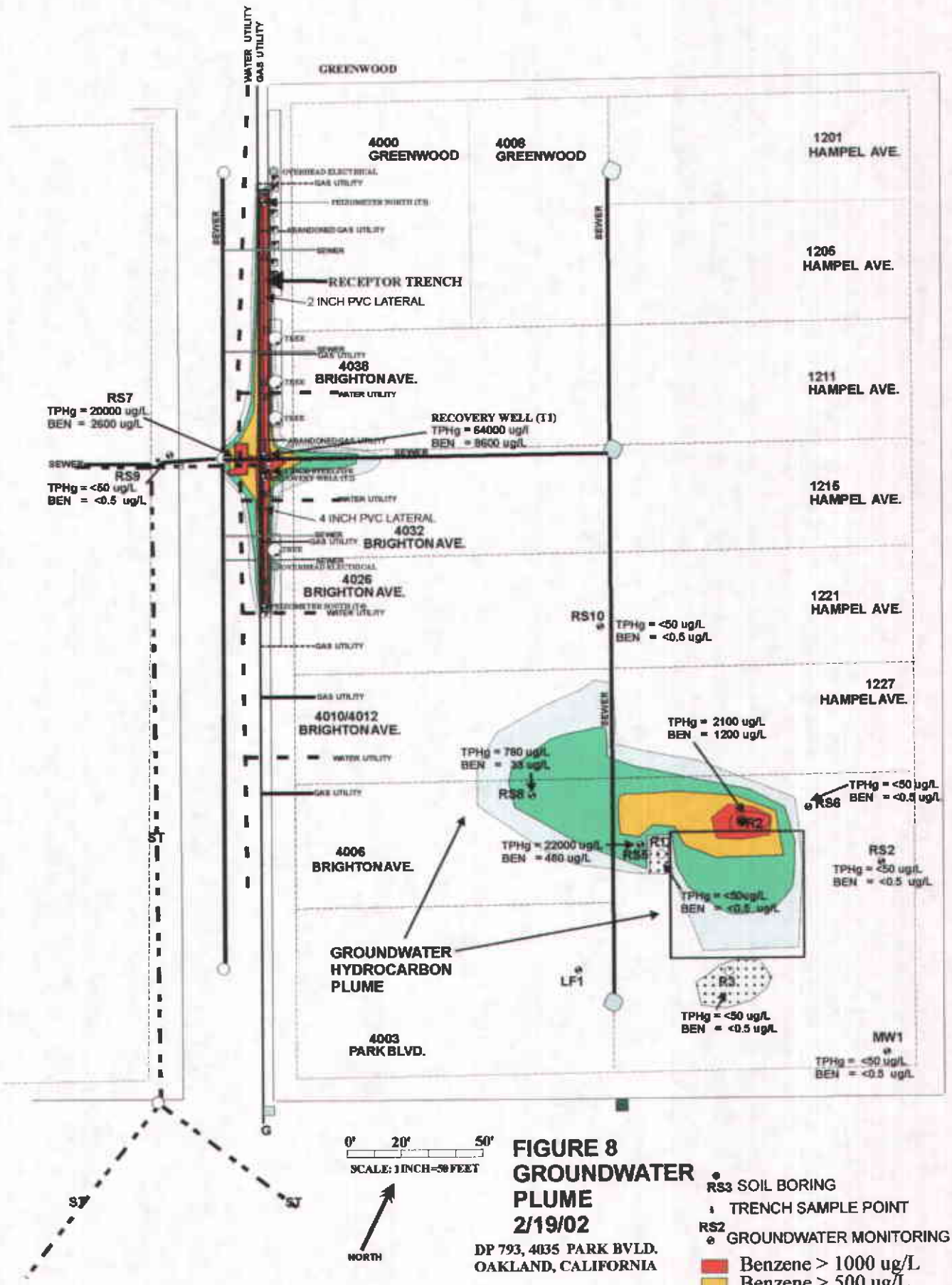


FIGURE 8
GROUNDWATER PLUME
2/19/02

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL
Benzene > 1000 ug/L
Benzene > 500 ug/L
Benzene > 1 ug/L
TPHg Groundwater Plume

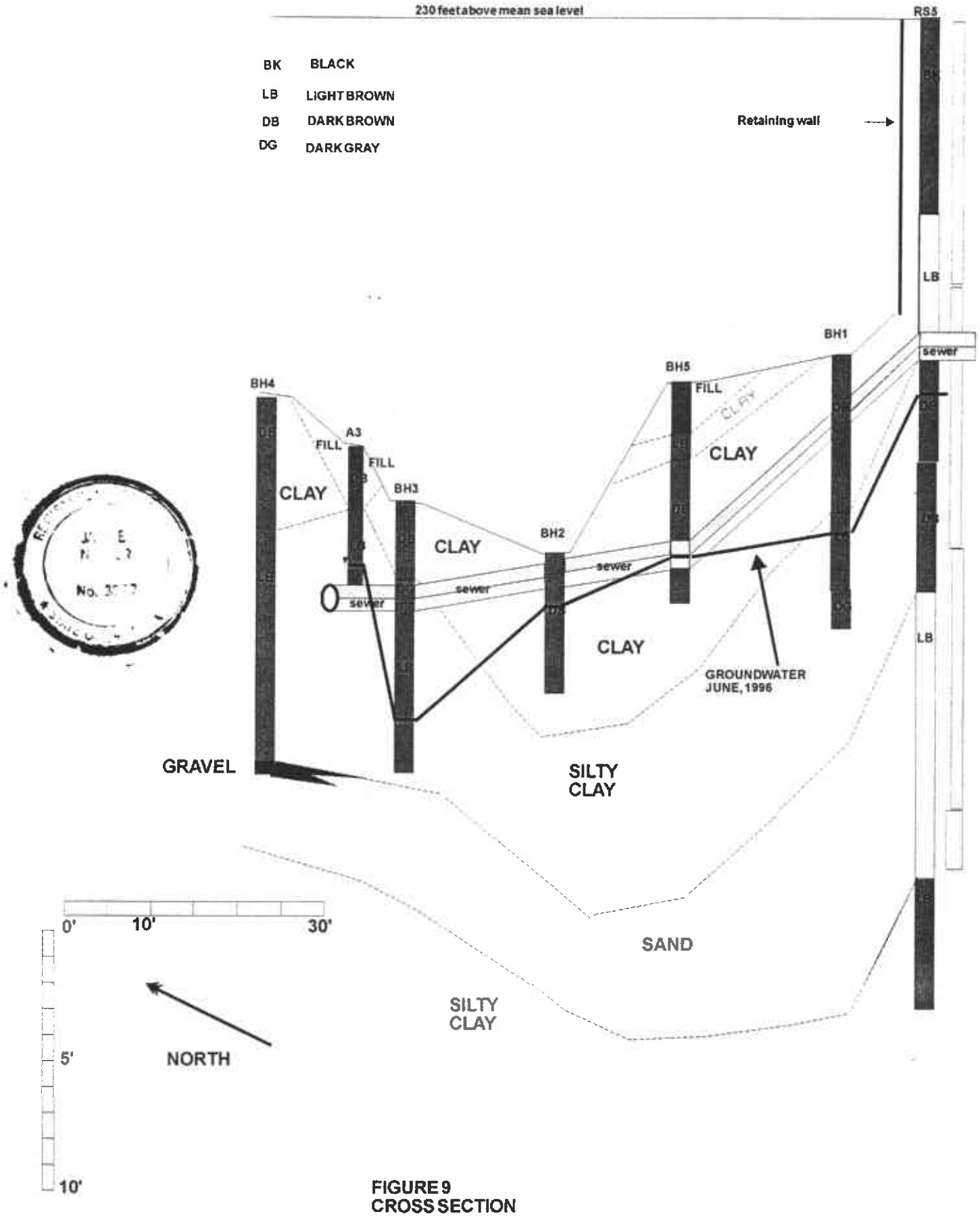


FIGURE 9
CROSS SECTION
FREE PRODUCT INVESTIGATION
SEWER ROUTE FROM SITE ALONG FENCE LINE BACK YARDS
DP793, 4035 PARK BLVD.
OAKLAND, CALIFORNIA

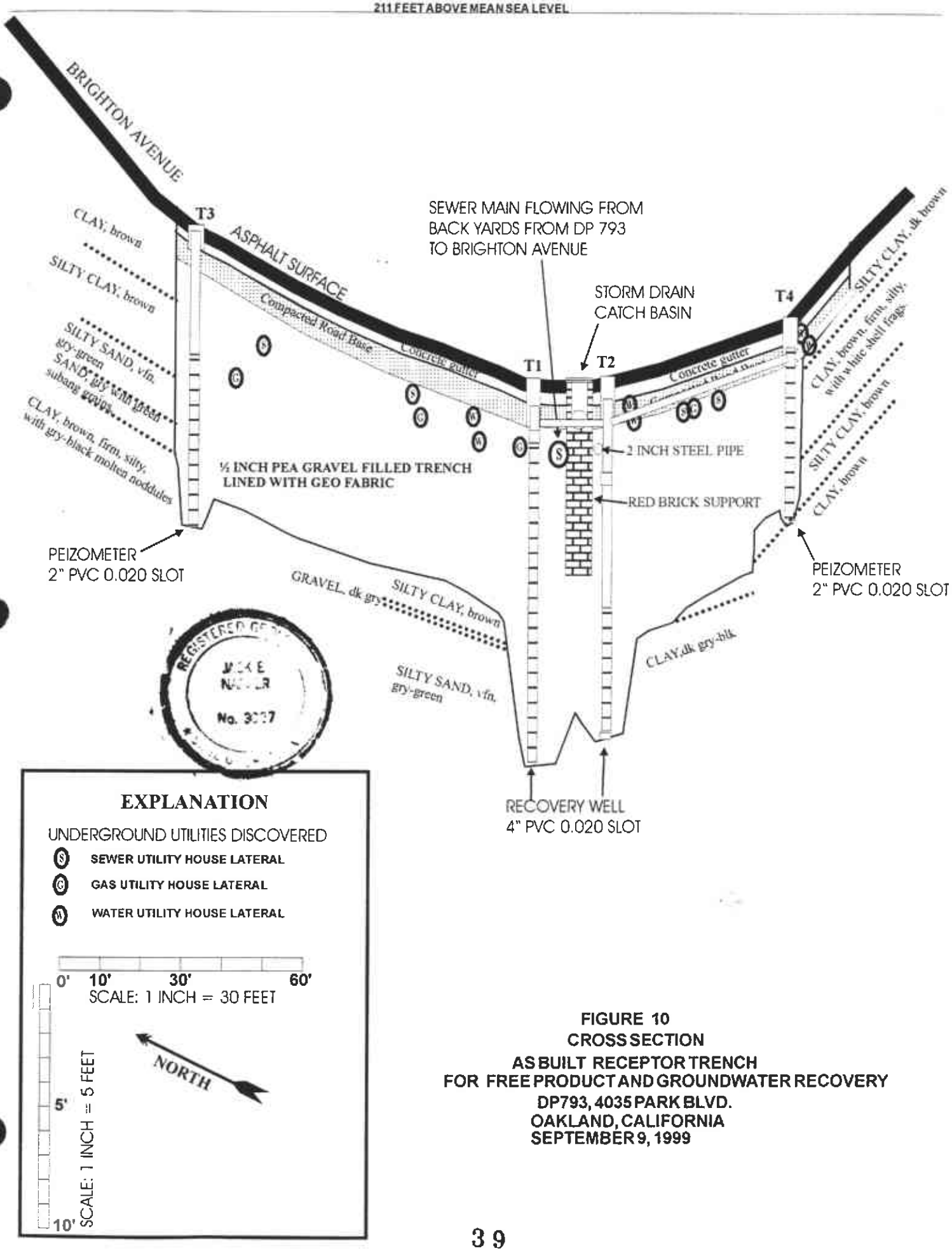


FIGURE 10
CROSS SECTION
AS BUILT RECEPTOR TRENCH
FOR FREE PRODUCT AND GROUNDWATER RECOVERY
DP793, 4035 PARK BLVD.
OAKLAND, CALIFORNIA
SEPTEMBER 9, 1999

APPENDIX A

QA/QC
METHODS
&
PROCEDURES

APPENDIX A.

METHODS AND PROCEDURES, QA/QC

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

Gauging and Measuring Monitor Wells.

Prior to sampling a well, WEGE personnel obtain two measurements: the depth to ground water and the product thickness using a battery powered depth to water-product interface probe and or by using a specially designed bailer. The 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 calibrated in 0.01 foot intervals for accuracy to 0.01 foot, that is attached to the probe. The measured distance is subtracted from the established elevation at the top of casing to determine the elevation of ground water with respect to mean sea level.

The probe is washed with TSP 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.

Purging Standing Water from Monitor Wells

If no product is present, WEGE personnel purge the well. This is accomplished by removing ground water from the well until the water quality parameters (temperature, pH, and conductivity) stabilize, or until the well is emptied of water. Periodic measurements of ground water temperature, pH, and conductivity were taken with a Hydac Monitor or other meter and recorded along with the volume of ground water 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 offsite 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 ground water 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.

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 920
WELL MW1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	14.42 DTB 18.32	
FLUID ELEVATION	215.08	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
927	1 Bailer	66.1	6.78	.18
933	3 gal	68.9	6.74	.20
935	1	68.7	6.57	.21
937	1	68.7	6.45	.21
939	1	68.6	6.44	.21

FINAL VOLUME PURGED	6 gal
TIME SAMPLED	940
SAMPLE ID.	MW1
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~ASE~~ Kiff
NOTES:	1ST Bailer Clear No Odor

2b1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 945
WELL RS-2	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	8.08 DTB 18.4	
FLUID ELEVATION	219.31	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
950	1 Bailer	63.1	7.53	.72
955	12 gal	63.8	7.46	.86
957	1	66.8	7.38	.88
959	1	66.8	7.39	.88

FINAL VOLUME PURGED	14 gal
TIME SAMPLED	1000
SAMPLE ID.	RS-2
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1ST Bailer stained No Odor

2 of 1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1034
WELL RS-5	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	14.8 DTB 39.2	
FLUID ELEVATION	~~213.61~~ 212.81	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1036	1 Bailer	63.8		.52
1050	70 gal	63.7	7.75	.48
1052	1	65.2	7.61	.37
1054	1	66.0	7.51	.37
1056	1	65.9	7.50	.37

FINAL VOLUME PURGED	73 gal
TIME SAMPLED	1105
SAMPLE ID.	RS-5
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~ASE~~ Kiff
NOTES:	1ST Bailer Turbid Some Odor

2 of 1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1002
WELL RS-6	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	11.08 DTB 34.02	
FLUID ELEVATION	216.14	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD				
TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1004	1 Bailer	69.4	7.61	50
1013	40 gal	64.7	7.22	48
1015	1	65.5	7.24	.50
1017	1	65.7	7.24	.50

FINAL VOLUME PURGED	42 gal
TIME SAMPLED	1018
SAMPLE ID.	RS-6
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NOSE~~ Kiff
NOTES:	1ST Bailer Stained NO Odor

7b1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1210
WELL RS7	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	3.91 DTB 7.0	
FLUID ELEVATION	192.08	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1221	1 Bailer	64.0	7.18	.35
1223	8 gal	64.2	7.15	.34
1228	1	64.6	7.09	.35
1229	1	64.4	7.10	.35

FINAL VOLUME PURGED	10 gal
TIME SAMPLED	1230
SAMPLE ID.	RS7
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ K.J.
NOTES:	1ST Bailer Turbid Strong Odor

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1146
WELL RS8	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	[redacted] 7.69 DTB 14.4	
FLUID ELEVATION	206.98	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1148	1 Bailer	63.1	7.52	.39
1149	1 gal	63.7	7.45	.40
1150	1	64.2	7.36	.41
1151	1	64.3	7.34	.41

FINAL VOLUME PURGED	3 gal
TIME SAMPLED	1152
SAMPLE ID.	RS8
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1st Bailer silty slight odor

2 of 1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1206
WELL RS9	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	4.99 DTB 12.3	
FLUID ELEVATION	~~TOC~~ 190.64	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1206	1 Bailer	63.2	7.58	.38
1209	4 gal	65.7	7.49	.36
1210	1	64.1	7.41	.36
1211	1	64.3	7.40	.36

FINAL VOLUME PURGED	6 gal
TIME SAMPLED	1212
SAMPLE ID.	RS9
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~ASE~~ Kiff
NOTES:	1ST Bailer Silty No Odor

2b.

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1200
WELL RS10	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	2.29 DTB 9.6	
FLUID ELEVATION	206.17	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1201	1 Bailer	63.5	7.77	.30
1202	4 gal	63.7	7.67	.29
1203	1	63.9	7.58	.29
1204	1	64.0	7.59	.29

FINAL VOLUME PURGED	3 gal
TIME SAMPLED	1205
SAMPLE ID.	RS10
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1ST Bailer Silty Strong Odor

2b.

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1110
WELL R1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	10.86 DTB 16.92	
FLUID ELEVATION	216.83	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1112	1 Bailer	62.2	7.42	.15
1118	24 gal	64.1	7.66	.15
1120	1	64.2	7.52	.15
1122	1	64.1	7.43	.15
1124	1	64.1	7.42	1.5

FINAL VOLUME PURGED	27 gal
TIME SAMPLED	1125
SAMPLE ID.	R1
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1ST Bailer Clear Some Odor

2 to 1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1020
WELL R2	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	11.32 DTB 16.8	
FLUID ELEVATION	215.96	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1022	1 Bailer	64.0	7.23	.64
1027	16 gal	64.1	7.19	.66
1029	1	64.2	7.20	.66

FINAL VOLUME PURGED	17 gal
TIME SAMPLED	1030
SAMPLE ID.	R2
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSC~~ Kiff
NOTES:	1ST Bailer Clear No Odor

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 2-19-02	TIME 1127
WELL R3	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	7.86 DTB 11.74	
FLUID ELEVATION	219.39	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1128	1 Bailer	64.4	7.03	.60
1134	12 gal	65.6	7.02	.65
1136	1	65.1	7.08	.75
1138	1	66.0	7.19	.76
1140	1	66.1	7.20	.76

FINAL VOLUME PURGED	15 gal
TIME SAMPLED	1141
SAMPLE ID.	R3
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1ST Bailer Clear Slight odor

2b1

GEO-ENGINEERS
(916) 668-5300, FAX (916) 662-0273

WELL SAMPLING DATA SHEET

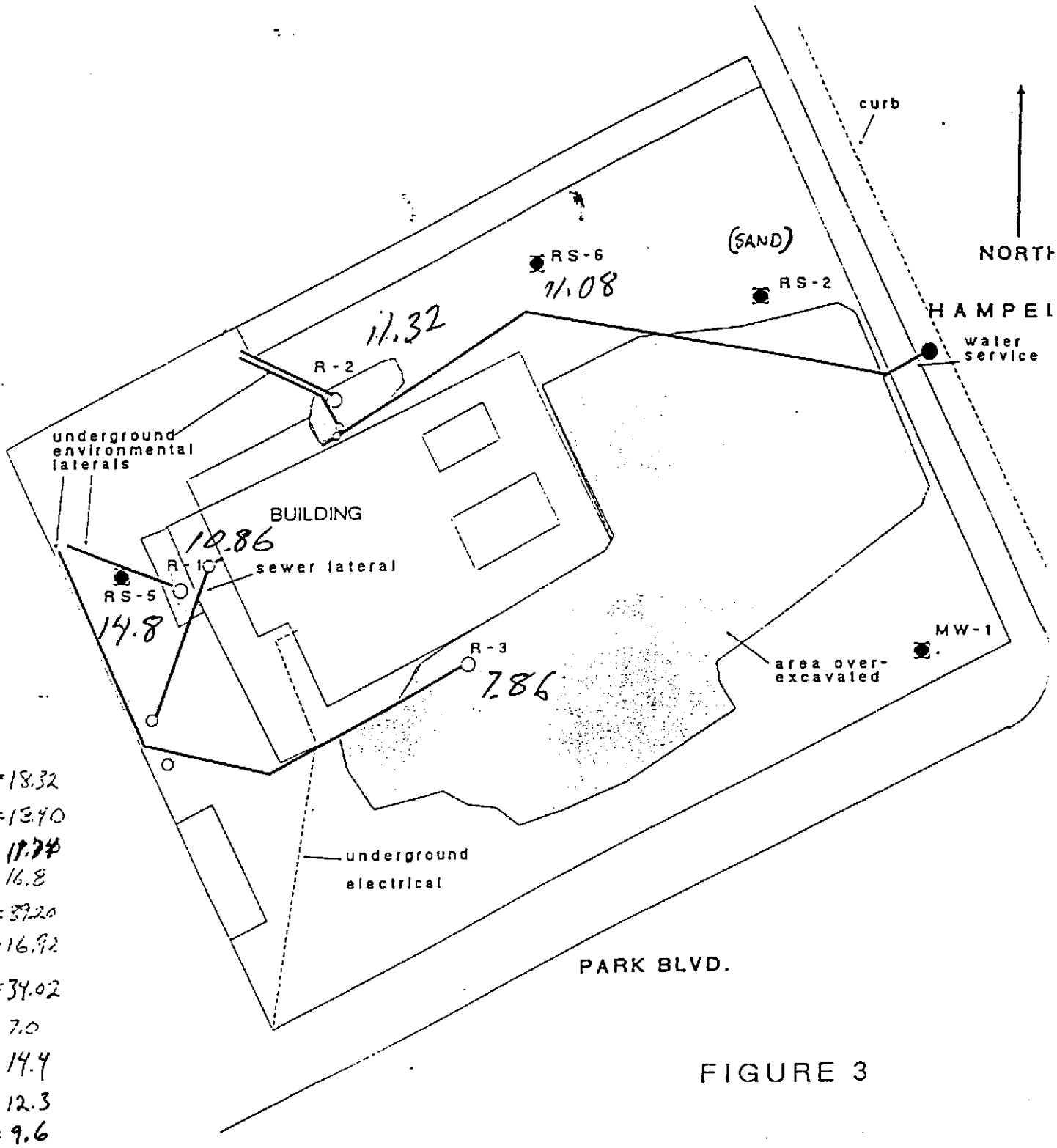
SITE OP 793	DATE 2-19-02	TIME
WELL T1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	1.96 DTB 14.4	
FLUID ELEVATION	193.15	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
	1 Bailer	62.7	7.51	.52
	30 gal	63.5	7.44	.67
		64.1	7.39	.68
		64.2	7.37	.68

FINAL VOLUME PURGED	30 gal
TIME SAMPLED	12:35
SAMPLE ID.	T1
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	~~NSE~~ Kiff
NOTES:	1ST Bailer Turbid Strong Odor

2b1



MW1 = 18.32
RS2 = 13.40
R3 = 11.74
R2 = 16.8
RS5 = 37.20
R1 = 16.92
RS6 = 34.02
RS7 = 7.0
RS8 = 14.4
RS9 = 12.3
RS10 = 9.6

FIGURE 3

SITE BASE MAP

0' 20' 40'

SCALE: 1" = 20'.

DESERT PETROLEUM STATION #793
4035 PARK BLVD.,
OAKLAND, CALIFORNIA 94602

30 + 113 → 24 Approved

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. ________ Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George [illegible]

Company/Address: 1386 E. Beamer St. Woodland

Phone No.: 530 668 5300

FAX No.: 530 [illegible]

Project Number: DP793

P.O. No.:

Project Address: [illegible] Park Blvd [illegible]

Project Name: DP793

EDF Report? ☐ Yes ☐ No

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Global ID:

EDF Deliverable To (Email Address): [illegible]

Sampler Signature: [signature]

Analysis Request

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE				Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)					TAT 12 hr/24 hr/48 hr/72 hr/wk	For Lab Use Only
R1	2/19/02	1125	3					✓		✓		✓						✓														
R2	✓	1030	✓					✓		✓		✓						✓														
R3	✓	1141	✓					✓		✓		✓						✓														
MW1	✓	940	✓					✓		✓		✓						✓														
~~R2~~ RS2	✓	1000	✓					✓		✓		✓						✓														
RS5	✓	1105	✓					✓		✓		✓						✓														
RS6	✓	1218	✓					✓		✓		✓						✓														
RS7	✓	1230	✓					✓		✓		✓						✓														
RS8	✓	1202	✓					✓		✓		✓						✓														
RS9	✓	1221	✓					✓		✓		✓						✓														

TAT: wk (circled)

Relinquished by:	Date	Time	Received by:
[signature]	2/21/02	1155	
	022102	1605	Received by Laboratory: [signature] / KIFF ANALYTICAL

Remarks:

Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9

KIFF ANALYTICAL LLC
720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. _____ Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George Conniff

Company/Address: 1356 E. Kemper

Phone No.: 530-662-5302 FAX No.:

Project Number: P.O. No:

Project Address: 4035 Park Blvd

Project Name: DP 793

EDF Report? ☐ Yes ☐ No

Recommended but not mandatory to complete this section:

Sampling Company Log Code: - - -

Global ID: - - - - - - - - - - -

EDF Deliverable To (Email Address):

Sampler Signature: [signature]

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Container:	Container:	Container:	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Preservative:	Matrix: WATER	Matrix: SOIL	Matrix:
RS10	2/19/03	1212	3												
T1	"	1235	3												
Carlton Discharge	"	1120	3												

Analysis Request

BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)					TAT: 12 hr/24 hr/48 hr/72 hr/1 wk	For Lab Use Only

Relinquished by:	Date	Time	Received by:
[signature]	2/21/03	1605	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	022103	1605	Luis A. Zuniga / KIFF ANALYTICAL

Remarks:

Bill to:

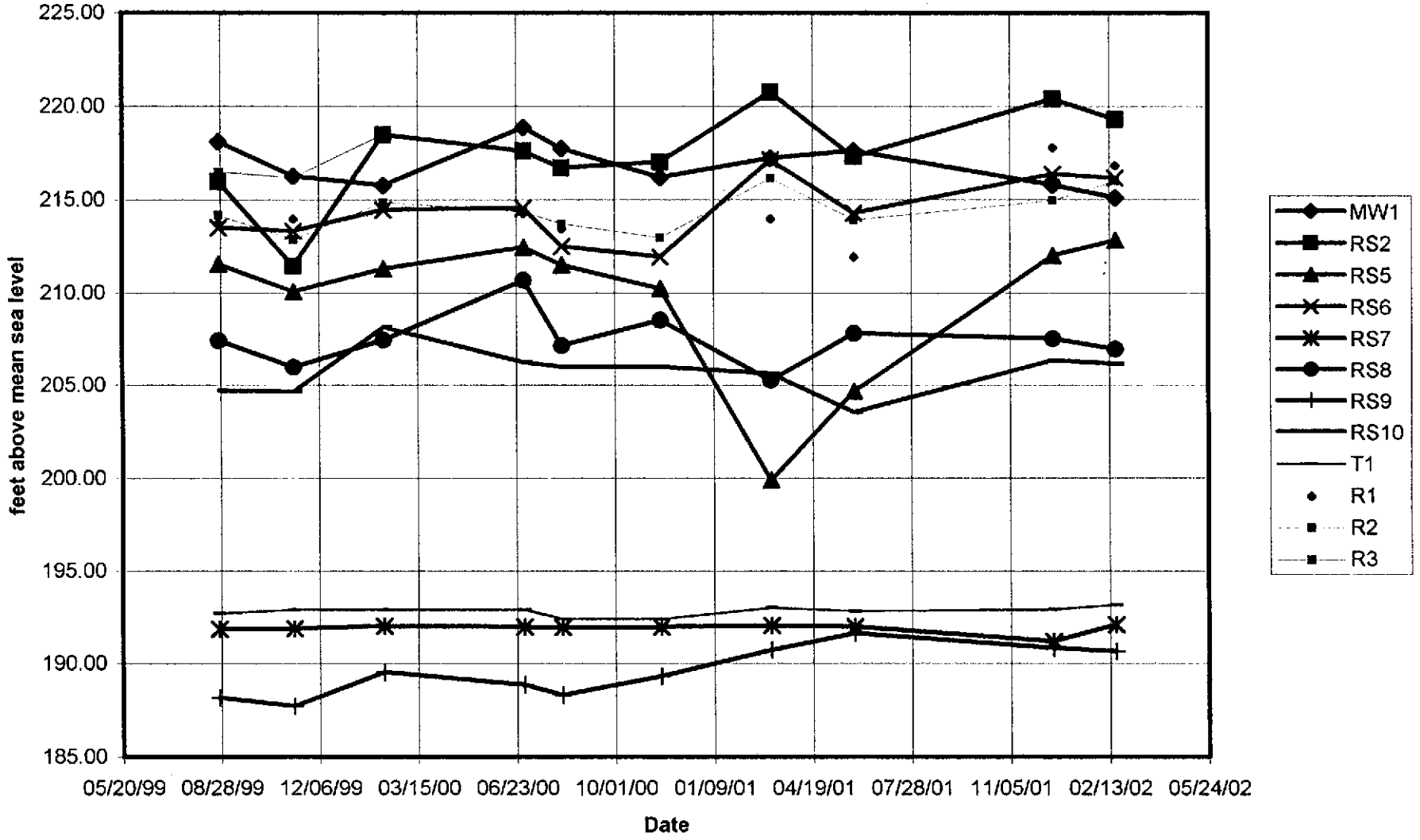
Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9

APPENDIX B.

GROUNDWATER ELEVATION CHART

Groundwater Elevation



KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

George Converse
Western Geo-Engineers
1386 East Beamer St.
Woodland, CA 95776

Subject : 13 Water Samples
Project Name : DP793
Project Number : DP793

Dear Mr. Converse,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Subject : 13 Water Samples
Project Name : DP793
Project Number : DP793

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples R1, R3, RS8, RS6, RS10, CARBON DISCHARGE, MW1, RS2, RS9, T1, RS5, RS7, R2 for the analytes Benzene, Toluene were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **R1** Matrix : Water Lab Number : 24919-01
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/3/02

Sample : **R2** Matrix : Water Lab Number : 24919-02
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1200**	5.0	ug/L	EPA 8260B	3/5/02
Toluene	**< 5.0**	5.0	ug/L	EPA 8260B	3/5/02
Ethylbenzene	**14**	5.0	ug/L	EPA 8260B	3/5/02
Total Xylenes	**< 5.0**	5.0	ug/L	EPA 8260B	3/5/02
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	3/5/02
TPH as Gasoline	**2100**	500	ug/L	EPA 8260B	3/5/02
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	3/5/02
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	3/5/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **R3** Matrix : Water Lab Number : 24919-03
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/3/02

Sample : **MW1** Matrix : Water Lab Number : 24919-04
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/4/02
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	3/4/02
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	3/4/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **RS2** Matrix : Water Lab Number : 24919-05
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/4/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/4/02
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	3/4/02
4-Bromofluorobenzene (Surr)	98.5		% Recovery	EPA 8260B	3/4/02

Sample : **RS5** Matrix : Water Lab Number : 24919-06
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**460**	5.0	ug/L	EPA 8260B	3/5/02
Toluene	**1700**	5.0	ug/L	EPA 8260B	3/5/02
Ethylbenzene	**680**	5.0	ug/L	EPA 8260B	3/5/02
Total Xylenes	**4000**	5.0	ug/L	EPA 8260B	3/5/02
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	3/5/02
TPH as Gasoline	**22000**	500	ug/L	EPA 8260B	3/5/02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	3/5/02
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	3/5/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **RS6** Matrix : Water Lab Number : 24919-07
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**0.60**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	3/3/02

Sample : **RS7** Matrix : Water Lab Number : 24919-08
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2600**	10	ug/L	EPA 8260B	3/5/02
Toluene	**360**	10	ug/L	EPA 8260B	3/5/02
Ethylbenzene	**570**	10	ug/L	EPA 8260B	3/5/02
Total Xylenes	**1900**	10	ug/L	EPA 8260B	3/5/02
Methyl-t-butyl ether (MTBE)	**11**	10	ug/L	EPA 8260B	3/5/02
TPH as Gasoline	**20000**	1000	ug/L	EPA 8260B	3/5/02
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	3/5/02
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	3/5/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **RS8** Matrix : Water Lab Number : 24919-09
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**33**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**21**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**5.1**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**45**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**780**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	3/3/02

Sample : **RS9** Matrix : Water Lab Number : 24919-10
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	3/3/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **RS10** Matrix : Water Lab Number : 24919-11
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	98.9		% Recovery	EPA 8260B	3/3/02

Sample : **T1** Matrix : Water Lab Number : 24919-12
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**8600**	50	ug/L	EPA 8260B	3/5/02
Toluene	**6000**	50	ug/L	EPA 8260B	3/5/02
Ethylbenzene	**1700**	50	ug/L	EPA 8260B	3/5/02
Total Xylenes	**6800**	50	ug/L	EPA 8260B	3/5/02
Methyl-t-butyl ether (MTBE)	**55**	50	ug/L	EPA 8260B	3/5/02
TPH as Gasoline	**64000**	5000	ug/L	EPA 8260B	3/5/02
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	3/5/02
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/5/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **CARBON DISCHARGE** Matrix : Water Lab Number : 24919-13
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	3/3/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Method Blank Data

Project Name : **DP793**

Project Number : **DP793**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/1/02
Toluene - d8 (Surr)	102		%	EPA 8260B	3/1/02
4-Bromofluorobenzene (Surr)	97.8		%	EPA 8260B	3/1/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **DP793**

Project Number : **DP793**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	24919-09	33	18.7	20.0	41.7	44.3	ug/L	EPA 8260B	3/1/02	44.3	54.2	20.0	70-130	25
Toluene	24919-09	21	18.7	20.0	30.7	33.6	ug/L	EPA 8260B	3/1/02	50.6	62.0	20.1	70-130	25
Tert-Butanol	24919-09	<5.0	93.6	100	87.7	90.6	ug/L	EPA 8260B	3/1/02	93.6	90.5	3.44	70-130	25
Methyl-t-Butyl Ether	24919-09	<0.50	18.7	20.0	18.3	15.6	ug/L	EPA 8260B	3/1/02	97.8	78.0	22.6	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Laboratory Control Sample (LCS)

Project Name : **DP793**

Project Number : **DP793**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	3/2/02	95.6	70-130
Toluene	20.0	ug/L	EPA 8260B	3/2/02	91.3	70-130
Tert-Butanol	100	ug/L	EPA 8260B	3/2/02	88.8	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	3/2/02	97.4	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 24919 Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George Converse
Company/Address: 1386 E. Beamer St. Woodland
Phone No.: 530 668 5300 FAX No.: 530 662 0275
Project Number: DP 793 P.O. No:
Project Address: 4035 Park Blvd Oakland
Project Name: DP 793

EDF Report? ☐ Yes ☐ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address): wege@mother.com
Sampler Signature: SZ Broadway

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	For Lab Use Only
R1	2/19/02	1125	3								-01
R2		1030									-02
R3		1141									-03
MW1		940									-04
~~R2~~ RS2		1000									-05
RS5		1105	VOA								-06
RS6		918 1016									-07
RS7		1230									-08
RS8		1202									-09
RS9		1221									-10

Analysis Request

BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT: 12 hr/24 hr/48 hr/72 hr/ wk

Relinquished by:	Date	Time	Received by:
SZ Broadway	2/21/02	1605	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	022102	1605	Kris A. Kincaid / KIFF ANALYTICAL

Remarks:

Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/co... :001.fm9

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 24919 Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George Converse
Company/Address: 1386 E. Beamer
Phone No.: 530-668-5300 FAX No.:
Project Number: P.O. No:
Project Address: 4035 Park Blvd
Project Name: DP793

EDF Report? ☐ Yes ☐ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Sampler Signature: E2 Broadway

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT: 12 hr/24 hr/48 hr/72 hr/ wk	For Lab Use Only
RS10	2/19/02	1212	3																						-11
TL	"	1235	1																						-12
Carbon Discharge	"	1100																							-13

Relinquished by:	Date	Time	Received by:
E2 Broadway	2/21/02	1605	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	022102	1605	Kris A. Zimmer / KIFF ANALYTICAL

Remarks:

Bill to:

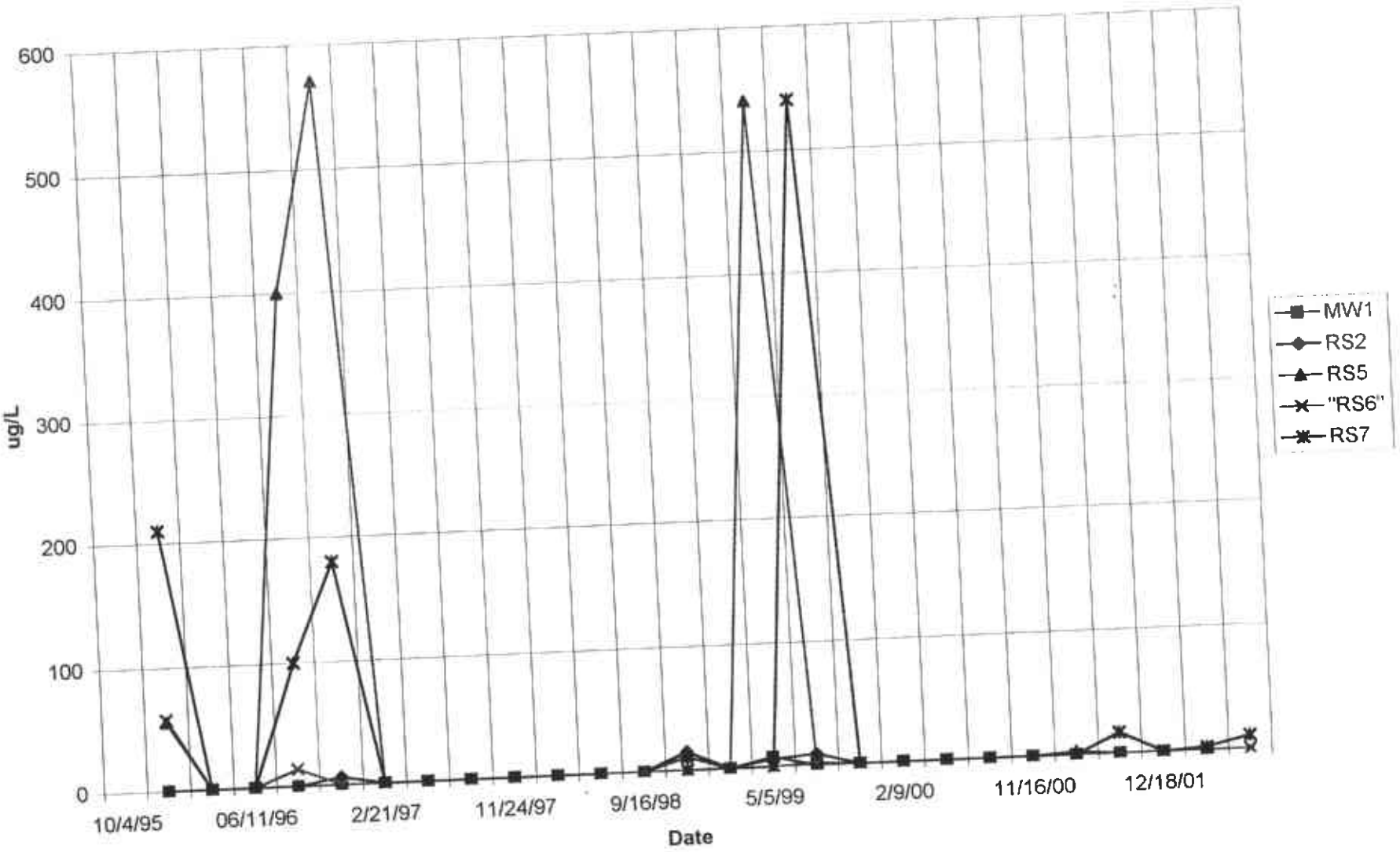
Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9

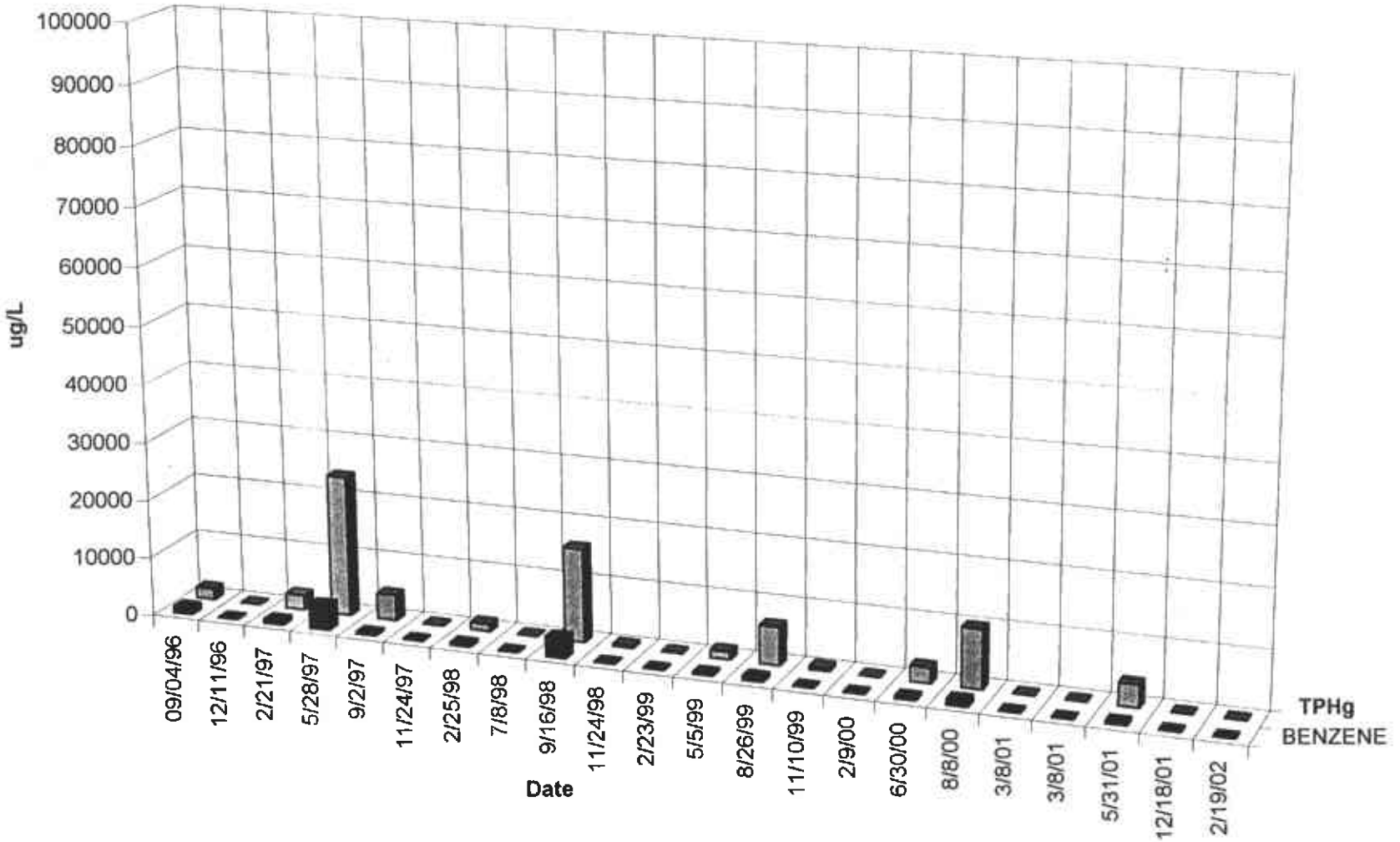
APPENDIX D.

MtBE, TPHg AND BENZENE CHARTS

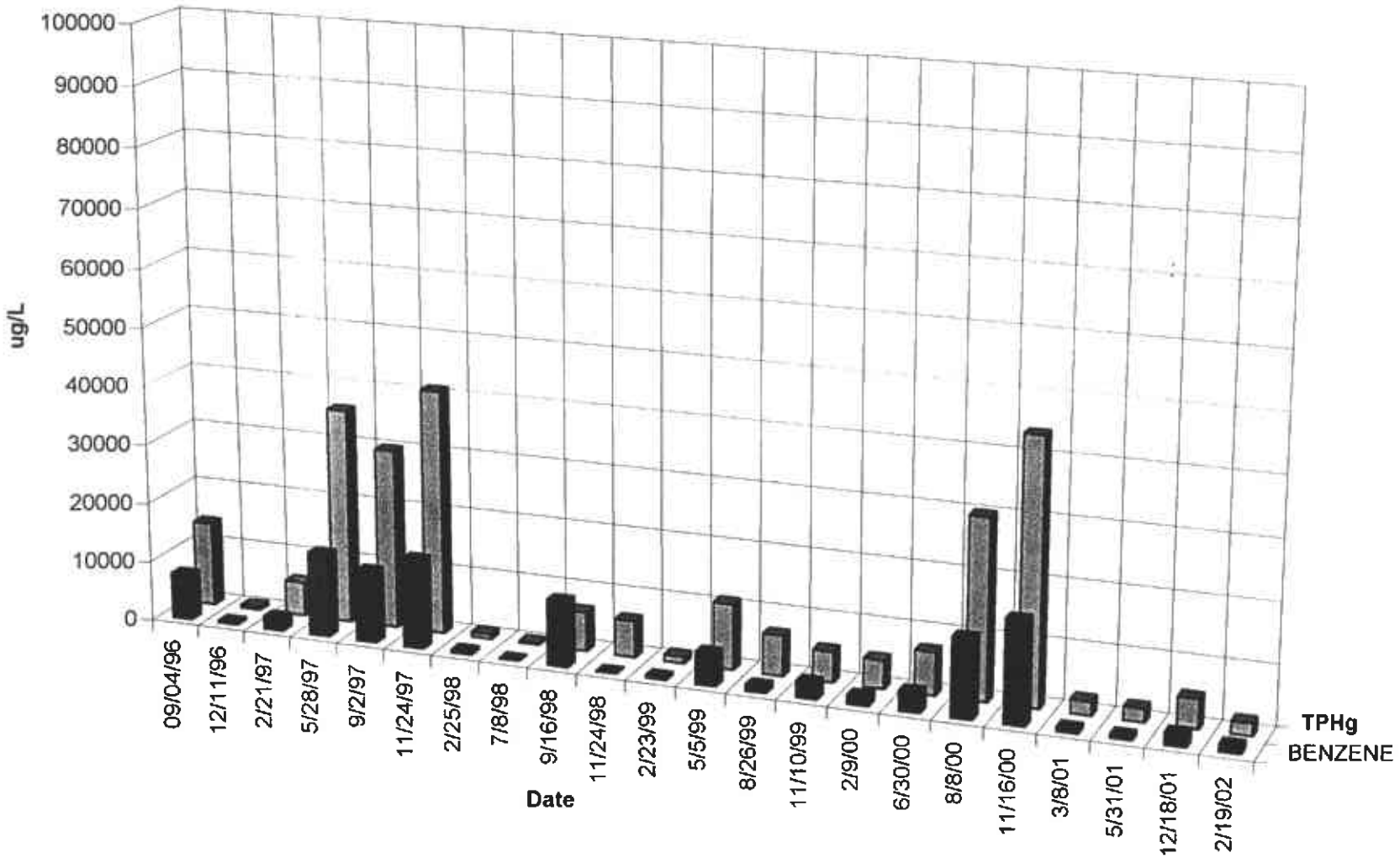
MTBE IN WELLS



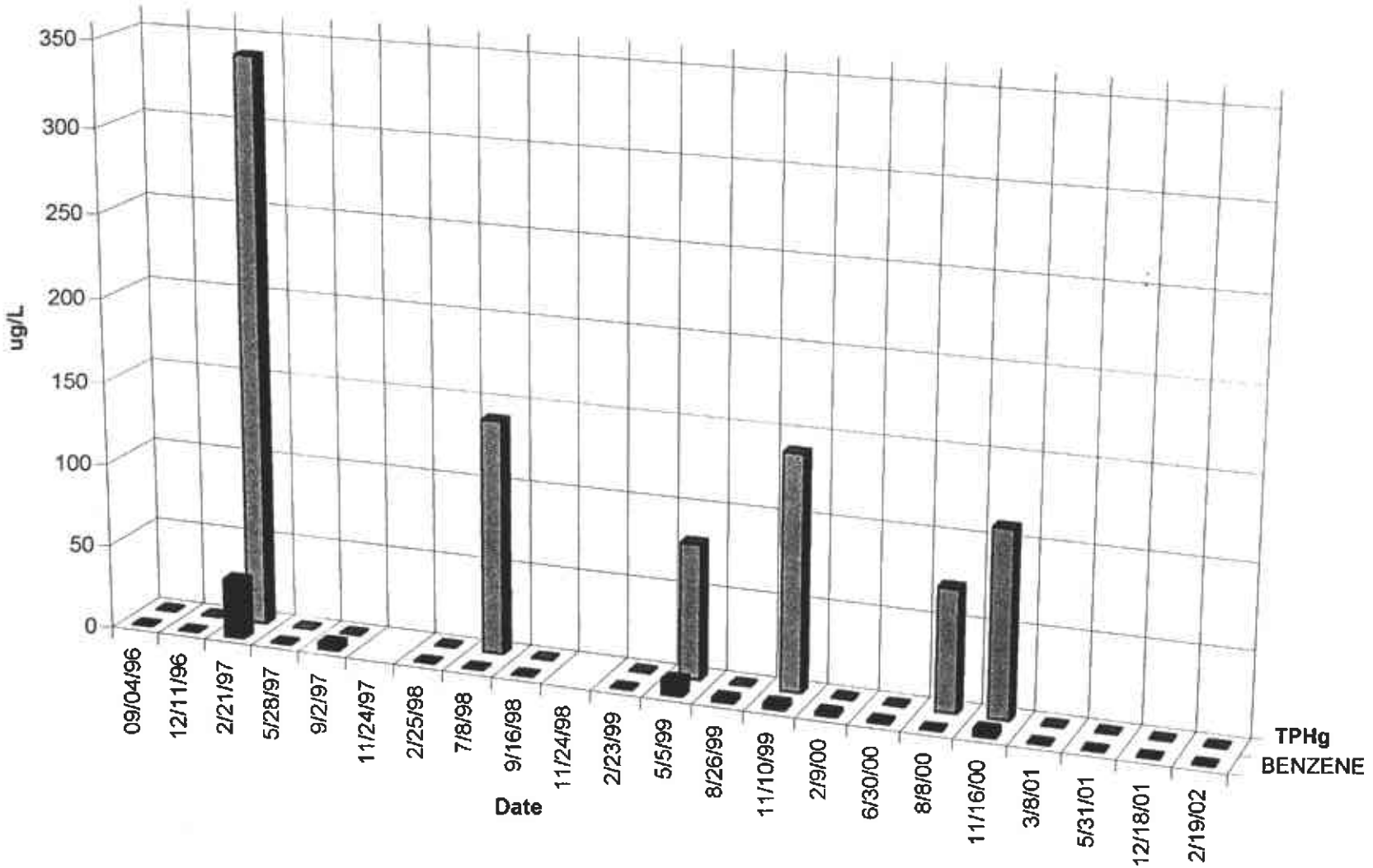
R-1


100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
3/8/01
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

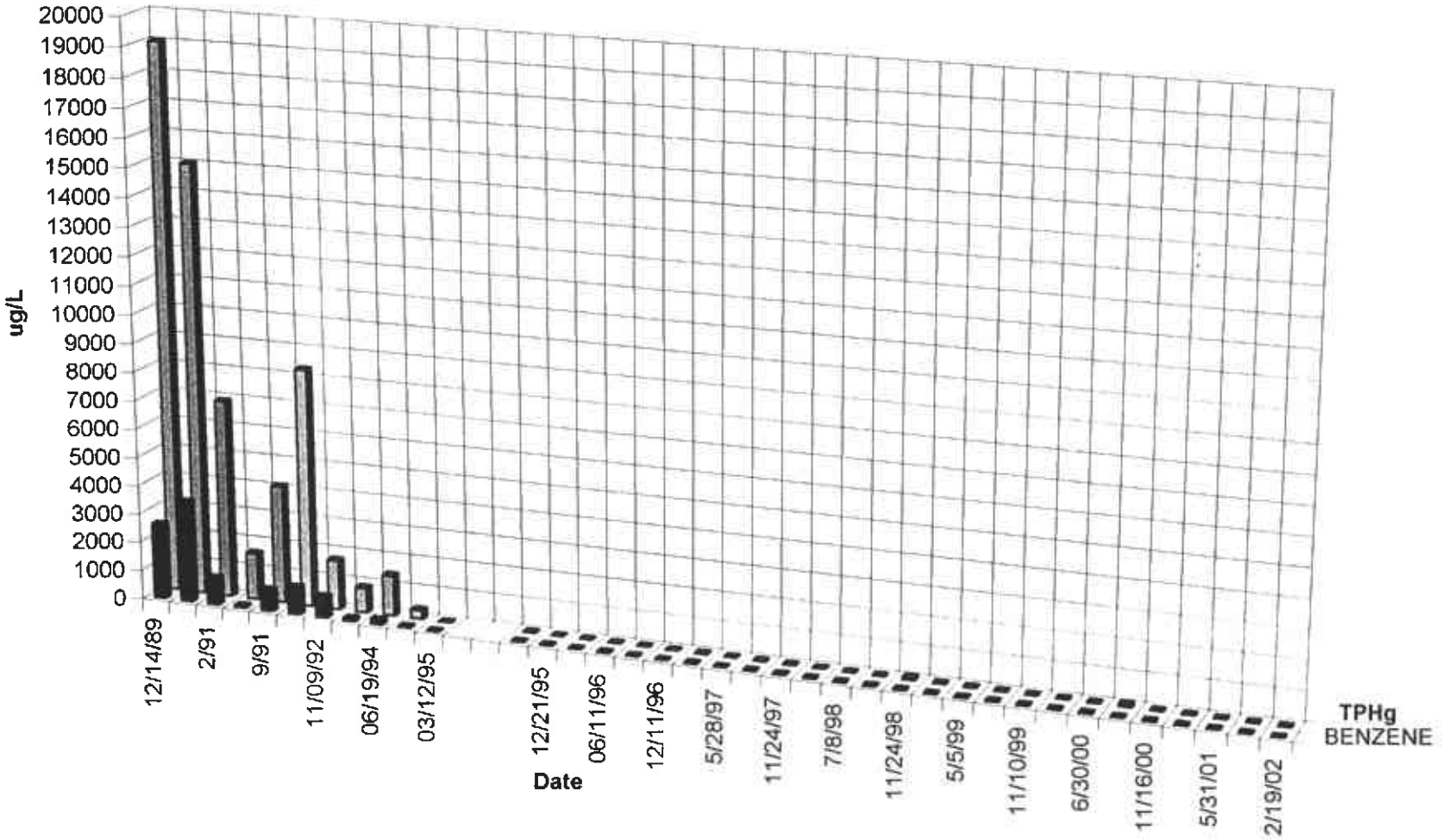
R-2


100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

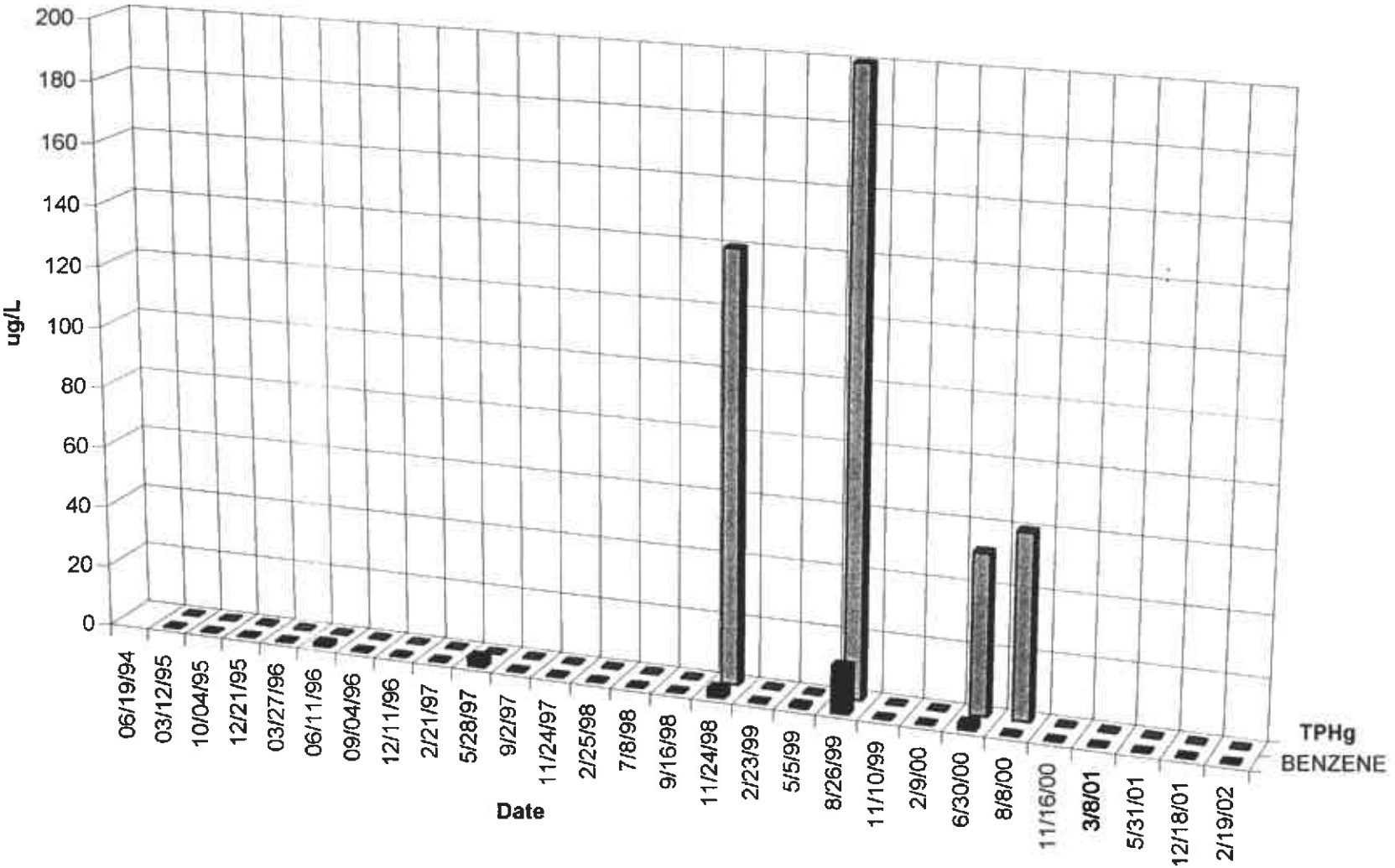
R-3


350
300
250
200
150
100
50
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

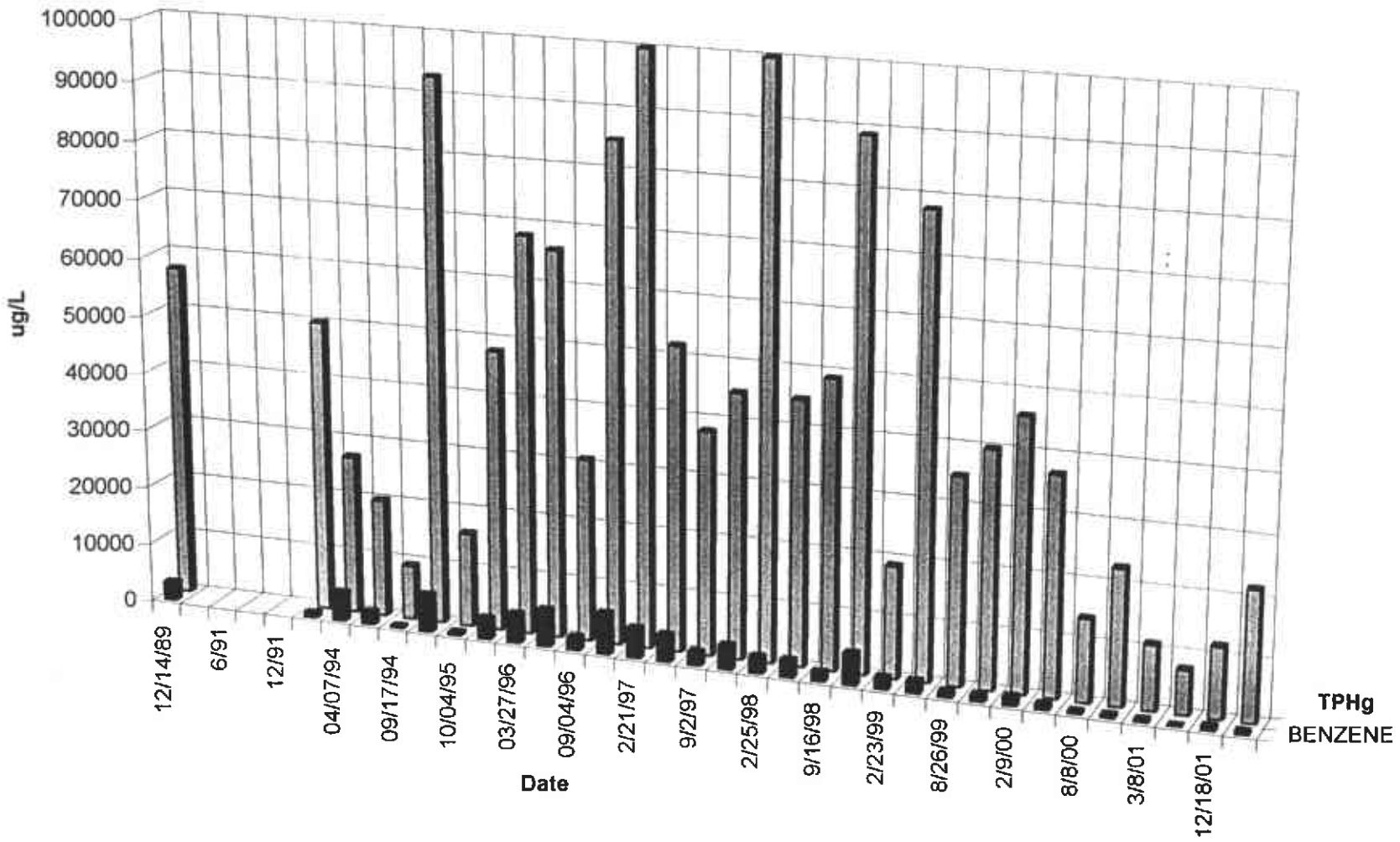
RS-1/MW-1 TPHg


20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
ug/L
12/14/89
2/91
9/91
11/09/92
06/19/94
03/12/95
12/21/95
06/11/96
12/11/96
5/28/97
11/24/97
7/8/98
11/24/98
5/5/99
11/10/99
6/30/00
11/16/00
5/31/01
2/19/02
Date
TPHg
BENZENE

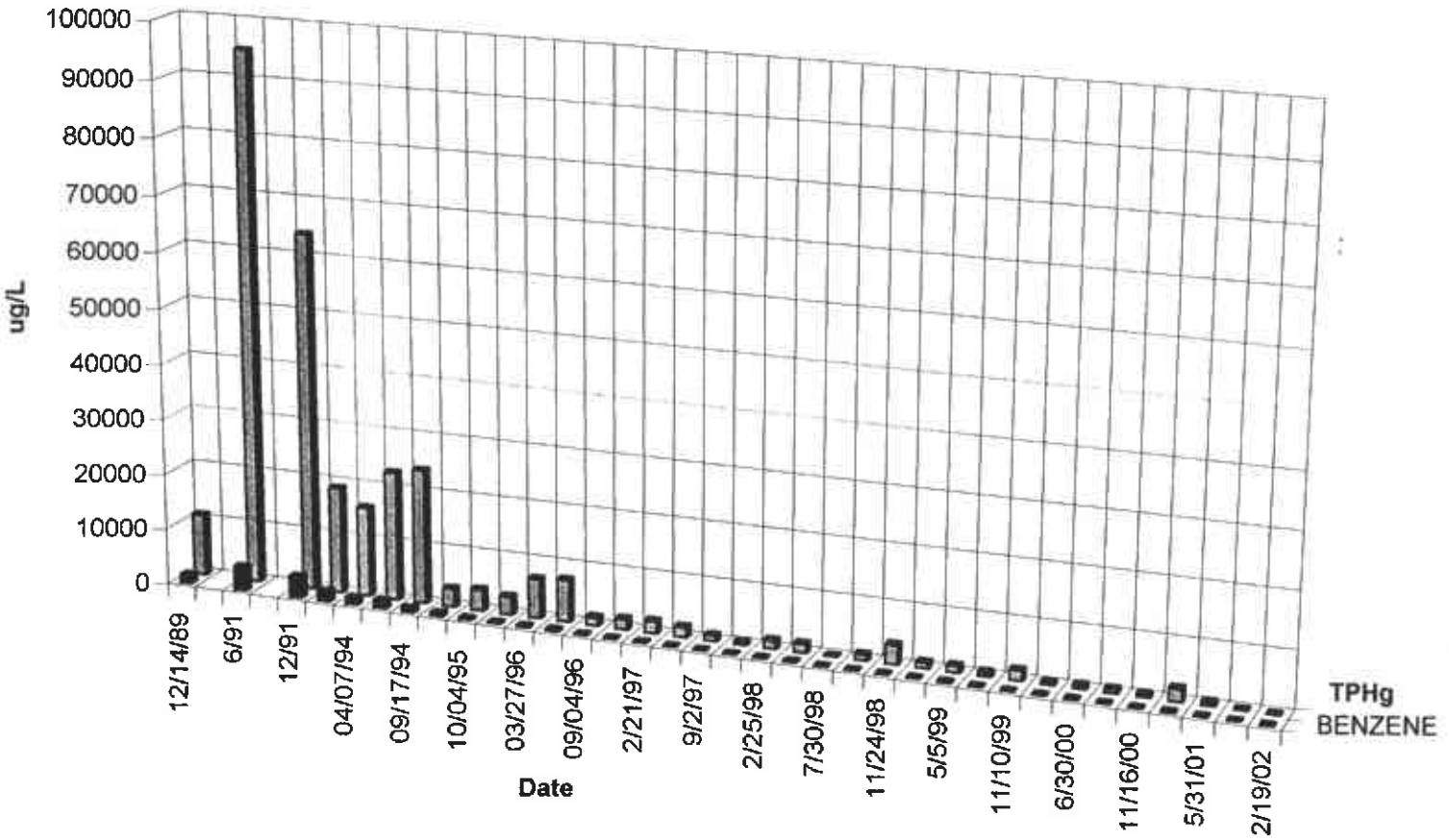
RS-2 TPHg


200
180
160
140
120
100
80
60
40
20
0
ug/L
06/19/94
03/12/95
10/04/95
12/21/95
03/27/96
06/11/96
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

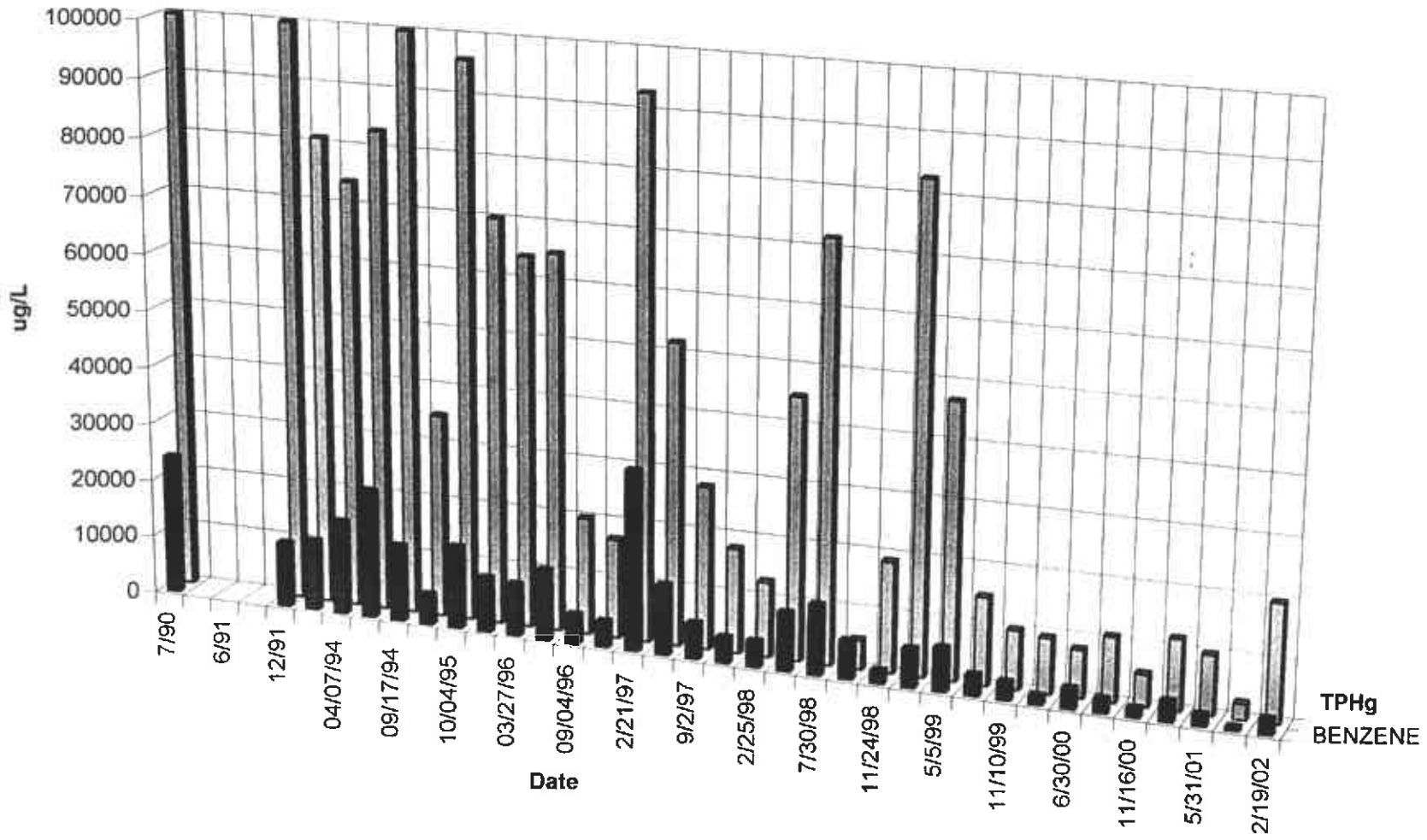
RS-5


100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
12/14/89
6/91
12/91
04/07/94
09/17/94
10/04/95
03/27/96
09/04/96
2/21/97
9/2/97
2/25/98
9/16/98
2/23/99
8/26/99
2/9/00
8/8/00
3/8/01
12/18/01
Date
TPHg
BENZENE

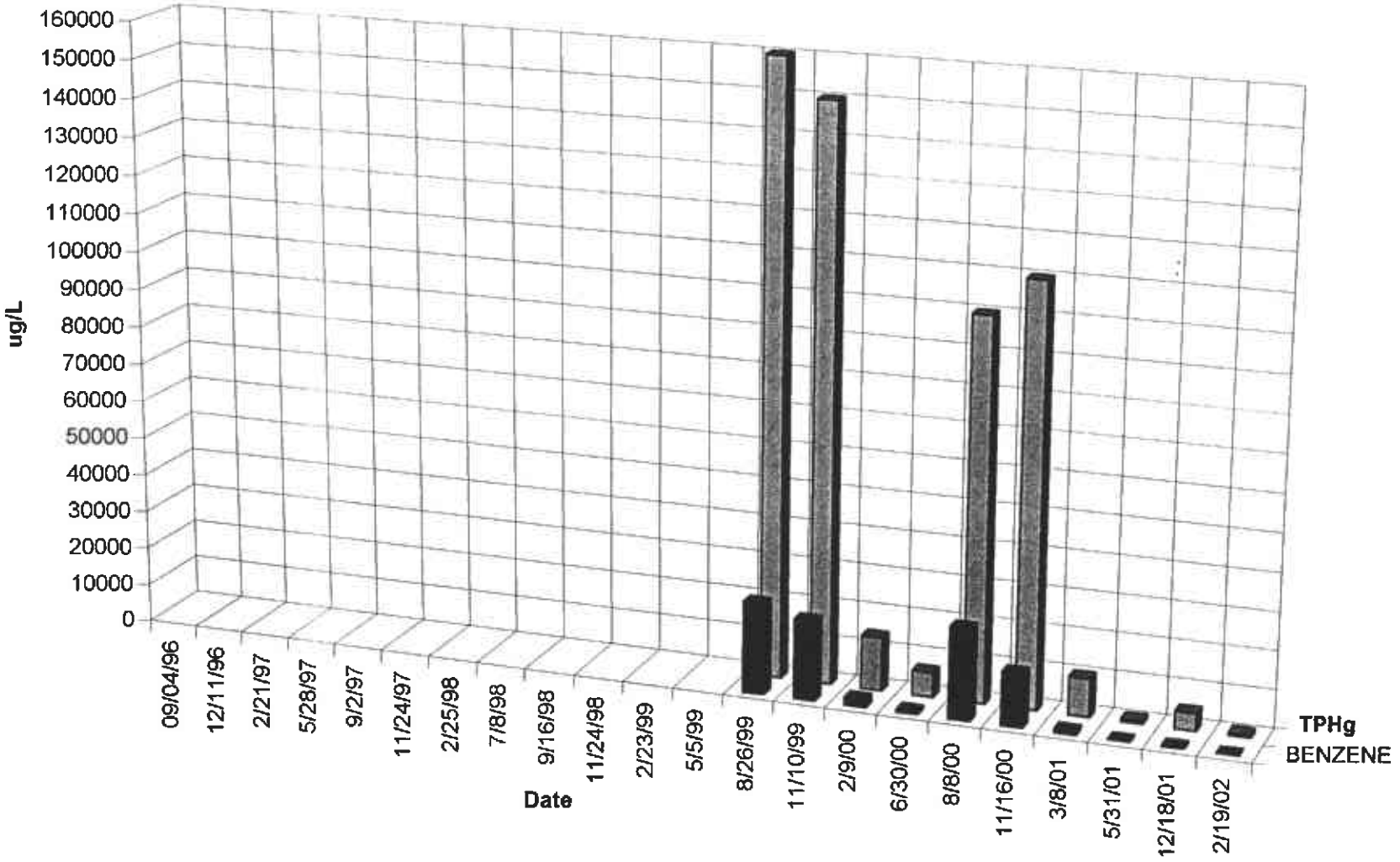
RS-6


100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
12/14/89
6/91
12/91
04/07/94
09/17/94
10/04/95
03/27/96
09/04/96
2/21/97
9/2/97
2/25/98
7/30/98
11/24/98
5/5/99
11/10/99
6/30/00
11/16/00
5/31/01
2/19/02
Date
TPHg
BENZENE

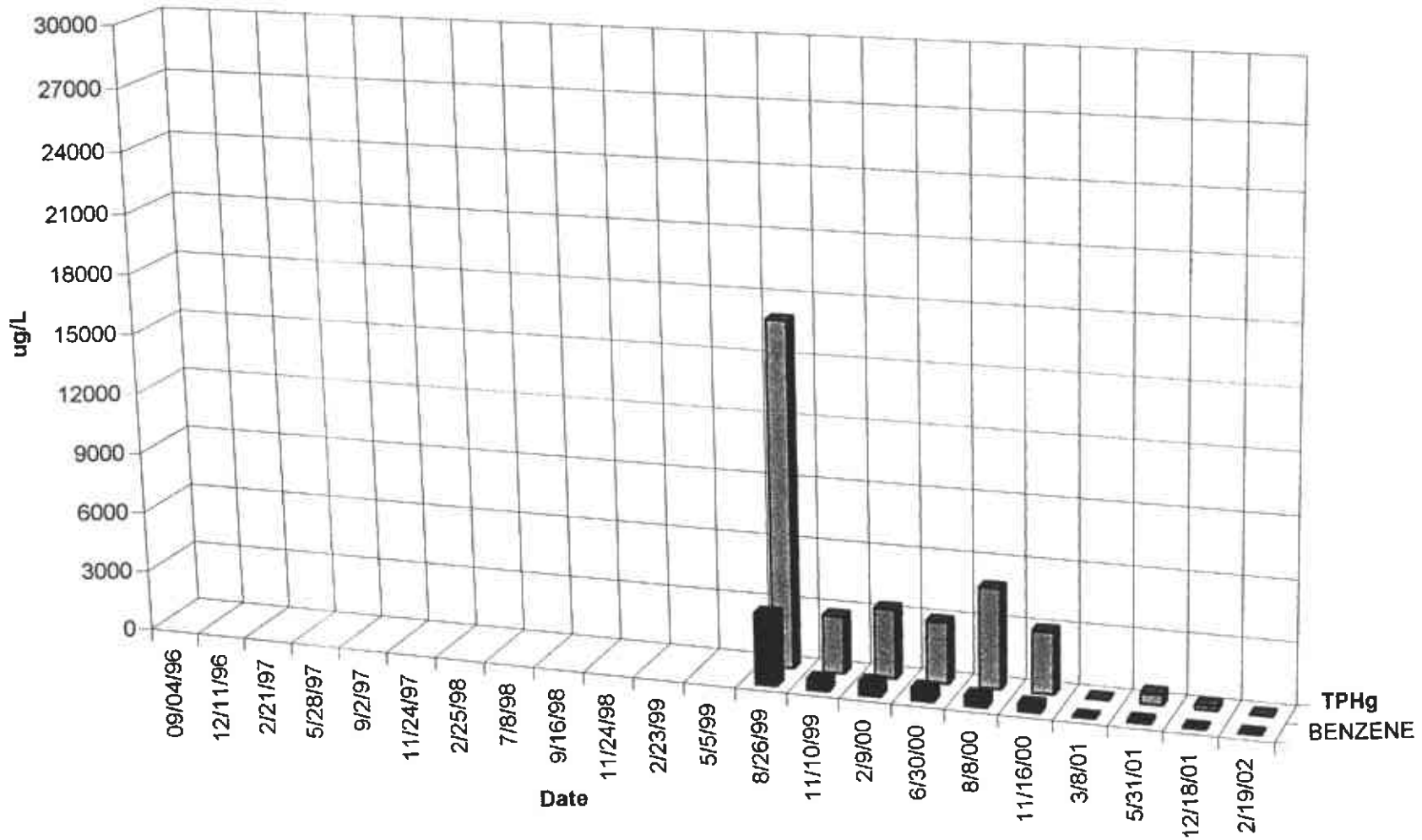
RS-7


100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
7/90
6/91
12/91
04/07/94
09/17/94
10/04/95
03/27/96
09/04/96
2/21/97
9/2/97
2/25/98
7/30/98
11/24/98
5/5/99
11/10/99
6/30/00
11/16/00
5/31/01
2/19/02
Date
TPHg
BENZENE

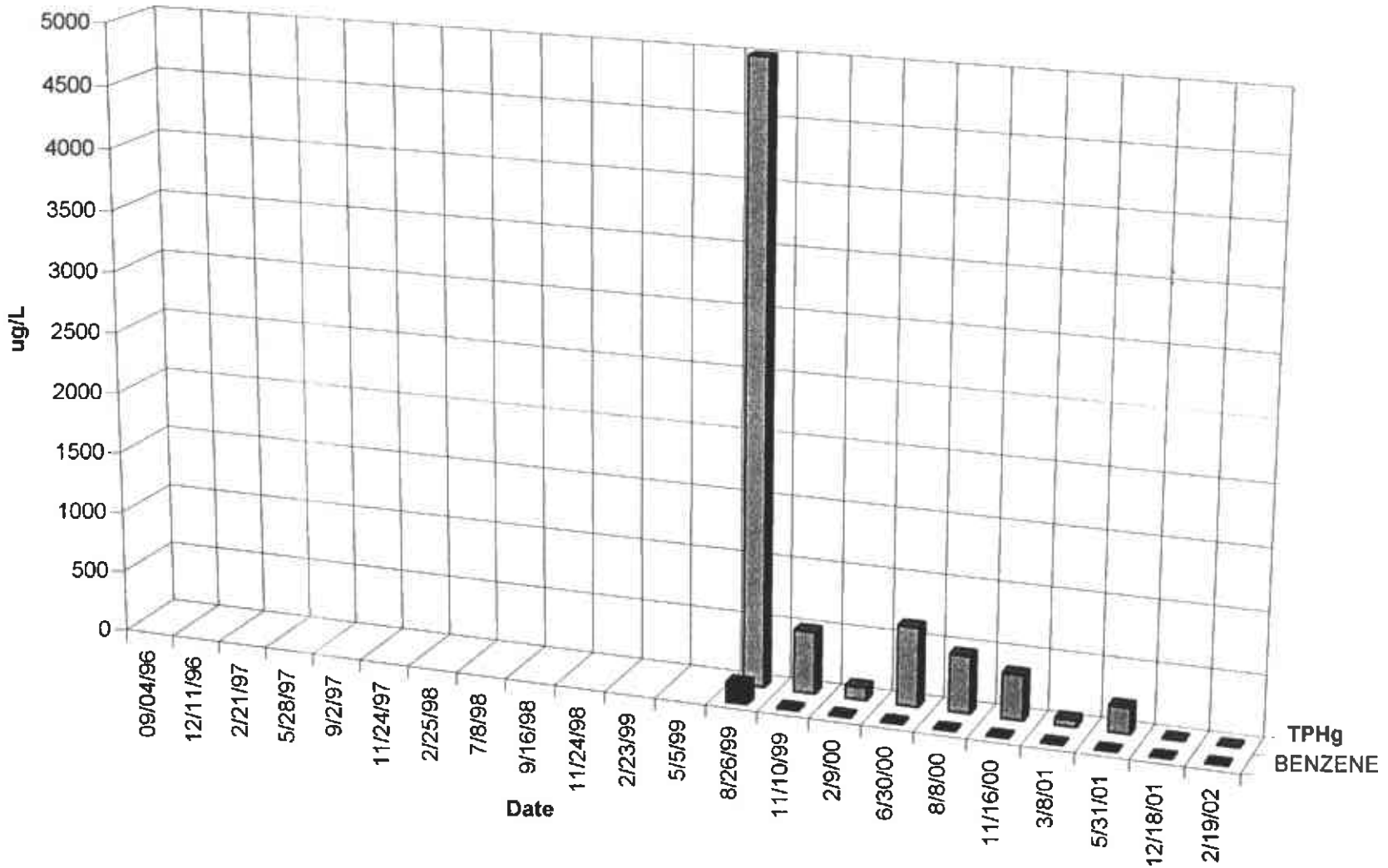
RS-8


160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

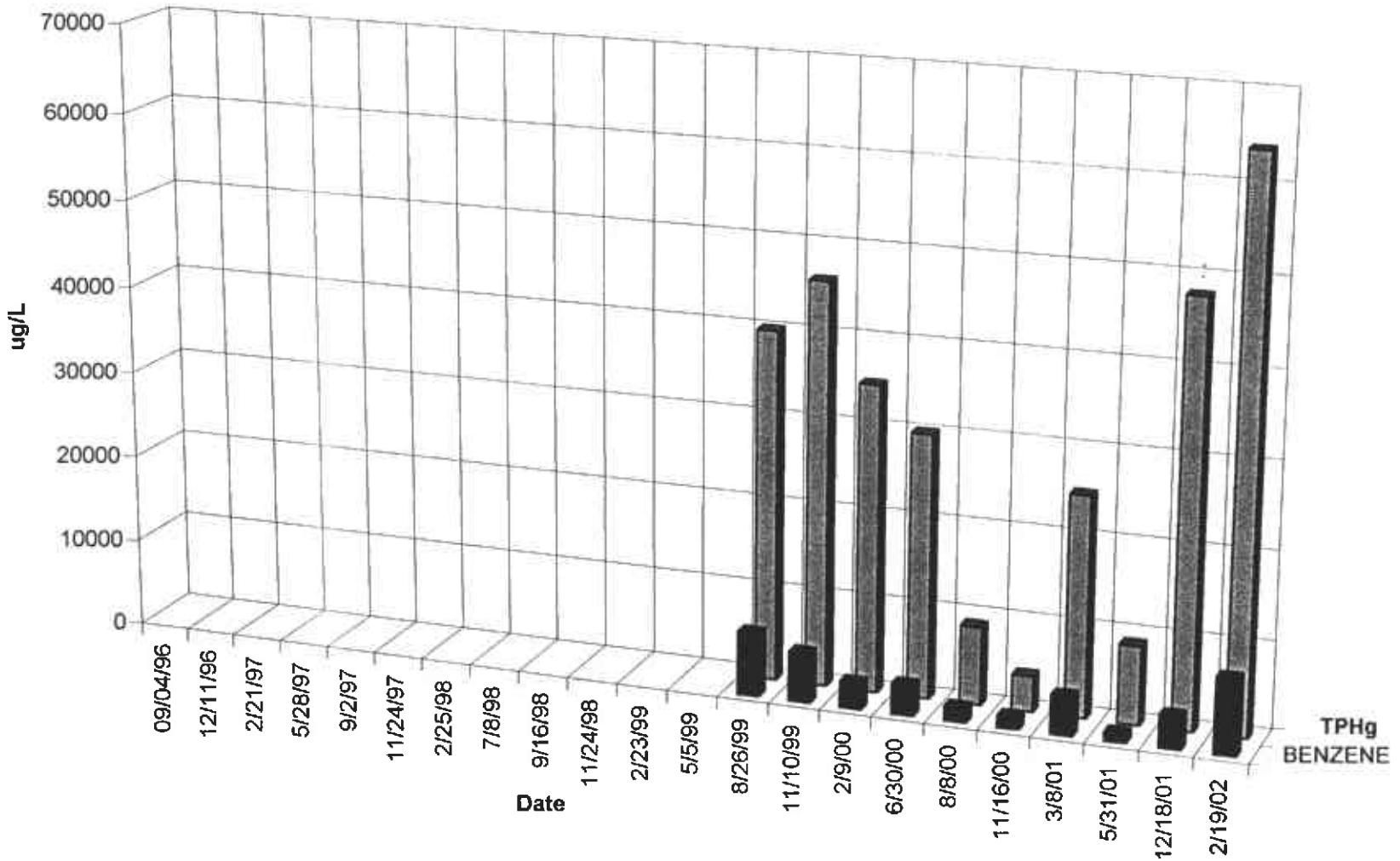
RS-9


30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

RS-10


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

T-1


70000
60000
50000
40000
30000
20000
10000
0
ug/L
09/04/96
12/11/96
2/21/97
5/28/97
9/2/97
11/24/97
2/25/98
7/8/98
9/16/98
11/24/98
2/23/99
5/5/99
8/26/99
11/10/99
2/9/00
6/30/00
8/8/00
11/16/00
3/8/01
5/31/01
12/18/01
2/19/02
Date
TPHg
BENZENE

APPENDIX E

HACH SPECTROPHOTOMETER
FIELD TEST METHODS
FIGURES
DISSOLVED OXYGEN
SULFATE
NITRATE
FERROUS IRON

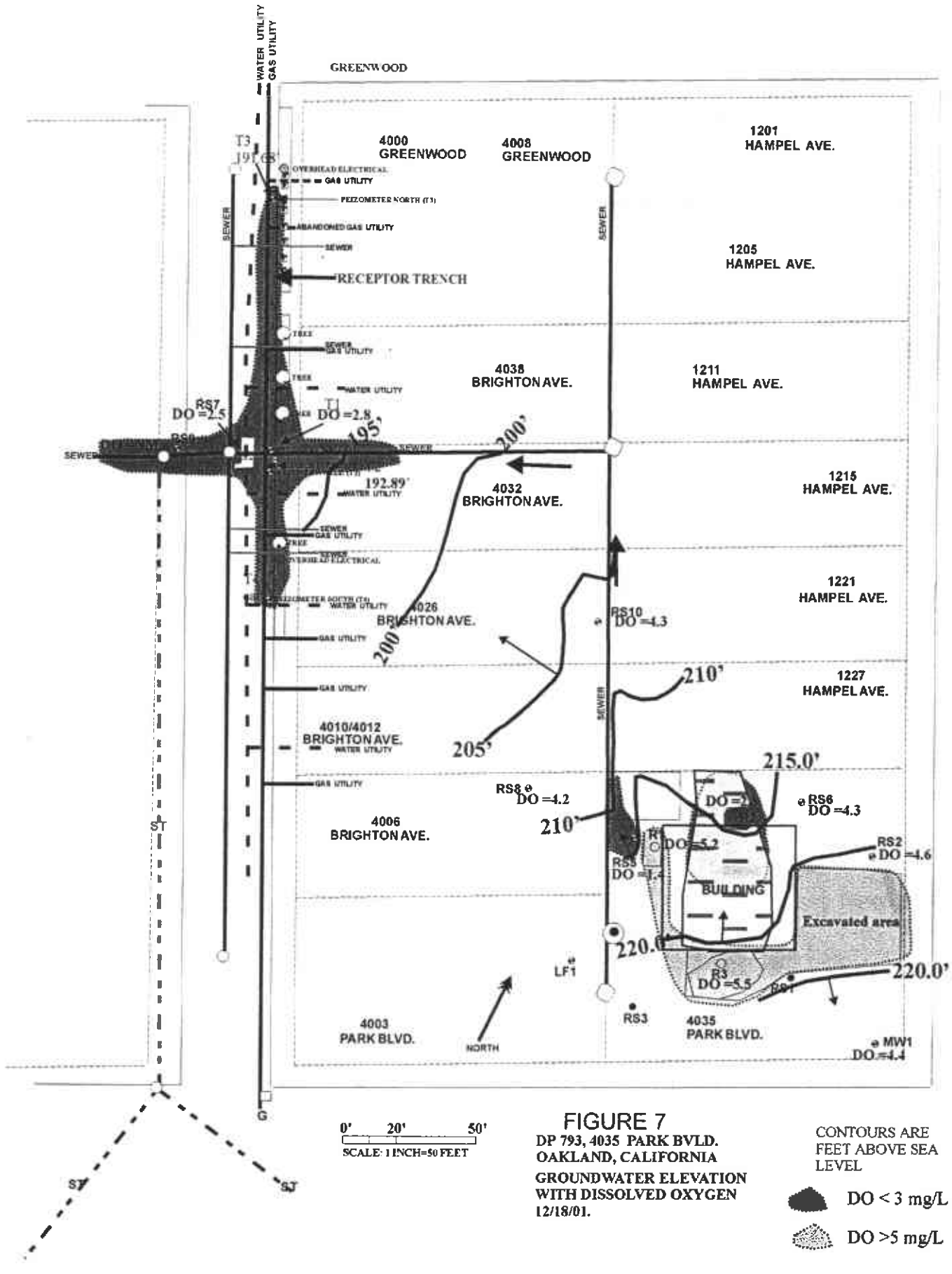


FIGURE 7

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION WITH DISSOLVED OXYGEN 12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

DO < 3 mg/L

DO >5 mg/L

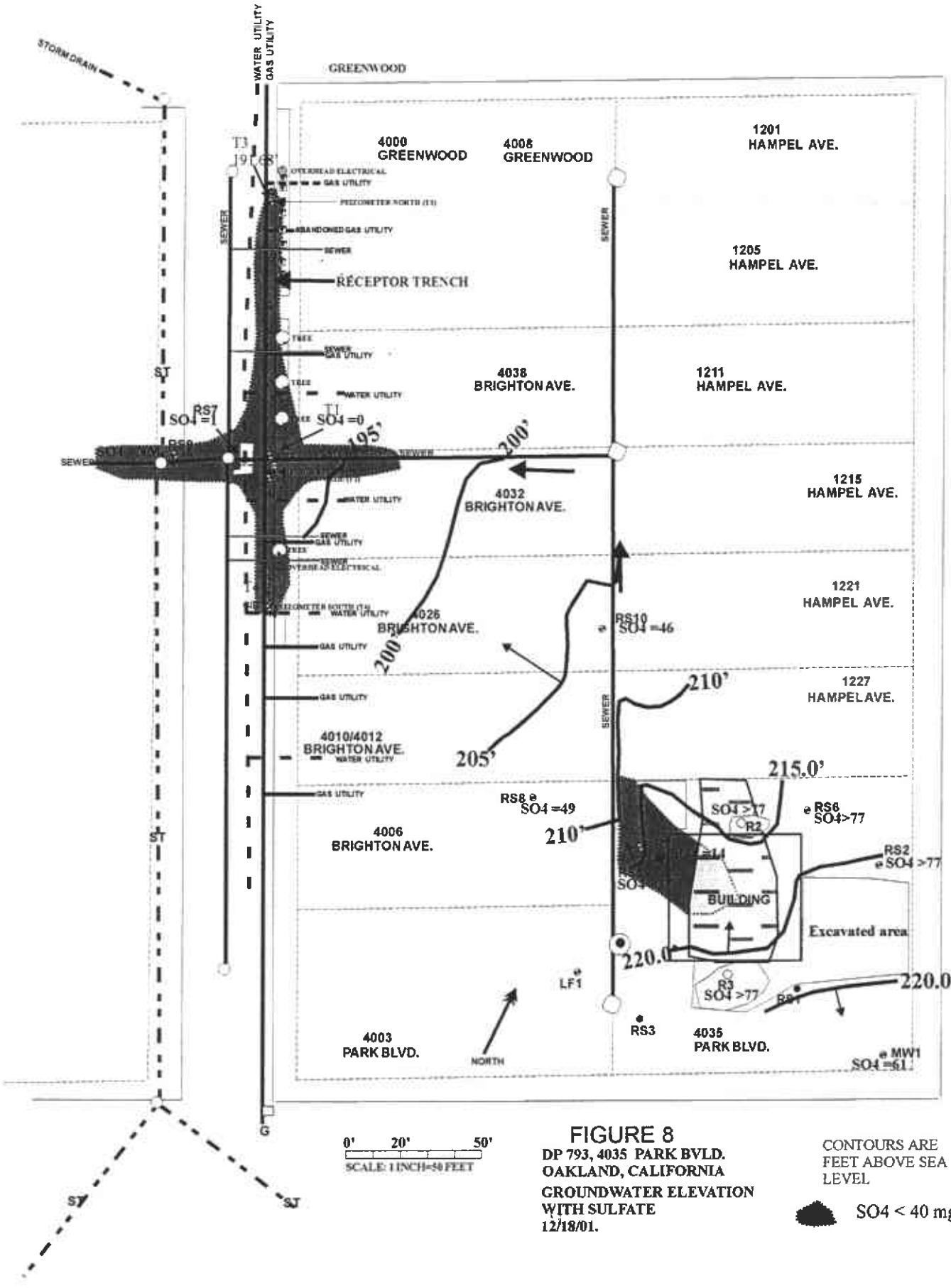


FIGURE 8
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION WITH SULFATE
12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

SO4 < 40 mg/L

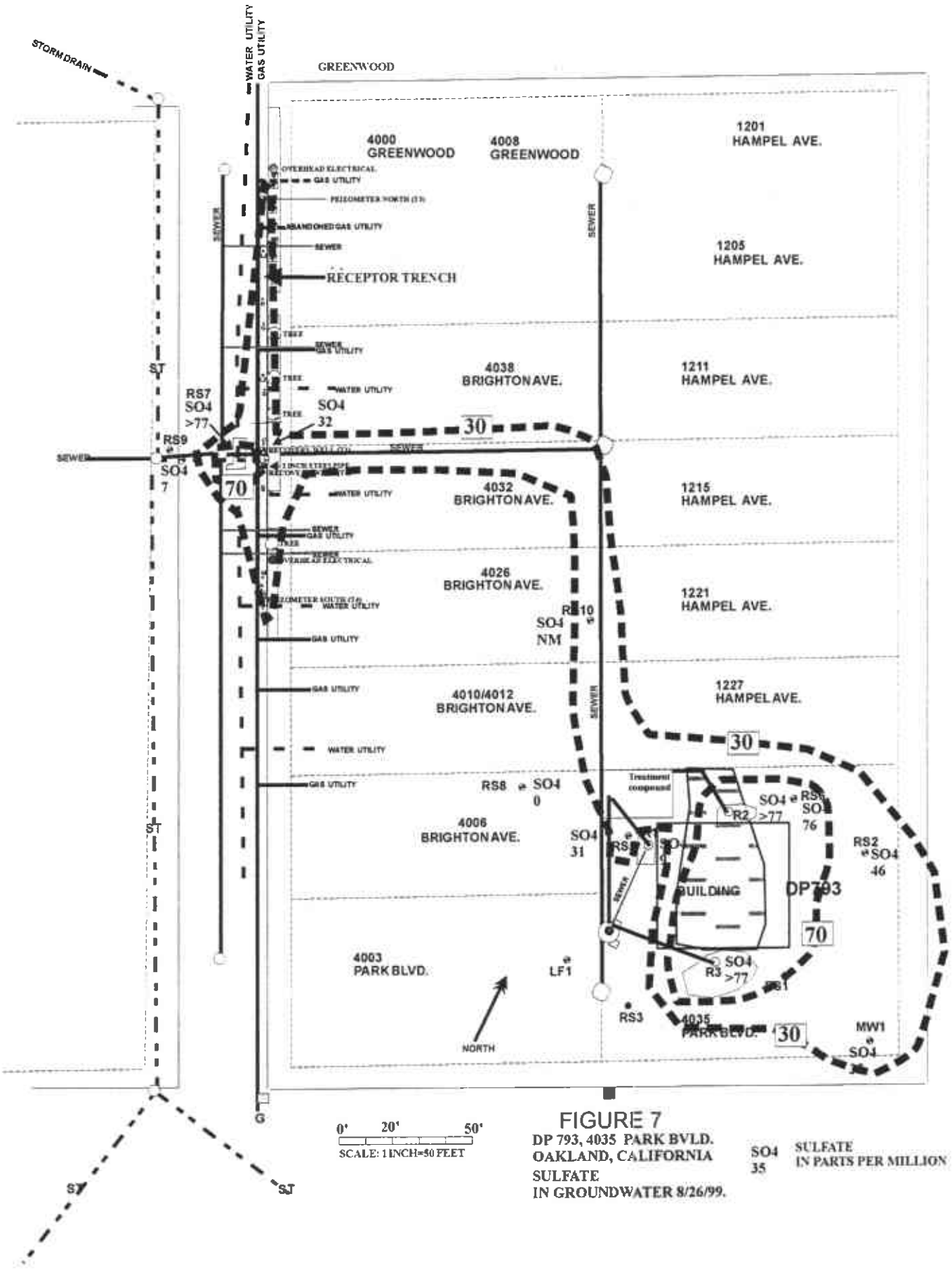


FIGURE 7
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
SULFATE
IN GROUNDWATER 8/26/99.

SO4 35 SULFATE IN PARTS PER MILLION

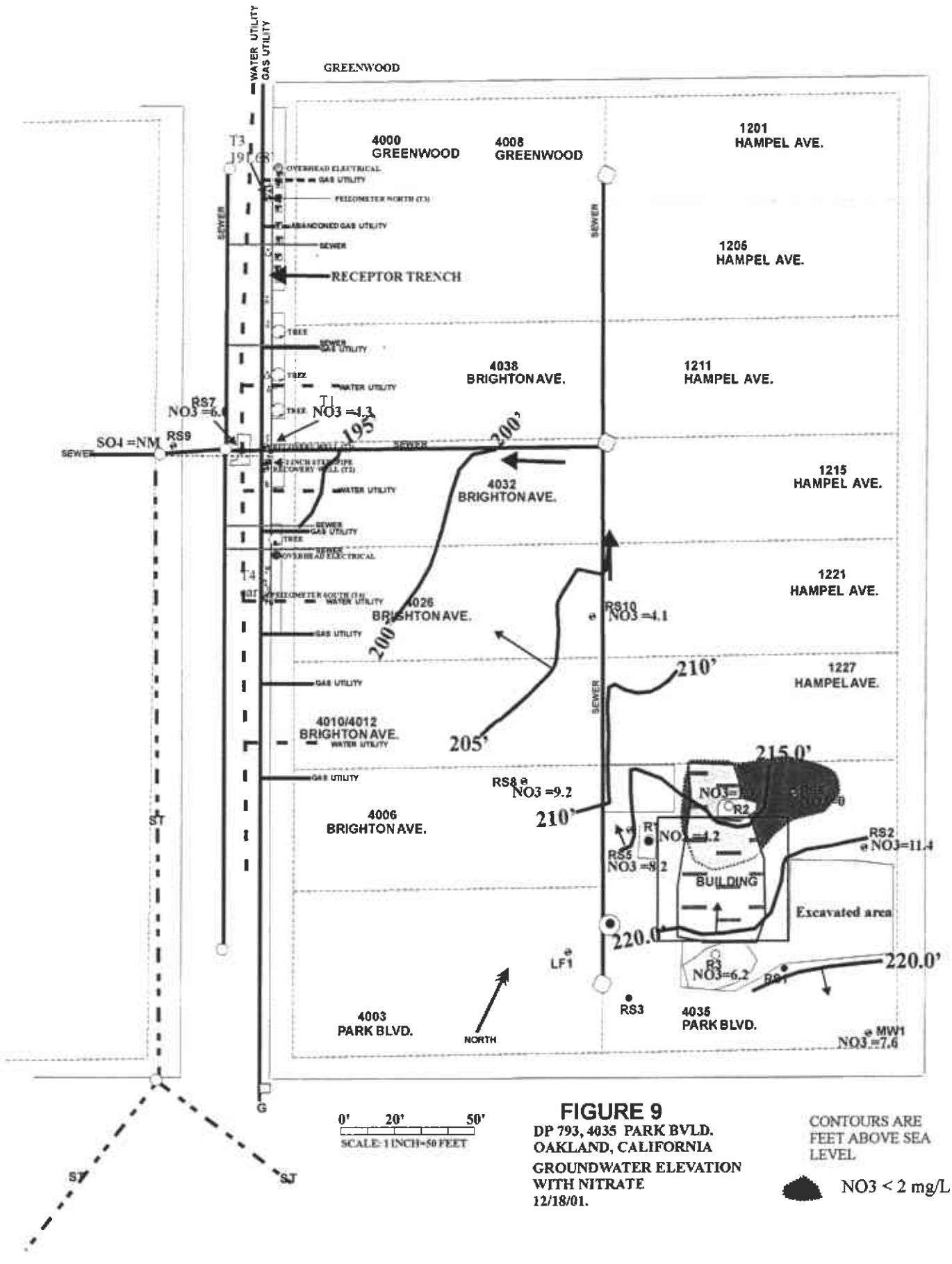
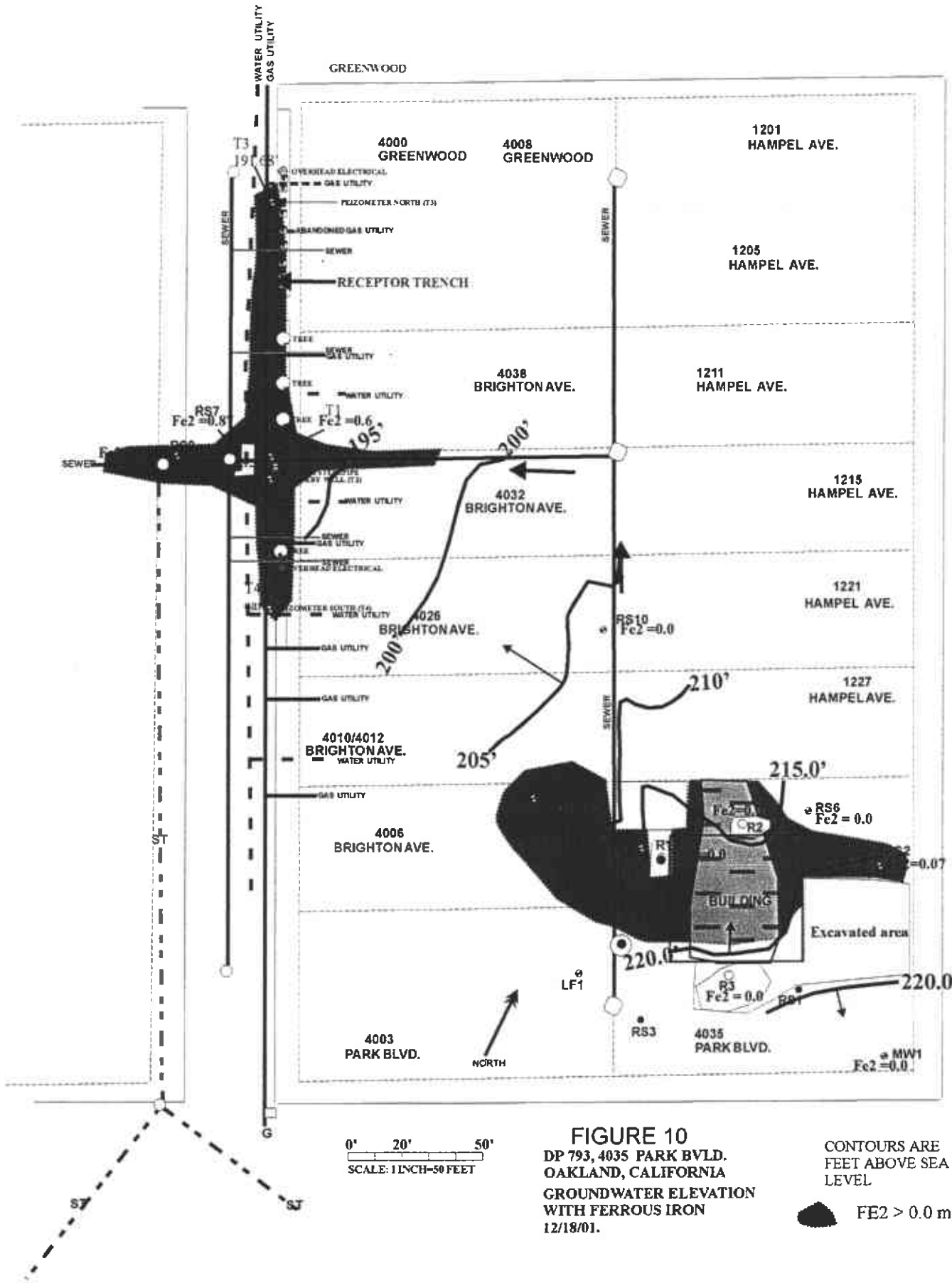


FIGURE 9
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION WITH NITRATE
12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

NO3 < 2 mg/L



0' 20' 50'

SCALE: 1 INCH=50 FEET

FIGURE 10

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION WITH FERROUS IRON
12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

FE2 > 0.0 mg/L

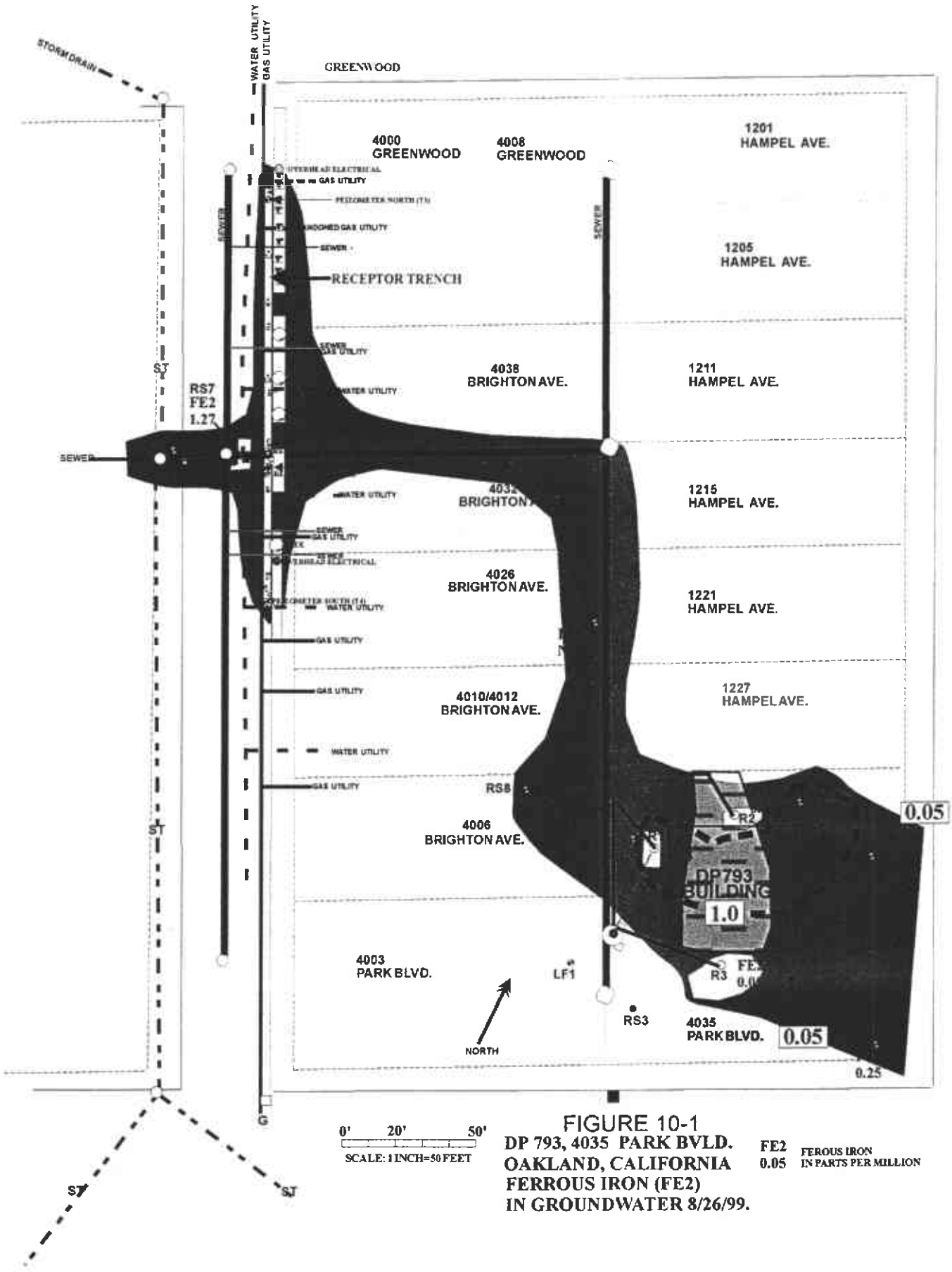


FIGURE 10-1

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
FERROUS IRON (FE2)
IN GROUNDWATER 8/26/99.

FE2 FEROUS IRON
0.05 IN PARTS PER MILLION

APPENDIX F

November 28, 2001 Letter
Alameda County Health
Reference to November 13, 2001 meeting.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

November 28, 2001

STID 1248

Mr. Bill Thompson
Desert Petroleum, Inc.
P.O. Box 1601
Oxnard, CA 93032

Re: (former) Desert Petroleum #793, 4035 Park Boulevard, Oakland

Dear Mr. Thompson:

This letter is sent in the wake of our November 13th meeting. Your consultant, George Converse of Western Geo-Engineers (WEGE), presented a summary of the current project status and brief history of this case. The scope of the August 29, 2000 WEGE corrective action plan (CAP) proposal was also discussed.

We agreed that the scope of the cited CAP should be revised to reflect positive changes in groundwater impacts observed both on- and off-site over the last two years. For example, reported groundwater concentrations of Benzene in well RS8 have dropped from the 24,000 micrograms per liter(ug/l) observed in August 1999, to 11 ug/l in May 2001. Similar generalized decreases in dissolved-phase concentrations have been observed in all sampled wells, as well as those observed within the Brighton Avenue receptor trench.

As we discussed, the CAP scope now envisioned will still include the introduction of oxygen to the subsurface to support aerobic biodegradation. We discussed the use of batched or metered H_2O_2, or oxygen-releasing compounds (ORC) in lieu of air sparging or other engineered approaches. Nutrient augmentation does not appear necessary at this time. In addition, periodic pumping from either the on-site wells or Brighton Avenue receptor trench is also not requested at this time pending evaluation of groundwater impacts after several quarters of oxygen supplementation.

Please submit a revised CAP workplan that reflects the issues presented above, as discussed during the November 13th meeting. This workplan is due for submittal within 45 days of the date of this letter.

1/14/02

In addition, quarterly sampling, monitoring, and reporting are to be reinstated beginning the 4th quarter 2001.

Please call me at 510/567-6783 should you have any questions.

Sincerely,

Scott O. Seery, CHMM
Hazardous Materials Specialist

c: Chuck Headlee, RWQCB
Hernon Gomez, Oakland Fire Department
Steve Marquez, SWRCB UST Fund
Keith Carson, Board of Supervisors, Alameda County
Danny Wan, Council Member, City of Oakland
George Converse, Western Geo-Engineers
1386 E. Beamer St., Woodland, CA 95776-6003
Toni Razi, 3609 E. 14th St., Oakland, CA 94601
Alireza Shirazian, 2 Anchor Drive, #F-386, Emeryville, CA 94608
Derrick Williams, 4032 Brighton Ave., Oakland, CA 94602
Michael Gabriel, Glenview Neighborhood Assoc.
4200 Park Blvd., Box 111, Oakland, CA 94602

APPENDIX G

REGENISIS ORC COST CALCULATIONS TO INCREASE
DISSOLVED OXYGEN IN GROUNWATER PLUME

February 14, 2002

George Converse
Western Geo-Engineers
1386 East Beamer Street
Woodlands, CA 95776

Phone: 530-668-5300 Fax: 530-668-0273

Subject: Acceleration of Natural Attenuation at the Park Blvd. site – Proposal No. 2510 revision

Dear Mr. Converse:

We have reviewed the information that you provided for the above-referenced site. In the following sections, we provide design and cost information for a potential site remediation approach. This proposal was based upon information provided by your firm. If site conditions have changed significantly please let us know. A new proposal may need to be generated.

Use of ORC to Accelerate Bioremediation

Oxygen Release Compound (ORC) is used to provide terminal electron acceptors to support the oxidative biodegradation of many types of petroleum-based hydrocarbons as well as chlorinated hydrocarbons such as dichloroethenes and vinyl chloride. ORC is a proprietary formulation of magnesium peroxide, designed to provide a timed release of oxygen. ORC is manufactured as a powder, which can be (1) mixed with water for slurry injection into the saturated zone, (2) included in excavation backfill material, or (3) enclosed in specially designed socks for placement in monitoring wells.

The use of ORC for groundwater remediation offers a comparatively simple and cost effective remediation alternative for sites that would otherwise require unacceptably long periods of time for natural attenuation or the high levels of capital investment and operating expense associated with active remediation technologies.

Design/Proposal Assumptions

Using the information you provided, we have made the following assumptions to estimate system design variables and dose amounts.

Area 1

- Area requiring treatment: 10 feet x 15 feet
- Representative contaminant concentration: 2.7 ppm TPH

- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 1a

- Area requiring treatment: 165 feet x 15 feet
- Representative contaminant concentration: 48 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 2

- Area requiring treatment: 60 feet x 45 feet
- Representative contaminant concentration: 4.9 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 3

- Area requiring treatment: 60 feet x 45 feet
- Representative contaminant concentration: 12 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

The design specifications and costs provided below represent a design for an accelerated bioremediation project. This design may need to be adjusted as detailed design and regulatory oversight issues are finalized. For instance, the following design variables may need to be adjusted prior to the implementation:

- Treatment areas may need to be increased or decreased depending on the overall site remediation strategy.
- Exact delivery locations should be selected in the final design process. Delivery locations may need to be adjusted to take into account site features such as underground utilities and other site structures.

ORC Grid Treatment – Area 1	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	10 feet x 15 feet
Delivery Pt. Spacing and Configuration	Place into existing wells

ORC dose rate in lbs/vertical foot of injection	N/a
Material requirement	120 pounds
Material cost at $8.00/lb	$960

ORC Grid Treatment – Area 1a	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	165 feet x 15 feet
Delivery Pt. Spacing and Configuration	Place into existing wells/trench
ORC dose rate in lbs/vertical foot of injection	N/a
Material requirement	6,750 pounds
Material cost at $8.00/lb	$54,000

ORC Grid Treatment – Area 2	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	60 feet x 45 feet
Delivery Pt. Spacing and Configuration	48 points spaced 8 feet on center throughout the treatment zone
ORC dose rate in lbs/vertical foot of injection	2 lbs/ft (20 lbs/pt)
Material requirement	48 pts. x 10 ft. x 2 lbs/ft = 960 lbs
Material cost at $8.00/lb	$7,680

ORC Grid Treatment – Area 3	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	60 feet x 45 feet
Delivery Pt. Spacing and Configuration	48 points spaced 8 feet on center throughout the treatment zone
ORC dose rate in lbs/vertical foot of injection	3.9 lbs/ft (39 lbs/pt)

Material requirement	48 pts. x 10 ft. x 3.9 lbs/ft = 1,860 lbs
Material cost at $8.00/lb	$14,880

ORC Oxygen Barrier

A 100 foot oxygen barrier would required 400 pounds of ORC to construct. The construction of the barrier would require two rows of 10 geoprobe points. Each row would be 100 feet long and the points within the row would be spaced 10 feet on center. The two rows would be 10 feet apart and offset by 5 feet. Each point would be injected with 20 pounds of ORC throughout the 10 foot contaminated saturated zone. The cost of each application of the barrier is $3,200.

Total Project Cost

The total cost of an accelerated bioremediation project can be estimated as the sum of the following items:

- ORC material and shipping costs.
- ORC compound application fieldwork costs. Customers are responsible for selecting a local injection/application subcontractor.
- Groundwater monitoring well construction (if necessary to monitor project performance).
- Periodic groundwater sampling and analysis.
- Consultant oversight and reporting. Regenesis data evaluation and technical support are provided free of charge.

The costs provided in this letter apply to time release material costs for one application. The need for re-applications will depend on your plume management strategy, site specific biodegradation performance, remedial goals for the site, and other technical or regulatory considerations. For plume area treatments, one to two re-applications could be necessary over the course of the project, although each re-application would most likely be done over a reduced area and dose amount compared to the initial application. For barrier-based designs, re-applications will be necessary every one to two years as long as there is a need to prevent contaminant migration.

ORC Delivery to Contaminated Zone

Typically, ORC is applied using direct push hydraulic equipment. Drive rods are pushed to the bottom of the contaminated saturated zone and then an ORC/water slurry is injected as the rods are withdrawn.

For sites where direct push technology is not feasible, auger-based equipment can be used to deliver ORC; and, for cases where repeated injections will be necessary, the use of permanent,

small diameter re-injection wells may be a more cost-effective approach. Technical support personnel at Regenesis are available to discuss the suitability of other delivery methods.

The ORC/water slurry mixture is typically 20% to 40% ORC solids by weight. An average ORC solids content is 30%, but this value may need to be adjusted in the field so that the required mass of ORC can be injected at each location. For example, tighter soil types may require a higher ORC solids content since less slurry volume can be injected per location.

The volume of water per injection location can be calculated from the following equation:

$$\text{Volume of water (gallons/injection point):} \quad \frac{\text{ORC lbs/hole}}{(8.34\ \text{lbs/gal water})(\%\text{ORC solids})}[1-(\%\text{ORC solids})]$$

Most geoprobe contractors are equipped with grout pumps capable of injecting ORC. Typical pump specifications call for a pumping rate of 1 to 5 gpm and injection pressures from 100 to 500 psig.

Costs for ORC injection should be obtained from local subcontractors. Regenesis can assist in locating ORC injection subcontractors. Budgetary cost estimates for direct push-based injection range from $1,000 to $2,000 per day. Typically, two to three ORC injection points can be completed per hour and from 20 to 30 points can be completed per day, depending on soil type, depths of injection, and subcontractor experience.

Recommended Groundwater Monitoring Program for Pilot/Full Scale Treatment

Monitoring of selected wells should be conducted to validate the enhancement of natural attenuation processes. Also, an initial or "baseline" round of sampling should be performed to identify pre-remediation groundwater conditions. After delivery of ORC to the subsurface, samples can be collected every 2 to 3 months. After the initial biodegradation and geochemical trends have been identified, the monitoring frequency can be decreased to a semiannual or annual program. The monitoring program should employ low flow groundwater sampling techniques and include the measurement of the following field/chemical parameters:

- all contaminants of concern
- field redox parameters: ORP, pH, dissolved oxygen, and ferrous iron
- biochemical oxygen demand (5 day) and chemical oxygen demand at selected wells within treatment area

Ideally, samples should be collected from the following site locations:

- an upgradient or background location to identify groundwater conditions outside the treatment area
- inside the treatment area

- an appropriate distance downgradient of the treatment area to identify potential residence time requirements for complete biodegradation
- downgradient compliance point to confirm offsite migration is not occurring

Regenesis appreciates the opportunity to provide this information for your project. If you have any questions about this proposal please contact me at (616) 344-2617 or your local sales manager Pat Randall (805) 375-0961.

Sincerely,

Brittain Griffiths
Applications Engineer

2510 Revision

* The ORC Barrier can be placed where you see fit.

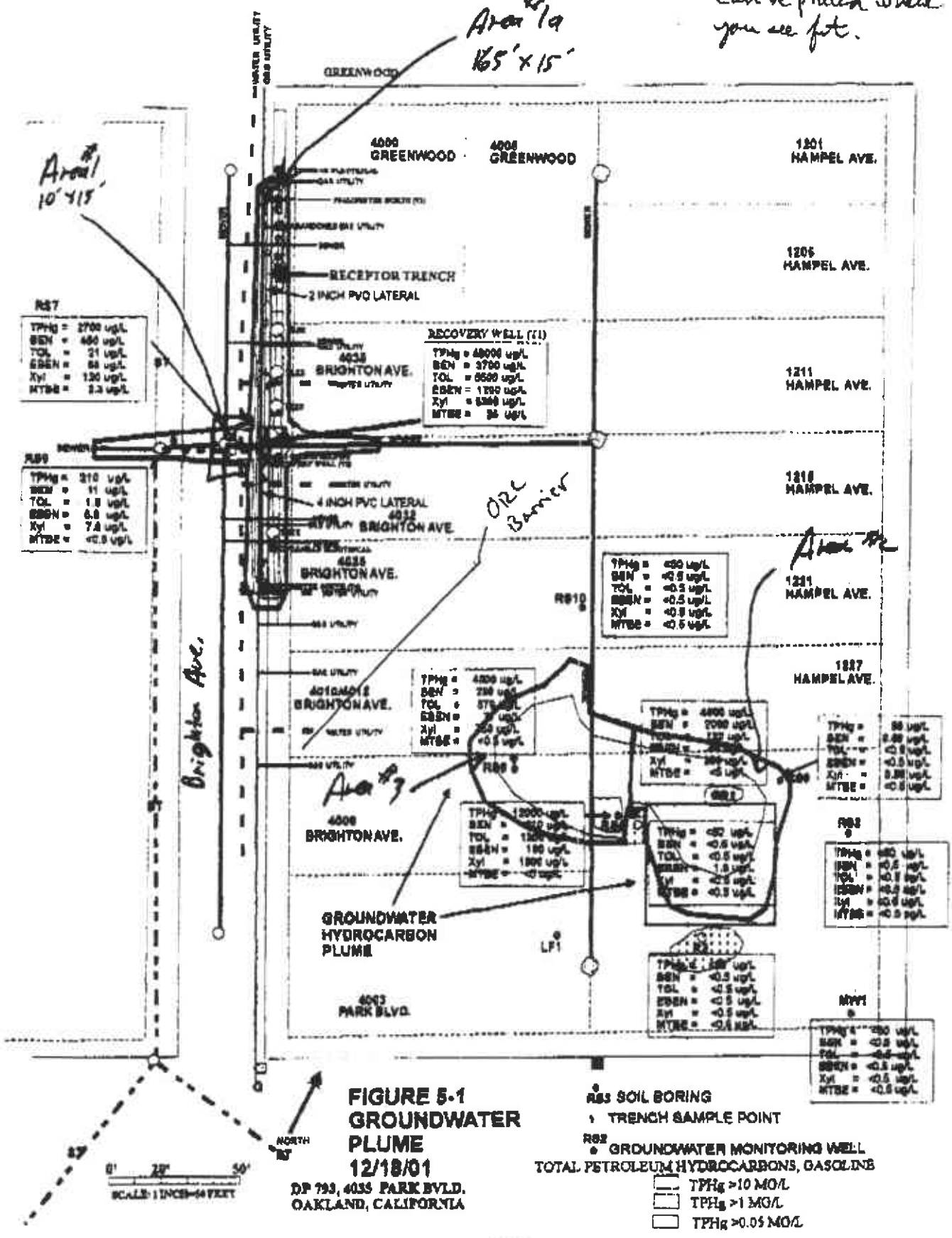


FIGURE 5-1
GROUNDWATER PLUME
12/18/01
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL
TOTAL PETROLEUM HYDROCARBONS, GASOLINE
TPHg >10 MG/L
TPHg >1 MG/L
TPHg >0.05 MG/L

19

-WEGE-

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND CA 95776-6003
(530) 668-5300.
FAX (530) 662-0273
wege@mother.com

FROM: George Converse DATE: Feb. 5, 2002

TO: Brittain Griffiths FAX #: (616) 373-1078

(616) 344-2617

Regenesis

TOTAL PAGES
INCLUDING THIS PAGE

2

COMMENTS: DP 793, 4035 PARK BLVD., OAKLAND, CA.

PROPOSAL No. 2510

Brittain, I have enclosed a better - clearer copy of the plume extent figure. I think you got confused on concentrations from various sample points.

Area 1 2.7 ppm is well RS7, in the middle of Brighton Avenue.

Area 1a 48 ppm is the receptor trench along the eastern gutter of Brighton Avenue.

Area 2 4.9 ppm is as you interpreted.

Area 3 12 ppm is as you interpreted.

Please revise your estimates

Thanks George

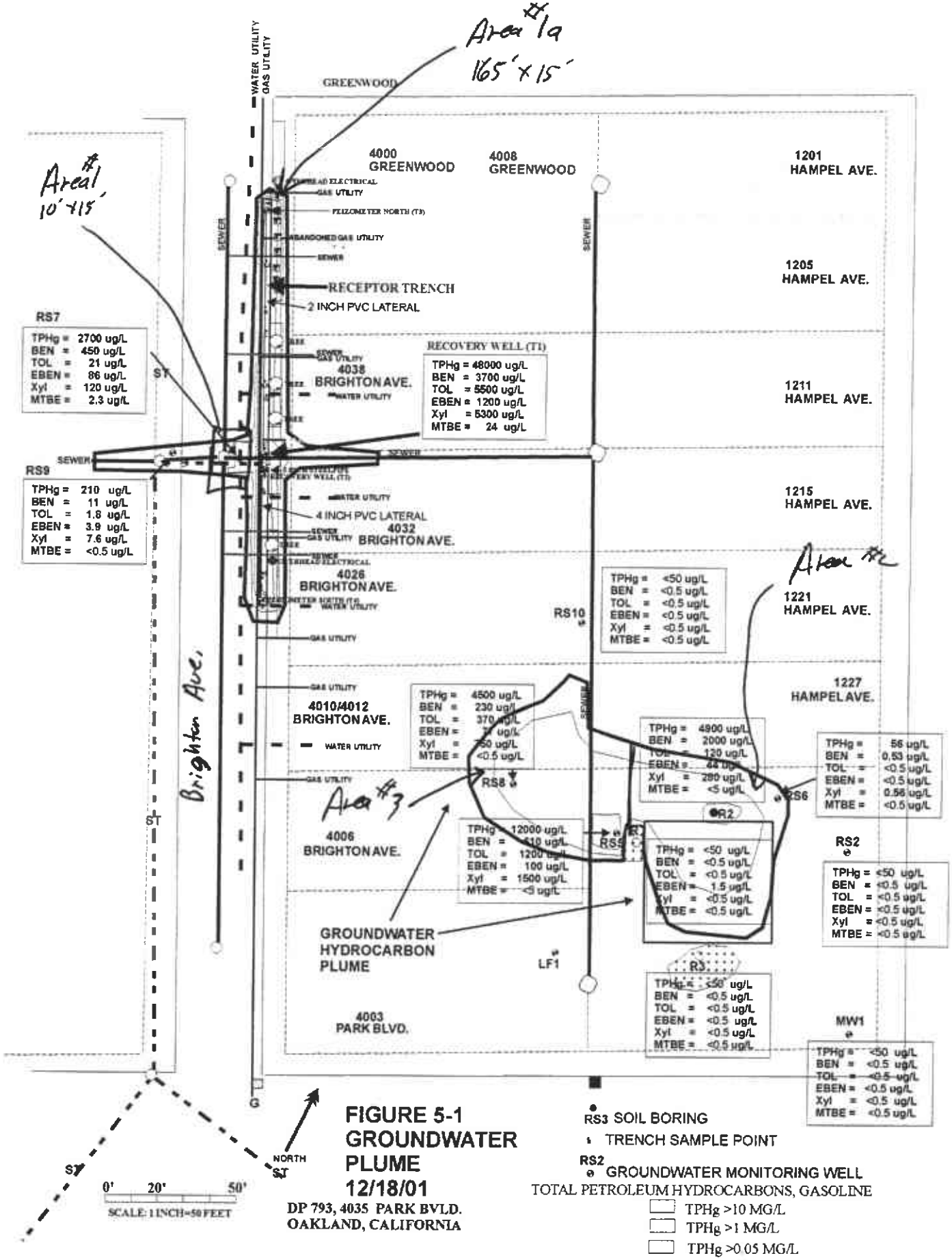


FIGURE 5-1
GROUNDWATER PLUME
12/18/01
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

RS3 SOIL BORING
TRENCH SAMPLE POINT
RS2 GROUNDWATER MONITORING WELL
TOTAL PETROLEUM HYDROCARBONS, GASOLINE
TPHg >10 MG/L
TPHg >1 MG/L
TPHg >0.05 MG/L

February 4, 2002

George Converse
Western Geo-Engineers
1386 East Beamer Street
Woodlands, CA 95776
Phone: 530-668-5300 Fax: 530-662-0273

Subject: Park Blvd. site – Proposal No. 2510

Dear Mr. Converse:

We have reviewed the information that you provided for the above-referenced site. In the following sections, we provide design and cost information for a potential site remediation approach. This proposal is based on information provided by your firm. If site conditions have changed significantly please let us know, a new proposal may need to be generated.

Use of ORC to Accelerate Bioremediation

Oxygen Release Compound (ORC) is used to provide terminal electron acceptors to support the oxidative biodegradation of many types of petroleum-based hydrocarbons as well as chlorinated hydrocarbons such as dichloroethenes and vinyl chloride. ORC is a proprietary formulation of magnesium peroxide, designed to provide a timed release of oxygen. ORC is manufactured as a powder, which can be (1) mixed with water for slurry injection into the saturated zone, (2) included in excavation backfill material, or (3) enclosed in specially designed socks for placement in monitoring wells.

will eventually be convert

The use of ORC for groundwater remediation offers a comparatively simple and cost effective remediation alternative for sites that would otherwise require unacceptably long periods of time for natural attenuation or the high levels of capital investment and operating expense associated with active remediation technologies.

Design/Proposal Assumptions

Using the information you provided, we have made the following assumptions to estimate system design variables and dose amounts.

Area 1 = RS-7 not Trench

- Plume area requiring treatment: 2,840 square feet
- Representative contaminant concentration: 2.7 ppm TPH

- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 1a is Trench

- Plume area requiring treatment: 400 square feet 2840 ft²
- Representative contaminant concentration: 48 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 2 conda building → RS2

- Plume area requiring treatment: 60 x 45 feet
- Representative contaminant concentration: 4.9 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

Area 3 RS-5

- Plume area requiring treatment: 60 x 45 feet
- Representative contaminant concentration: 12 ppm TPH
- Contaminated saturated zone thickness requiring treatment: 10 feet (top 10 feet of the aquifer)

The design specifications and costs provided below are designed as an accelerated bioremediation project. This design may need to be adjusted as detailed design and regulatory oversight issues are finalized. For instance, the following design variables may need to be adjusted prior to the implementation:

- Treatment areas may need to be increased or decreased depending on the overall site remediation strategy.
- Exact delivery locations should be selected in the final design process. Delivery locations may need to be adjusted to take into account site features such as underground utilities and other site structures.

ORC Grid Treatment – Area 1	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	2,840 square feet
Delivery Pt. Spacing and Configuration	Place into existing wells.

ORC dose rate in lbs/vertical foot of injection	N/A
Material requirement	435 lbs
Material cost at $9/lb	$3,915 plus shipping and applicable sales tax

ORC Grid Treatment – Area 1a	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	400 square feet
Delivery Pt. Spacing and Configuration	Place into existing well.
ORC dose rate in lbs/vertical foot of injection	N/A
Material requirement	1,090 lbs
Material cost at $9/lb	$8,640 plus shipping and applicable sales tax

ORC Grid Treatment – Area 2	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	60 feet x 45 feet
Delivery Pt. Spacing and Configuration	48 points spaced 8 feet on center throughout the treatment area
ORC dose rate in lbs/vertical foot of injection	2 lbs/ft (20 lbs/pt)
Material requirement	48 pts. x 10 feet x 2 lbs/ft = 960 lbs
Material cost at $9/lb	$8,640 plus shipping and applicable sales tax

ORC Grid Treatment – Area 3	
Design Feature	**Specification**
Saturated thickness requiring treatment	10 feet
Treatment Area	60 feet x 45 feet
Delivery Pt. Spacing and Configuration	48 points spaced 8 feet on center throughout the treatment area

ORC dose rate in lbs/vertical foot of injection	3.9 lbs/ft (39 lbs/pt)
Material requirement	48 pts. x 10 feet x 3.9 lbs/ft = 1,860 lbs
Material cost at $9/lb	$16,740 plus shipping and applicable sales tax

ORC IS PRICED ON A VOLUME DISCOUNT STRUCTURE.

ORC Oxygen Barrier

A 100 foot oxygen barrier would require 400 pounds of ORC to construct. The construction of the barrier would required two rows of 10 geoprobe points. Each row would be 100 feet long and the points within the row would be spaced 10 feet on center. The two rows would be 10 feet apart and offset by 5 feet. Each point would be injected with 20 pounds of ORC throughout the 10 foot contaminated saturated zone. The cost for each application of the barrier is $3,600.

ORC Cost

The total amount of ORC required for this proposal is 4,735 pounds. At $9/lb the total cost is $42,615 plus shipping and sales tax.

Total Project Cost

The total cost of an accelerated bioremediation project can be estimated as the sum of the following items:

- Time release compound material and shipping costs.
- Time release compound application fieldwork costs. Customers are responsible for selecting a local injection/application subcontractor.
- Groundwater monitoring well construction (if necessary to monitor project performance).
- Periodic groundwater sampling and analysis.
- Consultant oversight and reporting. Regenesis data evaluation and technical support are provided free of charge.

The costs provided in this letter apply to time release material costs for one application. The need for re-applications will depend on your plume management strategy, site specific biodegradation performance, remedial goals for the site, and other technical or regulatory considerations. For plume area treatments, one to two re-applications could be necessary over the course of the project, although each re-application would most likely be done over a reduced area and dose amount compared to the initial application.

ORC Delivery to Contaminated Zone

Typically, ORC is applied using direct push hydraulic equipment. Drive rods are pushed to the bottom of the contaminated saturated zone and then an ORC/water slurry is injected as the rods are withdrawn.

For sites where direct push technology is not feasible, auger-based equipment can be used to deliver ORC; and, for cases where repeated injections will be necessary, the use of permanent, small diameter re-injection wells may be a more cost-effective approach. Technical support personnel at Regenesis are available to discuss the suitability of other delivery methods.

The ORC/water slurry mixture is typically 20% to 40% ORC solids by weight. An average ORC solids content is 30%, but this value may need to be adjusted in the field so that the required mass of ORC can be injected at each location. For example, tighter soil types may require a higher ORC solids content since less slurry volume can be injected per location.

The volume of water per injection location can be calculated from the following equation:

$$\text{Volume of water (gallons/injection point):} \quad \frac{\text{ORC lbs/hole}}{(8.34\ \text{lbs/gal water})(\%\ \text{ORC solids})}[1-(\%\ \text{ORC solids})]$$

Most geoprobe contractors are equipped with grout pumps capable of injecting ORC. Typical pump specifications call for a pumping rate of 1 to 5 gpm and injection pressures from 100 to 500 psig.

Costs for ORC injection should be obtained from local subcontractors. Regenesis can assist in locating ORC injection subcontractors. Budgetary cost estimates for direct push-based injection range from $1,000 to $2,000 per day. Typically, two to three ORC injection points can be completed per hour and from 20 to 30 points can be completed per day, depending on soil type, depths of injection, and subcontractor experience.

Recommended Groundwater Monitoring Program

Monitoring of selected wells should be conducted to validate the enhancement of natural attenuation processes. Also, an initial or "baseline" round of sampling should be performed to identify pre-remediation groundwater conditions. After delivery of ORC to the subsurface, samples can be collected every 2 to 3 months. After the initial biodegradation and geochemical trends have been identified, the monitoring frequency can be decreased to a semiannual or annual program. The monitoring program should employ low flow groundwater sampling techniques and include the measurement of the following field/chemical parameters:

- all contaminants of concern
- field redox parameters: ORP, pH, dissolved oxygen, and ferrous iron
- biochemical oxygen demand (5 day) and chemical oxygen demand at selected wells within treatment area

Ideally, samples should be collected from the following site locations:

- an upgradient or background location to identify groundwater conditions outside the treatment area
- inside the treatment area

- an appropriate distance downgradient of the treatment area to identify potential residence time requirements for complete biodegradation
- downgradient compliance point to confirm offsite migration is not occurring

Regenesis appreciates the opportunity to provide this information for your project. If you have any questions about this proposal please feel free to contact me at 616-344-2617 or your local sales manager Jack Peabody at 925-944-5566.

Sincerely,

Brittain Griffiths
Applications Engineer

#2510

Area 1 = 3240 sq ft
- (400 sq ft)
2840 sq. ft

Area 1a
= 20 x 20 x 10
= 4001t x 1gal.

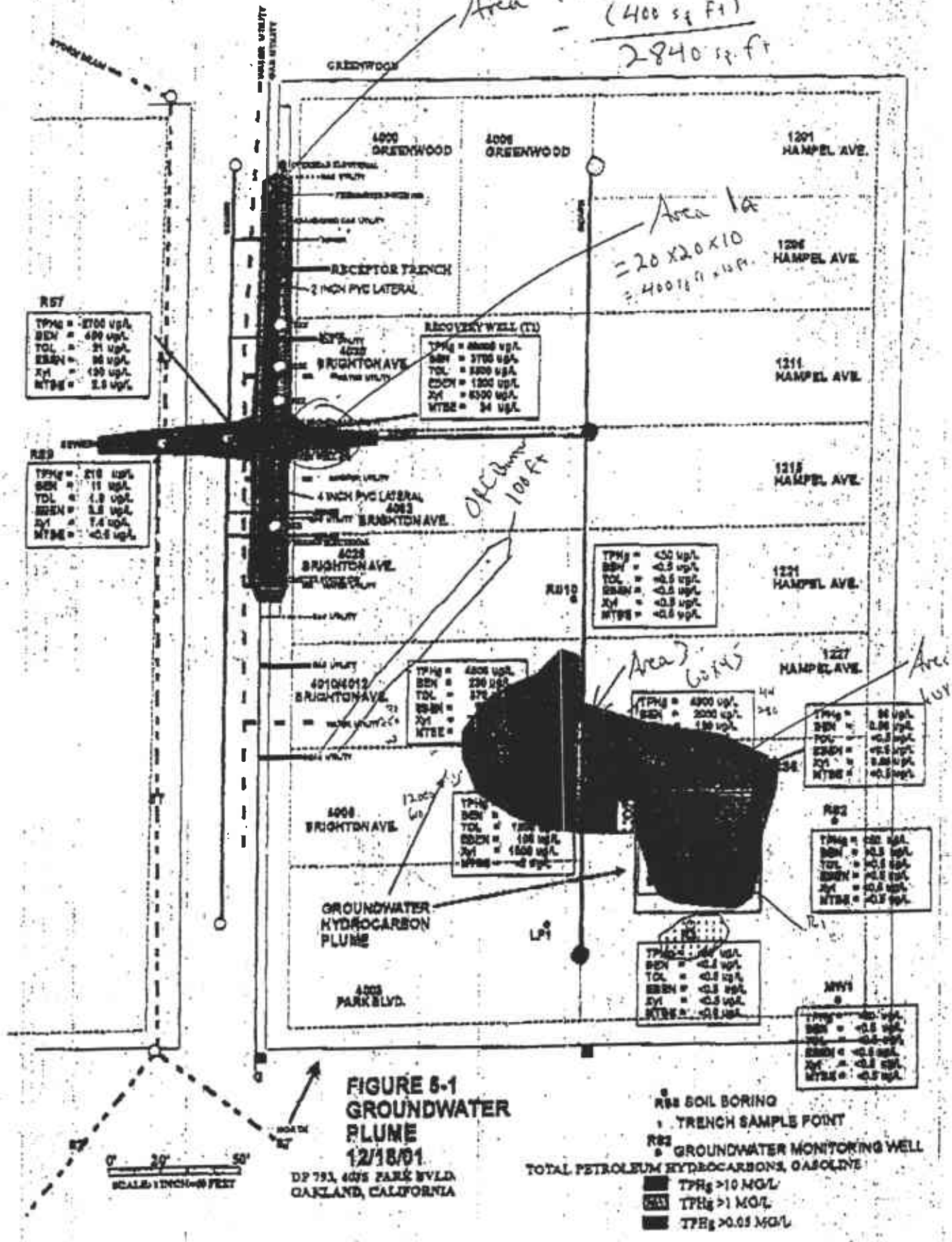


FIGURE 5-1
GROUNDWATER PLUME
12/18/01
DP 793, 4075 PARK BLVD.
OAKLAND, CALIFORNIA

RB8 SOIL BORING
TRENCH SAMPLE POINT
RB2 GROUNDWATER MONITORING WELL
TOTAL PETROLEUM HYDROCARBONS, GASOLINE
TPHg >10 MG/L
TPHg >1 MG/L
TPHg >0.05 MG/L

APPENDIX H
WEGE HYDROGEN PEROXIDE COST CALCULATIONS
TO INCREASE DISSOLVED OXYGEN IN GROUNDWATER PLUME

-WEGE-

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND CA 95776-6003
(530) 668-5300,
FAX (530) 662-0273
wege@mother.com

February 21, 2002

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

Dear Mr. Thompson:

Mr. Scott Seary, Alameda County Health, is still in the process of reviewing our workplan to augment the groundwater with oxygen at former Desert Petroleum Station #793. I recently received the cost analysis from Regenisis to use ORC to elevate the oxygen level in the groundwater. Their calculations indicate that we would need an estimated 9,690 pounds of ORC at $8.00/lb = $77,520.00. This does not include delivery of the ORC into the groundwater (push points) and monitoring to insure that the ORC is working.

WEGE has used hydrogen pyroxide to increase the oxygen in groundwater at a site in Watsonville. I calculated the amount of hydrogen pyroxide that would be required to increase the oxygen from 2 mg/L to 8 mg/L within the groundwater plume (17 gallons at 35% by volume). The estimated cost to provide monthly treatments with 35% hydrogen pyroxide including application and monitoring would be $1,160.00, or $13,920.00/year, see Table. You will notice that the cost estimate for monitoring is different for the ORC application as compared to the hydrogen pyroxide. With the hydrogen pyroxide we will also be performing a monthly application, so personnel hours our divided between the application and monitoring, along with mobilization cost.

I suggest we try the hydrogen pyroxide treatment once we get approval from Alameda County Health.

Sincerely yours,

George Converse
Project Geologist

COST COMPARISON ORC TO HYDROGEN PYROXIDE

	AMOUNT LITERS	GALLONS	POUNDS	DOSE	MATERIAL COST
GROUNDWATER PLUME	1781168	470586			
ORC			9690	YEARLY	$77,520.00
HYDROGEN PYROXIDE 35%		53		MONTHLY	$515.00

	COST	AMOUNT	SUBTOTAL	TOTAL
ORC -YEARLY COST				
ONE APPLICATION	$5,000.00	1	$5,000.00	
MATERIAL	$77,520.00	1	$77,520.00	
MONITORING	$535.00	12	$6,420.00	$88,940.00
HYDROGEN PYROXIDE				
MONTHLY APPLICATION	$340.00	12	$4,080.00	
MATERIAL	$515.00	12	$6,180.00	
MONITORING	$305.00	12	$3,660.00	$13,920.00

TABLE 5 POUNDS HYDROCARBONS

DP 793

4035 PARK BLVD, OAKLAND, CA

Pounds TPHg in soil and in groundwater AUGUST 1999.

		soil density=	1.9						
Square Feet	Thickness	Cubic feet	Upper mg/kg	Lower mg/kg	Average con mg/kg	kg Soil	mg TPHg	pounds TPHg	
TPHg in soil 5 - 10 foot depth 8/99									
2165	5	10825	50	1	25.5	582409.9	14851452.39	32.7	
1945	5	9725	100	50	75	523227.4	39242052.56	86.5	
700	5	3500	290	100	195	188308.1	36720069.75	81.0	
325	5	1625	1000	100	550	87428.74	48085805.63	106.0	
100	5	500	2000	1000	1500	26901.15	40351725	89.0	
440	5	2200	4000	1000	2500	118365.1	295912650	652.4	1047.6
TPHg in soil 10-15 foot depth AUGUST 1999									
5006	5	25030	50	1	25.5	1346672	34340125.01	75.7	
1599	5	7995	100	50	75	430149.4	32261204.14	71.1	
2815	5	14075	1000	100	550	757267.4	416497054.9	918.2	
240	5	1200	1200	1000	1100	64562.76	71019036	156.6	1221.6
TPHg in soil 15-20 foot depth AUGUST 1999									
1926	5	9630	50	1	25.5	518116.1	13211961.8	29.1	
1044	5	5220	100	50	75	280848	21063600.45	46.4	
1250	5	6250	1000	100	550	336264.4	184945406.3	407.7	483.3
TPHg in soil 20-25 foot depth AUGUST 1999									
2900	5	14500	10	1	5.5	780133.4	4290733.425	9.5	9.5
TPHg in soil 25-30 foot depth AUGUST 1999									
410	5	2050	50	1	25.5	110294.7	2812515.233	6.2	
175	5	875	100	50	75	47077.01	3530775.938	7.8	
145	5	725	1000	100	550	39006.67	21453667.13	47.3	
80	5	400	1600	1000	1300	21520.92	27977196	61.7	123.0
Total pounds TPHg in Soil AUGUST 1999								2884.9	

MASS GROUNDWATER CONTAMINATION AUGUST 1999

		PORES	0.3					
Square Feet	Thickness	Cubic feet	Upper mg/l	Lower mg/l	Average con mg/l	LITERS water	mg TPHg	pounds TPHg
10520	16	168320	1	0.05	0.525	1429895	750695	1.66
8650	16	138400	10	1	5.5	1175722	6466470	14.26
2000	16	32000	40	10	25	271843	6796080	14.98
2550	16	40800	100	10	55	346600	19063004	42.03
750	16	12000	160	100	130	101941	13252356	29.22
Total Calculated Mass TPHg in Groundwater AUGUST 1999								102.14

MASS GROUNDWATER CONTAMINATION DECEMBER 2001									
		PORES	0.3						
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds	
Feet		feet	mg/l	mg/l	mg/l	water	TPHg	TPHg	
4825	16	77200	1	0.05	0.525	655822	344306	0.76	
4984	16	79744	10	1	5.5	677433	3725883	8.21	
120	16	1920	12	10	11	16311	179417	0.40	
1240	16	19840	48	10	29	168543	4887741	10.78	
495	10	4950	48	48	48	42051	2018436	4.45	trench

Total Calculated Mass TPHg in Groundwater DECEMBER 2001				
				24.59

MASS BENZENE GROUNDWATER CONTAMINATION AUGUST 1999								
assumption: free product contains 287 mg/L of benzene								
		PORES	0.3					
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds
Feet		feet	mg/l	mg/l	mg/l	water	Benzene	Benzene
6775	16	108400	0.1	0.0005	0.05025	920869	46274	0.10
7800	16	124800	1	0.1	0.55	1060188	583104	1.29
2000	16	32000	7.2	1	4.1	271843	1114557	2.46
2000	16	32000	10	1	5.5	271843	1495138	3.30
1200	16	19200	24	10	17	163106	2772801	6.11
Total Calculated Mass Benzene in Groundwater 1999								13.25

MASS BENZENE GROUNDWATER CONTAMINATION DECEMBER 2001									
assumption: free product contains 287 mg/L of benzene									
		PORES	0.3						
Square	Thickness	Cubic	Upper	Lower	Average con	LITERS	mg	pounds	
Feet		feet	mg/l	mg/l	mg/l	water	Benzene	Benzene	
3940	16	63040	0.001	0.0005	0.00075	535531	402	0.00	
5265	16	84240	0.5	0.001	0.2505	715627	179265	0.40	
2170	16	34720	1	0.5	0.75	294950	221212	0.49	
450	16	7200	2	1	1.5	61165	91747	0.20	
970	16	15520	3.7	1	2.35	131844	309833	0.68	
495	10	4950	3.7	3.7	3.7	42051	155588	0.34	trench
Total Calculated Mass Benzene in Groundwater 2001								2.11	

ESTIMATED POUNDS GROUNDWATER TPHg REDUCTION FROM 1999 TO 2001 77.5
ESTIMATED POUNDS GROUNDWATER BENZENE REDUCTION FROM 1999 TO 2001 11.1

ESTIMATED % REDUCTION TPHg 75.9
ESTIMATED % REDUCTION BENZENE 84.1

Cost Estimate per treatment	unit cost	amount	subtotal		ORC cost	
liters of groundwater treated		1781168				
53 gallon drum 35% peroxide	$514.62	1	$514.62		$77,520.0	150.63
pump truck	$175.00	1	$175.00			
Geotechnichain	$55.00	6	$330.00			
DTW	10	1	$10.00			
ph,Cond, Temp	10	1	$10.00			
Dissolved Oxygen	20	6	$120.00	$1,159.62		

To raise depleted oxygen from 2 ppm to 8 ppm - 1,781,168 (no reactions calculated) with 35% hydrogen peroxide

ratio O to H2O2	2.125
killograms Oxygen	10.6870057
killogram peroxide	22.70988712
litter peroxide	16.33804829
35 percent sol	65.35219314
gallons peroxide	17.28893998

APPENDIX I.

WASTEWATER DISCHARGE REPORT

desert petroleum inc.

Molly Ong.
Source Control Division
East Bay Municipal Utility District
P.O. Box 24055, MS 702
Oakland, CA 94623
(510) 287-1618
Fax (510) 287-0621

March 13, 2002

RE: Wastewater Discharge Quarterly Sampling for Permit #5043550 1.

Dear Ms. Ong:

The enclosed table and certified laboratory report represents the sampling for wasterwater Discharge Permit #5043550 1 for the period between December 18, 2001 and March 13, 2002. Continues discharge from pumping at RS-5 was discontinued on July 19, 2001. Currently the treated water discharged to the sewer is produced from purging monitor wells associated with this site, to obtain groundwater samples on a quarterly basis. A sample of the water discharged to sewer was obtained on February 19, 2002 and analyzed for TPHg, BTEX and MtBE using EPA method 8260B.

All discharge conditions have been met.

CERTIFICATION East Bay Municipal Utility District, Permit #5043550 1

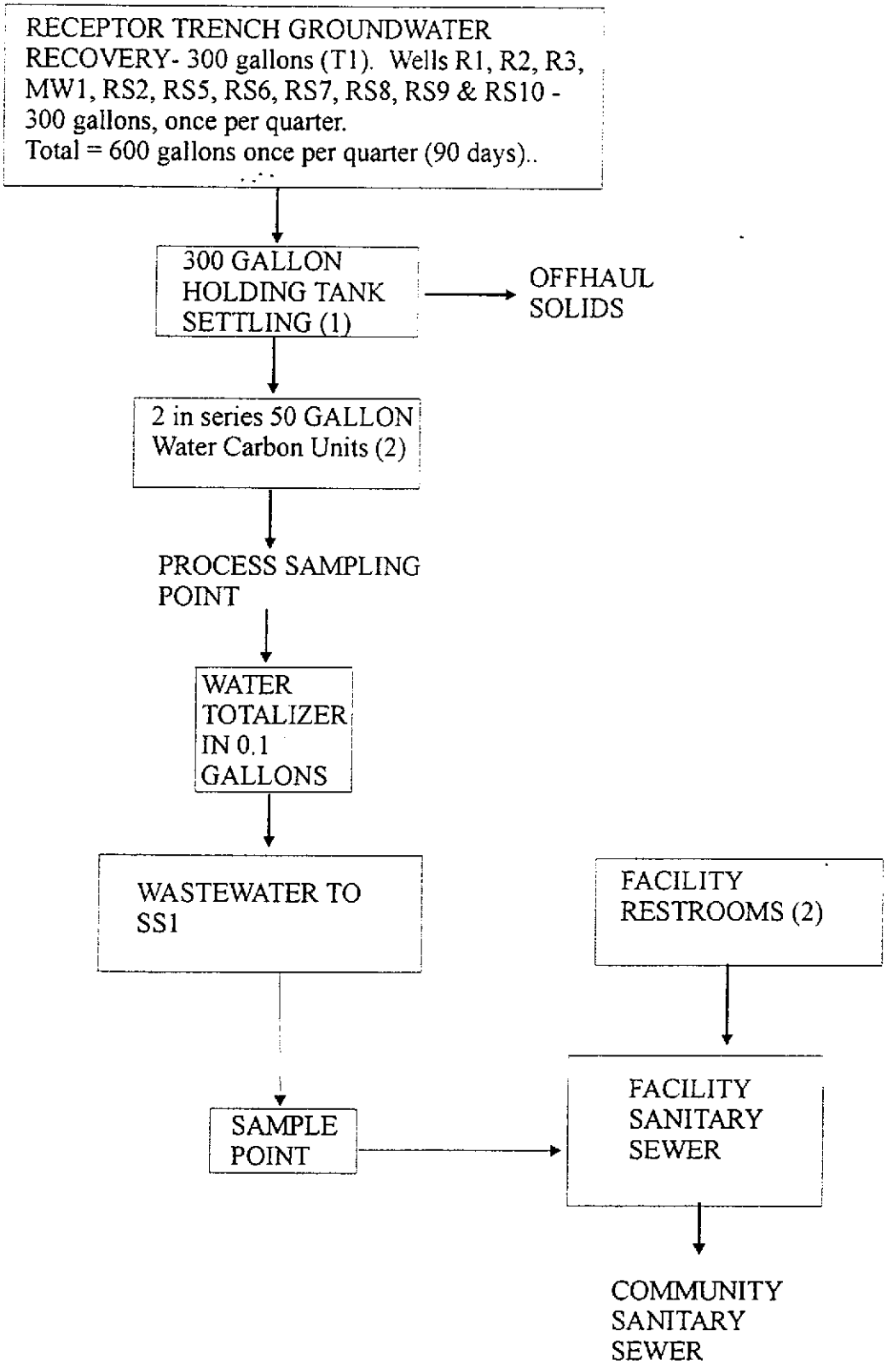
I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that the qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person of persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

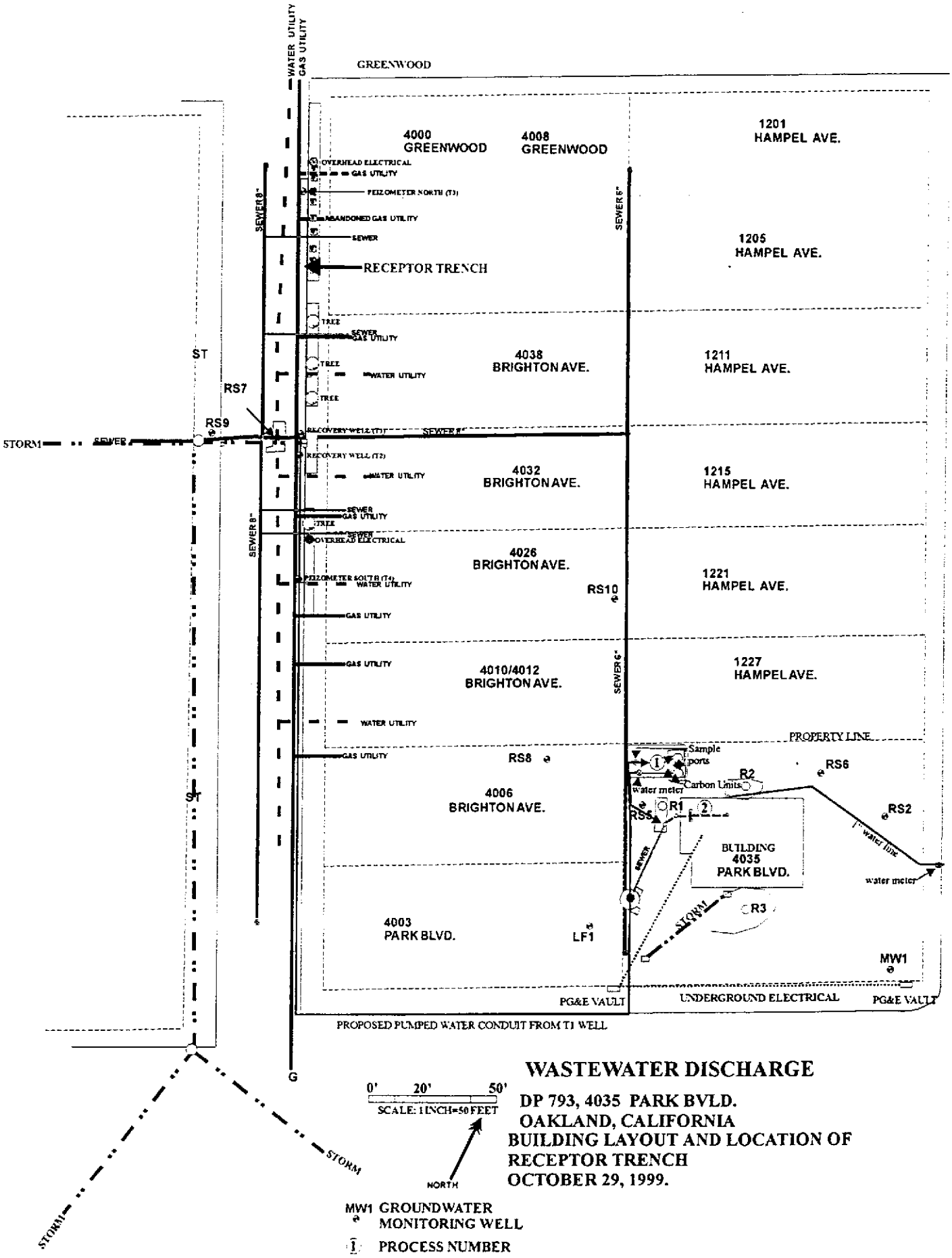
William E. Thompson 4/1/02
Signature Bill Thompson date

WASTEWATER DISCHARGE PERMIT # 5043550 1
FORMER DP #793
4035 PARK BLVD., OAKLAND, CALIFORNIA

WASTEWATER SOURCE ID	DATE	METER READING IN GALLONS #35635668 314110	NEW METER IN GALLONS #47083426	GALLONS DISCHARGED BETWEEN VISITS	ACCUMULATIVE GALLONS DISCHARGED	AVERAGE DISCHARGE PER MINUTE IN GALLONS	EPA METHOD 624 BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	7420 LEAD ug/L
BAKER TANK	1/25/00	314110		0	0	0.00					
BAKER TANK	1/26/00	315050		940	940	0.65	<1	<1	<1	<1	<50
BAKER TANK	1/28/00	321120	1098330	6070	7010	2.11					
BAKER TANK	2/2/00		1102560	4230	11240	0.59					
BAKER TANK	2/3/00		1107482.2	4922	16162	3.42	<1	<1	<1	<1	<50
BAKER TANK AND 1/4LY SAMPLES	2/7/00		1107482.2	0	16162	0.00					
F1 (PSP No. 1)	2/9/00		1109680	2198	18360	0.76	EPA METHOD 624				239.2
F1 (PSP No. 1)	3/23/00		1109720	40	18400	0.00	<1	<1	<1	<2	<5
F1 (PSP No. 1)	5/4/00		1110780	1060	19460	0.02					
F1 (PSP No. 1)	5/12/00		1111700	920	20380	0.08					
F1 (PSP No. 1)	5/18/00		1113359	1659	22039	0.19					
F1 (PSP No. 1)	5/25/00		1113840	481	22520	0.05					
F1 (PSP No. 1)	5/31/00		1115111	1271	23791	0.15					
F1 (PSP No. 1)	6/16/00		1115823	712	24503	0.03					
F1 (PSP No. 1)	6/28/00		1116293	470	24973	0.03					
F1 (PSP No. 1)	6/30/00		1116303	10	24983	0.00	EPA METHOD 624				200.7
F1 (PSP No. 1)	7/5/00		1116313	10	24993	0.00	<1	<1	<1	<2	<2
F1 (PSP No. 1)	7/13/00		1117816	1503	26496	0.13					
F1 (PSP No. 1)	7/20/00		1118892	1076	27572	0.11					
F1 (PSP No. 1)	7/27/00		1118892	0	27572	0.00					
F1 (PSP No. 1)	8/3/00		1120336	1444	29016	0.14					
F1 (PSP No. 1)	8/10/00		1121041	705	29721	0.07					
F1 (PSP No. 1)	8/17/00		1121041	0	29721	0.00					
F1 (PSP No. 1)	8/24/00		1121860	819	30540	0.08	EPA METHOD 624				200.7
F1 (PSP No. 1)	8/30/00		1122720	860	31400	0.10	<1	<2	<1	<2	<2
F1 (PSP No. 1)	9/7/00		1123270	550	31950	0.05					
F1 (PSP No. 1)	9/14/00		1123819	549	32499	0.05					
F1 (PSP No. 1)	9/21/00		1123819	0	32499	0.00					
F1 (PSP No. 1)	10/5/00		1124153	334	32833	0.02					
F1 (PSP No. 1)	10/12/00		1124660	507	33340	0.05					
F1 (PSP No. 1)	10/19/00		1125904.3	1244	34584	0.12					
F1 (PSP No. 1)	10/26/00		1127167	1263	35847	0.13					
F1 (PSP No. 1)	11/9/00		1128367.2	1200	37047	0.06					
F1 (PSP No. 1)	11/16/00		1129779.5	1412	38460	0.14					
F1 (PSP No. 1)	11/22/00		1130940.5	1161	39621	0.13					
F1 (PSP No. 1)	12/1/00		1134147	3207	42827	0.25	EPA METHOD 624				200.7

Figure 1(Revised December 5, 2001)
Activity: GROUNDWATER RECOVERY AND DISCHARGE SYSTEM
FORMER DESERT PETROLEUM SITE DP 793.





WASTEWATER DISCHARGE

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
BUILDING LAYOUT AND LOCATION OF RECEPTOR TRENCH
OCTOBER 29, 1999.

MW1 GROUNDWATER MONITORING WELL

1 PROCESS NUMBER

WATER METER

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

George Converse
Western Geo-Engineers
1386 East Beamer St.
Woodland, CA 95776

Subject : 13 Water Samples
Project Name : DP793
Project Number : DP793

Dear Mr. Converse,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Subject : 13 Water Samples
Project Name : DP793
Project Number : DP793

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples R1, R3, RS8, RS6, RS10, CARBON DISCHARGE, MW1, RS2, RS9, T1, RS5, RS7, R2 for the analytes Benzene, Toluene were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 24919
Date : 3/6/02

Project Name : **DP793**
Project Number : **DP793**

Sample : **CARBON DISCHARGE** Matrix : Water Lab Number : 24919-13
Sample Date :2/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	3/3/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/3/02
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	3/3/02
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	3/3/02

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Method Blank Data

Project Name : **DP793**

Project Number : **DP793**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/1/02
Toluene - d8 (Surr)	102		%	EPA 8260B	3/1/02
4-Bromofluorobenzene (Surr)	97.8		%	EPA 8260B	3/1/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **DP793**

Project Number : **DP793**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	24919-09	33	18.7	20.0	41.7	44.3	ug/L	EPA 8260B	3/1/02	44.3	54.2	20.0	70-130	25
Toluene	24919-09	21	18.7	20.0	30.7	33.6	ug/L	EPA 8260B	3/1/02	50.6	62.0	20.1	70-130	25
Tert-Butanol	24919-09	<5.0	93.6	100	87.7	90.6	ug/L	EPA 8260B	3/1/02	93.6	90.5	3.44	70-130	25
Methyl-t-Butyl Ether	24919-09	<0.50	18.7	20.0	18.3	15.6	ug/L	EPA 8260B	3/1/02	97.8	78.0	22.6	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 24919

Date : 3/6/02

QC Report : Laboratory Control Sample (LCS)

Project Name : **DP793**

Project Number : **DP793**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	3/2/02	95.6	70-130
Toluene	20.0	ug/L	EPA 8260B	3/2/02	91.3	70-130
Tert-Butanol	100	ug/L	EPA 8260B	3/2/02	88.8	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	3/2/02	97.4	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 24919 Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George Converse
Company/Address: 1386 E. Beamer St. Woodland
Phone No.: 530 668 5300 FAX No.: 530 662 0273
Project Number: OP 793 P.O. No:
Project Address: 4035 Park Blvd Oakland
Project Name: OP 793

EDF Report? ☐ Yes ☐ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address): wege@mother.com
Sampler Signature: L2 Broadway

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	For Lab Use Only
R1	2/19/02	1125	3				✓		✓		-01
R2		1036									-02
R3		1141									-03
MW1		940									-04
~~R8~~ RS2		1000									-05
RS 5		1105	4	4							-06
RS 6		918									-07
RS 7		1230									-08
RS 8		1202									-09
RS 9		1221									-10

Analysis Request

BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2)	TOTAL (X)	W.E.T. (X)
				✓										

TAT: 12 hr / 24 hr / 48 hr / 72 hr / (5 day)

Relinquished by:	Date	Time	Received by:
L2 Broadway	2/21/02	1605	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	022102	1405	Kris A. Kinziger / KIFF ANALYTICAL

Remarks:

Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/co... 001.fh9

KIFF ANALYTICAL LLC

720 Olive Drive, Suite D
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4803

Lab No. 24919 Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): George Converse
Company/Address: 1386 E. Bearner
Phone No.: 530-668-5300 FAX No.:
Project Number: P.O. No:
Project Address: 4035 Park Blvd
Project Name: DP793

EDF Report? ☐ Yes ☐ No
Recommended but not mandatory to complete this section:
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address):
Sampler Signature: J2 Broadway

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Container: SLEEVE	Preservative: HCl	Preservative: HNO_3	Preservative: ICE	Preservative: NONE	Matrix: WATER	Matrix: SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT: 12 hr/24 hr/48 hr/72 hr/ (5)	For Lab Use Only
RS10	2/19/02	1212	3																						-11
TL	"	1235	1																						-12
Carbon Discharge	"	1100																							-13

	Date	Time		
Relinquished by: J2 Broadway	2/21/02	1605	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	022202	1605	Received by Laboratory: Kris A. Zimmer / KIFF ANALYTICAL	

Remarks:

Bill to:

Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 121001.fh9