FOURTH QUARTER 2001
GROUNDWATER SAMPLING REPORT
WITH
AMENDED WORKPLAN TO
AUGMENT THE GROUNDWATER WITH OXYGEN
(APPENDIX G)

AT

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

FOR

DESERT PETROLEUM

January 7, 2002

BY

-WEGE-
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January 7, 2002

Dear Mr. Thompson:

The following report documents the fourth quarter 2001 sampling and includes the modified workplan (see Appendix G) to augment the groundwater with oxygen at DP793, 4035 Park Blvd., Oakland, California.

1.0 SITE LOCATION AND DESCRIPTION

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).

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 December 18, 2001. Samples were analyzed for Total Petroluem Hydrocabons as gasoline, Benzene, Toluene, Ethylbenzene, Xylenes and Methyl tert-Butal Alcohol using EPA method 8260B. During this time all wells sampled were field tested for Dissolved Oxygen, Sulfate, Nitrate and Ferrous Iron, see Tables 1 and 2. Figure 3 shows the positions of the groundwater monitoring wells, the receptor trench and previous sample locations.

3.1 Depth to Water Measurements

On December 18, 2001 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 December 18, 2001.

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 December 18, 2001, 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 charts 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.

4.2 Results of Certified Analysis of Groundwater Samples

The results of the certified analyses of groundwater samples collected on December 18, 2001 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 48 mg/l at trench well T1, to below laboratory lower detection limits of 50 ug/L in wells MW1, RS2, RS10, R1 and R3 respectively. Benzene concentrations ranged from a maximum of 3.7 mg/L in T1 to below the laboratory lower detection limits (0.5 ug/L) at wells MW1, RS2, 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. RS7 and the trench well T1 contained 2.3 and 24 ug/L MTBE respectively. 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 (December 18, 2001) shows the lateral distribution of the hydrocarbon plume with benzene distinction in groundwater as determined from groundwater samples collected from the monitor wells and from non-certified results from the Soil Probe Surveys. Figure 6 (August 26, 1999) shows the lateral distribution of the hydrocarbon plume with benzene distinction in groundwater prior to 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 December 18, 2001 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. 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 current dissolved oxygen measurements are at 2.5 mg/L or greater, see Figure 7.

7.2 Sulfate

Figure 8 represents sulfate measurements obtained during the December 18, 2001 quarterly monitoring. Comparing sulfate measurements obtained in August 1999, Figure 8-1, to the

December 2001 measurements, 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

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

7.4 Ferrous Iron

Figure 10 represents ferrous iron measurements obtained during the December 18, 2001 quarterly monitoring. The measurements obtained in August 1999, Figure 10-1, and the December 2001 measurements, 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.

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 current conditions was 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. 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). The ammeded workplan is presented in Appendix G of this report and suggests that ORC would be the most beneficial means of enhancing dissolved oxygen in the groundwater plume.

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

Jack E. Napper
Ca. 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#	(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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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	11/09/92	228.15	17.05	211.1		1700	**730**	9.6	16	14		
RS-1	04/07/94	228.15	13	215.15		860	**84**	12	16	110		
RS-1	06/19/94	228.15	13.37	214.78		1400	**150**	12	52	87		
RS-1	09/17/94	228.15	16.33	211.82		310	**30**	1.8	2.8	3.9		
RS-1	03/12/95	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	10/04/95	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	

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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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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	****
RS-2	12/14/89	227.39									
RS-2	06/19/94	227.39	10.89	216.50							
RS-2	03/12/95	227.39	5.26	222.13	ND	ND	ND	ND	ND		
RS-2	10/04/95	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	

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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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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-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	11/09/92	227.61	20.73	206.88		50000	650	4800	1100	15000		
RS-5	04/07/94	227.61	18.16	209.45		27000	5000	8700	550	2800		
RS-5	06/19/94	227.61	18.11	209.5		20000	2100	5300	470	2500		
RS-5	09/17/94	227.61	19.63	207.98		9300	230	340	110	700		
RS-5	03/12/95	227.61	14.54	213.07		93000	6400	2000	19000	10000		
RS-5	10/04/95	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	2100	9400	1300	5800	<0.5	

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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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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-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	11/09/92	227.22	19.43	207.79		19000	1600	710	500	1600		
RS-6	04/07/94	227.22	14.42	212.8		16000	1200	1300	290	1100		
RS-6	06/19/94	227.22	14.45	212.77		23000	1300	2200	590	2200		
RS-6	09/17/94	227.22	19.52	207.7		24000	630	790	250	1100		
RS-6	03/12/95	227.22	8.90	218.32		3200	450	13	82	230		
RS-6	10/04/95	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	

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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-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									

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)
RS-7	9/91	195.99	FLOATING PRODUCT								
RS-7	12/91	195.99				270000	11000	22000	2000	13000	
RS-7	11/09/92	195.99	4.62	191.37		81000	12000	16000	1900	13000	
RS-7	04/07/94	195.99	4.03	191.96		74000	16000	16000	1400	8500	
RS-7	06/19/94	195.99	4.07	191.92		83000	22000	19000	1500	9500	
RS-7	09/17/94	195.99	4.05	191.94		270000	13000	15000	2100	1100	
RS-7	03/12/95	195.99	3.72	192.27		35000	5100	560	6300	3600	
RS-7	10/04/95	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

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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-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-9	12/14/89											

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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-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										

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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	****
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**	

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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	****
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	

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)	
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	****
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	****
T 1	12/14/89										
T 1	09/04/96										

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)	TOLUENE (UG/L)	ETHYL-BENZENE (UG/L)	XYLENES (UG/L)	MTBE (UG/L)
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** ****

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 #2814
**** 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)	TEMP-ERATURE (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	0.87	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					

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 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					
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	197.48	CAR			nm	nm	nm	nm	nm	nm	NA					
	9/2/99	197.48	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 milli
< 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

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)	12/7/00		1134289	142	42969	0.02	<1	<1	<1	<2	<2
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)	12/18/01			238	141669	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 GALLON: 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	780	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								
WEGE	10/26/00		1127167.0	2.22	1263	35847								

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 GALLON 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	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		1138659.0	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	19668.9		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			141668.2	48000	3700	5500	1200	5300	24

per liter (parts per billion)
is 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 28, 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					
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
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
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
TPHg in soil 20-25 foot depth AUGUST 1999								
2900	5	14500	10	1	5.5	780133.4	4290733.425	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
Total pounds TPHg in Soil AUGUST 1999								2884.9

TABLE 5 POUNDS HYDROCARBONS

DP 793

4035 PARK BLVD, OAKLAND, CA

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
Total Calculated Mass TPHg in Groundwater DECEMBER 2001								20.14

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
Total Calculated Mass Benzene in Groundwater 2001								1.77

ESTIMATED POUNDS GROUNDWATER TPHg REDUCTION FROM 1999 TO 2001	82.0
ESTIMATED POUNDS GROUNDWATER BENZENE REDUCTION FROM 1999 TO 2001	11.5
ESTIMATED % REDUCTION TPHg	80.3
ESTIMATED % REDUCTION BENZENE	86.7

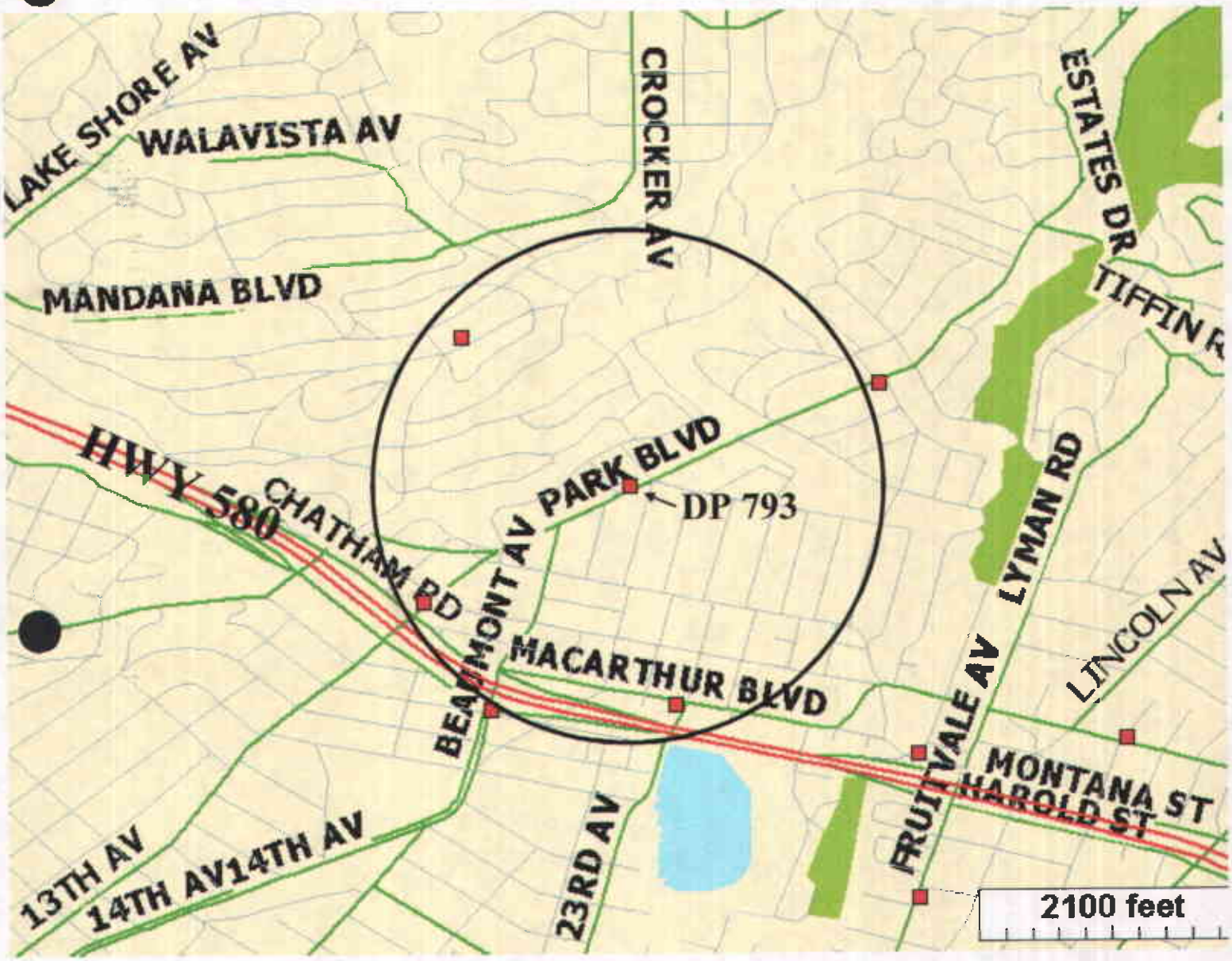


FIGURE 1
GEOTRACKER
AREA WELL & LUST MAP
DP 793
4035 PARK BLVD.
OAKLAND, CA

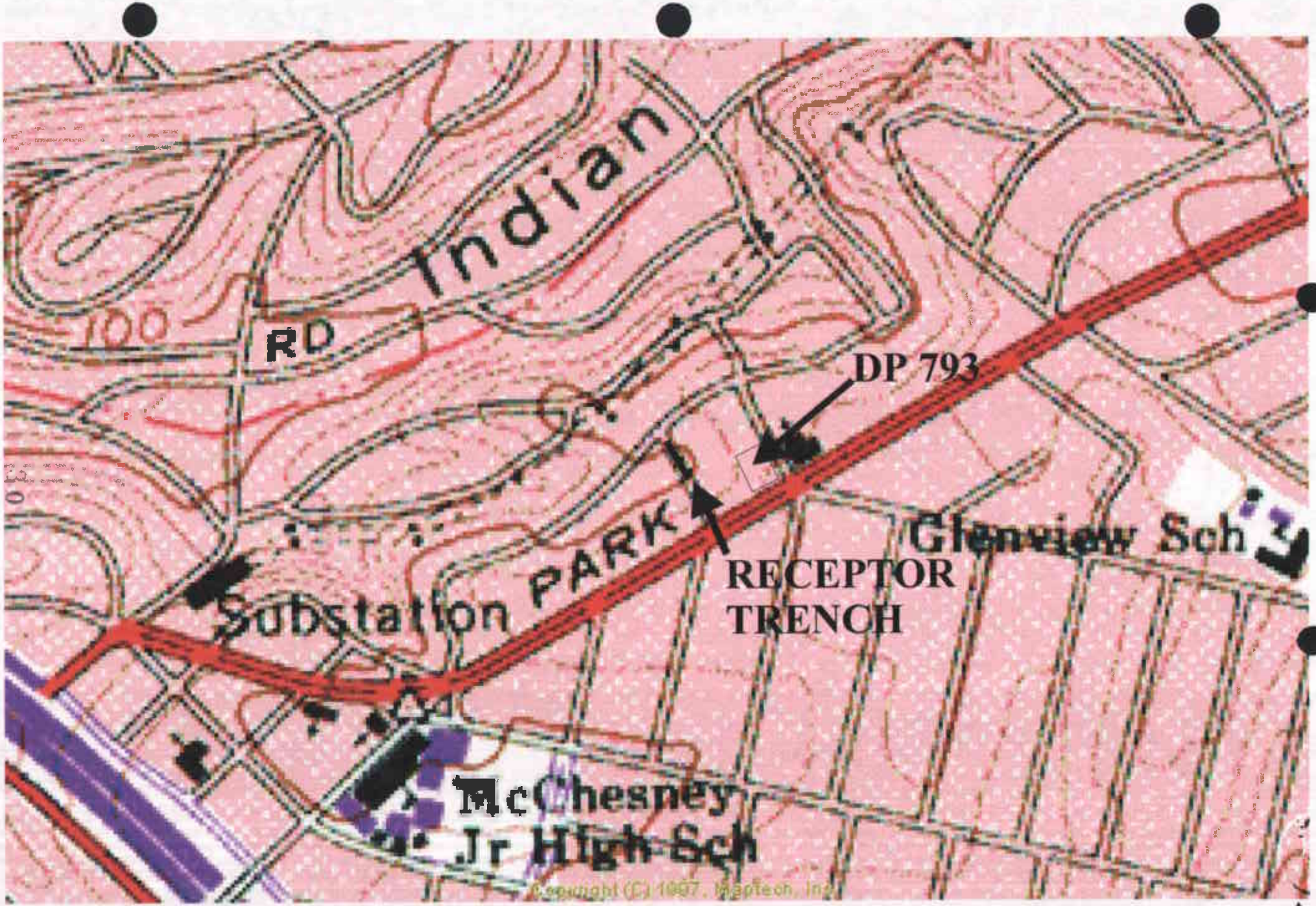


FIGURE 2
PORTION OF OAKLAND EAST 7.5 MINUTE USGS TOPOGRAPHIC MAP

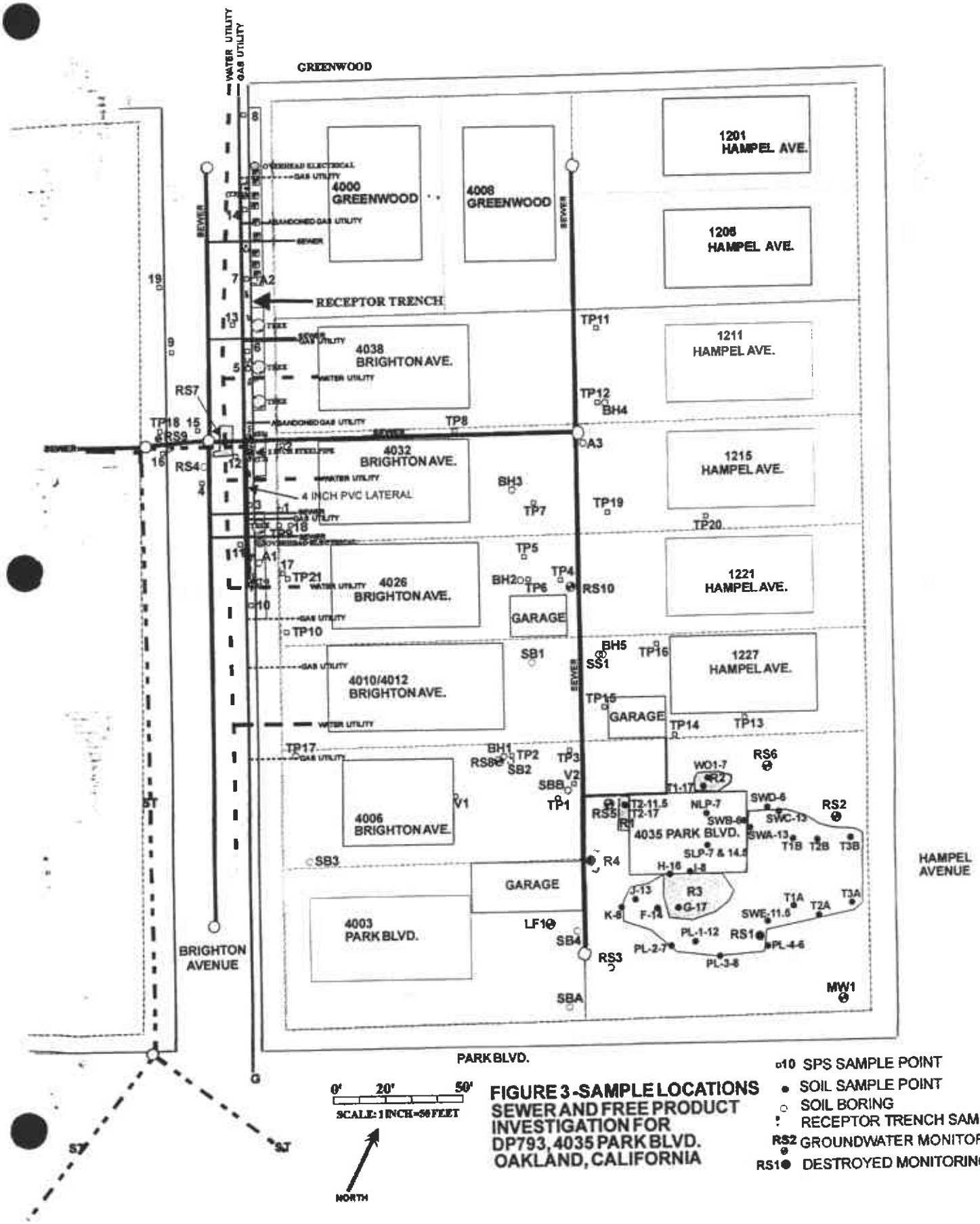


FIGURE 3 -SAMPLE LOCATIONS
SEWER AND FREE PRODUCT INVESTIGATION FOR DP793, 4035 PARK BLVD. OAKLAND, CALIFORNIA

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

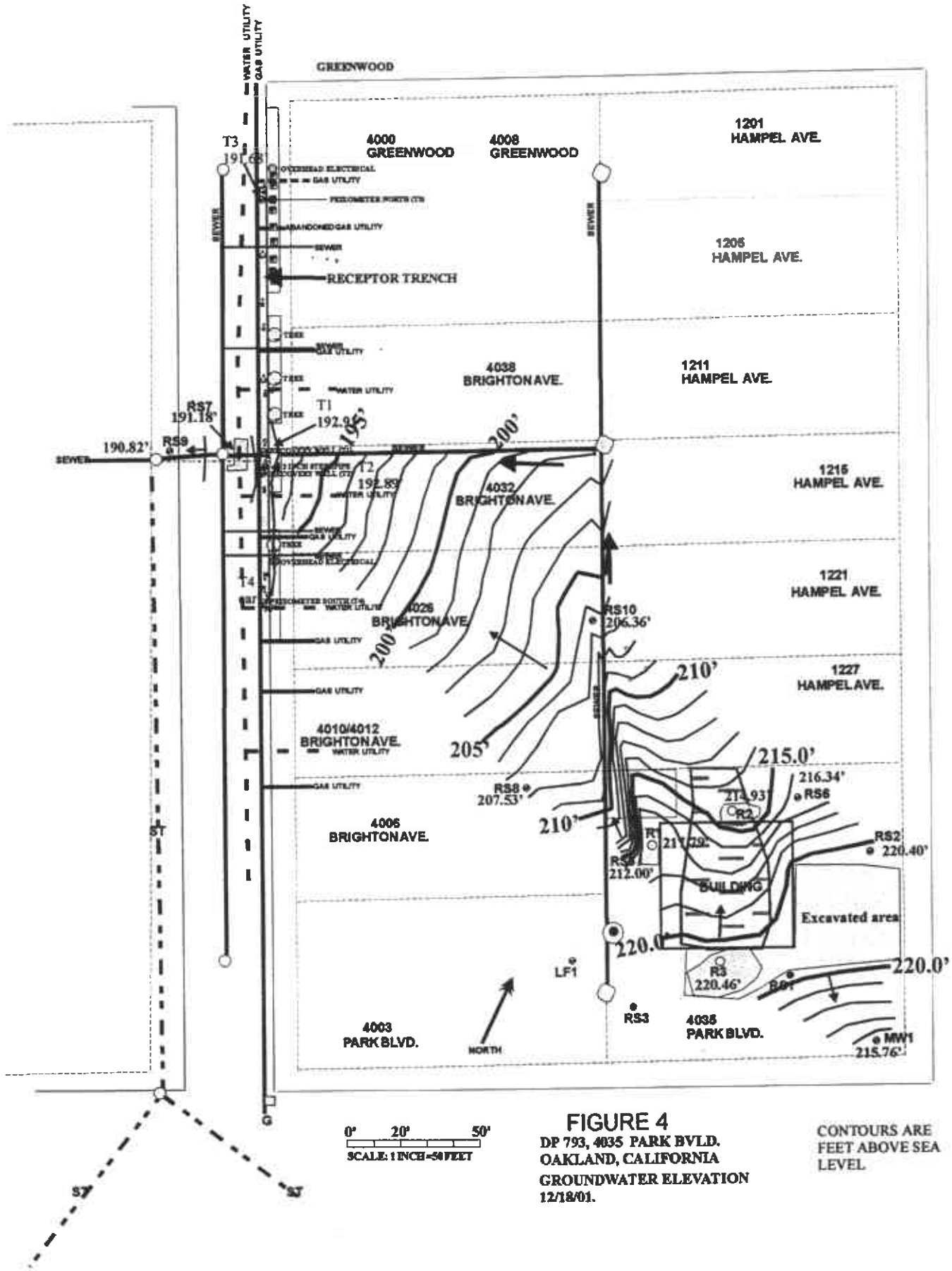


FIGURE 4
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION
12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

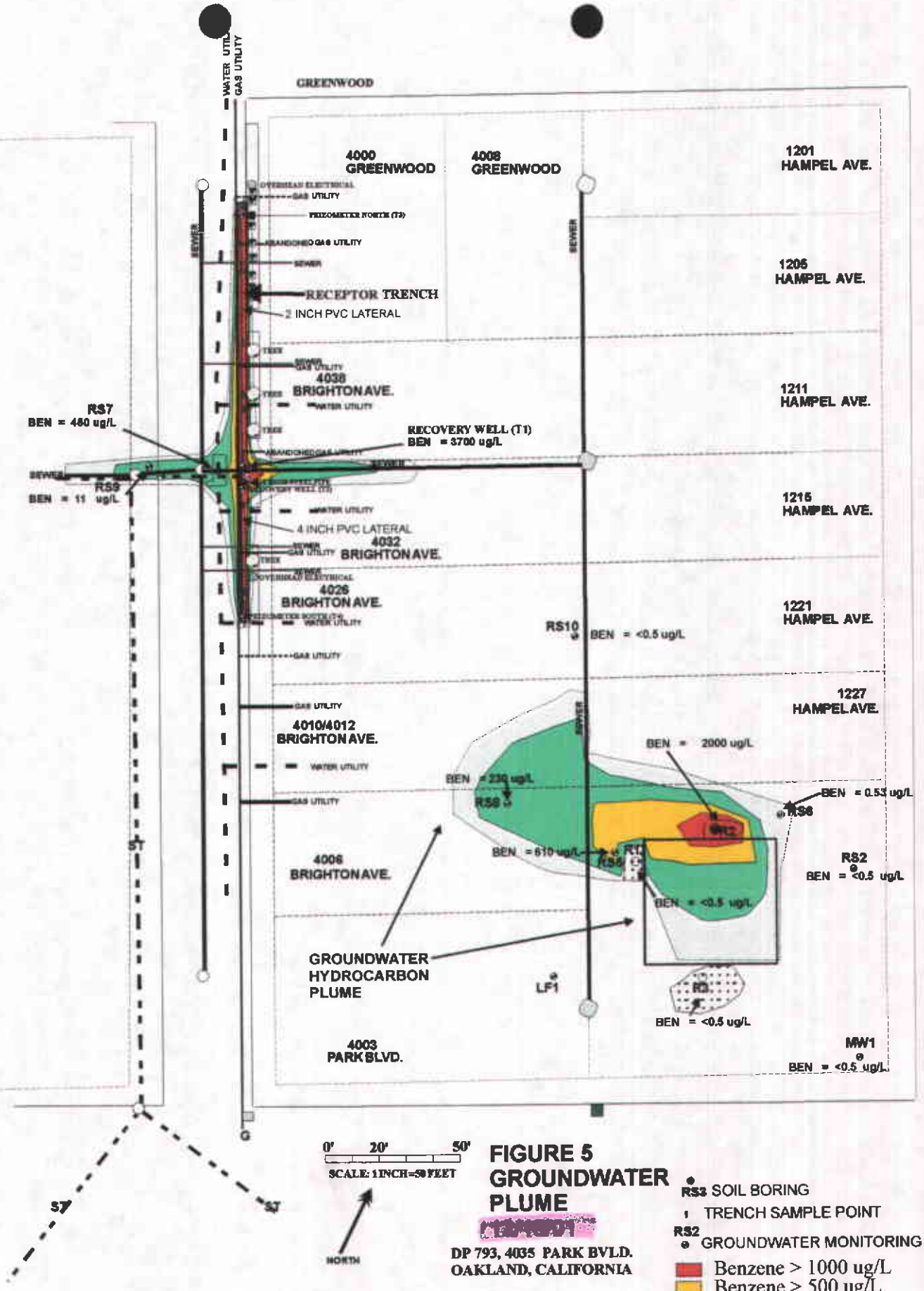


FIGURE 5
GROUNDWATER PLUME

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

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

12/01

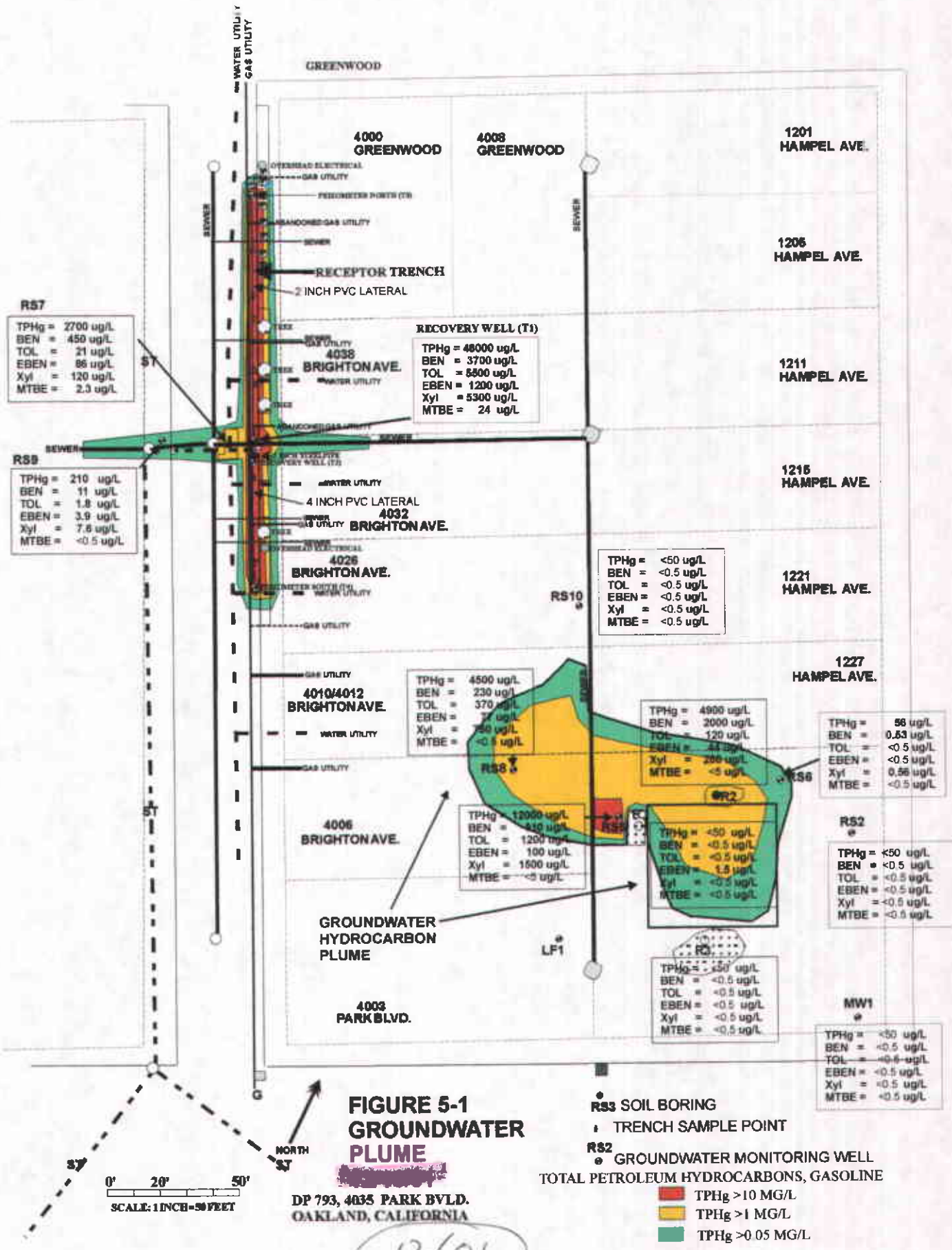


FIGURE 5-1
GROUNDWATER PLUME
[redacted]
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA

12/01

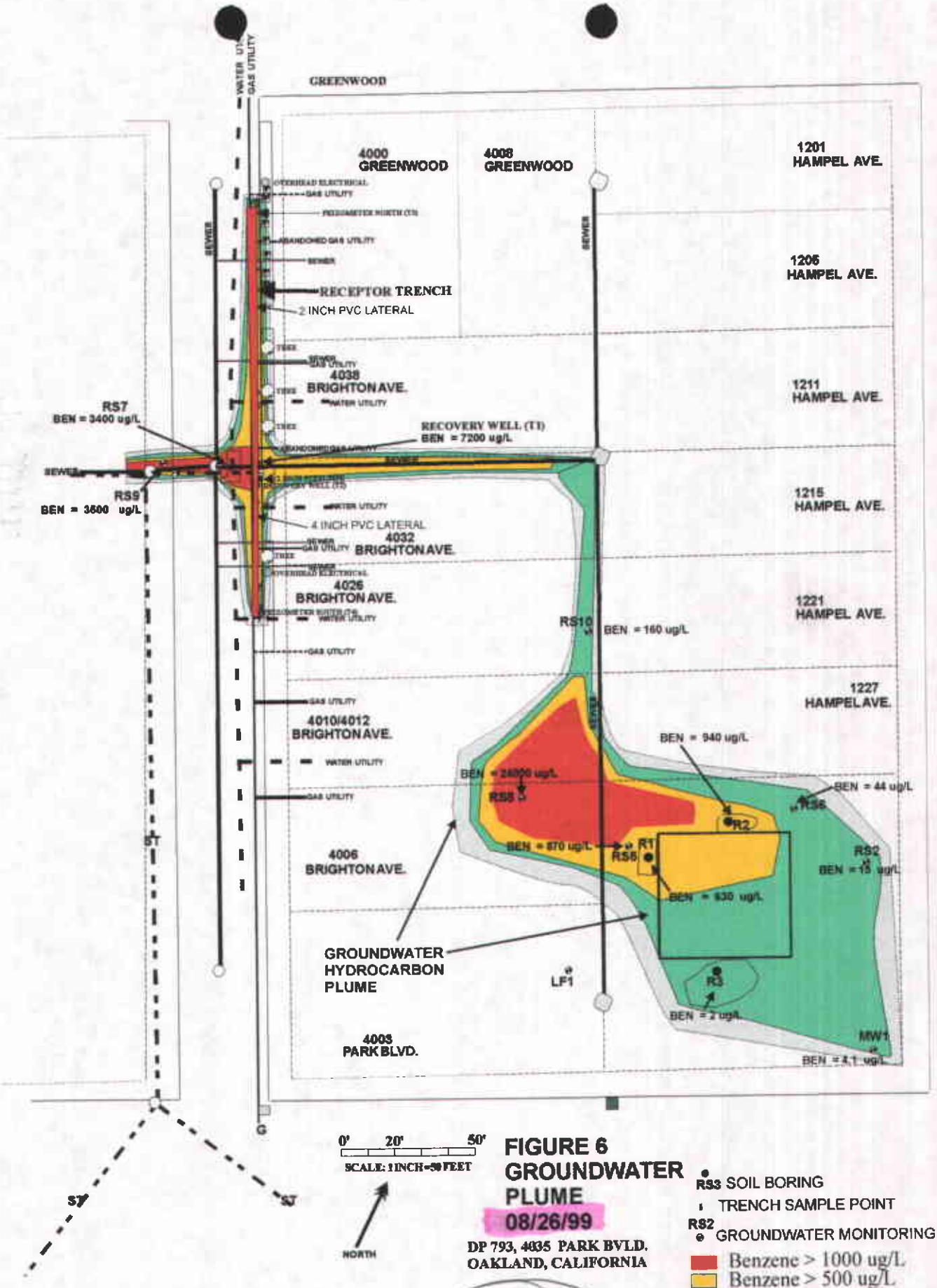


FIGURE 6
GROUNDWATER PLUME
08/26/99

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

8/99

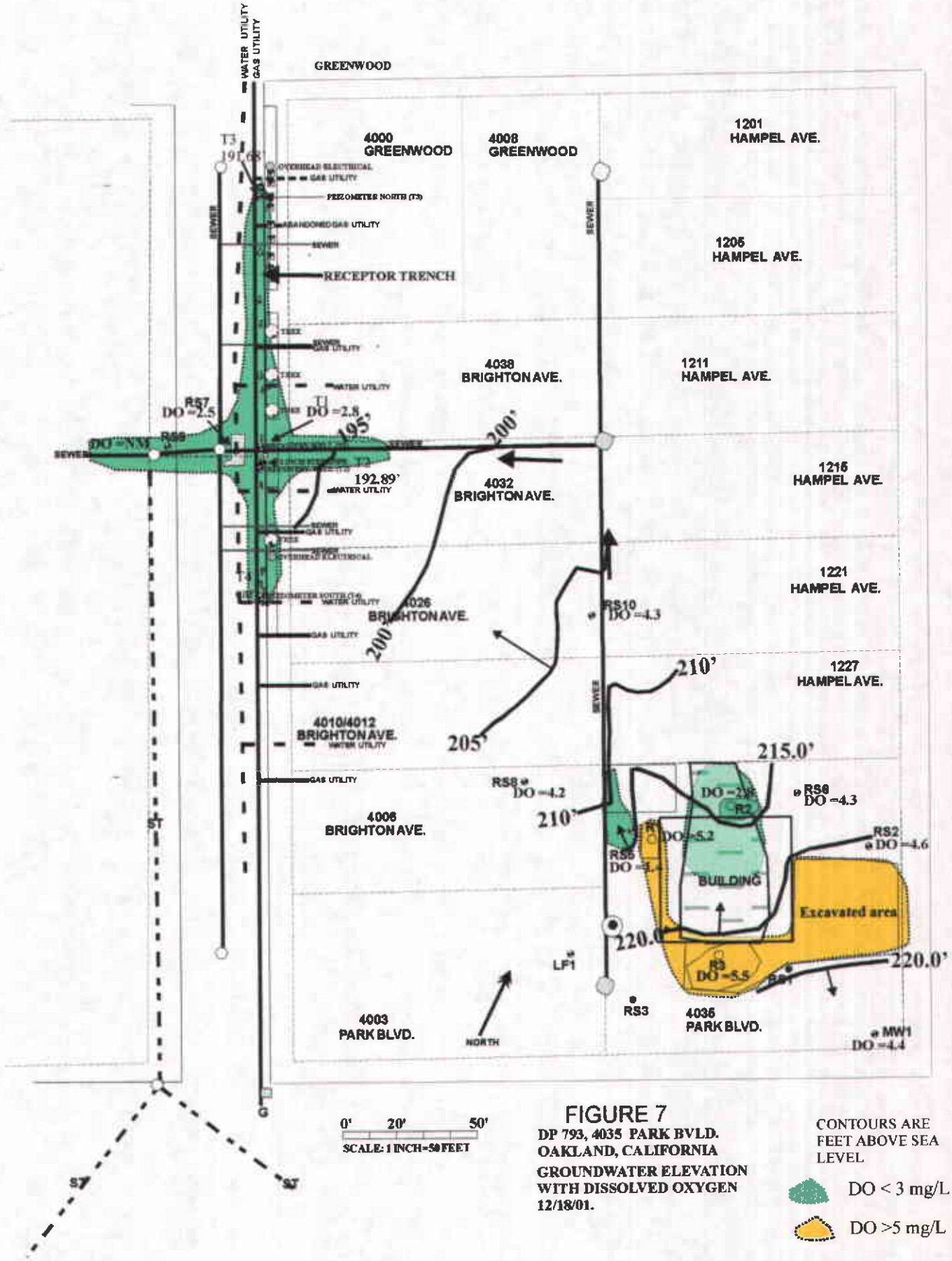


FIGURE 7

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

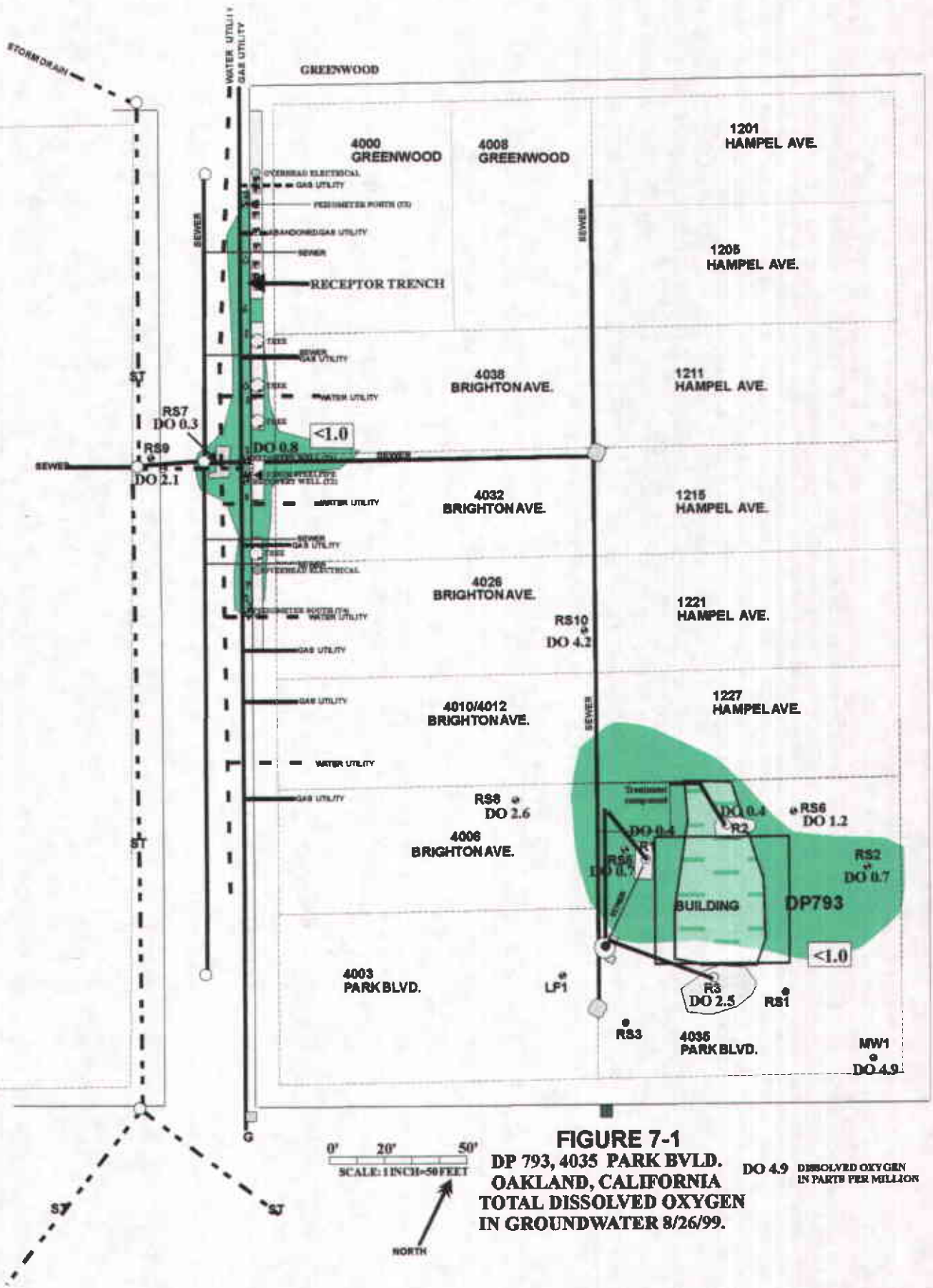


FIGURE 7-1
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
TOTAL DISSOLVED OXYGEN IN GROUNDWATER 8/26/99.

DO 4.9 DISSOLVED OXYGEN IN PARTS PER MILLION

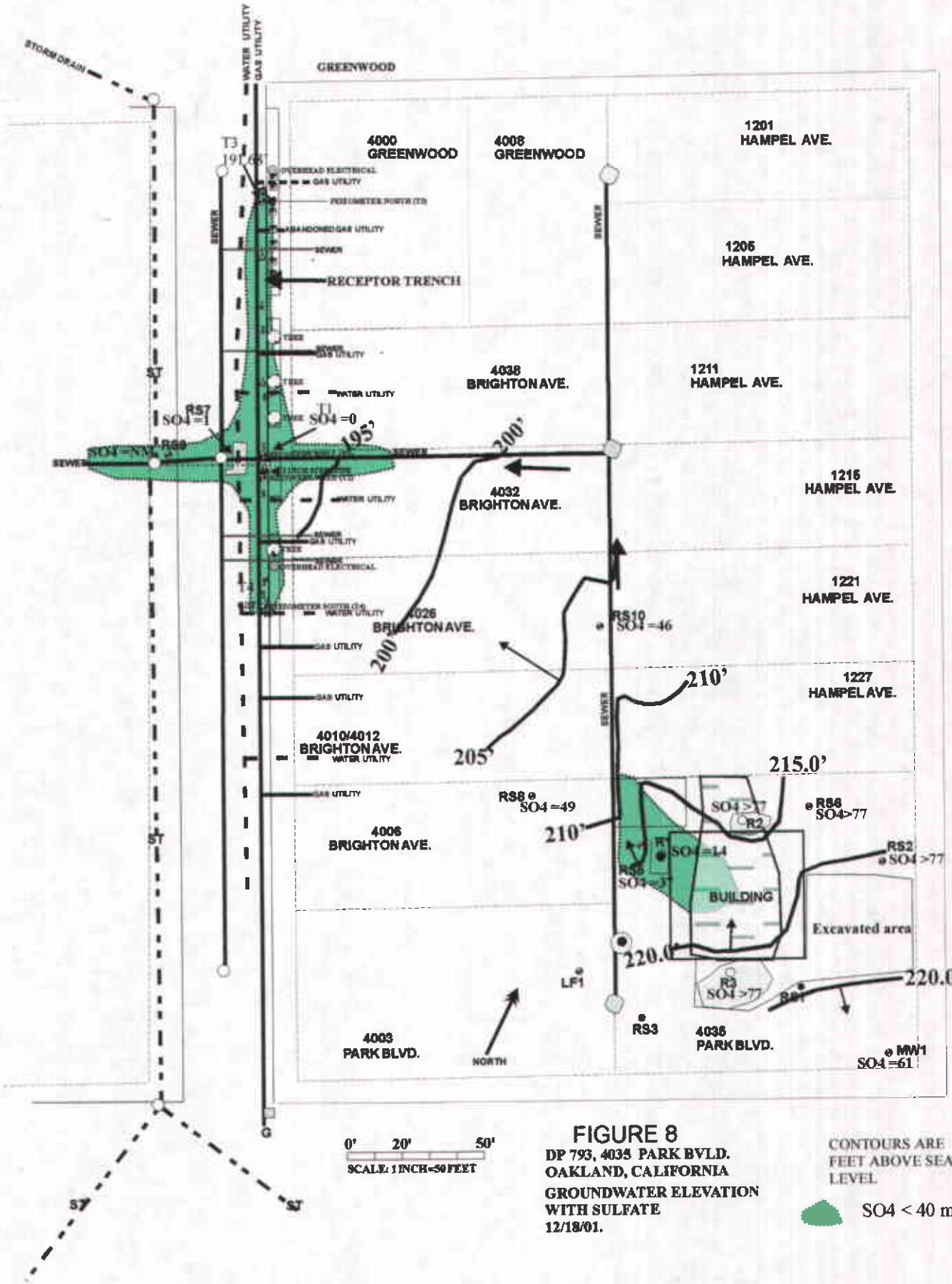


FIGURE 8

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

CONTOURS ARE FEET ABOVE SEA LEVEL

SO4 < 40 mg/L

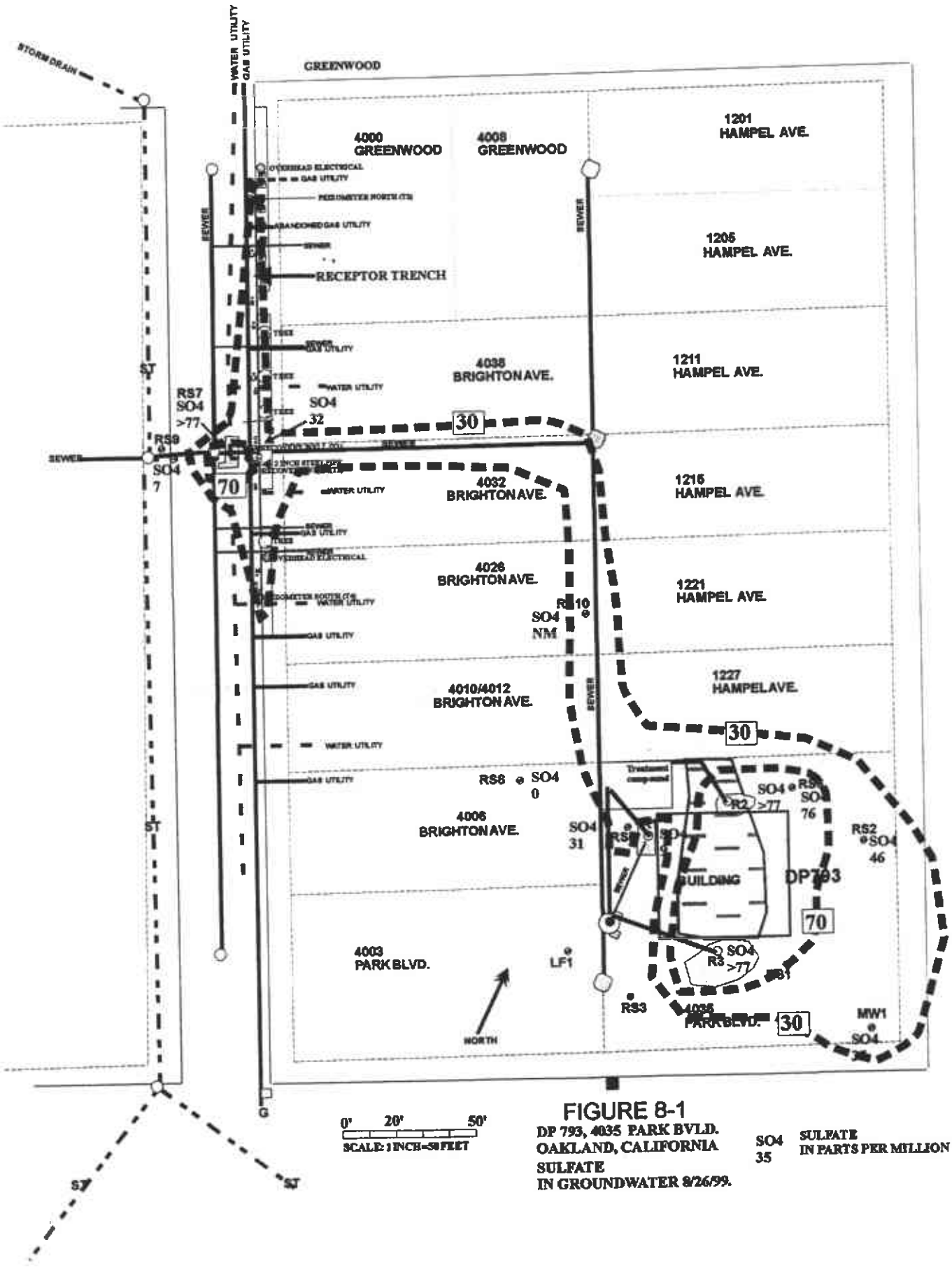


FIGURE 8-1
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
SULFATE
IN GROUNDWATER 8/26/99.

SO4 SULFATE
35 IN PARTS PER MILLION

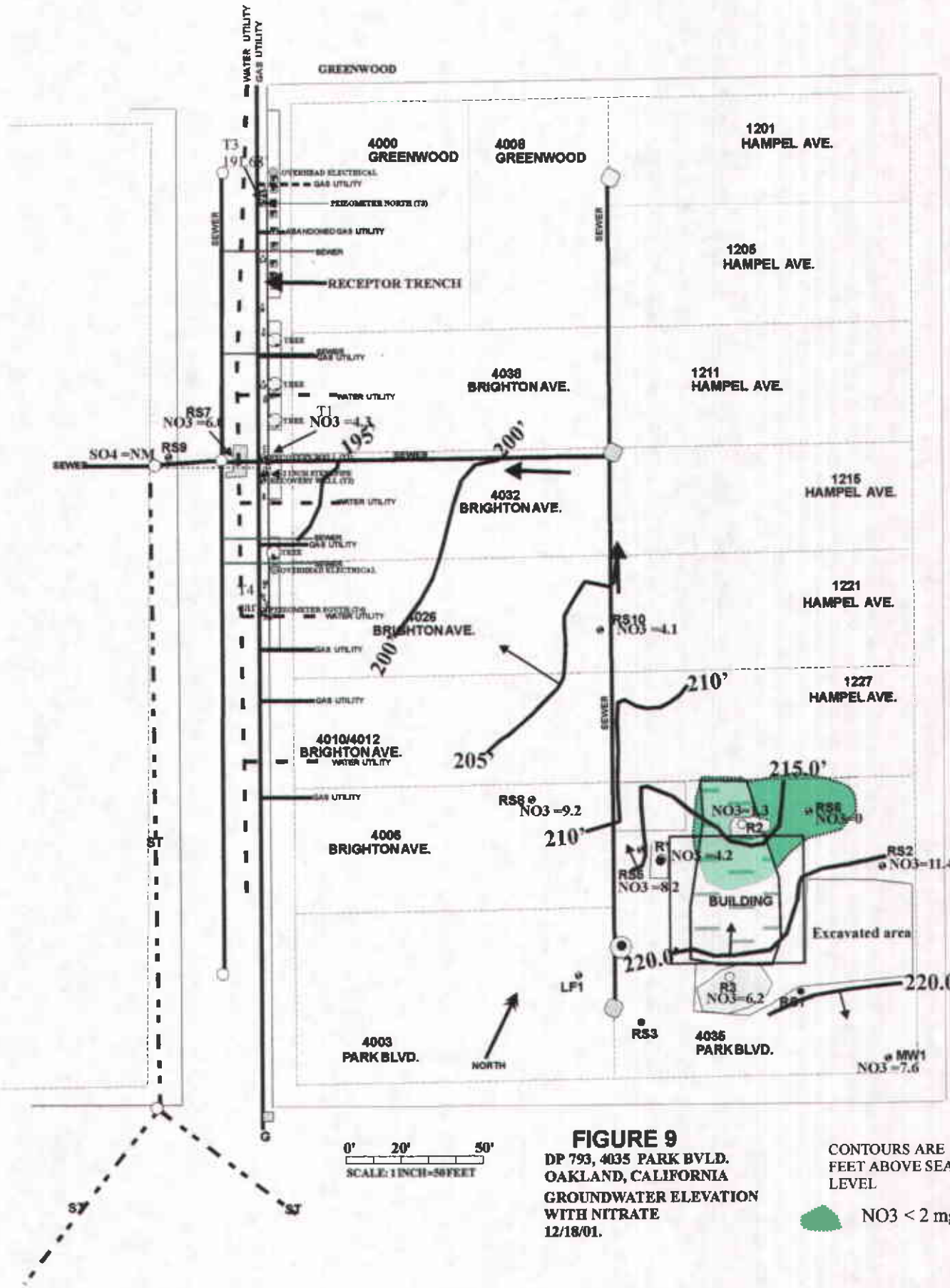


FIGURE 9
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
GROUNDWATER ELEVATION WITH NITRATE
12/18/01.

CONTOURS ARE FEET ABOVE SEA LEVEL

NO3 < 2 mg/L

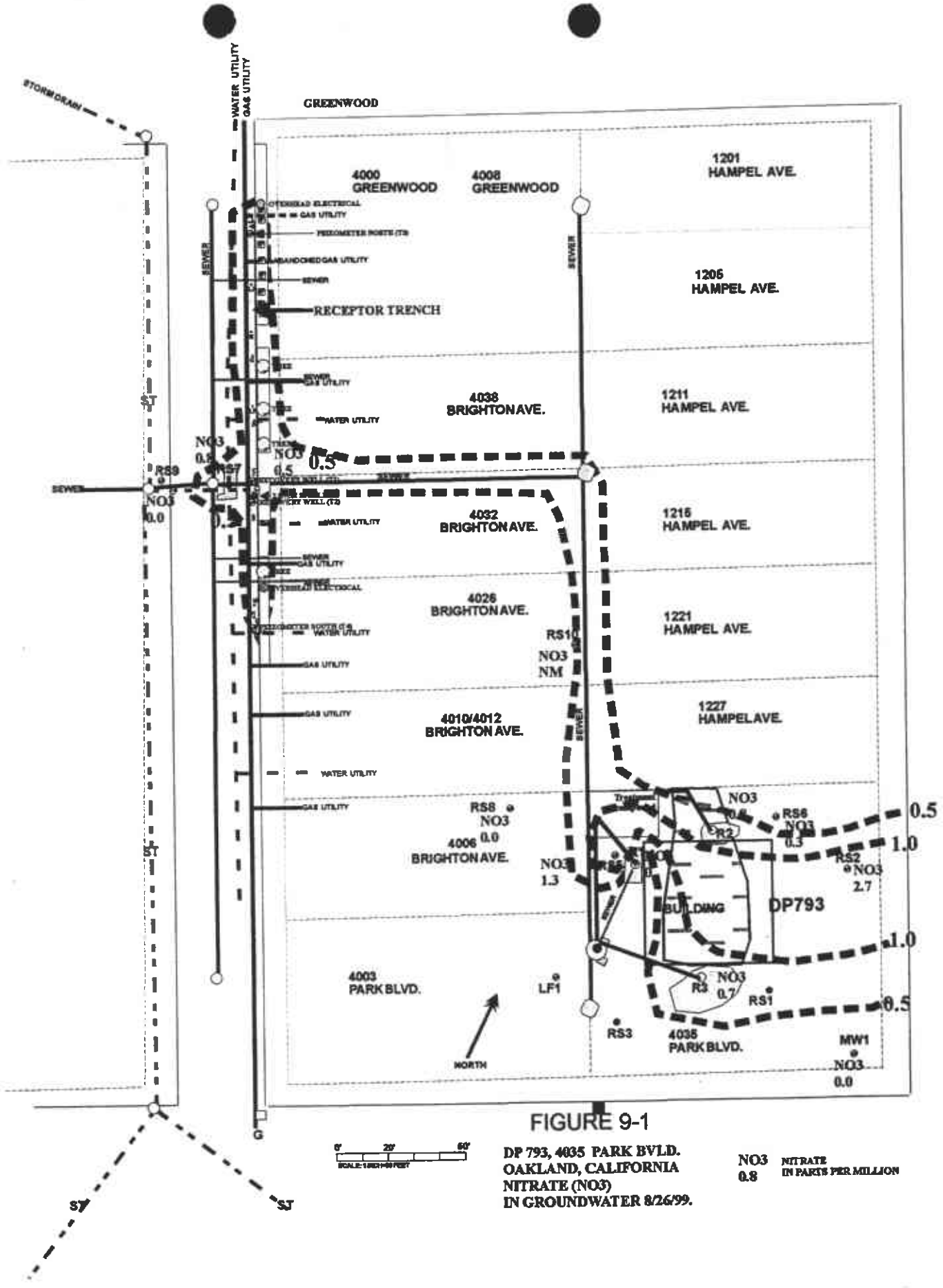


FIGURE 9-1

DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
NITRATE (NO3)
IN GROUNDWATER 8/26/99.

NO3 NITRATE
0.8 IN PARTS PER MILLION

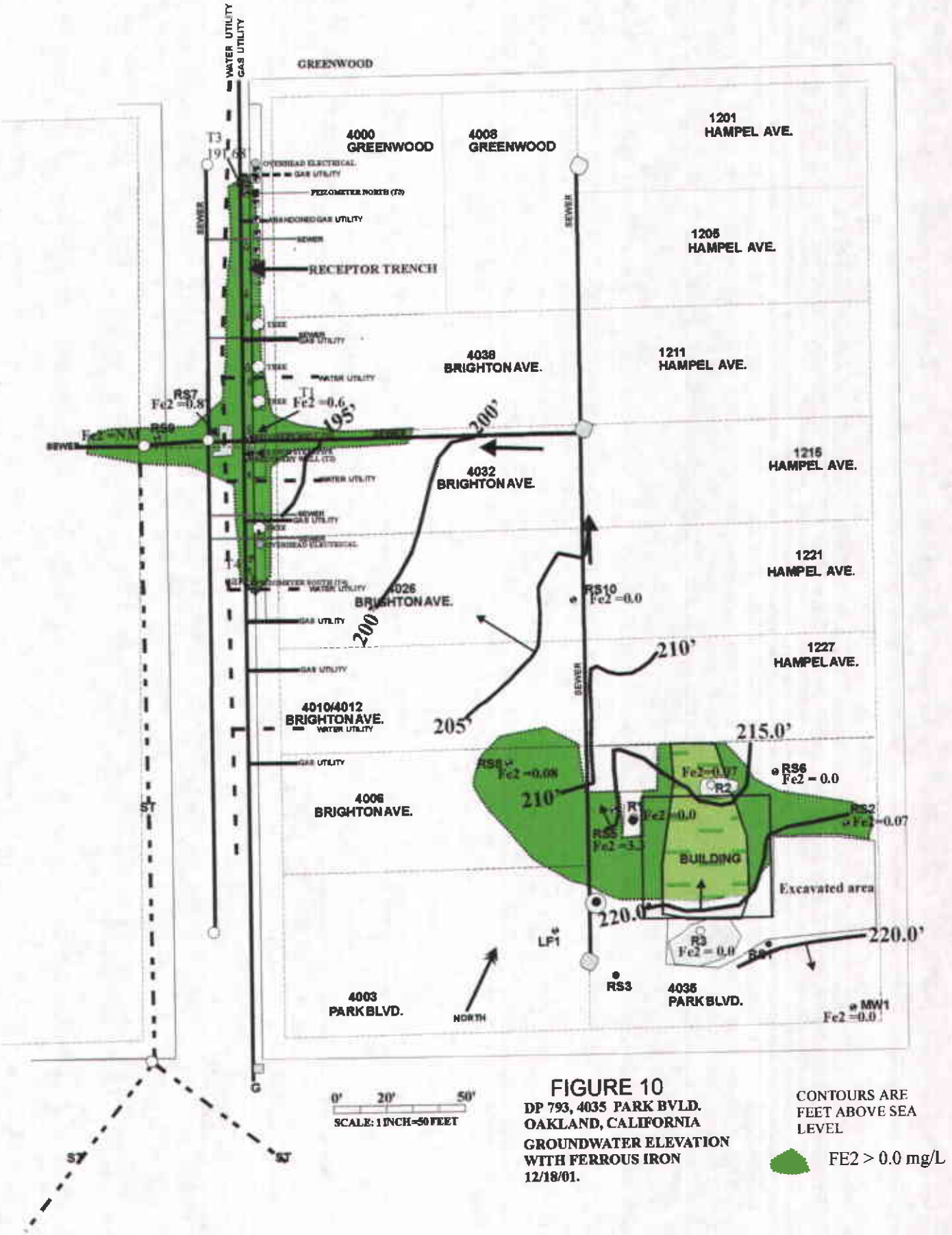


FIGURE 10

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

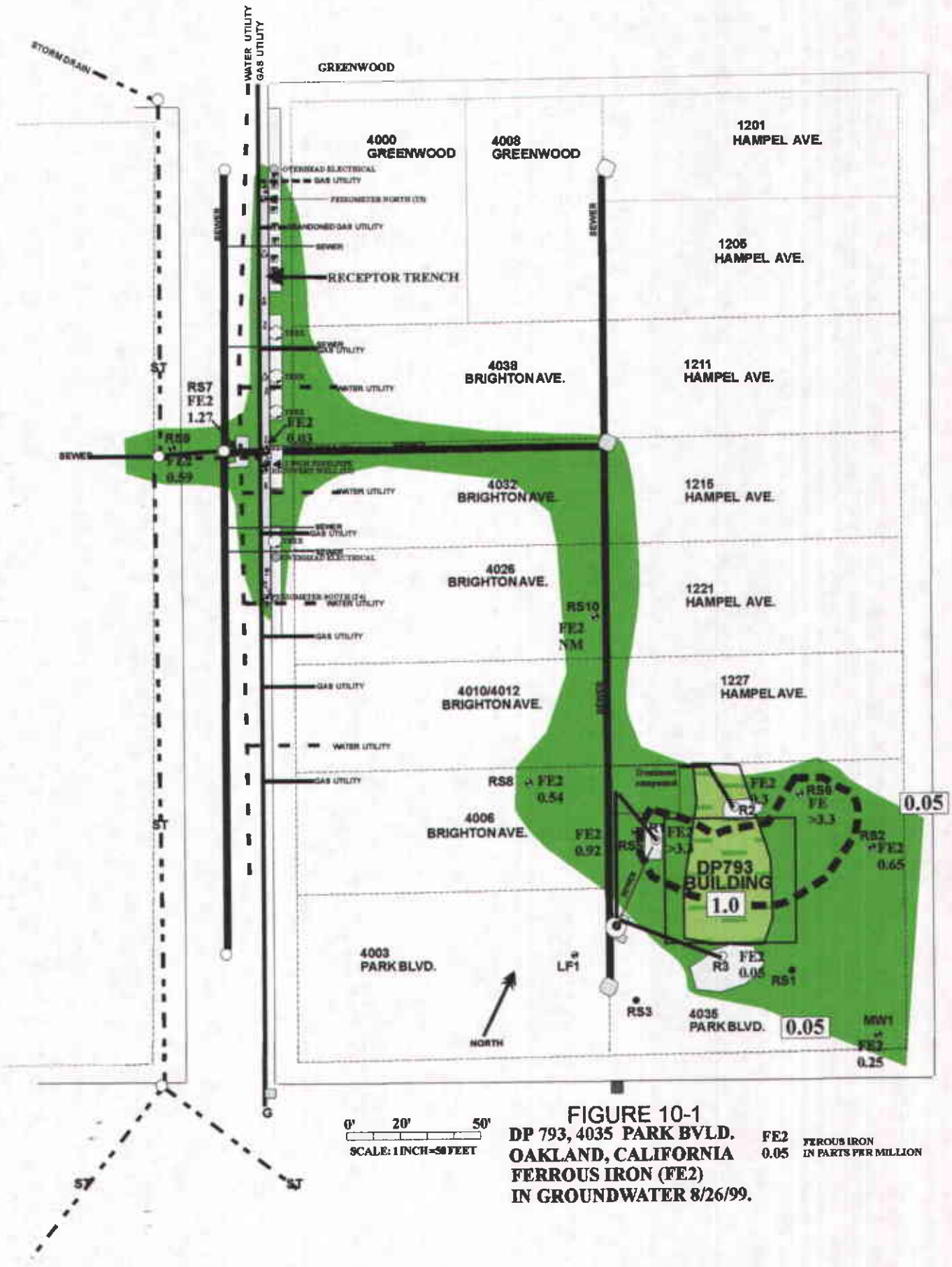


FIGURE 10-1
DP 793, 4035 PARK BVLD.
OAKLAND, CALIFORNIA
FERROUS IRON (FE2)
IN GROUNDWATER 8/26/99.

FE2 FEROUS IRON
0.05 IN PARTS PER MILLION

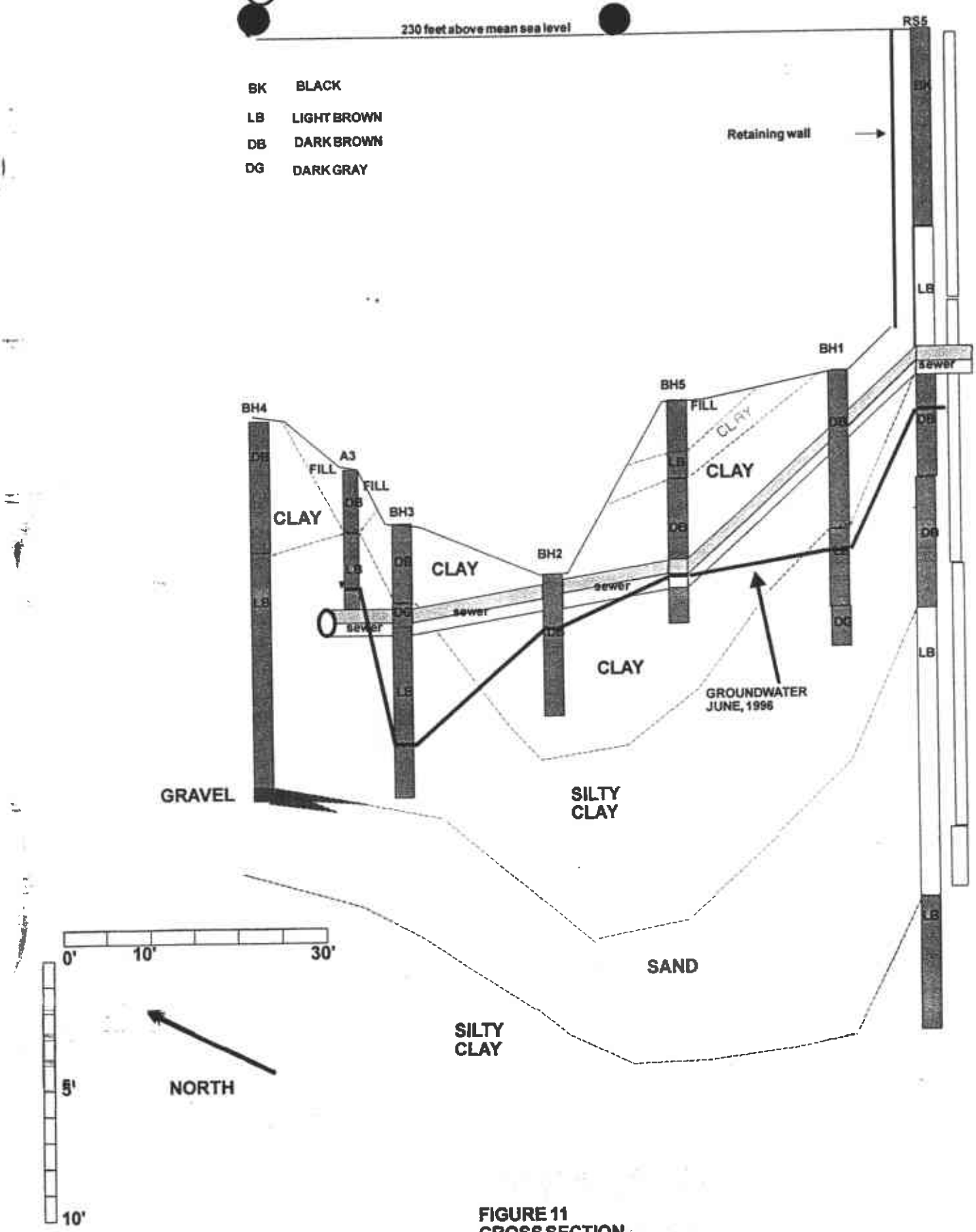


FIGURE 11
CROSS SECTION
FREE PRODUCT INVESTIGATION
FOR
DP793, 4035 PARK BLVD.
OAKLAND, CALIFORNIA

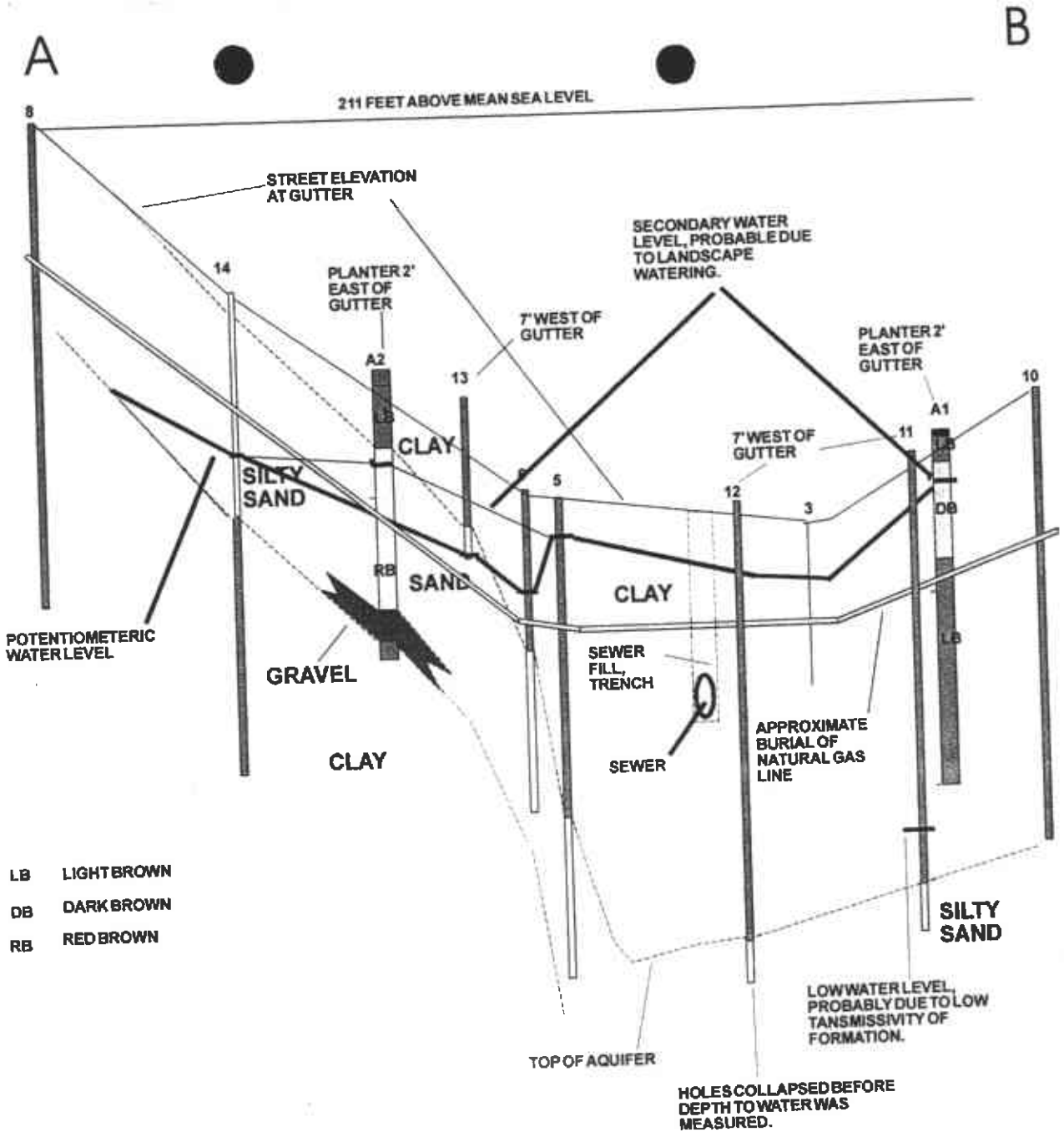


FIGURE 12
CROSS SECTION
FREE PRODUCT INVESTIGATION
FOR
DP793, 4035 PARK BLVD.
OAKLAND, CALIFORNIA

APPENDIX A

METHODS AND PROCEDURES, QA/QC WITH FIELD NOTES

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.

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

Analytical Results

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

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

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

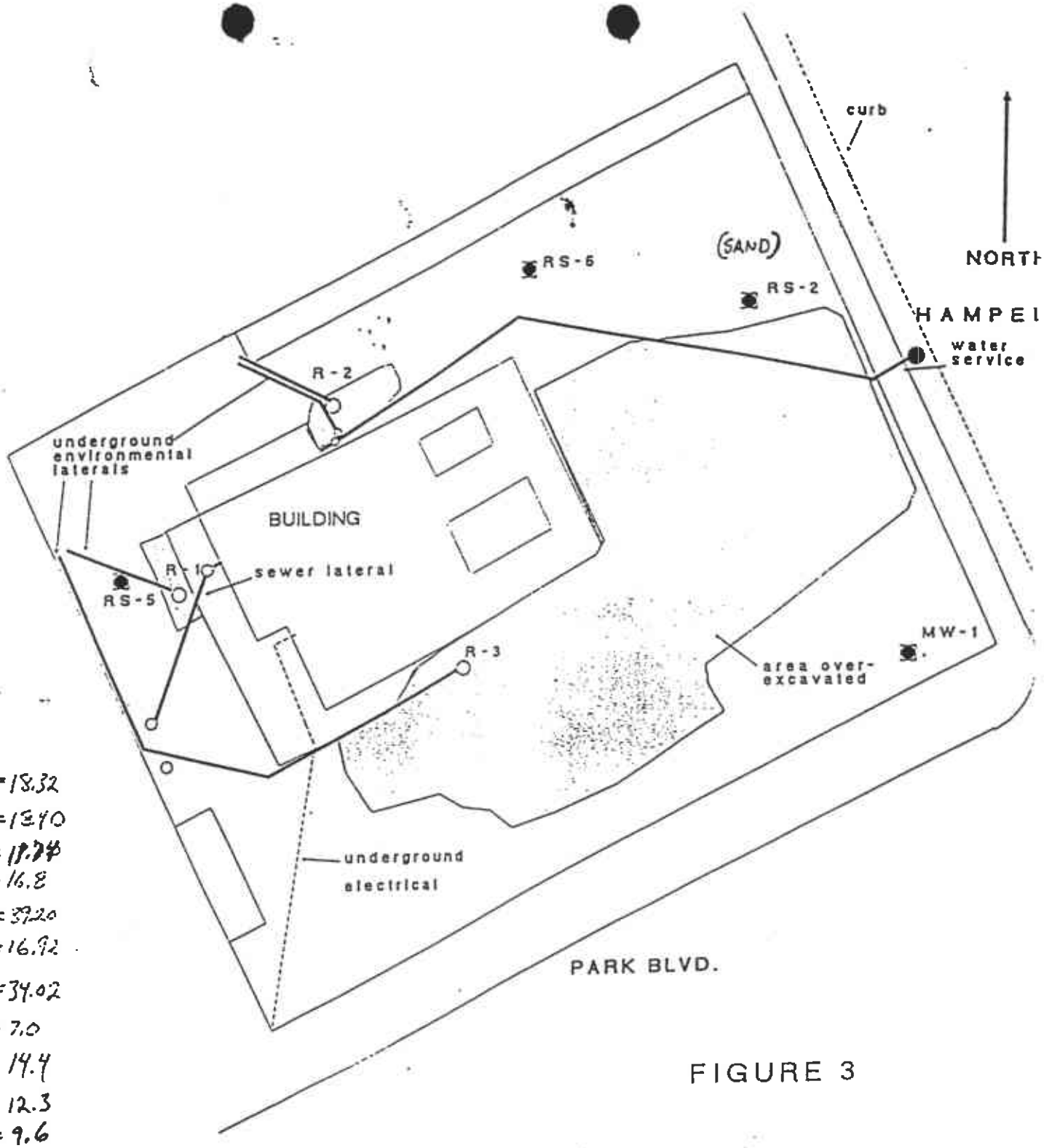
The less than symbol, <, used with a "parts per value" indicates the lower detection limit for a given analytical result and the level, if present, of that particular analyte is below or less than that lower detection limit.

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

Chain of Custody Documentation

All water samples that are collected by WEGE and transported to a certified analytical laboratory are accompanied by chain-of-custody (COC) documentation. This documentation is used to record the movement and custody of a sample from collection in the field to final analysis and storage. Samples to be analyzed at the certified laboratory were logged on the COC sheet provided by the laboratory. The same information provided on the sample labels (site name, sample location, date, time, and analysis to be performed) is also noted on the COC form. Each person relinquishing custody of the sample set signs the COC form indicating the date and time of the transfer to the recipient. A copy of the COC follows the samples or their extracts throughout the laboratory to aid the analyst in identifying the samples and to assure analysis within holding times.

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



MW1 = 18.32
RS2 = 13.40
R3 = 18.24
R2 = 16.8
RS5 = 39.20
R1 = 16.92
RS6 = 34.02
RS7 = 7.0
RS8 = 14.4
RS9 = 12.3
RS10 = 9.6

FIGURE 3

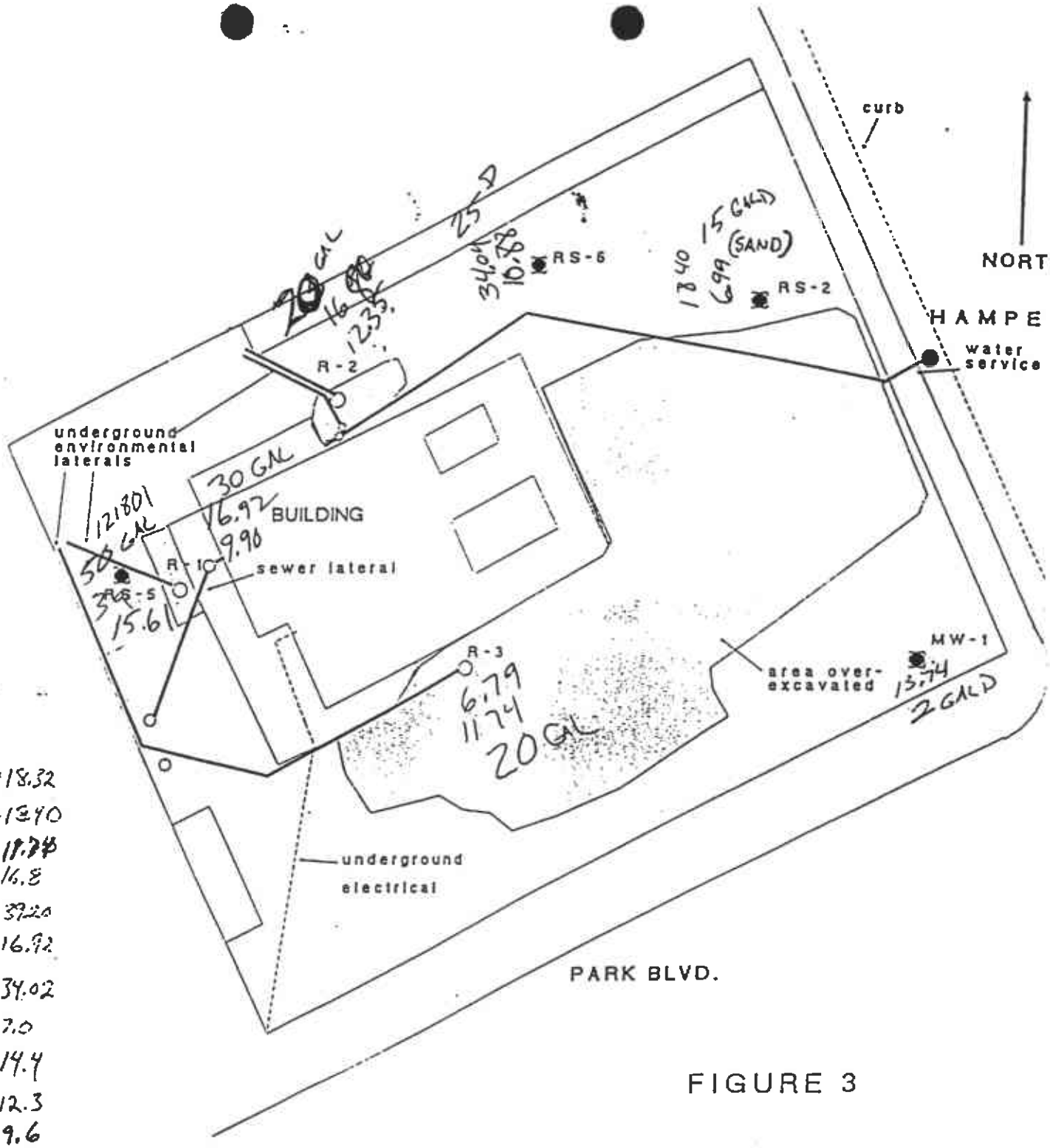
SITE BASE MAP

0' 20' 40'

SCALE: 1" = 20'.

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

30 + 113 → 24 Required



MW1 = 18.32
RS2 = 13.40
R3 = 11.74
R2 = 16.8
RS5 = 39.20
R1 = 16.92
RS6 = 34.02
RS7 = 7.0
RS8 = 14.4
RS9 = 12.3
RS10 = 9.6

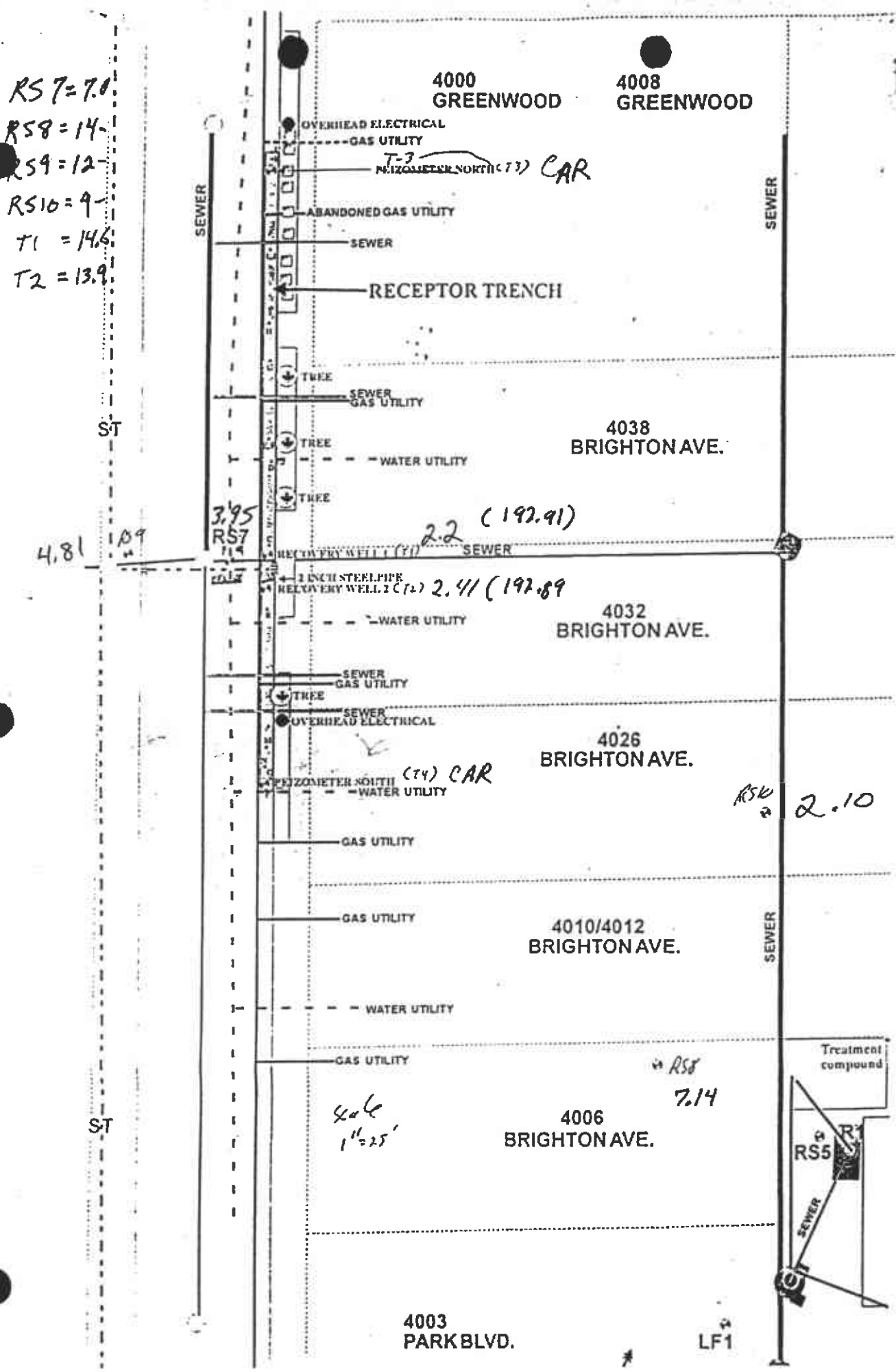
FIGURE 3

SITE BASE MAP

0' 20' 40'

SCALE: 1" = 20'.

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


RS 7 = 7.1
RS8 = 14
RS9 = 12
RS10 = 9
T1 = 14.6
T2 = 13.9
4000 GREENWOOD
4008 GREENWOOD
OVERHEAD ELECTRICAL
GAS UTILITY
T-3
PIEZOMETER NORTH (T3) CAR
ABANDONED GAS UTILITY
SEWER
RECEPTOR TRENCH
TREE
SEWER
GAS UTILITY
4038 BRIGHTON AVE.
WATER UTILITY
3.95
RS7
2.2 (192.91)
4.81
109
RECOVERY WELL 1 (T1)
2 INCH STEEL PIPE
RECOVERY WELL 2 (T2) 2.41 (192.89
4032 BRIGHTON AVE.
SEWER
GAS UTILITY
OVERHEAD ELECTRICAL
4026 BRIGHTON AVE.
PIEZOMETER SOUTH (T4) CAR
WATER UTILITY
RS6 2.10
GAS UTILITY
4010/4012 BRIGHTON AVE.
WATER UTILITY
RS8 7.14
4006 BRIGHTON AVE.
4003 PARK BLVD.
LF1
Treatment compound
RS5
R1
S.T
S.T

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1033
WELL MW1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	13.74 DTB 18.31	
FLUID ELEVATION	215.76	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1035	1 Bailer	64.2	7.58	.24
1037	2 gal	67.0	7.66	.25
1059	1	67.1	7.63	.25

FINAL VOLUME PURGED	3 gal
TIME SAMPLED	1040
SAMPLE ID.	MW1
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear No Odor
O_2 =	4.4
NO_3 =	7.6
$Fe2$ =	0
SO_4 =	61.

3b1

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1045
WELL RS2	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	6.99 DTB 18.4	
FLUID ELEVATION	220.4	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1050	1 Bailer	63.3	7.43	.39
1056	15 gal	65.5	7.55	.56
1058	1	66.8	7.72	.56
1100	1	67.6	7.75	.57

FINAL VOLUME PURGED	17 gal
TIME SAMPLED	1101
SAMPLE ID.	RS2
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Cloudy No Odor
O_2 =	4.6
NO_3 =	11.4
Fe_2 =	.07
SO_4 =	77 #

7b.

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1137
WELL RS5	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	15.61 DTB 39.2	
FLUID ELEVATION	212.0	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1139	1 Bailer	63.1	7.14	.34
1155	50 gal	65.8	6.91	.36
1157	1	66.4	6.85	.36
1159	1	66.6	6.83	.36

FINAL VOLUME PURGED	52 gal
TIME SAMPLED	1200
SAMPLE ID.	RS5
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Plastic Strong Odor
O_2 =	1.4
NO_3 =	8.2
Fe_2 =	3.30 ✗
SO_4 =	37

3b1

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1107
WELL RS6	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	10.88 DTB 34.04	
FLUID ELEVATION	216.34	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1105	1 Bailer	63.5	7.11	.54
1111	25 gal	65.1	6.95	.53
1113	1	66.5	6.84	.53
1115	1	66.7	6.84	.53

FINAL VOLUME PURGED	27 gal
TIME SAMPLED	1116
SAMPLE ID.	RS6
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1st Bailer Clear No Odor
O_2 =	4.3
NO_3 =	0
Fe_2 =	0
SO_4 =	77#

2b.

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 955
WELL RS7	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	4.81 DTB 20	
FLUID ELEVATION	191.18	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
957	1 Bailer	61.3	7.58	.24
959	6 gal	66.9	7.22	.27
1001	1	67.4	7.04	.28
1003	1	67.8	6.85	.29
1005	1	68.1	6.82	.29

FINAL VOLUME PURGED	9 gal
TIME SAMPLED	1006
SAMPLE ID.	RS7
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear Strong Odor
O_2 =	2.5
NO_3 =	6.0
Fe_2 =	.87
SO_4 =	1.

2b1

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 0900
WELL RS8	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	7.14 DTB 14 -	
FLUID ELEVATION	207.53	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
0901	1 Bailer	63.5	7.83	.23
0903	1 gal	64.3	7.47	.26
0905	1	65.7	7.15	.27
0909	1	67.0	7.00	.28
0913	1	67.3	6.98	.28

FINAL VOLUME PURGED	4 gal
TIME SAMPLED	915
SAMPLE ID.	RS8
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1st Bailer Cloudy (SLH) Strong Odor
O_2 = 4.2	
NO_3 = 9.2	
$Fe2$ = .08	
SO_4 = 49.	

3.61

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 940
WELL RS9	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	4.81 DTB 12-	
FLUID ELEVATION	190.82	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
942	1 Bailer	62.3	7.48	.22
944	1 gal	66.8	7.12	.26
946	1	67.3	6.89	.26
948	1	68.0	6.79	.27
950	1	68.3	6.80	.27

FINAL VOLUME PURGED	4 gal
TIME SAMPLED	951
SAMPLE ID.	RS9
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear Slight odor
Sample Light grey w/sediment HACH could not read	
Let set but still did not clear	

3b1

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 928
WELL RS10	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	2.1 DTB 9-	
FLUID ELEVATION	206.36	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
929	1 Bailer	62.4	7.36	.22
931	1 gal	65.8	7.05	.25
933	1	66.3	6.72	.26
935	1	67.0	6.56	.26
937	1	66.9	6.54	.26

FINAL VOLUME PURGED	4 gal
TIME SAMPLED	938
SAMPLE ID.	RS10
SAMPLE CONTAINERS	3/40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear No Odor
O_2 = 4.3	
NO_3 = 4.1	
Fe = 0	
SO_4^{-2} = 46	

2 lb.

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1201
WELL R1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	9.90 DTB 16.92	
FLUID ELEVATION	217.79	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1202	1 Bailer	63.1	7.15	.10
1212	30 gal	64.0	7.17	.11
1214	1	66.2	7.25	.11
1216	1	66.4	7.24	.11

FINAL VOLUME PURGED	32 gal
TIME SAMPLED	1217
SAMPLE ID.	R1
SAMPLE CONTAINERS	3/40cc VOA's
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear Slight odor
O_2 =	5.2
NO_3 =	4.2
$Fe2$ =	0
SO_4 =	14

3b.

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1115
WELL R2	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	12.35 DTB 16.8	
FLUID ELEVATION	214.93	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1119	1 Bailer	63.4	6.91	.43
1126	20 gal	65.0	6.88	.48
1128	1	66.3	6.71	.49
1130	1	66.5	6.69	.49

FINAL VOLUME PURGED	22 gal
TIME SAMPLED	1131
SAMPLE ID.	R2
SAMPLE CONTAINERS	3/40cc VOA's
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear Some Odor
O_2 = 2.8	
NO_3 = 1.3	
Fe^{2} = .07	
SO_4 = 77	

2 b.

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

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1230
WELL R3	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	6.79 DTB 11.74	
FLUID ELEVATION	220.46	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1250	1 Bailer	63.5	7.15	.35
1258	20 gal	65.9	7.04	.38
1300	1	66.8	6.89	.39
1302	1	67.1	6.91	.39

FINAL VOLUME PURGED	22 gal
TIME SAMPLED	1305
SAMPLE ID.	R3
SAMPLE CONTAINERS	40cc VOA's
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Clear No Odor
O_2 =	5.5
NO_3 =	6.2
Fe_2 =	0
SO_4 =	77

2b.

WELL SAMPLING DATA SHEET

SITE OP 793	DATE 12-18-01	TIME 1006
WELL T1	SAMPLED BY. BROADWAY	
WELL ELEVATION		
PRODUCT THICKNESS		
DEPTH TO WATER	2.2 DTB 14.6	
FLUID ELEVATION	192.91	
BAILER TYPE	Disposable Bailer	
PUMP	David Pittman	

WELL PURGING RECORD

TIME	VOLUME REMOVED	TEMP. F°	pH	COND. X1000
1006	1 Bailer	61.5	7.01	.39
1008	40 gal	65.6	6.83	.38
1010	"	66.3	6.61	.38
1012	"	66.3	6.52	.39
			6.52	.38

FINAL VOLUME PURGED	42 gal
TIME SAMPLED	1012
SAMPLE ID.	T1
SAMPLE CONTAINERS	40cc VOAs
ANALYSIS TO BE RUN	TPHg BTEX/MTBE
LABORATORY	NSE
NOTES:	1ST Bailer Turbid Strong Odor
O_2 = 2.8	
NO_3 = 4.3	
Fe_2 = .60	
SO_4 = 0	

2b.

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 Manager: George Converse
Phone No.: 530-668-5300
Company/Address: WEGE 1366 E. Bidwell Woodland CA 95776
FAX No.: 530-662-0273
Project Number: DP 793
P.O. No.:
Email Address: wege@pacbell.com
☑ .pdf ☐ .xls ☐ .doc ☐ other
Project Name/Location: Park Hwd
Sampler Signature: 62 Broadway

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount) 40 ml VOA	SLEEVE	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER/SOIL
MW1	12/19/01	1040	3						
R1		1217							
R2		1131							
R3		1305							
R52		1101							
R55		1200							
R56		1116							
R57		1006							
R58		915							
R59		951							

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)

For Lab Use Only

12 hr = Results by 9 a.m. of the next bus. day
24 hr = Results by 5 p.m. of the next bus. day
48 hr = Results by 5 p.m. of the 2nd bus. day
72 hr = Results by 5 p.m. of the 3rd bus. day
1 wk = Results by 5 p.m. of the [illegible]us. day

Relinquished by:	Date	Time	Received by:
[signature]	12/19/1	1240	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	12/19/01	1240	Montrice / Kiff Analytical

Remarks:

Bill to:

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

COC.fh8 (5/00)

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 Manager: Geos Consultant
Phone No.:
Company/Address: WGCE
FAX No.:
Project Number: P.O. No.:
Email Address: ☐.pdf ☐.xls ☐.doc ☐other
Project Name: BP793
Sampler Signature: L J Bradford
Project Location: Park Blvd Oakland

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/(1 wk)	For Lab Use Only
KS10	12/18/1	938	3																						
T1	"	1012																							
CARBON ~~Grab~~ Discharge	"	1350																							

	Date	Time		
Relinquished by: L J Bradford	12/18/1	1240	Received by:	Remarks:
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date 121901	Time 1210	Received by Laboratory: Marsha Hall / Kiff Analytical	Bill to:

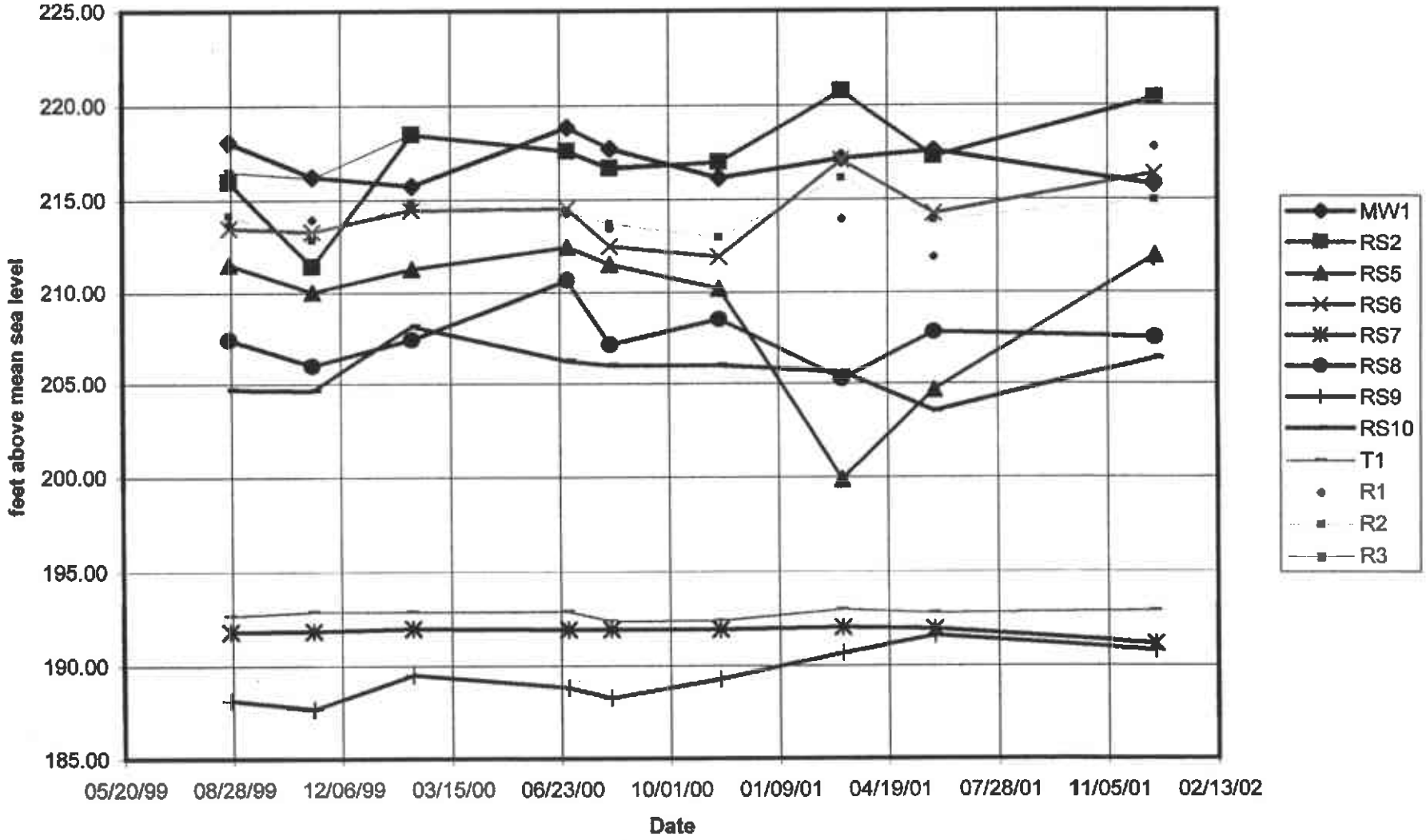
Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 062801.fh9

APPENDIX B.

GROUNDWATER ELEVATION CHART

Groundwater Elevation



KIFF ANALYTICAL LLC

Report Number : 23991
Date : 1/2/2002

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

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

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 : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **MW1** Matrix : Water Lab Number : 23991-01

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	12/26/2001

Sample : **R1** Matrix : Water Lab Number : 23991-02

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**1.5**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	12/26/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **R2** Matrix : Water Lab Number : 23991-03

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2000**	5.0	ug/L	EPA 8260B	12/29/2001
Toluene	**120**	5.0	ug/L	EPA 8260B	12/29/2001
Ethylbenzene	**44**	5.0	ug/L	EPA 8260B	12/29/2001
Total Xylenes	**280**	5.0	ug/L	EPA 8260B	12/29/2001
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	12/29/2001
TPH as Gasoline	**4900**	500	ug/L	EPA 8260B	12/29/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/29/2001
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	12/29/2001

Sample : **R3** Matrix : Water Lab Number : 23991-04

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	12/26/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **RS2** Matrix : Water Lab Number : 23991-05

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	12/26/2001

Sample : **RS5** Matrix : Water Lab Number : 23991-06

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**610**	5.0	ug/L	EPA 8260B	12/29/2001
Toluene	**1200**	5.0	ug/L	EPA 8260B	12/29/2001
Ethylbenzene	**100**	5.0	ug/L	EPA 8260B	12/29/2001
Total Xylenes	**1500**	5.0	ug/L	EPA 8260B	12/29/2001
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	12/29/2001
TPH as Gasoline	**12000**	500	ug/L	EPA 8260B	12/29/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/29/2001
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	12/29/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **RS6** Matrix : Water Lab Number : 23991-07

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.53**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**0.56**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**56**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	12/26/2001

Sample : **RS7** Matrix : Water Lab Number : 23991-08

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**450**	2.0	ug/L	EPA 8260B	1/1/2002
Toluene	**21**	2.0	ug/L	EPA 8260B	1/1/2002
Ethylbenzene	**86**	2.0	ug/L	EPA 8260B	1/1/2002
Total Xylenes	**120**	2.0	ug/L	EPA 8260B	1/1/2002
Methyl-t-butyl ether (MTBE)	**2.3**	2.0	ug/L	EPA 8260B	1/1/2002
TPH as Gasoline	**2700**	200	ug/L	EPA 8260B	1/1/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	1/1/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	1/1/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **RS8** Matrix : Water Lab Number : 23991-09

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**230**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**370**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**77**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**750**	2.0	ug/L	EPA 8260B	12/28/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**4500**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	12/26/2001

Sample : **RS9** Matrix : Water Lab Number : 23991-10

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**11**	0.50	ug/L	EPA 8260B	12/28/2001
Toluene	**1.8**	0.50	ug/L	EPA 8260B	12/28/2001
Ethylbenzene	**3.9**	0.50	ug/L	EPA 8260B	12/28/2001
Total Xylenes	**7.6**	0.50	ug/L	EPA 8260B	12/28/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/28/2001
TPH as Gasoline	**210**	50	ug/L	EPA 8260B	12/28/2001
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	12/28/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	12/28/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991
Date : 1/2/2002

Project Name : **DP793 PARK BLVD**
Project Number :

Sample : **RS10** Matrix : Water Lab Number : 23991-11
Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	12/26/2001

Sample : **T1** Matrix : Water Lab Number : 23991-12
Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3700**	20	ug/L	EPA 8260B	1/1/2002
Toluene	**5500**	20	ug/L	EPA 8260B	1/1/2002
Ethylbenzene	**1200**	20	ug/L	EPA 8260B	1/1/2002
Total Xylenes	**5300**	20	ug/L	EPA 8260B	1/1/2002
Methyl-t-butyl ether (MTBE)	**24**	20	ug/L	EPA 8260B	1/1/2002
TPH as Gasoline	**48000**	2000	ug/L	EPA 8260B	1/1/2002
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	1/1/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	1/1/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23991

Date : 1/2/2002

Project Name : **DP793 PARK BLVD**

Project Number :

Sample : **CARBON DISCHARGE** Matrix : Water Lab Number : 23991-13

Sample Date :12/18/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/29/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/29/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/29/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/29/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/29/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/29/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/29/2001
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	12/29/2001

Approved By: Joel Kiff

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

Report Number : 23991

Date : 1/2/2002

QC Report : Method Blank Data

Project Name : **DP793 PARK BLVD**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/29/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/29/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/29/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/29/2001
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/29/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/29/2001
Toluene - d8 (Surr)	98.3		%	EPA 8260B	12/29/2001
4-Bromofluorobenzene (Surr)	96.9		%	EPA 8260B	12/29/2001
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/26/2001
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	101		%	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	12/26/2001

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 : 23991

Date : 1/2/2002

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **DP793 PARK BLVD**

Project Number :

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	23991-13	<0.50	19.2	18.8	18.3	17.7	ug/L	EPA 8260B	12/29/2009	5.0	94.5	0.501	70-130	25
Toluene	23991-13	<0.50	19.2	18.8	18.7	18.2	ug/L	EPA 8260B	12/29/2009	7.1	96.9	0.180	70-130	25
Tert-Butanol	23991-13	25	96.2	93.8	125	118	ug/L	EPA 8260B	12/29/2009	104	98.8	4.90	70-130	25
Methyl-t-Butyl Ether	23991-13	<0.50	19.2	18.8	17.4	16.6	ug/L	EPA 8260B	12/29/2009	0.8	88.2	2.82	70-130	25
Benzene	23952-01	<0.50	40.0	40.0	37.8	37.0	ug/L	EPA 8260B	12/26/2009	4.4	92.6	1.95	70-130	25
Toluene	23952-01	<0.50	40.0	40.0	38.8	38.0	ug/L	EPA 8260B	12/26/2009	7.0	95.0	2.06	70-130	25
Tert-Butanol	23952-01	<5.0	200	200	186	190	ug/L	EPA 8260B	12/26/2009	2.8	95.0	2.30	70-130	25
Methyl-t-Butyl Ether	23952-01	210	40.0	40.0	252	252	ug/L	EPA 8260B	12/26/2009	102	103	1.15	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 23991

Date : 1/2/2002

QC Report : Laboratory Control Sample (LCS)

Project Name : **DP793 PARK BLVD**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	12/29/200	93.0	70-130
Toluene	40.0	ug/L	EPA 8260B	12/29/200	94.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/29/200	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	12/29/200	86.6	70-130
Benzene	40.0	ug/L	EPA 8260B	12/26/200	94.5	70-130
Toluene	40.0	ug/L	EPA 8260B	12/26/200	95.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	12/26/200	89.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	12/26/200	94.2	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. 23991 Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Manager: George Converse
Phone No.: 530-668-5300
Company/Address: WEGE 1386 E. Beamer Woodland CA 95776
FAX No.: 530-662-0273
Project Number: P.O. No.:
Email Address: wege@mother.com
☑ .pdf ☐ .xls ☐ .doc ☐ other
Project Name/Location: DP793 PARK Blvd
Sampler Signature: 42 Broadway

Sample Designation	Sampling Date	Sampling Time	Container (Type/Amount): 40 ml VOA	SLEEVE				Method Preserved: HCl	HNO_3	ICE	NONE	Matrix: WATER/SOIL
MW1	12/18/01	1040	3									
R1		1217										
R2		1131										
R3		1305										
R52		1101										
R55		1200										
R56		1116										
R57		1006										
R58		915										
R59		951										

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	For Lab Use Only
																	-01
																	-02
																	-03
																	-04
																	-05
																	-06
																	-07
																	-08
																	-09
																	-10

TAT: 12 hr = Results by 9 a.m. of the next bus. day; 24 hr = Results by 5 p.m. of the next bus. day; 48 hr = Results by 5 p.m. of the 2nd bus. day; 72 hr = Results by 5 p.m. of the 3rd bus. day; 1 wk = Results by 5 p.m. of the 5th bus. day

Relinquished by:	Date	Time	Received by:
42 Broadway	12/18/1	1240	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	12/19/01	1240	Montrelle / Kiff Analytical

Remarks:

Bill to:

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

COC.fh8 (5/00)

KIFF ANALYTICAL LLC

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

Lab No. 23991 Page 2 of 2

Chain-of-Custody Record and Analysis Request

Project Manager: Georg Converse
Phone No.:
Company/Address: WEGE
FAX No.:
Project Number: P.O. No.:
Email Address:
☐.pdf ☐.xls ☐.doc ☐other
Project Name: BP 793
Sampler Signature: E J Broadway
Project Location: Park Blvd Oakland

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	Analysis Request	For Lab Use Only
RS10	12/18/1	938	3									-11
T1		1012										-12
CARBON ~~Sewer~~ discharge		1350										-13

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

	Date	Time	
Relinquished by: E J Broadway	12/18/1	1240	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 12/19/01	Time 1240	Received by Laboratory: Martin Lobo / KIFF Analytical

Remarks:

Bill to:

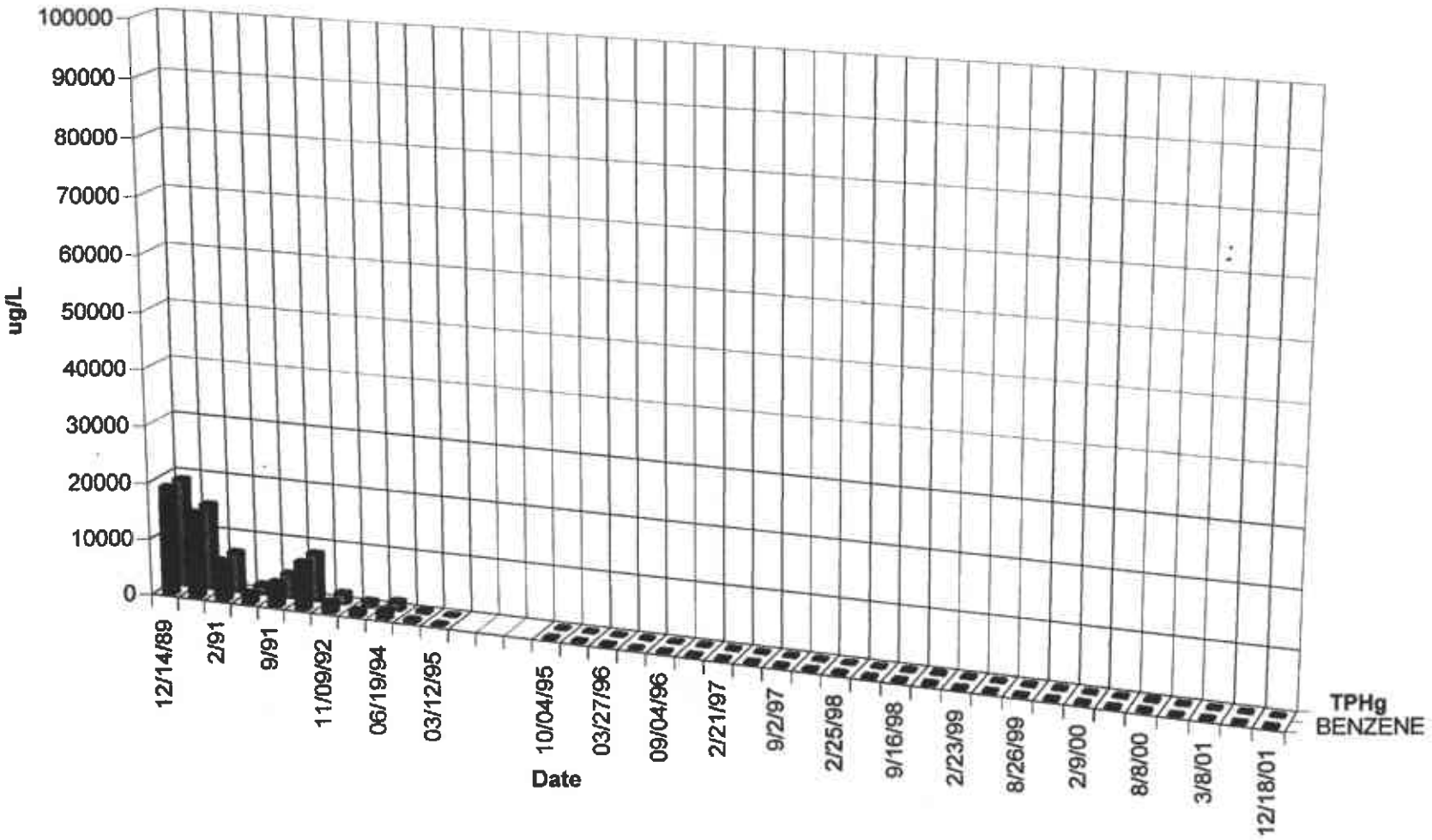
Distribution: White - Lab, Yellow - File, Pink - Originator

Forms/coc 062801.fh9

APPENDIX D.

TPHg AND BENZENE CHARTS

RS-1/MW-1 TPHg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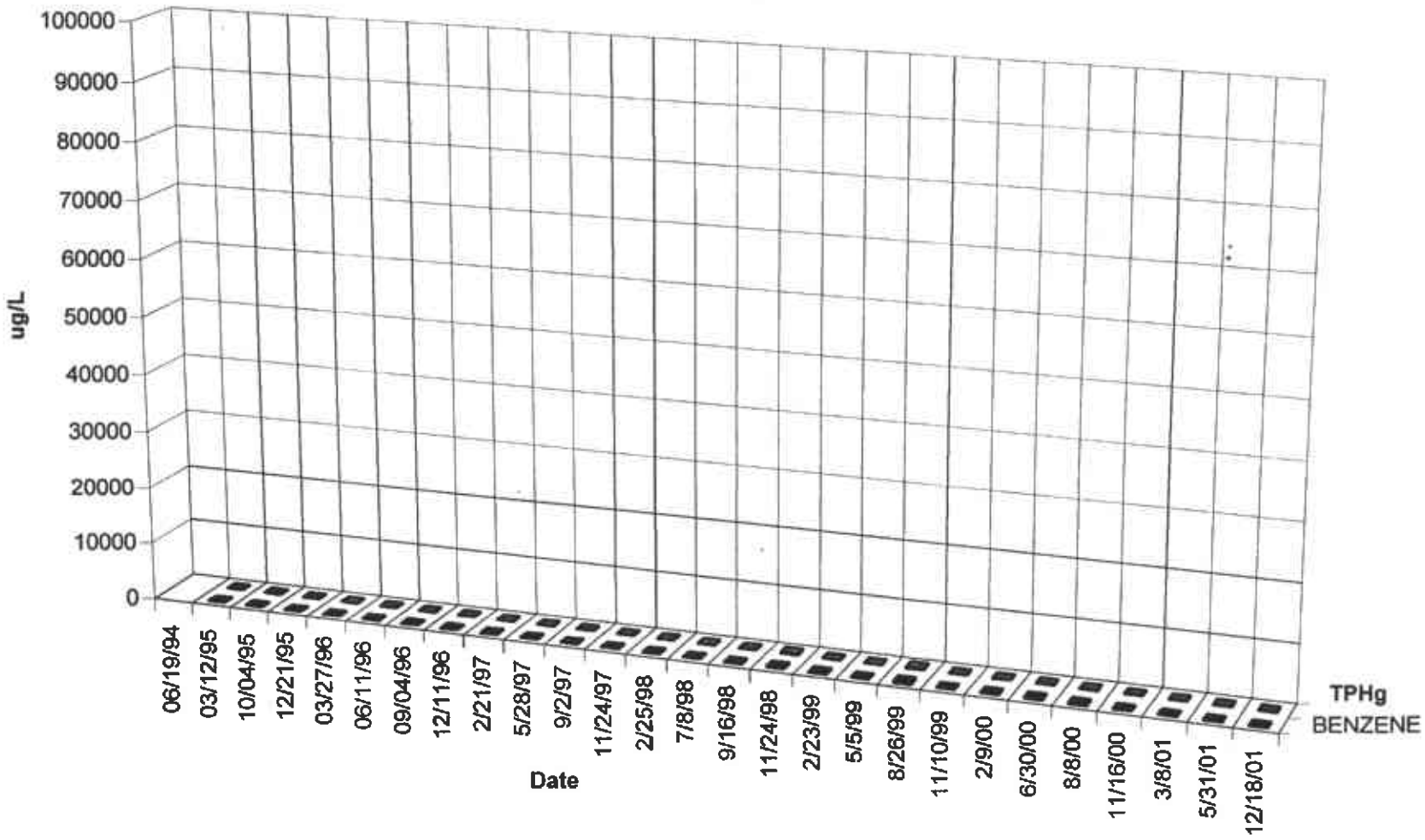
Date
TPHg
BENZENE

RS-2 TPHg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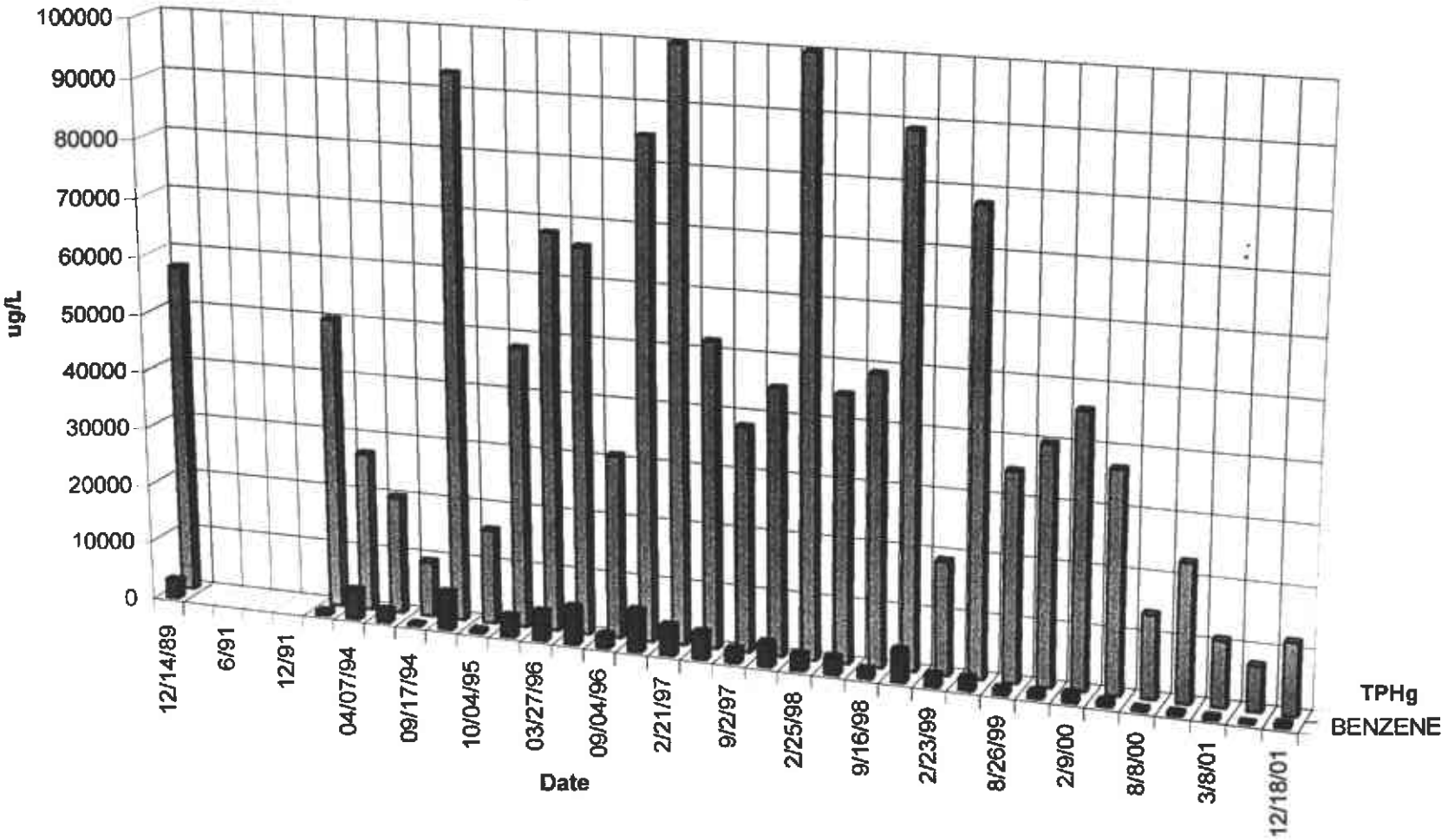
TPHg
BENZENE

RS-5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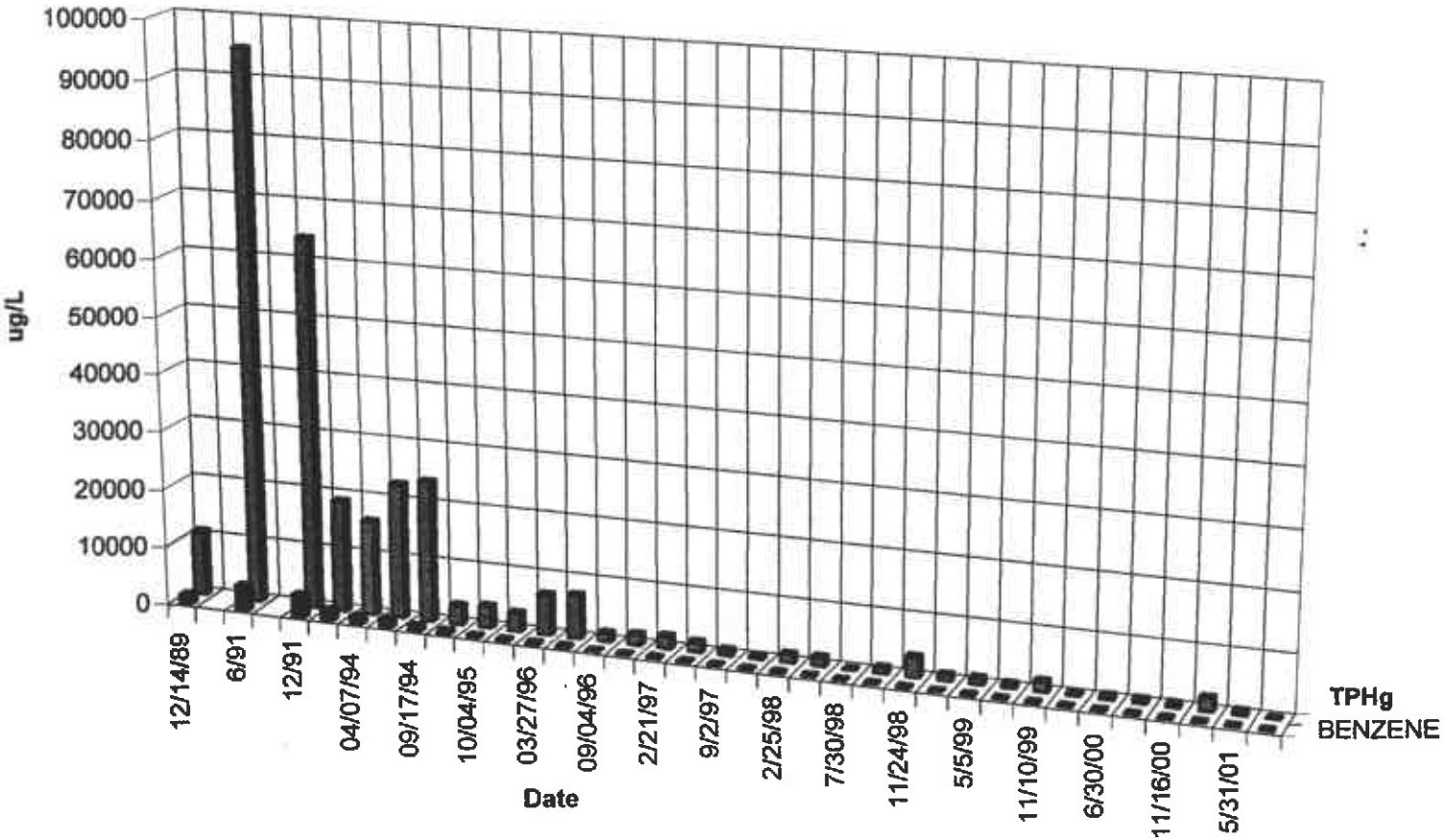
RS-6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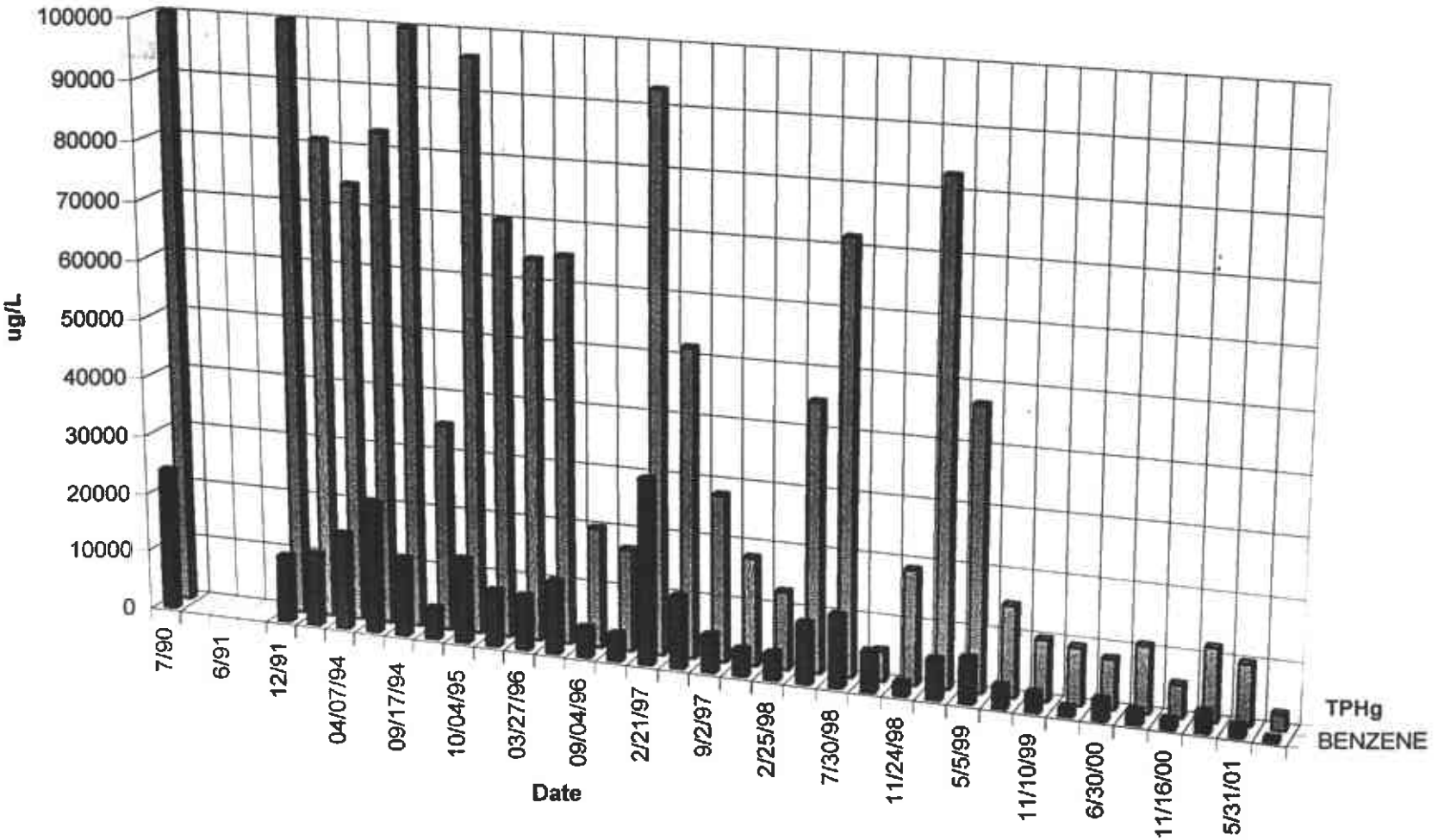
RS-7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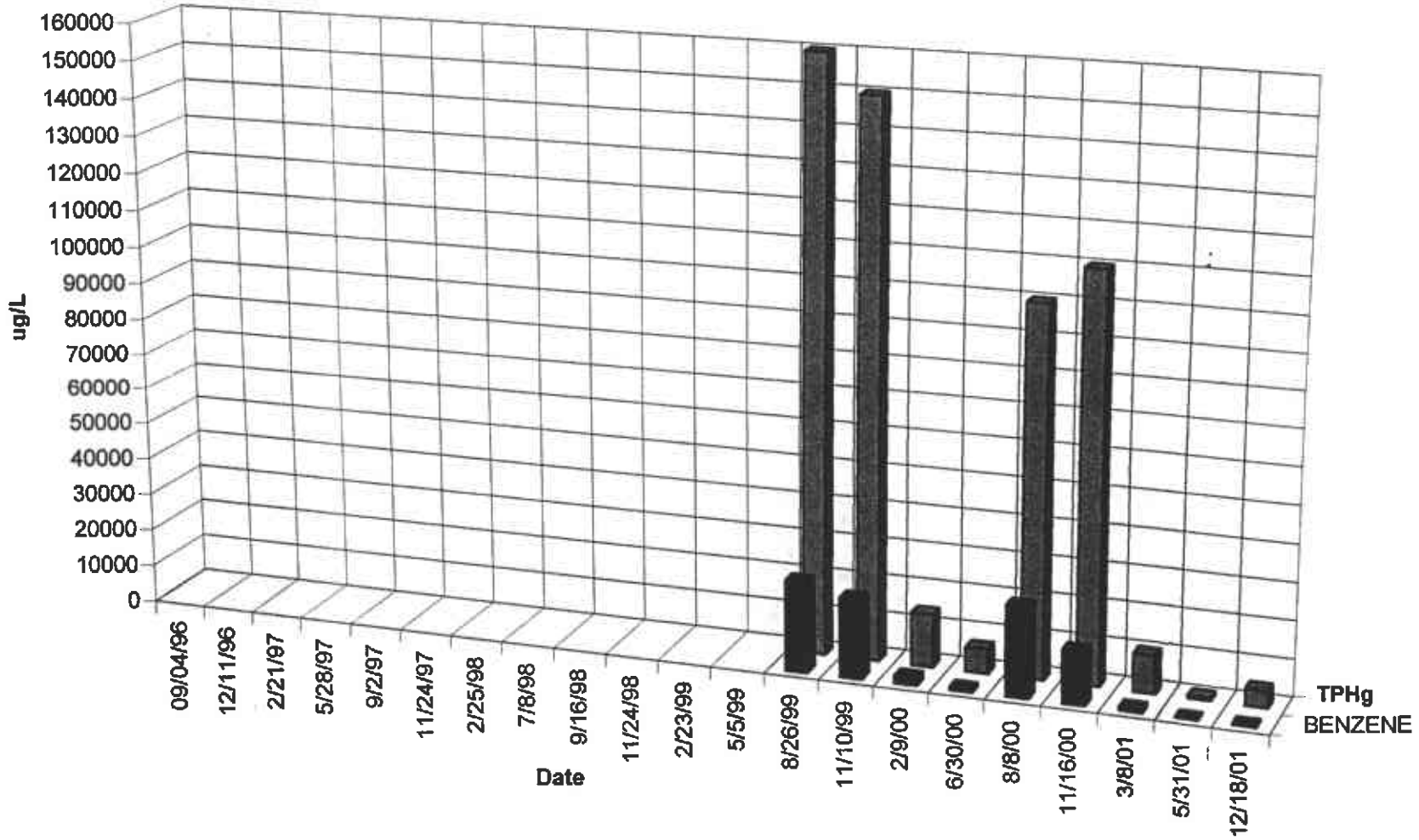
BENZENE

RS-8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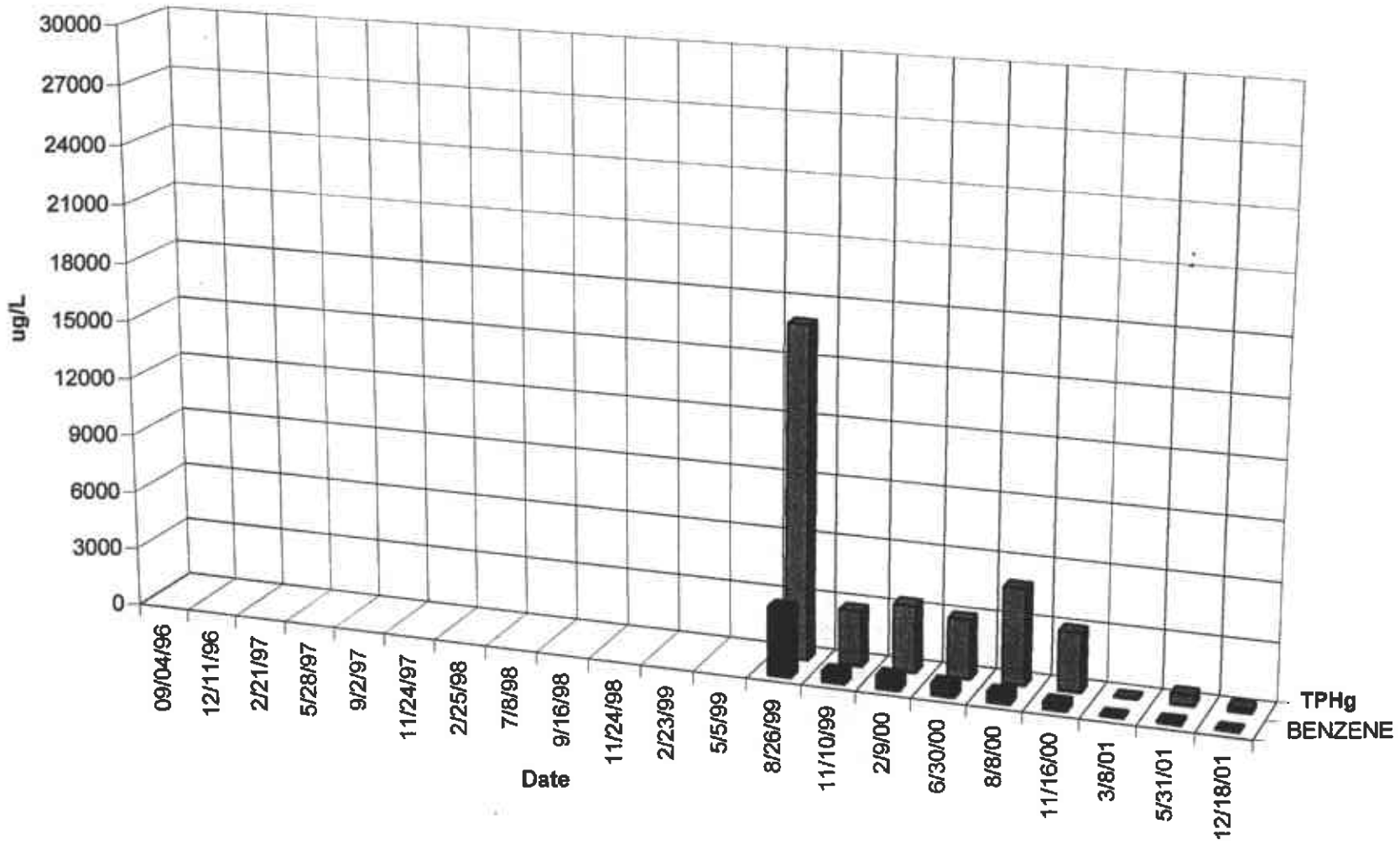
BENZENE

RS-9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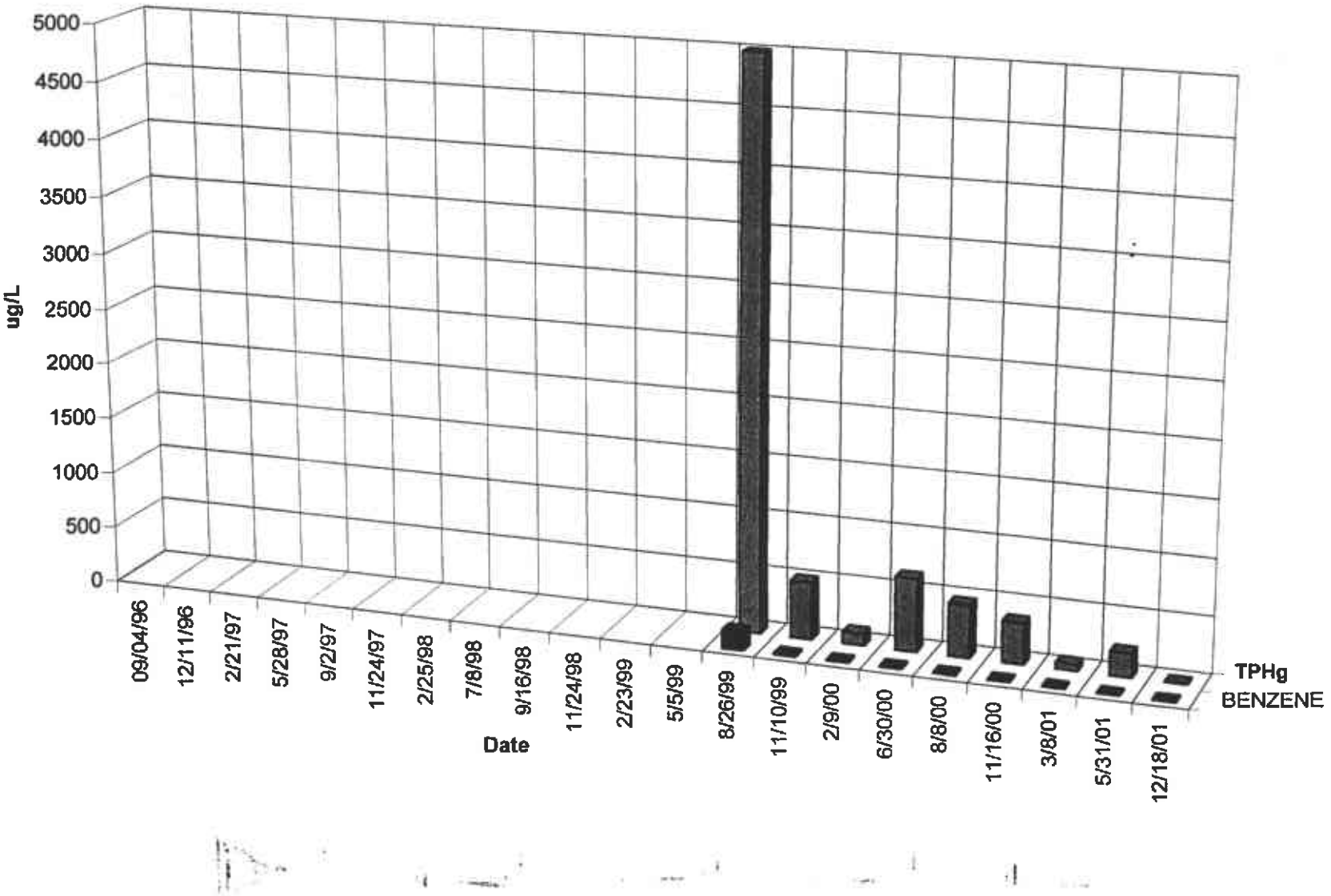
BENZENE

RS-10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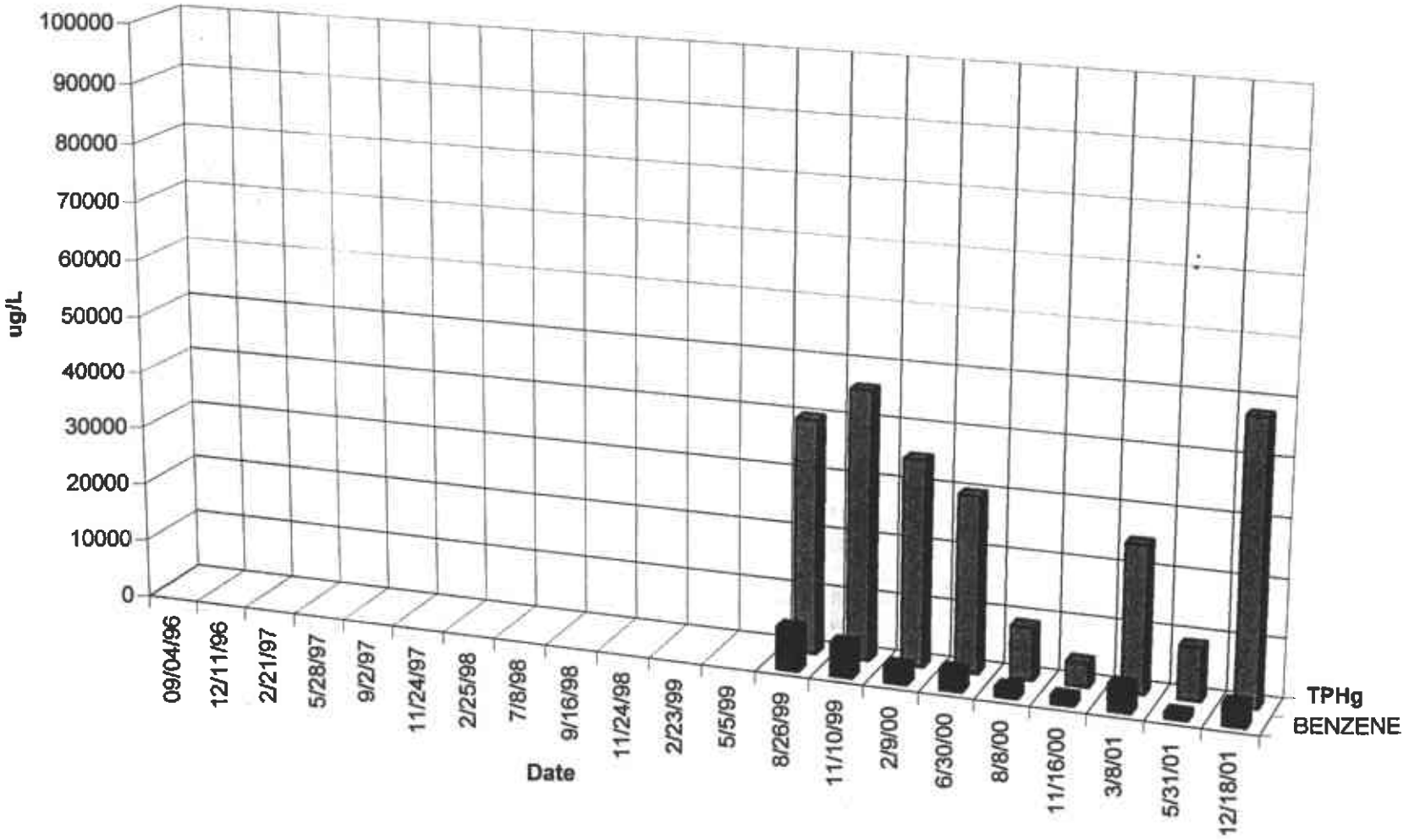
TPHg
BENZENE

T-1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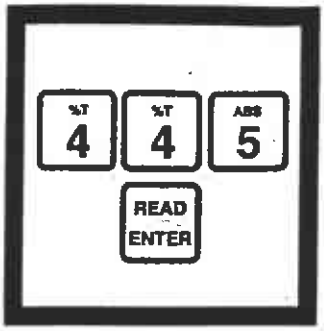
12/18/01
Date
TPHg
BENZENE

APPENDIX E

HACH SPECTROPHOTOMETER FIELD TEST METHODS

OXYGEN, DISSOLVED, HR (0 to 13.0 mg/L O)

HRDO Method



1. Enter the stored program number for dissolved oxygen.

Press: **4 4 5 READ/ENTER**

The display will show:
DIAL nm TO 535

Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

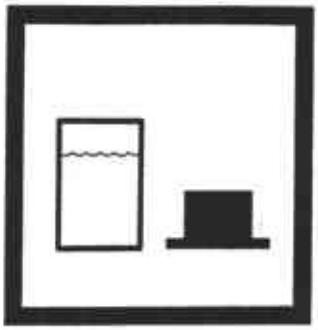
Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: Samples must be analyzed on site and cannot be stored; see Sampling and Storage following these steps.

2. Rotate the wavelength dial until the small display shows:
535 nm

3. Press: **READ/ENTER**

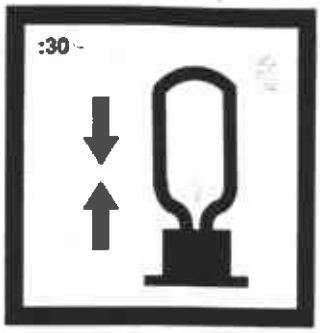
The display will show:
mg/l O_2 HRDO



4. Fill a zeroing vial (the blank) with at least 10 mL of sample. Fill a blue ampul cap with sample.

5. Fill a High Range Dissolved Oxygen AccuVac Ampul with sample.

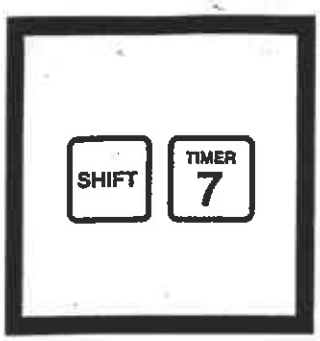
Note: Keep the tip immersed while the ampul fills completely.



6. Without inverting the ampul, immediately place the ampul cap that has been filled with sample securely over the tip of the ampul. Shake the ampul for approximately 30 seconds.

Note: A small amount of the undissolved HRDO Reagent does not affect results.

Note: The cap prevents contamination with atmospheric oxygen.

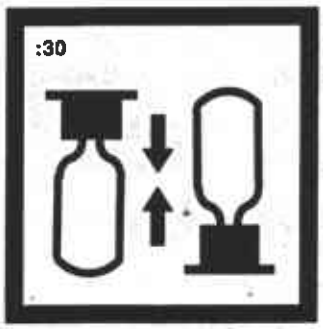


7. Press: **SHIFT TIMER**

A 2–minute reaction period enables oxygen, which was degassed during aspiration, to redissolve and react.

8. Place the AccuVac Vial Adapter into the cell holder.

Note: Place the grip tab at the rear of the cell holder.

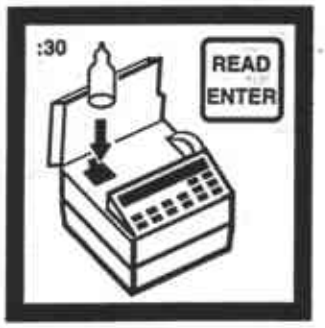


9. When the timer beeps, the display will show:
mg/l O_2 HRDO
Shake the ampul for 30 seconds.

10. Place the blank into the cell holder. Close the light shield.

11. Press: **ZERO**

The display will show:
WAIT
then:
0.0 mg/l O_2 HRDO



12. Place the AccuVac ampul into the cell holder. Close the light shield. Wait approximately 30 seconds for the air bubbles to disperse from the light path.

Press: **READ/ENTER**

The display will show:
WAIT
then the result in mg/L dissolved oxygen will be displayed.

Note: In the constant–on mode, pressing READ/ENTER is not required. WAIT will not appear. When the display stabilizes, read the result.

SAMPLING AND STORAGE

The primary consideration in sampling with the High Range Dissolved Oxygen Ampul is to prevent the sample from becoming contaminated with atmospheric oxygen. This is accomplished by capping the ampul with an ampul cap in the interval between breaking open the ampul and reading the absorbance. If the ampul is securely capped, the ampul should be safe from contamination for several hours. The absorbance will decrease by approximately 3% during the first hour and will not change significantly afterwards.

Sampling and sample handling are important considerations in obtaining meaningful results. The dissolved oxygen content of the water being tested can be expected to change with depth, turbulence, temperature, sludge deposits, light, microbial action, mixing, travel time and other factors. A single dissolved oxygen test rarely reflects the accurate over–all condition of a body of water. Several samples taken at different times, locations and depths are recommended for most reliable results. Samples must be tested immediately upon collection although only a small error results if the absorbance reading is taken several hours later.

ACCURACY CHECK

The results of this procedure may be compared with the results of a titrimetric procedure or dissolved oxygen meter.

PRECISION

In a single laboratory, using a standard solution of 7.22 mg/L O_2 determined by the Winkler method and two representative lots of reagent with the DR/2000, a single operator obtained a standard deviation of ±0.20 mg/L O_2.

INTERFERENCES

The following do not interfere at a level of 10 mg/L which is in excess of naturally occurring levels: Cr^{3+}, Mn^{2+}, Fe^{2+}, Ni^{2+}, Cu^{2+} and NO_2^-.

SUMMARY OF METHOD

The High Range Dissolved Oxygen AccuVac ampul contains reagent that is vacuum sealed in a 12–mL ampul. When the AccuVac ampul is broken open in a sample containing dissolved oxygen, it forms a yellow color which turns purple. The purple color development is proportional to the concentration of dissolved oxygen.

REQUIRED REAGENTS

Description	Quantity Required Per Test	Units	Cat. No.
High Range Dissolved Oxygen AccuVac ampuls, with 2 reusable ampul caps	1 ampul	25/pkg	25150–25

REQUIRED APPARATUS

AccuVac Dissolved Oxygen Sampler	1	each	24051–00
Adapter, AccuVac Vial	1	each	43784–00
Beaker, 50 mL	1	each	500–41
Caps, ampul, blue	varies	6/pkg	1731–06
Vial, zeroing	1	each	21228–00

OPTIONAL APPARATUS

AccuVac Snapper Kit	each	24052–00
BOD bottle and stopper, 300 mL	each	621–00

Dissolved oxygen may also be determined by titrimetric methods. Request Publication 8042 for additional information.

For additional ordering information, see final section.
In the U.S.A. call 800–227–4224 to place an order.

NITRATE, HR to 30.0 mg/L NO_3^-–N) water, wastewater and seawater*

Cadmium Reduction Method (Powder Pillows or AccuVac Ampuls)

USING POWDER PILLOWS

1. Enter the stored program number for high range nitrate nitrogen (NO_3^-–N)–powder pillows.

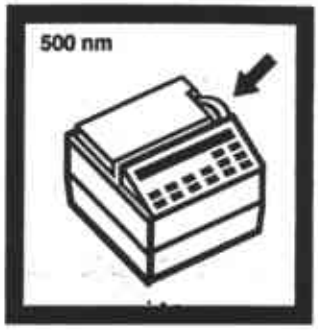
Press: **3 5 5 READ/ENTER**

The display will show:
DIAL nm TO 500

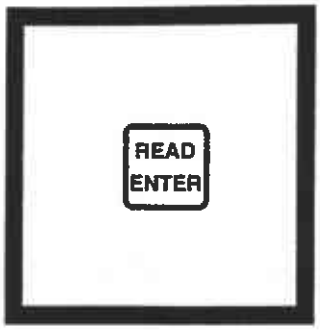
Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: If sample cannot be analyzed immediately, see Sampling and Storage following these steps. Adjust the pH of stored samples before analysis.



2. Rotate the wavelength dial until the small display shows:
500 nm



3. Press: **READ/ENTER**

The display will show:
mg/l N NO_3^- H

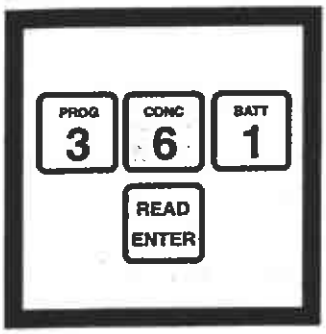
4. Fill a sample cell with 25 mL of sample.

Note: For proof of accuracy, use a 10 mg/L Nitrate Nitrogen Standard Solution (listed under Optional Reagents) in place of the sample.

Note: A reagent blank must be determined on each new lot of NitraVer 5. Perform Steps 4 to 12 using deionized water as the sample. Subtract this value from each result obtained with this lot of reagent.

*For seawater, a manual calibration is required; see Interfrences.

USING ACCUVAC AMPULS



1. Enter the stored program number for high range nitrate nitrogen (NO_3^-–N)–AccuVac ampuls.

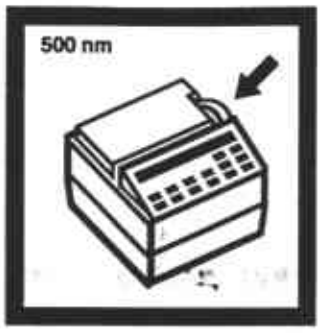
Press: **3 6 1 READ/ENTER**

The display will show:
DIAL nm TO 500

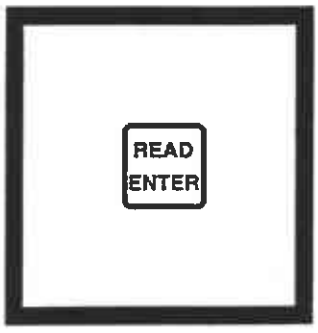
Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: If your instrument does not have program number 361, see Instrument Setup following these steps.



2. Rotate the wavelength dial until the small display shows:
500 nm



3. Press: **READ/ENTER**

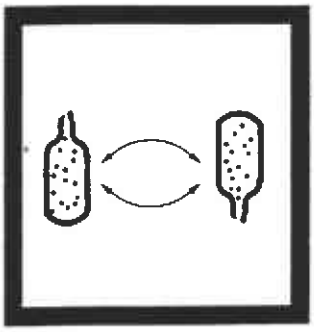
The display will show:
mg/l N NO_3^- H AV

4. Collect at least 40 mL of sample in a 50–mL beaker. Fill a NitraVer 5 Nitrate AccuVac Ampul with sample.

Note: Keep the tip immersed while the ampul fills completely.

Note: For proof of accuracy, use a 10 mg/L Nitrate Nitrogen Standard Solution (listed under Optional Reagents) in place of the sample.

Note: A reagent blank must be determined on each new lot of NitraVer 5. Repeat Steps 4 to 12 using deionized water as the sample. Subtract this value from each result obtained with this lot of reagent.



5. Press: **SHIFT TIMER**

A one–minute mixing period will begin. Invert the ampul repeatedly until the timer beeps. Wipe off any liquid or fingerprints.

Note: Shaking time and technique influence color development. For most accurate results, make successive tests on a 10 mg/L Nitrate Nitrogen Standard Solution listed under Optional Reagents. Adjust the shaking time to obtain the correct result.

6. When the timer beeps, press: **SHIFT TIMER**

A 5–minute reaction period will begin.

Note: A deposit of unoxidized metal will remain after the NitraVer 5 Nitrate Reagent Powder dissolves. this deposit will have no effect on test results.

Note: An amber color will develop if nitrate nitrogen is present.

7. Fill a zeroing vial with at least 10 mL of sample (the blank).

8. Place the AccuVac Vial Adapter into the cell holder.

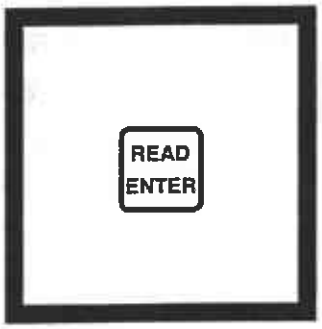
Note: Place the grip tab at the rear of the cell holder.

9. When the timer beeps, the display will show:
mg/l N NO_3^- H AV
Place the blank into the cell holder. close the light shield.

10. Press: **ZERO**

The display will show:
WAIT
then
0.0 mg/l N NO_3^- H AV

11. Place the AccuVac ampul into the cell holder. Close the light shield.



12. Press: **READ/ENTER**

The display will show:
WAIT
then the nitrate result in mg/L nitrate nitrogen (NO_3^--N) will be displayed.

Note: The results can be expressed as mg/L nitrate (NO_3^-) by multiplying the mg/L nitrate nitrogen (NO_3^--N) by 4.4.

Note: In the constant–on mode, pressing READ/ENTER is not required. WAIT will not appear. When the display stabilizes, read the result.

ACCURACY CHECK

Standard Additions Method

a) Snap the neck off a fresh High Range Nitrate Nitrogen Voluette Ampule Standard, 500 mg/L NO_3^--N.

b) Use the TenSette Pipet to add 0.1, 0.2, and 0.3 mL of standard to three 25–mL samples. Mix each thoroughly. (For AccuVac ampuls, use 50–mL beakers.)

c) Analyze each sample as described above. The nitrogen concentration should increase 2.0 mg/L for each 0.1 mL of standard added.

d) If these increases do not occur, see Standard Additions (Section I) for more information.

Standard Solution Method

Use a 10.0 mg/L Nitrate Nitrogen Standard Solution listed under Optional Reagents to check test accuracy. Or, this can be prepared by diluting 1.00 mL of solution from a High Range Nitrate Nitrogen Voluette Ampule Standard Solution, 500 mg/L NO_3^-–N, to 50.0 mL with deionized water.

PRECISION

In a single laboratory, using standard solutions of 20.0 mg/L nitrate nitrogen (NO_3^--N) and two representative lots of reagent with the DR/2000, a single operator obtained a standard deviation of ±0.8 mg/L nitrate nitrogen.

Using standard solutions of 30.0 mg/L (NO_3^-–N) and one representative lot of AccuVac ampuls with the DR/2000, a single operator obtained a standard deviation of ±2.3 mg/L nitrate nitrogen.

INTERFERENCES

Compensate for nitrite interference as follows:

a) Add Bromine Water, 30 g/L, drop–wise to the sample in Step 4 until a yellow color remains.

b) Add one drop of Phenol Solution, 30 g/L, to destroy the color.

c) Proceed with Step 4. Report results as total nitrate and nitrite.

Strong oxidizing and reducing substances will interfere. Ferric iron causes high results and must be absent. Chloride concentrations above 100 mg/L will cause low results. The test may be used at high chloride levels (i.e., seawater), but a calibration must be performed using standards spiked to the same chloride concentration. See User Stored Programs in the DR/2000 Instrument Manual for more information.

Highly buffered samples or extreme sample pH may exceed the buffering capacity of the reagents and require sample pretreatment; see Interferences, pH (Section I).

SUMMARY OF METHOD

Cadmium metal reduces nitrates present in the sample to nitrite. The nitrite ion reacts in an acidic medium with sulfanilic acid to form an intermediate diazonium salt. This salt couples to gentisic acid to form an amber–colored product. Nitrate can be determined directly using the Nitrate Ion Selective Electrode (Cat. No. 44560–71).

REQUIRED REAGENTS (Using Powder Pillows)

Description	Quantity Required Per Test	Units	Cat. No.
NitraVer 5 Nitrate Reagent Powder Pillows	1 pillow	50/pkg	14034–66

REQUIRED REAGENTS (Using AccuVac Ampuls)

NitraVer 5 Nitrate Reagent AccuVac Ampul	1 ampul	25/pkg	25110–25

REQUIRED APPARATUS (Using Powder Pillows)

Clippers, for opening powder pillows	1	each	968–00
Stopper, rubber, size 2	1	12/pkg	2118–02

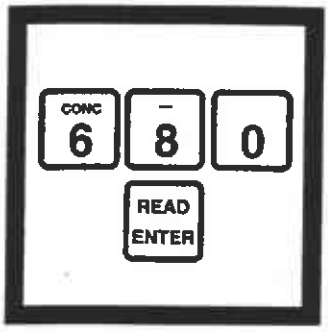
REQUIRED APPARATUS (Using AccuVac Ampuls)

Adapter, AccuVac Vial	1	each	43784–00
Beaker, 50 mL	1	each	500–41
Zeroing Vial	1	each	21228–00

SULFATE (0 to [redacted] mg/L)

Method 8051
For water, wastewater and seawater

SulfaVer 4 Method*, USEPA approved for reporting**
USING POWDER PILLOWS



1. Enter the stored program for sulfate (SO_4^{2-}).

Press: **6 8 0 READ/ENTER**

The display will show:
DIAL nm to 450

Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: If samples cannot be analyzed immediately, see Sampling and Storage following these steps.

2. Rotate the wavelength dial until the small display shows:
450 nm

Note: For greater accuracy, prepare an instrument calibration for each new lot of SulfaVer 4 Sulfate Reagent Powder Pillows; see Calibration following these steps.

3. Press: **READ/ENTER**

The display will show:
mg/l SO_4^{2-}

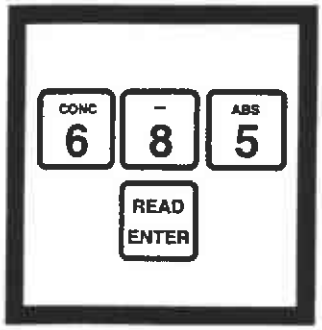
4. Fill a clean sample cell with sample with 25 mL of sample.

Note: Filter highly turbid or colored samples. Use filtered sample in this step and Step 6. Use labware listed under Optional Apparatus.

Note: For proof of accuracy, use a 50 mg/L sulfate standard solution (see Accuracy Check) in place of the sample.

*Adapted from *Standard Methods for the Examination of Water and Wastewater*
**Procedure is equivalent to USEPA method 375.4 for wastewater.

USING ACCUVAC AMPULS



1. Enter the stored program for sulfate (SO_4^{2-}) – AccuVac Ampuls.

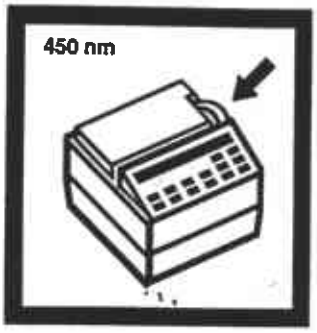
Press: **6 8 5 READ/ENTER**

The display will show:
DIAL nm to 450

Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

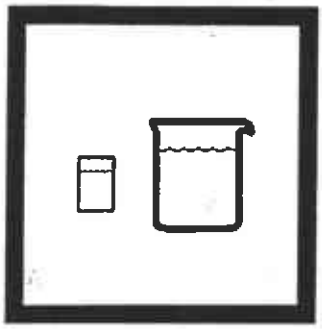
Note: If samples cannot be analyzed immediately, see Sampling and Storage following these steps.



2. Rotate the wavelength dial until the small display shows:
450 nm

3. Press: **READ/ENTER**

The display will show:
mg/l SO_4^{2-} AV

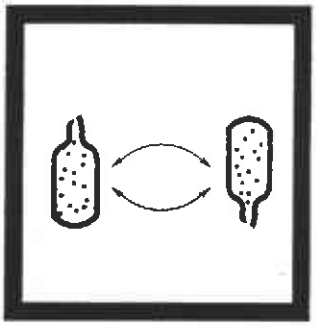


4. Fill a zeroing vial (the blank) with at least 10 mL of sample. Collect at least 40 mL of sample in a 50–mL beaker.

Note: Filter highly turbid or colored samples. Use filtered sample in this step and Step 5. Use labware listed under Optional Apparatus.

5. Fill a SulfaVer 4 Sulfate AccuVac ampul with sample.

Note: Keep tip immersed until the ampul fills completely.



6. Quickly invert the ampul several times to mix. Wipe off any liquid or fingerprints.

Note: A white turbidity will develop if sulfate is present.

Note: Accuracy is not affected by undissolved powder.

7. Press: **SHIFT TIMER**

A 5–minute reaction period will begin

8. Place the AccuVac Vial Adapter into the cell holder.

Note: Place the grip tab at the rear of the cell holder.

9. When the timer beeps, the display will show:
mg/l SO_4^{2-} AV
Place the blank into the cell holder. Close the light shield.

10. Press: **ZERO**

The display will show:
WAIT
then:
0. mg/l SO_4^{2-} AV

11. Within five minutes after the timer beeps, place the AccuVac ampul into the cell holder. Close the light shield.

12. Press: **READ/ENTER**

The display will show:
WAIT
then the results in mg/L SO_4^{2-} will be displayed.

Note: In the constant-on mode, pressing READ/ENTER is not required. WAIT will not appear. When the display stabilizes, read the result.

CALIBRATION

A new calibration should be performed for each new lot of SulfaVer 4 Sulfate Reagent Powder Pillows as follows:

a) Prepare standards of 0, 10, 20, 30, 40, 50 and 60 mg/L sulfate by diluting 0, 0.1, 0.2, 0.3, 0.4, 0.5 and 0.6 mL of the contents of a Sulfate Voluette Ampule Standard, 2500 mg/L, to 25 mL with deionized water in graduated mixing cylinders. Use a TenSette Pipet to measure the standard. Mix well.

Or, pipet 0, 1.0, 2.0, 3.0, 4.0, 5.0, and 6.0 mL of a 1000–mg/L sulfate Standard Solution into 100-mL volumetric flasks. Dilute to volume. Mix well. Transfer 25 mL to each test cylinder.

b) Store the calibration in the instrument memory using the procedure in the Operation section of the instrument manual. Follow the procedure described, choosing a wavelength of 450 nm, the decimal position as 0000, units as mg/L SO_4^{2-} and a Timer 1 interval of 05:00. Note the program number assigned to the procedure.

c) Add the reagents to the deionized water (0 standard–reagent blank) and to the 10 mg/L standard as described in Steps 4 to 6 of the powder pillow procedure above, using the deionized water blank to perform the zero calibration. Enter the sulfate concentration of the first standard (10 mg/L) and measure the absorbance as directed by the instrument manual. React and measure the remaining standards.

d) Use this stored program number in the powder pillow procedure above. Prepare a new calibration for each new lot of reagent, using the same stored program number.

SAMPLING AND STORAGE

Collect samples in clean plastic or glass bottles. Samples may be stored up to 7 days by cooling to 4 °C (39 °F) or lower. Warm to room temperature before analysis.

ACCURACY CHECK

Standard Additions Method

a) Snap the neck off a Sulfate Voluette Ampule Standard Solution, 2500 mg/L.

b) Use a TenSette Pipet to add 0.1, 0.2 and 0.3 mL of standard to three 25–mL samples. Mix thoroughly. For AccuVac Ampuls, use 50–mL beakers.

c) Analyze each sample as described above. The sulfate concentration should increase 10 mg/L for each 0.1 mL of standard added.

d) If these increases do not occur, see Standard Additions (Section I) for more information.

Standard Solution Method

Check the accuracy of the test by using the Sulfate Standard Solution, 50 mg/L, listed under Optional Reagents. Or, prepare this solution by pipetting 1.0 mL of the contents of a Voluette Ampule Standard for Sulfate into a 50–mL volumetric flask. Dilute to volume with deionized water.

PRECISION

In a single laboratory, using a standard solution of 50 mg/L sulfate and two representative lots of powder pillows with the DR/2000, a single operator obtained a standard deviation of ±0.9 mg/L sulfate.

In a single laboratory, using a standard solution of 50 mg/L sulfate and two representative lots of AccuVac ampuls with the DR/2000, a single operator obtained a standard deviation of ±2.2 mg/L sulfate.

INTERFERENCES

The following interfere at levels above those concentrations listed:

Calcium	20,000 mg/L as $CaCO_3$
Chloride	40,000 mg/L as $CaCO_3$
Magnesium	10,000 mg/L as $CaCO_3$
Silica	500 mg/L as $CaCO_3$

SUMMARY OF METHOD

Sulfate ions in the sample react with barium in the SulfaVer 4 and form a precipitate of barium sulfate. The amount of turbidity formed is proportional to the sulfate concentration. The SulfaVer 4 also contains a stabilizing agent to hold the precipitate in suspension.

REQUIRED REAGENTS (Using Powder Pillows)

Description	Quantity Required Per Test	Units	Cat. No.
SulfaVer 4 Sulfate Reagent Powder Pillows	1 pillow	50/pkg	12065–66

REQUIRED REAGENTS (Using AccuVac Ampuls)

SulfaVer 4 Sulfate AccuVac Ampuls	1 ampul	25/pkg	25090–25

REQUIRED APPARATUS (Using Powder Pillows)

Clippers, for opening powder pillows	1	each	968–00

REQUIRED APPARATUS (Using AccuVac Ampuls)

Adapter, AccuVac Vial	1	each	43784–00
Brush	1	each	690–00
Vial, zeroing	1	each	21228–00

OPTIONAL REAGENTS

Sulfate Standard Solution, 50 mg/L	500 mL	2578–49
Sulfate Standard Solution, 1000 mg/L	500 mL	21757–49
Sulfate Standard Solution, Voluette Ampule, 2500 mg/L, 10 mL	16/pkg	14252–10
Water, deionized	3.78 L	272–17

OPTIONAL APPARATUS

AccuVac Snapper Kit	each	24052–00
Ampule Breaker Kit	each	21968–00
Beaker, 50 mL	each	500–41
Filter Paper, folded, 12.5 cm	100/pkg	1894–57
Flask, volumetric, 50 mL, Class A	each	14574–41
Flask, volumetric, 100 mL, Class A	each	14574–42
Funnel, poly, 65 mm	each	1083–67
Pipet, TenSette, 0.1 to 1.0 mL	each	19700–01
Pipet Tips, for 19700–01 Pipet	50/pkg	21856–96
Pipet, volumetric, Class A, 1.00 mL	each	14515–35
Pipet Filler, safety bulb	each	14651–00

For additional ordering information, see final section.
In the U.S.A. call 800–227–4224 to place an order.

IRON, FERROUS (0 to 3.00 mg/L)

For water, wastewater and seawater

1,10 Phenanthroline Method* (Powder Pillows or AccuVac Ampuls)

USING POWDER PILLOWS

1. Enter the stored program number for ferrous iron, (Fe^{2+})–powder pillows.

Press: **2 5 5 READ/ENTER**

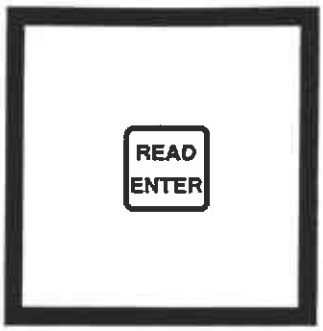
The display will show:
DIAL nm TO 510

Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: Analyze samples as soon as possible to prevent air oxidation of ferrous iron to ferric iron, which is not determined.

2. Rotate the wavelength dial until the small display shows:
510 nm



3. Press: **READ/ENTER**

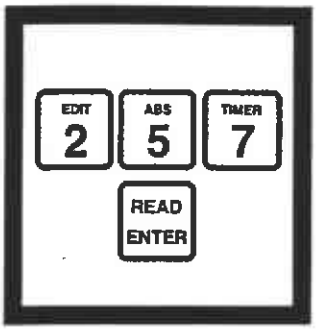
The display will show:
mg/l Fe^{2+}

4. Fill a sample cell with 25 mL of sample.

Note: For proof of accuracy, use a 1.0 mg/L ferrous iron standard solution (preparation given in the Accuracy Check) in place of the sample.

*Adapted from *Standard Methods for the Examination of Water and Wastewater*

USING ACCUVAC AMPULS



1. Enter the stored program number for ferrous iron (Fe^{2+})–AccuVac ampuls.

Press: **2 5 7 READ/ENTER**

The display will show:
DIAL nm TO 510

Note: DR/2000s with software versions 3.0 and greater will display "P" and the program number.

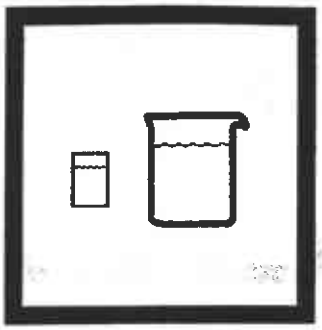
Note: Instruments with software versions 3.0 and greater will not display "DIAL nm TO" message if the wavelength is already set correctly. The display will show the message in Step 3. Proceed with Step 4.

Note: Analyze samples as soon as possible to prevent air oxidation of ferrous iron to ferric iron, which is not determined.

2. Rotate the wavelength dial until the small display shows:
510 nm

3. Press: **READ/ENTER**

The display will show:
mg/l Fe^{2+} AV

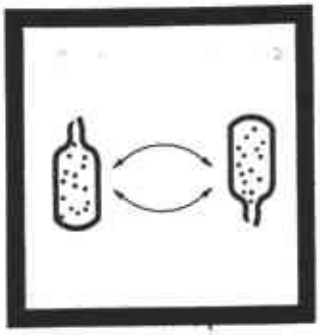


4. Fill a zeroing vial (the blank) with at least 10 mL of sample. Collect at least 40 mL of sample in a 50–mL beaker.

Note: For proof of accuracy, a 1.0 mg/L ferrous iron standard solution (preparation given in the Accuracy Check) can be used in place of the sample.

5. Fill a Ferrous Iron AccuVac Ampul with sample.

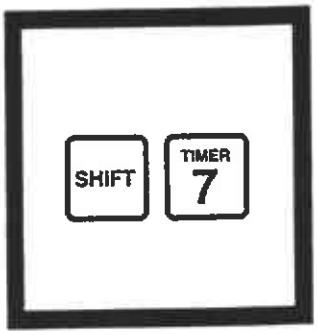
Note: Keep the tip immersed while the ampul fills completely.



6. Quickly invert the ampul several times to mix. Wipe off any liquid or fingerprints.

Note: An orange color will form if ferrous iron is present.

Note: Undissolved powder does not affect accuracy.



7. Press: **SHIFT TIMER**

A 3–minute reaction period will begin.

8. Place the AccuVac Vial Adapter into the cell holder.

Note: Place the grip tab at the rear of the cell holder.

9. When the timer beeps, the display will show:
mg/l Fe^{2+} AV
Place the blank into the cell holder. Close the light shield.

10. Press: **ZERO**

The display will show:
WAIT
then:
0.00 mg/l Fe^{2+} AV

11. Place the AccuVac ampul into the cell holder. Close the light shield.

12. Press: **READ/ENTER**

The display will show:
WAIT
then the result in mg/L Fe^{2+} will be displayed.

Note: In the constant–on mode, pressing READ/ENTER is not required. WAIT will not appear. When the display stabilizes, read the result.

ACCURACY CHECK

Standard Solution Method

Prepare a ferrous iron stock solution (100 mg/L Fe) by dissolving 0.7022 grams of ferrous ammonium sulfate, hexahydrate, in deionized water. Dilute to 1 liter. Prepare immediately before use. Dilute 1.00 mL of this solution to 100 mL with deionized water to make a 1.0 mg/L standard solution. Prepare this immediately before use.

PRECISION

In a single laboratory, using an iron standard solution of 1.000 mg/L Fe^{2+} and two representative lots of reagent with the DR/2000, a single operator obtained a standard deviation of ±0.006 mg/L Fe^{2+}.

In a single laboratory using a standard solution of 1.000 mg/L Fe^{2+} and two representative lots of AccuVac ampuls with the DR/2000, a single operator obtained a standard deviation of ±0.009 mg/L Fe^{2+}.

SUMMARY OF METHOD

The 1,10 phenanthroline indicator in Ferrous Iron Reagent reacts with ferrous iron in the sample to form an orange color in proportion to the iron concentration. Ferric iron does not react. The ferric iron (Fe^{3+}) concentration can be determined by subtracting the ferrous iron concentration from the results of a total iron test.

REQUIRED REAGENTS (Using Powder Pillows)

Description	Quantity Required Per Test	Units	Cat. No.
Ferrous Iron Reagent Powder Pillows	1 pillow	100/pkg	1037–69

REQUIRED REAGENTS (Using AccuVac Ampuls)

Ferrous Iron Reagent AccuVac Ampuls	1 ampul	25/pkg	25140–25

REQUIRED APPARATUS (Using Powder Pillows)

Clippers, for opening powder pillows	1	each	968–00

REQUIRED APPARATUS (Using AccuVac Ampuls)

Adapter, AccuVac Vial	1	each	43784–00
Beaker, 50 mL	1	each	500–41
Sample Cell, 10 mL, with cap	1	each	21228–00

OPTIONAL REAGENTS

Ferrous Ammonium Sulfate, hexahydrate, ACS	113 g	11256–14
Water, deionized	3.78 L	272–17

OPTIONAL APPARATUS

AccuVac Snapper Kit	each	24052–00
Clippers, shears, 7–1/4"	each	23694–00
Flask, volumetric, 100 mL, Class B	each	547–42
Flask, volumetric, 1000 mL, Class B	each	547–53
Pipet, volumetric, 1 mL	each	515–35
Pipet Filler, safety bulb	each	14651–00
Pour–Thru Cell Assembly Kit	each	45215–00

For additional ordering information, see final section.
In the U.S.A. call 800–227–4224 to place an order.

APPENDIX F.

WASTEWATER DISCHARGE PERMIT RENEWAL

EAST BAY MUNICIPAL UTILITY DISTRICT

COMPLIANCE EVENT REMINDER NOTICE

DAVID R. WILLIAMS
DIRECTOR OF WASTEWATER

December 3, 2001

DESERT PETROLEUM, INC.
P.O. Box 1601
Oxnard, CA 93032

Attention: George Converse

Re: Wastewater Discharge Permit No. 50435501

As a compliance reporting condition of your Wastewater Discharge Permit, you are required to submit periodic reports. The purpose of this letter is to remind you that your facility must submit a(n) Self-Monitoring Report by 01/31/02.

The report must contain the proper certification statement and be signed by an authorized person. Details concerning these items may be found in Section B of STANDARD TERMS AND CONDITIONS. This report must be completed and mailed to the Source Control Division by this date. A violation follow up fee may be assessed for late, incomplete or failure to submit this report.

Sincerely,

Marie Kulka

Marie A. Kulka
Wastewater Control Representative
(510) 287-1632

EBMUD - Mail Slot #702
Source Control Division
P.O. Box 24055
Oakland, CA 94623-1055

cc: George Converse
1386 East Beamer Street
Woodland, CA 95776

-WEGE-

WESTERN
GEO-ENGINEERS
CALIF. CONTRACTOR #513857
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND CA 95776-6003
530 668-5300,
FAX (916) 662-0273
Wege@mother.com

December 5, 2001

Mr. Bill Thompson
DESERT PETROLEUM
P.O. Box 1601
Oxnard, Ca 93032

RE: FORMER DESERT #793. 4035 PARK BLVD., OAKLAND, CALIFORNIA.

Dear Bill:

Enclosed please find the renewal application for wastewater discharge permit for the above referenced site. Please review, sign, date and mail back to us. If you have any questions please call.

Sincerely,

George L. Converse
Project Geologist

Enclosure:

EBMUD

WASTEWATER DISCHARGE PERMIT APPLICATION CHECKLIST AND CERTIFICATION

Permit: Wastewater Discharge Permit No.: 50435501 Renewal

Check the appropriate box for each page of the Wastewater Discharge Permit Application. If you are completing a page and including it in the application, initial the box in the "Page Completed" column. If you are able to certify that no change has occurred to a particular page from the previous application, initial the box in the "No Change" column. Sign and date the checklist/certification. Submit the checklist/certification with your application package.

Page No.	Page Title	Initial if Page Completed	Initial if No Change
1	Applicant Information	LLC	
2	Process Description	LLC	
3	Schematic Flow Diagram	LLC	
4	Building Layout Diagram	LLC	LLC
5	Water Source and Use ("Water Balance")	LLC	
6	Strength Summary	LLC	

I certify under penalty of law that by initialing a page(s) above in the "No Change" column that the most recently submitted application page fully describes conditions at the facility at the present time and for the expected duration of the renewed permit.

I certify under penalty of law that this document and all attachments were prepared under my direction or 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 or 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.

Greg Greene / Project Manager

Signature/Title

12-5-01

Date

EBMUD

WASTEWATER DISCHARGE PERMIT
Terms and Conditions
APPLICANT INFORMATION

PERMIT NUMBER 50435501

APPLICANT BUSINESS NAME
Desert Petroleum

PERSON TO BE CONTACTED IN EVENT OF EMERGENCY

George Converse
Name

(530) 668-5300 (530) 668-5300 m
Day Phone Night Phone

(530) 662-0273
Fax Number

ADDRESS OF PREMISES DISCHARGING WASTEWATER

4035 Park Blvd.
Street Address

Oakland, CA 94602
City Zip Code

PERSON TO BE CONTACTED ABOUT THIS APPLICATION

George Converse
Name

Project Manager
Title

(530) 668-5300 (530) 662-0273
Day Phone Fax Number

FACILITY MAILING ADDRESS

P.O. Box 1601
Street Address

Oxnard, CA 93002
City Zip Code

almccowen@aol.com
Electronic Mail Address (E-Mail)

CHIEF EXECUTIVE OFFICER/DULY AUTHORIZED REPRESENTATIVE

Mr. Bill Thompson President
Name (printed) Title

2060 Knoll Drive, Suite 100 Ventura, CA 93003
Street Address City Zip Code

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or 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 or 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 Pres.
Signature (see certification requirements on reverse)

12/12/01
Date

Revised 6/26-97

EBMUD

WASTEWATER DISCHARGE PERMIT
Terms and Conditions
PROCESS DESCRIPTION

FACILITY NAME DP793

PURPOSE - The Process Description is intended to provide a description of the primary business activities and the substances which may enter into the wastewater from the business activity.

Permit Number: 50435501

BUSINESS ACTIVITY	Standard Industrial Classification	Business Classification Code
Groundwater Remediation		

DESCRIPTION OF PRODUCT

TYPE OF PRODUCT OR BRAND NAME	QUANTITIES - INDICATE UNITS	
	Past Year 7 / 00 to 7 / 01 (Mo. Year Mo. Year)	Estimated This Year 12 / 01 to 12 / 02 (Mo. Year Mo. Year)
Extracted Groundwater	116,438 gallons	2450 gallons

PROCESS DESCRIPTION

Process Description (List all wastewater generating operations)	Characteristics (List all substances that may be discharged to the sewer)	Process Number (From Schematic)
Pump Groundwater	Benzene, Toluene, Ethylbenzene, Xylene, TPH gasoline	1

PRETREATMENT FACILITIES

Pretreatment: Check the type of treatment, if any, given wastewater before it is discharged to the community sewer:

☐ None ☒ holding tank ☐ grease trap ☐ oil and water separator ☐ grinding ☐ sedimentation ☐ pH adjustment ☐ biological treatment ☐ screening ☐ chlorination ☒ other (describe) activated carbon

Description: Describe the loading rates, design capacity, physical size, etc. of each pretreatment facility checked above. Identify the side sewer to which treated wastewater is discharged.

300 gallon capacity poly tank feeds 2 in series 50 gallon (160lbs carbon each) at 5gpm, gravity flow discharge to side sewer SS1 (see figure)

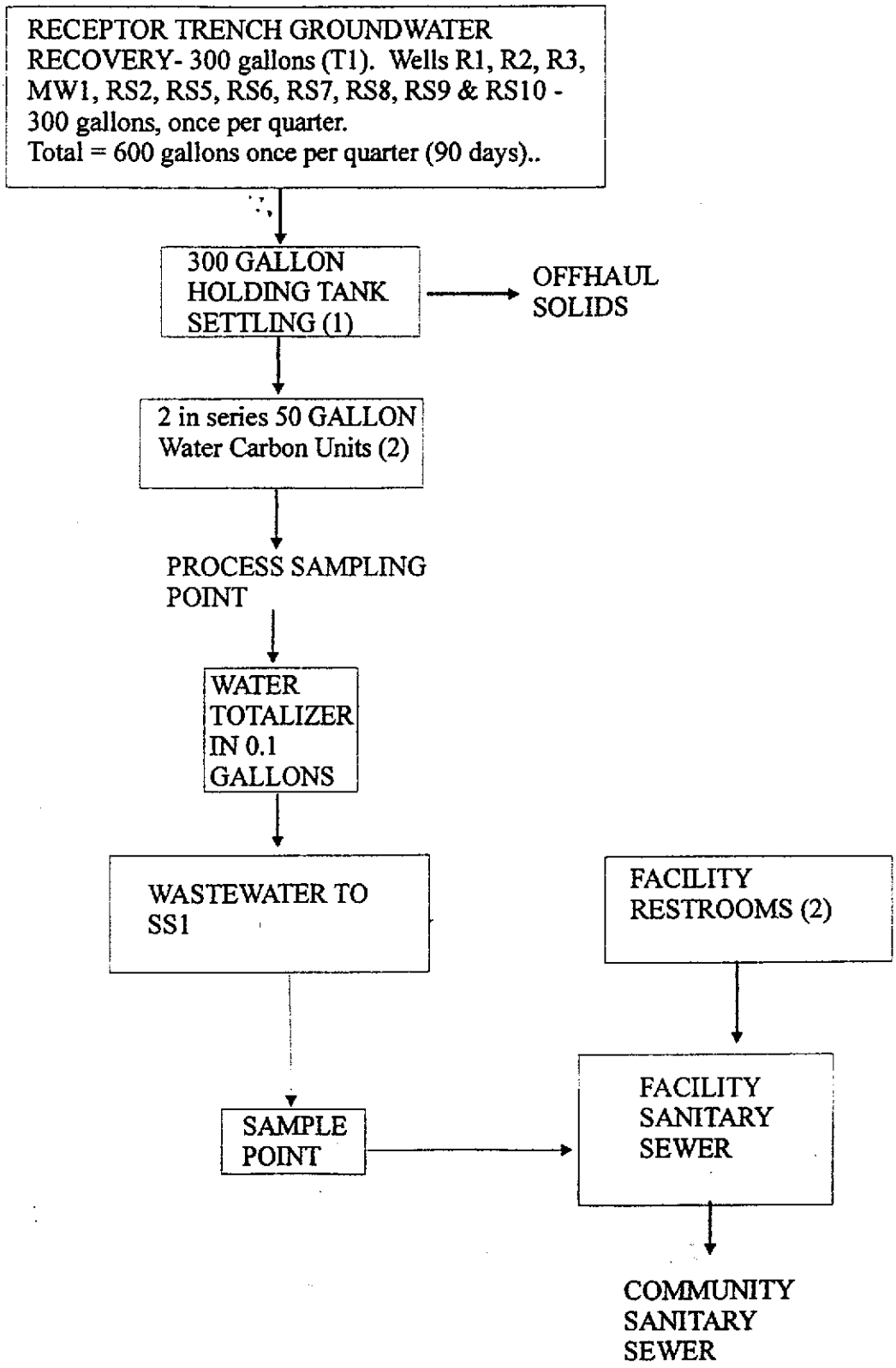
OTHER WASTES: List the type and volume of liquid waste and sludge removed from the premises by means other than the community sewer.

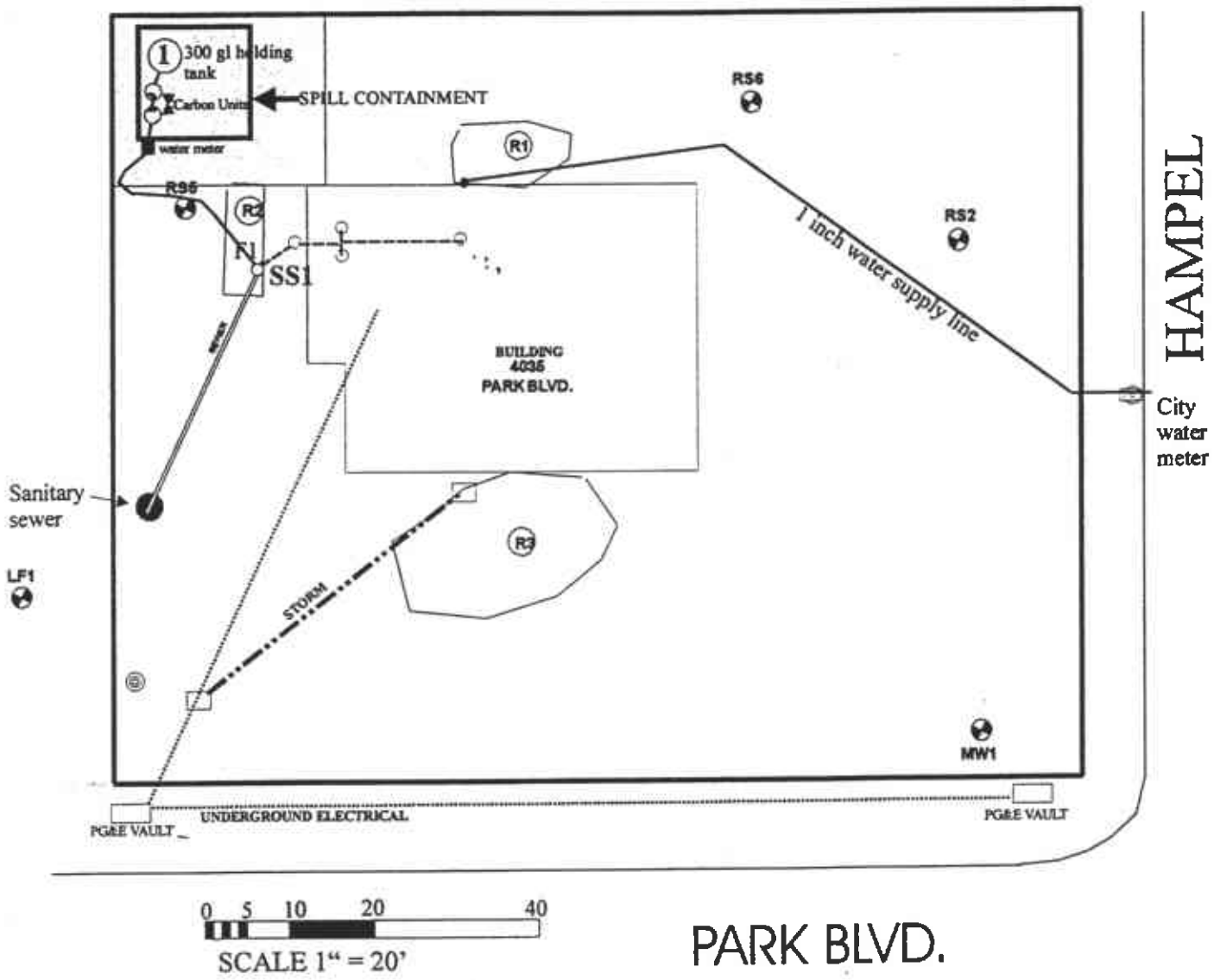
Facility EPA Generator I.D. Number _____

Waste removed by (Name, address, State Transporter I.D. No.)	Type of Waste (Example: Alkaline cleaners, Organic solvents)	EPA Waste No.	State Waste No.	Quantity generated (lbs. or gal. /month)

Revised 6/26/97

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





MW1 MONITOR WELL

1 300 gallon poly tank

2 2 in series 55 gallon carbon filters.

FIGURE 2
SEWER DISCHARGE TREATMENT COMPOUND WASTEWAER DISCHARGE PERMIT # 5043550 1

EBMUD

WASTEWATER DISCHARGE PERMIT
Terms and Conditions
WATER SOURCE AND USE

FACILITY NAME DP793

PURPOSE: This information will enable EBMUD to evaluate the volumes and source(s) of wastewater discharged to the community sewer.

Permit Number WE-3 50435Q1

Water Use and Disposition Estimate the average quantity of water received and wastewater discharged daily.
NOTE: Show on a separate sheet the METHOD AND CALCULATIONS used to determine the quantities shown on the table.

	Supply From			Discharged To		
	EBMUD	Other (1)		Community Sewer	Other (2)	
WATER USED FOR:	gal/day	gal/day	code	gal/day	gal/day	code
SANITARY						
PROCESSES						
BOILER						
COOLING						
WASHING						
IRRIGATION						
OTHER (3)		600	A	600		
TOTAL	0			0		

Notes:

(1) Enter the quantity and the appropriate code letter indicating the source:
a. well b. creek c. estuary d. bay e. stormwater f. reclaimed water

(2) Enter the quantity and the appropriate code letter indicating the discharge point:
a. well b. creek c. estuary d. bay e. stormdrain f. rail, truck, barge g. evaporation h. product

(3) Describe: Pumping wells during groundwater sampling events

Total Number of Employees Total 0

	Office		Production (number of employees per shift)					
			Day Shift		Swing shift		Night shift	
	No.	Hours	No.	Hours	No.	Hours	No.	Hours
Weekday		to		to		to		to
Saturday		to		to		to		to
Sunday		to		to		to		to

Source of Wastewater Discharged

Water Meter Number	Use Code (see reverse)	Percent (%) discharged to: Side Sewer									Total % Disch. to all side sewers
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	
47083426	W	100%									100%

Revised 6/26/97

WASTEWATER DISCHARGE PERMIT
Terms and Conditions
STRENGTH SUMMARY

EBMUD

FACILITY NAME DP793

PURPOSE: This information will identify for EBMUD the variation in flow rate and the type of constituents and characteristics of the discharge for each side sewer.

Permit Number 50435501

Side Sewer No. SS1 Side Sewer Location west side of building

Wastewater Flow Rate

Peak Hourly (gallons/minute)	Maximum Daily (gallons/day)	Annual Daily Average (gallons/day)	Max. Monthly (CCF *)
5	650	7	1.0

* CCF = hundred cubic feet = 748 gallons

Discharge Frequency

Discharge Period

☐ Continuous ☐ 24 hrs./day
☐ 365 day/year, or

a. Time of day from _____ to _____

b. Days of the week _____

Batch Discharge(s)

a. Day(s) of the week Tue, Wed, Thb. Time(s) of the day noon-2pm

c. Volume discharged 600gl d. Rate of Discharge 5gpm

Stormwater Area - Total area in square feet exposed to stormwater, rainwater, and groundwater and draining to this side sewer

0 or 11,000 sq. ft. There is one storm drain for 11,000 5q. ft. of property. Storm drain may or may not be part of sewer.

Wastewater Strength Estimates - Enter the average annual and maximum wastewater strength for this side sewer for each of the following elements of wastewater strength for the period covered by the Permit. These values will become the basis for sewage disposal charges and are the average and maximum limits on the elements of the discharger's wastewater strength.

Elements of Wastewater Strength	Unit	Average	Maximum
Total Suspended Solids (TSS)	mg/L	N/A	N/A
Filtered Chemical Oxygen Demand (CODF)	mg/L	N/A	N/A

Provide the name and address of the laboratory and the State of California, Department of Health Services, Environmental Laboratory Accreditation Program Certificate Number of the laboratory performing self-monitoring analyses.

Name Kiff Analytical LLC Telephone (530) 297-4800

Street 720 Olive Drive, Suite D City Davis State CA Zip 95616

Certificate Number 2236

APPENDIX G.

WORKPLAN (amended) – AUGMENT BIODEGRADATION

WORKPLAN TO AUGMENT BIODEGRADATION BY INTRODUCING OXYGEN INTO SELECTED WELLS

August 29, 2000
Amended January 7, 2002

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

Dear Mr. Thompson:

The following is the amended Workplan for oxygen augmentation into wells R3, RS5, RS7 and trench wells T1, T2, T3 and T4 at former Desert Petroleum Station #793.

1.0 SITE LOCATION AND DESCRIPTION

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. The site is located in projected section 32; T1S; R3W; MDB&M at an approximate elevation of 210 feet above mean sea level.

2.0 INTRODUCTION

The following amends the August 29, 2000 workplan to augment the ongoing natural bioremediation at former Desert Petroleum Inc. station DP 793. Gasoline was discovered trickling into a sewer manway on Brighton Avenue on November 30, 1989. The station was closed and all contents removed from the tanks by December 7, 1989. The UST's were removed on June 23,1994 and over-excavation of on-site contaminated soils occurred August 14, 1995. Various assessments have delineated the gasoline plume and show that the gasoline release followed the sewer main from the station to Brighton Avenue sewer manway. A receptor trench was installed along Brighton Avenue on August 12, 1999. On August 26, 1999 during the 1/4ly sampling round selected wells were also tested for the potential of natural biodegradation, see Western Geo-Engineers report "Further Assessment, Installation of Brighton Avenue Receptor Trench and 3rd Quarter 1999 Groundwater monitoring". The August 29, 2000 workplan was developed to enhance the natural biodegradation that is occurring along the parameters of the groundwater plume associated with this site. Groundwater pumped from the receptor trench and well RS5 was treated with activated carbon and dumped to the sanitary sewer located at the site (4035 Park Blvd.). Comparing the groundwater plume prior to pumping and sewer discharge (August 1999) to the groundwater plume after pumping and sewer discharge (May 2001) showed a dramatic reduction in the groundwater plume. A meeting to discuss "if further remedial actions were warranted at or near the site" was held at Alameda County Health. Review and discussion of the actions that have been taken and the

results obtained indicated that nutrient augmentation was probably not warranted, but of greater benefit would be enhancement of the dissolved oxygen. This workplan has been developed to provide the means for enhancing dissolved oxygen near and within the hydrocarbon plume.

3.0 BIOREMEDIATION

Bacteria native to the soil at hydrocarbon contamination sites normally degrade hydrocarbons. The most effective hydrocarbon degraders (eaters) are the aerobic (oxygen using) bacteria. The amount of available dissolved oxygen is usually the factor controlling the rate that these bacteria degrade the gasoline.

A much slower degradation process starts when the dissolved oxygen is depleted. The plume begins to become anaerobic and the bacterium commences to reduce nitrate, ferric iron, and sulfate to further degrade the hydrocarbons. Eventually, as these compounds and the oxygen are used, the bacteria begin methogenesis, in which the hydrocarbons are converted to methane.

The results of prior bioremediation sampling (August and September 1999) indicate that natural attenuation/bioremediation is active at this site and methogenesis is occurring. In a number of the wells the biodegradation has proceeded to the point that nearly all of the electron acceptors and the nutrients that bacteria require to degrade gasoline have been consumed while a significant amount of hydrocarbons remain.

The most current bioremediation sampling (December 2001) shows similar results to that of the 1999 sampling but indicate that nutrient augmentation is not necessary at this time and oxygen enhancement would be beneficial.

All of the wells show the impact of active biodegradation. It is not therefore possible to determine a background level of the compounds. The closest approximation for background levels at this site is the highest concentrations of electron acceptors and the lowest levels of by-products.

Compound	Function	Concentration 1999 / 2001	Well 1999 / 2001
Dissolved Oxygen (O_2)	Electron Acceptor	4.9 mg/l / 5.5 mg/L	MW1 / R3
Nitrate	Electron Acceptor	2.7 mg/l / 11.4 mg/L	RS2
Sulfate	Electron Acceptor	>77 mg/l / >77 mg/L	R2 & R3 / RS2, RS6, R2 & R3
Ferrous Iron	By-product	0.25 mg/l / 0 mg/L	MW1
Methane	By-product	<0.00001 mg/l	MW1
Carbon Dioxide	By-product	0.058 mg/l	RS8
Aerobic Bacteria	By-product	10 CFU/ml	MW1

mg/L milligrams per liter (parts per million)
CFU/ml plate count per milliliter

All of the tested wells have reduced levels of dissolved oxygen.

Since the 1999 sampling Both Nitrate and Sulfate have rebounded, with Nitrate increasing from 0.8 to 6 mg/L in down gradient well RS7 and Sulfate increasing from non-detectable levels to 49 mg/L in well RS8.

The presence of Ferrous Iron and Methane in the wells indicates that biodegradation has progressed to the point that the system is oxygen deficient and the bacteria have started to reduce the iron to provide oxygen for the degradation. The Ferrous Iron outline has been reduced in size, indicating the groundwater near and associated with the hydrocarbon plume is not as oxygen deficient.

The carbon dioxide (CO_2) levels in the groundwater indicate that a portion of the hydrocarbons have been degraded. CO_2 and water are the final byproducts of the biodegradation of hydrocarbons. The carbon in CO_2 results from the oxidation of the hydrocarbon radical CH_2 and as such 1 mg of CO2 = 0.41 mg of CH_2 (CH_2 (12+1+1 = 14) / (CO_2 (12+16+16=34.

The presence of methane (CH_4) indicates that a number of the wells have progressed into methogenesis.

The levels of electron acceptors present and the presence of the reaction products, carbon dioxide, methane and ferrous iron indicate that the bacteria in the soil and the compounds in the groundwater have the capability to consume a significant amount of hydrocarbons.

Comparison of the hydrocarbon degrader counts (amount of bacteria) to the TPHg concentration, electron acceptors, byproducts, and nutrients, indicate that the addition of oxygen can have a significant effect on the bioactivity, see Table 3 of Third Quarter 2000 report and Table 2 of Fourth Quarter 2001 report.

The current TPHg concentrations show that only two of the wells, compared to five wells in 1999, contain greater than 10 mg/l of TPHg with a high of 48 mg/L at T1. This indicates that it would be beneficial to increase the biodegradation capacity of the aquifer. The most cost beneficial way to do this is by adding dissolved oxygen.

The current groundwater plume covers an area of approximately 10160 square feet. The affected water bearing strata is an estimated 16 feet thick and extends from 10 to 26 feet below the surface at well RS5. The plume volume is 162,560 cubic feet. Assuming a porosity of 0.3, the plume contains 48,768 cubic feet, 364,785 gallons or 1,380,711 liters of water.

4.0 BIO -AUGMENTATION

4.1.1 Air Sparging

Do to the close proximity of residential multistory apartments to the treatment compound, mechanical equipment, such as air pumps, compressors, etc would create a noise problem. The alternative is to chemically add the oxygen to the groundwater.

4.1.2 Hydrogen Peroxide

A 21% solution of hydrogen peroxide can be handled without special permits. The solution would be metered and/or batch dumped into select wells. Special personnel protective equipment would be necessary for the individual monitoring and/or handling the hydrogen peroxide. Due to the highly oxidizing nature of hydrogen peroxide care against splash/spillage of the solution would be necessary along with labeling for emergency response personnel, i.e. fire and police etc. A special compound would need to be constructed to store the hydrogen peroxide containers, metering pumps and distribution lines.

4.1.3 Oxygen Release Compound

Oxygen Release Compound "(ORC) is a proprietary formulation of magnesium peroxide intercalated with food-grade phosphates." The ORC socks are placed into select wells and once exposed to the groundwater allow for a continual release of oxygen for a period of up to a year (dependent upon the groundwater conditions). These socks once placed do not need maintenance and special handling protective equipment is not required. R2? RS2? R3?

Oxygen augmentation is suggested upgradient the station building at R1, updgradient of RS8 at RS5, along the receptor trench at T1, T2, T3 and T4 and upgradient of RS9 at RS7. Ideally this will cause the water near the well to become saturated with oxygen.

RS8, 6.. ?

4.1.4 NUTRIENT ADDITION

As found during the September 2, 1999 sampling round the phosphate and ammonia levels are reduced to levels that negatively effects the biodegradation rate. After approximately 6 months using ORC an evaluation will be made to whether additional nutrient augmentation is necessary. If it is necessary to augment with supplemental nutrients sodium hexametaphosphate and ammonium sulfate maybe added to the wells in order to augment the levels of these compounds.

4.1.4.1 Phosphate

Research of the current literature indicates that the direct addition of orthophosphate may cause the precipitation of insoluble phosphate salts, thus plugging the infiltration wells and the surrounding aquifer.

In sodium hexametaphosphate (SHMP), the phosphate is in the form of polyphosphate which and forms complex ions with the calcium and iron ions and does not precipitate out of solution. Additional sodium SHMP has a neutral pH of 7 and may be used in the treatment of potable water.

4.1.4.2 Ammonium Sulfate

In addition to the SHMP, ammonium sulfate as an ammonia source could be used. In addition to ammonia, this will also supply some sulfate, an important electron acceptor, to the system.

5.0 HYDROCARBON CONTAMINATION

The primary mass of hydrocarbon contamination remaining after the over-excavating and the installation of the receptor trench was found to be 2885 pounds in the soil with significant amounts (102 pounds) to be found in the groundwater, August 1999. The soil contamination is present in three phases; absorbed onto the soil, vapor and free phase. The free phase product has been found either coating the sand grains or as a floating product layer. Presently there is no significant floating product plume associated with this site.

The amount bound to the soil (2885 pounds) was found by contouring the results of the soil samples taken during test borings to find the resulting areas and volumes, see Table 5 and Figures 5 – 9 of Third Quarter 2000 report.

The mass in groundwater (102 pounds, August 1999) was found by contouring the August 24, 1999 ground water results and calculating the volume of contaminated water, as shown in Table 5 and Figures 10 and 11 of Third Quarter 2000 report. Current conditions (December 2001) indicate that this mass has been significantly reduced to 20.14 pounds TPHg and 1.77 pounds Benzene, see Figures 5 and 5-1 and Table 5.

Past experience has shown that significant levels of soil hydrocarbons can be removed through vapor extraction. Examinations of lithology beneath this site and along Brighton Avenue show that the formation is too clayey for this technology to have any degree of success.

Groundwater remediation will greatly benefit from elevating the dissolved oxygen levels in the groundwater within and near the plume. The least intrusive means to accomplish this would be to place socks containing ORC into selected wells (R3, RS5, RS7, T1, T2, T3 and T4) and monitor the levels of dissolved oxygen in the wells associated with the site periodically to evaluate if additional wells should be used for ORC placement.

6.0 INTERESTED PARTIES

Mr. Bill Thompson Desert Petroleum P.O. Box 1601 Oxnard, California 93032 (805) 644-6784 FAX (805) 654-0720	Mr. Scott Seery Environmental Health Services Environmental Protection (LOP) 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6782, Fax (510) 337-9335

Mr. Leroy Griffin Oakland Fire Dept. OES Haz Mat Mgmt Program 1605 Martin Luther King Jr. Drive Oakland, CA 94612	Steve Marquez SWRCB, Cleanup Fund 2014 T Street Sacramento, CA 95814

4.0 LIMITATIONS

This report is based upon the following:

- The observations of field personnel.
- The results of laboratory analyses performed by a state certified laboratory.
- Referenced documents.
- Our understanding of the regulations of the State of California and Alameda County, Hazardous Materials Section and/or City of Oakland, California.

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

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

The services performed by Western Geo-Engineers, a corporation, under California Registered Geologist #3037 and/or Contractors License #513857, have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California 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. Please note that known contamination of soil and/or groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

If you have any questions concerning this report or if we can be of further assistance, please don't hesitate to contact us at (530) 668-5300.

Respectfully,

George Converse
Project Geologist

Jack E. Napper
Registered Geologist #3037