# 554

February 15, 2002

SECOR
International Incorporated

Mr. Barney Chan Hazardous Materials Specialist Alameda County Health Care Services Agency Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

RE: Former Penske Truck Leasing Facility

725 Julie Ann Way Oakland, California

Dear Mr. Chan:

SECOR International Inc. (SECOR) has prepared this Letter Report (Report), on behalf of Penske Truck Leasing Co., L.P. (Penske), for the former Penske Facility located at 725 Julie Ann Way in Oakland, California (the Site). Figure 1 presents the Site Location Map and Figure 2 shows the Site Plan.

#### **OBJECTIVES**

The objective of this Report is to demonstrate that the chemical oxidation treatment (also known as Fenton's Reagent treatment) conducted at the Site in September 2001 has been successful in achieving its goals. According to SECOR's evaluation, Fentons's reagent treatment was considered to be the most effective remedial technology to reduce benzene, toluene, ethylbenzene and total xylenes (BTEX), total petroleum hydrocarbons as diesel (TPHd) and gasoline (TPHg); and to eliminate free product from wells MW-1, MW-4 and MW-7. SECOR plans to obtain Site closure by providing a summary of the results achieved and the effectiveness of the treatment. For specific details to the treatment activities, refer to SECOR's Fenton's Reagent Treatment Report, dated April 23, 2001.

#### PROJECT HISTORY AND BACKGROUND

In October 1989, one 10,000-gallon unleaded gasoline underground storage tank (UST), one 10,000-gallon diesel UST, and one 550-gallon waste oil UST were removed from the subject site. Following collection of confirmation soil samples, two excavations were conducted to remove residual hydrocarbons residing in subsurface soils.

Following excavation activities and under the direction of the Alameda County Health Care Services Agency (ACHCSA), the former UST excavation was backfilled with clean pea gravel and capped with asphalt.

Soil samples collected from the former UST cavity detected concentrations of TPHg ranging from 22.4 milligrams per kilogram (mg/kg) to 2,100 mg/kg. Concentrations of TPHd ranged from 840 mg/kg to 13,000 mg/kg. Oil and grease were detected in two of the samples collected from the gasoline and diesel UST excavations at concentrations of 54 mg/kg and 35 mg/kg.

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During September 1990, six soil borings were advanced in and around the former UST excavations to investigate the extent of impacted soil and groundwater. Three groundwater monitoring wells were installed (MW-1 through MW-3), in the vicinity of the former USTs (Figure 2). TPHg was detected in soil samples collected from two of the six borings and all of the groundwater monitoring wells at concentrations ranging from 1 to 820 mg/kg at depths ranging from 5 to 20 feet below ground surface (bgs). TPHd was detected in all of the soil borings and wells at concentrations ranging from 32 to 980 mg/kg at depths ranging from 5 to 20 feet bgs. Benzene was also detected in all of the soil borings and wells at concentrations ranging from 0.01 to 3.2 mg/kg. TPH as gasoline was detected in monitoring well MW-1 at a maximum concentration of 170 micrograms per liter (μg/l). Groundwater samples collected from monitoring wells MW-2 and MW-3 were below the laboratories minimum detection limit for TPHg. TPH as diesel in groundwater samples collected from all three of the newly installed monitoring wells at concentrations ranging from 80 to 2,900 μg/l. Benzene was detected in all of the groundwater samples collected at concentrations ranging from 0.4 to 20 μg/l.

In February 1993 two additional groundwater monitoring wells were installed to better define the extent of groundwater impact. Monitoring well MW-4 and MM-5 were subsequently installed. The locations of these monitoring wells are depicted on Figure 2. TPHg was detected in soil samples collected from monitoring well MW-4 only at concentrations ranging from 6 to 400 mg/kg at depths ranging from 5 to 15 feet bgs. TPH as diesel was detected within soil samples collected from both monitoring wells MW-4 and MW-5 at concentrations ranging from 21 to 4,100 mg/kg at depths between 5 and 15 feet bgs.

A third site assessment was conducted in July 1994. The objective of this site assessment was to further define the extent of soil and groundwater both down gradient (to the west) and cross gradient (to the north and southwest) of the former USTs. Four additional soil borings were drilled, three of which were converted to groundwater monitoring wells MW-6, MW-7 and MW-8. TPHg was detected in soil samples collected borings MW-6, MW-7, MW-8 and BH-4 at concentrations ranging from 1 mg/kg (boring MW-8 at 15.5 feet bgs) to 31 mg/kg (boring MW-7 at 15 feet bgs). TPHd was detected in soil samples collected from boring MW-7, MW-8 and BH-4 at concentrations ranging from 41 mg/kg (boring MW-8 at 10.5 feet bgs) to 5,500 mg/kg (boring MW-7 at 15 feet bgs). Benzene was detected in soil samples collected from borings MW-7, MW-8 and BH-4 at maximum concentrations ranging from mg/kg (boring BH-4 at 5 feet bgs) to 0.039 mg/kg (boring MW-8 at 5.5 feet bgs).

Based on the results of the third site assessment, a non-attainment-type zone was established with the concurrence of the ACHCSA. Concentrations of benzene reported in monitoring wells MW-7 and MW-8 (2.7 µg/l) were much lower than the 21 µg/l limit established by the Regional Water Quality Control Board (RWQCB) to protect nearby estuary waters. The ACHCSA was also in concurrence with this limit. Since the concentrations of benzene within groundwater samples collected from monitoring wells MW-3, MW-6, MW-7 and MW-8 located to the northwest and west of the former USTs were lower than the limit established by the ACHCSA and the RWQCB to protect possible down gradient receptors, the attainment zone was established.

As a step to reduce overall hydrocarbon concentrations in the highly impacted zones, Fenton's reagent treatment was conducted at the Site in October 2000. To date, six quarterly groundwater monitoring events (one baseline and five post treatment events) have been conducted at the Site to evaluate the effectiveness of the treatment.

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### SUMMARY OF BASELINE AND POST TREATMENT GROUNDWATER MONITORING RESULTS

On September 14, 2000, baseline groundwater samples were collected from the 10 on-Site wells. Fenton's reagent treatment was conducted on September 19 through to 23, 2000. Five quarterly groundwater monitoring events (December 2000, March, June, August and December 2001) have been conducted since then as part of the post treatment monitoring program.

### **Monitoring Well Soundings**

Table 1 presents a historical summary of groundwater elevation data within the wells at the Site. The corrected water table elevation for the last groundwater monitoring event (December 12, 2001) ranged from -1.36 feet (MW-4) to 0.65 feet (MW-7).

### **Groundwater Chemical Results**

Table 2 presents a historical summary of groundwater quality data for TPHd, TPHg, BTEX and MTBE. According to Table 2, the most significant reduction in TPHd concentrations since treatment was observed mainly in MW-1, MW-4, MW-7 and OW-2. Generally, TPHd concentrations in these wells have been reducing steadily. In the August 2001 monitoring event product was reported in MW-1 and MW-7 but the presence was reported as a product sheen and not free phase product. Figure-3 shows a plot of the reduction trend in TPHd concentrations within these wells. The major process associated to the reduction occurring here is likely due to the biotransformation of TPH as a result of increased oxygenation. In addition, the direct oxidation of TPH is thus creating a more biodegradable atmosphere due to the oxygen atoms bonded to TPH molecules

Historically, residual free product has been observed predominantly in MW-1 and MW-7, and occasionally in MW-4. Since the last occurrence of free product (in MW-1 and MW-7) in March 2001, no free product has been observed in any of the wells during the three preceding monitoring events.

TPHg concentrations were variable in the detected monitoring wells. However, the concentrations observed were generally below the regulatory limits set for similar closed sites in the area based on ACHCSA evaluation of a Tier I risk analysis conducted for another site on Julie Ann Way.

Table 3 presents the historical pH, dissolved oxygen (DO), and oxidation reduction potential (ORP) measurements for the groundwater samples collected. As shown on Table 3, the baseline DO levels (September 14, 2000) in MW-1 (0.36 mg/L), MW-4 (1.06 mg/L), MW-7 (0.65 mg/L) and OW-2 (1.33 mg/L) ranged from 0.36 to 1.33 mg/L. Oxidation by Fenton's Reagent has a short term impact, but DO concentrations decreased over time.

#### CONCLUSION AND RATIONALE FOR SITE CLOSURE

Based on the results presented in this report, SECOR concludes that the Fenton's reagent treatment has been successful in eliminating free product from wells MW-1, MW-4 and MW-7. In addition, the treatment has also created a more conducive environment for the biodegradation

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of TPH and BTEX. The ACHCSA has previously approved closure for another site on Julie Ann Way, which had TPHg and BTEX concentrations at approximately the same levels as the Site. Therefore, SECOR recommends that this Site be closed under the above-mentioned qualifications.

If you should have any questions regarding this report, please contact Richard Saut at (610) 775-6010 or Angus E. McGrath at (510) 285-2556 ext. 228.

Sincerely,

**SECOR International Inc.** 

Kit Soo

Project Hydrogeologist

Angus McGrath

Principal Geochemist

#### Attachments:

Table 1 - Chronological Listing of Groundwater Elevation Data

Table 2 – Chronological Listing of Groundwater Analytical Results

Table 3 - pH, Dissolved Oxygen and Oxidation Reduction Potential Measurements

Figure 1 – Site Location Map

Figure 2 - Site Layout Map

Figure 3 – TPHd Concentrations Trends – Baseline and Post Treatment Results

cc: Mr. Richard Saut, Penske Truck Leasing Company

### TABLE 1 CHRONOLOGICAL LISTING OF GROUNDWATER ELEVATION DATA PENSKE TRUCK LEASING FACILITY 725 Julie Ann Way

68857777777878788	Marine	man and a second second	STATE OF THE PARTY	CWIE
WELL	<b>.</b>	RE (FEET) <sup>(a)</sup>	DTW (FEET)	(FEET)
NO.	DATE	5.43	( <b>300B(I)</b> ) - FILA	0.02
MW-1	02/20/97 05/28/97	3.43	5.98	-0.55
	09/19/97		6.45	-1.02
ŀ	11/17/97		6.14	-0.71
	02/27/98		4.83	0.60
	05/27/98		6.42	-0.99
	10/01/98		6.49	-1.06
	12/22/98		6.35	-0.92
	12/28/99		7.34	-1.91
	03/14/00		4.95	0.48
	06/28/00		5.54	-0.11
	09/14/00		6.41	-0.98
	12/11/00		6.08	-0.65
	03/14/01		6.11	-0.68
	06/13/01	-	5.68	-0.25
	08/29/01		6.13	-0.70
	12/12/01		5.31	0.12
MW-2	02/20/97	6.20	6.26	-0.06
	05/28/97		6.65	-0.45
	09/19/97		6.90	-0.70 -0.55
	11/17/97	:	6.75	0.89
	02/27/98		5.31 5.87	0.33
	05/27/98		6.95	-0.75
1	10/01/98		6.70	-0.50
	12/28/99		7.08	-0.88
	03/15/00		5.45	0.75
	06/28/00		6.37	-0.17
	09/14/00		6.86	-0.66
1	12/11/00		7.33	-1.13
	03/14/01		5.75	0.45
	06/13/01		6.33	-0.13
	08/29/01		6.71	-0.51
	12/12/01		5.92	0.28
MW-3	02/20/97	6.10	6.36	-0.26
	05/28/97		6.62	-0.52
	09/19/97		6.83	-0.73
	11/17/97		6.77	-0.67
	02/27/98		5.38	0.72
	05/27/98		6.05	0.05 -0.85
ļ	10/01/98	{	6.95	-0.63
1	12/22/98	ł	7.22	-1.12
1	12/28/99	1	NM	NM
	06/28/00	1	6.37	-0.27
	09/14/00	1	7.06	-0.96
	12/11/00	1	6.68	-0.58
	03/14/01	1	5.85	0.25
1	06/13/01	1	6.34	-0.24
1	08/29/01	]	6.70	-0.60
	12/12/01		5.95	0.15
MW-4	02/20/97	5.18	5.29	-0.11
	05/28/97	1	5.66	-0.48
l	09/19/97	1	6.00	-0.82
	11/17/97	1	6.06	-0.88
	02/27/98	1	4.66	0.52
	05/27/98	}	5.98	-0.80
1	10/01/98	4	5.23	-0.05 -1.39
	12/22/98	4	6.57	-1.36
	12/28/99	l .	6.54	-1.50

# TABLE 1 CHRONOLOGICAL LISTING OF GROUNDWATER ELEVATION DATA PENSKE TRUCK LEASING FACILITY 725 Julie Ann Way Oakland, California

WELL NO.	DATE	RE (FERI)	DTW: (REBT)	
MW-4	03/14/00	NO ACTVENT	4.86	0.32
Cont.	06/28/00		5.55	-0.37
Cont.	09/14/00		6.05	-0.87
	12/11/00		5.93	-0.75
	03/14/01		5.04	0.14
	06/13/01	•	5.25	-0.07
	08/29/01	•	5.89	-0.71
	12/12/01		5.14	0.04
MW-5	02/20/97	4.71	4.68	0.03
	05/28/97		5.21	-0.50
	09/19/97		5.43	-0.72
	11/17/97		5.28	-0.57
]	02/27/98		4.10	0.61
	05/27/98		5.40	-0.69
	10/01/98		5.42	-0.71
	12/22/98		5.40	-0.69
	12/28/99		5.73 NM	-1.02 NM
,	03/14/00		<u>NM</u> 5.11	-0.40
	09/14/00		NM	NM
	12/11/00		5.48	-0.77
	03/14/01		4.57	0.14
	06/13/01		5.05	-0.34
	08/29/01		5.34	-0.63
	12/12/01		4.79	-0.08
MW-6	02/20/97	5.37	5.38	-0.01
	05/28/97		5.93	-0.56
1	09/19/97		6.15	-0.78
	11/17/97		6.06	-0.69
ŀ	02/27/98		4.74	0.63
ŀ	05/27/98		5.40	-0.03
	10/01/98		6.37	-1.00
	12/22/98		6.06 6.40	-0.69 -1.03
İ	12/28/99 03/14/00		NM	NM
ļ	06/28/00		6.71	-1.34
	09/14/00		6.17	-0.80
	12/11/00		NM	NM
	03/14/01		5.11	0.26
	06/13/01		6.65	-1.28
	08/29/01		6.00	-0.63
L	12/12/01		5.33	0.04
MW-7	02/20/97	5.38	5.70	-0.32
1	05/28/97		5.46	-0.08
	09/19/97		5.91	-0.53
	11/17/97		5.59	-0.21 0.70
	02/27/98		4.68	0.70
	05/27/98 10/01/98		5.17 5.80	-0.42
	12/22/98		5.78	-0.40
	12/28/99	1	7.72	-2.34
1	03/14/00	1	4.50	0.88
1	06/28/00	1	5.51	-0.13
	09/14/00	1	5.93	-0.55
	12/11/00	]	5.72	-0.34
	03/14/01		4.58	0.80
	06/13/01		5.18	0.20
	08/29/01	Į	5.53	-0.15
	12/12/01		4.73	0.65
MW-8	02/20/97	5.44	5.10	0.34
	05/28/97		5.68	-0.24

### TABLE 1 CHRONOLOGICAL LISTING OF GROUNDWATER ELEVATION DATA PENSKE TRUCK LEASING FACILITY

725 Julie Ann Way Oakland, California

WELL		RE	DTW	CWTE
NO.	DATE	(FEET) <sup>(a)</sup>	(EEET)	(FEET)
MW-8	09/19/97		5.95	-0.51
Cont.	11/17/97		5.91	-0.47
	02/27/98		4.50	0.94
	05/27/98		6.10	-0.66
	10/01/98		6.13	-0.69
	12/22/98		6.10	-0.66
	12/28/99		6.30	-0.86
	03/14/00	Г	5.01	0.43
	06/28/00	[	5.47	-0.03
	09/14/00		5.99	-0.55
	12/11/00		5.84	-0.40
	03/14/01		4.90	0.54
	06/13/01		5.40	0.04
	08/29/01		5.80	-0.36
	12/12/01		5.05	0.39
OW-1	12/28/99		5.77	NA_
	03/15/00		4.47	NA
	06/29/00		4.95	NA
	09/14/00		5.31	NA
	12/11/00		5.17	NA
	03/14/01		4.54	NA
	06/13/01		4.75	NA
	08/29/01		5.01	NA
	12/12/01		4.80	NA
OW-2	12/28/99		6.08	NA
	03/15/00		4.76	NA
	06/29/00		5.15	NA
	09/14/00	[	5.60	NA
	12/11/00		5.45	NA
	03/14/01		4.77	NA NA
	06/13/01		5.01	NA
	08/29/01	L.,	5.31	NA
	12/12/01	Г	5.10	NA

### Notes:

RE - Reference Elevation

DTW - Depth to Water

CWTE - Corrected Water Table Elevation

(a) - All well elevations resurveyed to site benchmark on February 10, 1993.

NM - Not Measured

NA - Not Available

				CONCE	NTRATIONS	(µg/L)		
WELL NO.	DATE	TPHa	TPHg	BENZENE	TOLUENE	ETHYL: BENZIENE	TOTAL XYLENES	Mubb
MW-1	02/20/97	200,000	2,900 <sup>(a)</sup>	260	61	42	96	NS
	05/28/97	28.000 <sup>(b)</sup>	2,100	230	42	55	110	NS
	09/19/97	2,700,000	110,000	230	140	250	700	ND
1	11/17/97	950,000 <sup>(c)</sup>	40,000 <sup>(c)</sup>	240 <sup>(c)</sup>	190 <sup>(c)</sup>	270 <sup>(c)</sup>	880 <sup>(e)</sup>	ND <sup>(c)</sup>
	02/27/98	1,200,000	380,000	50	50	200	800	ND
	05/27/98	280,000	13,000	110	13	66	390	ND _
	10/01/98	63,000	1,300 <sup>(d)</sup>	43	1.2	15	84	ND
	12/22/98	79,000 <sup>(e,f)</sup>	2,000 <sup>(e,g)</sup>	32 <sup>(e)</sup>	ND <sup>(e)</sup>	23 <sup>(e)</sup>	130 <sup>(e)</sup>	ND
	12/28/99	43000	1,700	49	1.3	11	24	ND
	03/14/00	4,300	540	59	1.3	12	23	NA
	06/28/00	290,000*	1,300#	26	ND	ND	23	ND
	09/14/00	770,000	1,100	34	ND	3.9	17	ND
	12/11/00	28,000	2,000	10	ND _	ND	9.3	ND
	03/14/01	8,400	350	12	ND	ND	ND	ND
	06/13/01	13,000	340	6.4	ND	ND	1.6	ND
	08/29/01	26,000*	140#	ND	ND	ND	ND	ND_
	12/12/01	5,600*	160#	0.65	ND	ND	ND	ND
MW-2	02/20/97	1,000 <sup>(h)</sup>	ND	ND	ND	ND	ND	NS
•	05/28/97	3,700 <sup>(b,h)</sup>	ND	ND	ND	ND	ND	NS
	09/19/97	4,100	ND	ND	ND	ND	ND	ND
	11/17/97	1,300	ND	ND _	ND	ND	ND	ND
	02/27/98	340	ND	ND	0.9	ND	ND	ND
	05/27/98	1,300_	ND	ND	ND	ND	ND	ND
	10/01/98	3,500 <sup>(i)</sup>	3,200 <sup>(d)</sup>	ND _	ND	ND_	ND _	ND
	12/22/98	1,200 <sup>(j,k)</sup>	67 <sup>(d)</sup>	ND	ND	ND	ND	ND
	12/28/99	750	ND	ND _	ND	ND_	ND	ND
	03/15/00	92	ND	ND	ND	ND ND	ND	ND ND
ľ	06/28/00	ND 100	ND	ND	ND ND	ND ND	ND ND	ND ND
	09/14/00	120 ND	ND ND	ND ND	ND ND	ND	ND ND	ND
	12/11/00 03/14/01	75	ND ND	ND ND	ND	ND	ND ND	ND
	06/13/01	ND	ND ND	ND ND	ND	ND	ND	ND
	08/29/01	ND	ND	ND	ND	ND	ND	ND
	12/12/01	150*	ND	ND	ND	ND	ND	ND
MW-3	02/20/97	140 <sup>(h)</sup>	ND	ND	ND	ND	ND	NS
	05/28/97	240 <sup>(b,h)</sup>	ND	ND	ND	ND	ND	NS
	09/19/97	ND	ND	0.7	ND	ND	ND	ND
	11/17/97	ND	ND	ND	ND	ND	ND	ND
	02/27/98	ND	ND	ND	ND	ND	ND	ND
	05/27/98	ND	ND	ND	ND	ND	ND	ND _
	10/01/98	56 <sup>(1)</sup>	ND	ND	ND	ND_	ND _	ND
•	12/22/98	NS	NS	NS	NS	NS	NS	NS
	12/28/99	NS	NS	NS	NS	NS	NS	NS
	03/14/00	NS	NS	NS	NS	NS	NS	NS
	06/28/00	NS	NS	NS	NS	NS NS	NS NS	NS NS
	09/14/00	NS	NS	NS_	NS	NS_	NS	149

				CONCE	NTRATIONS	(µg/L)		
WELL NO.	DATE	ТРНа	TPEIg	BENZENE	TOLUENE	ETHYL-	TOTAL XYLENES	MTBD.
MW-3	12/11/00	NS	NS	NS	NS	NS	NS	NS
Cont.	03/14/01	NS	NS	NS	NS	NS	NS	NS
Con.	06/13/01	NS	NS	NS	NS	NS	NS	NS
	08/29/01	NS	NS	NS	NS	NS	NS	NS
	12/13/01	NS	NS	NS	NS	NS	NS	NS
MW-4	02/20/97	470,000	64,000 <sup>(m)</sup>	ND	ND	ND	ND	NS
	05/28/97	1,000,000 <sup>(b)</sup>	11,000 <sup>(m)</sup>	ND	ND	ND	ND	NS
	09/19/97	2,600,000	37,000	260	ND	ND	ND	ND
	11/17/97	57,000 <sup>(c)</sup>	4,400 <sup>(c)</sup>	25 <sup>(c)</sup>	ND <sup>(c)</sup>	ND <sup>(c)</sup>	ND <sup>(c)</sup>	ND <sup>(c)</sup>
	02/27/98	9,300	580	2.7	0.8	0.8	3	ND
	05/27/98	11,000	3,900	1.4	0.6	ND	ND	ND
	10/01/98	670,000	2,400 <sup>(n)</sup>	5.7	ND	ND	4.6	ND
	12/22/98	3,700 <sup>(e,o)</sup>	ND <sup>(p)</sup>	ND <sup>(p)</sup>	ND <sup>(p)</sup>	ND <sup>(p)</sup>	ND <sup>(p)</sup>	ND <sup>(p)</sup>
	12/28/99	5,800	1,000	ND	ND	ND	ND	ND
	03/14/00	4,800	350	ND	ND	ND	ND	NA
	06/28/00	8,400*	120#	ND	ND	ND	ND	ND
	09/14/00	19,000	130	ND	ND	ND	ND	ND
	12/11/00	730	120	ND	ND	ND	ND	ND
	03/14/01	580	ND	ND	ND	ND	ND	ND
	06/13/01	260	54	ND	ND	ND	ND	ND
	08/29/01	30,000*	940#	ND	ND	ND	ND	ND
	12/13/01	260*	ND	ND	ND	ND	ND	ND
MW-5	02/20/97	1,100 <sup>(h)</sup>	ND	ND	ND	ND	ND	NS
	05/28/97	560 <sup>(b,q)</sup>	60 <sup>(m)</sup>	ND	ND	_ND	ND _	NS
	09/19/97	1,000	70	ND	ND	ND	ND _	ND
	11/17/97	1,100	70	0.6	0.7	0.5	ND	5
	02/27/98	ND	ND	ND	ND	ND	ND ND	5
	05/27/98	770	ND	ND	ND	ND	ND	ND_
	10/01/98	630	ND	ND	ND	ND	ND _	ND
	12/22/98	890 <sup>(r)</sup>	ND	ND	ND_	ND	ND	ND
	12/28/99	440	ND	ND	ND	ND	ND	ND
	03/15/00	NS	NS	NS	NS	NS	NS	NS
	06/28/00	110*	ND	ND	ND	ND	ND	ND
	09/14/00	NS	NS	NS	NS	NS	NS	NS
	12/11/00	130	ND	ND	ND	ND	ND	ND
	03/14/01	NS	NS	NS	NS	NS	NS _	NS
	06/13/01	120	ND	ND	ND	ND	ND_	ND
	08/29/01	NS	NS	NS	NS	NS	NS	NS
	12/13/01	530*	ND	ND	ND	ND_	ND NO	ND NS
MW-6	02/20/97	NS	NS	NS	NS_	NS NS	NS NC	NS
	05/28/97	NS	NS	NS	NS	NS NE	NS	NS NS
	09/19/97	NS	NS	NS_	NS	NS NO	NS	NS NS
	11/17/97	NS	NS	NS	NS _	NS	NS	NS NS
	02/27/98	NS	NS_	NS NC	NS NC	NS NS	NS NS	NS NS
	05/27/98	NS	NS NS	NS NC	NS NS	NS _	NS NS	NS NS
	10/01/98	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS
	12/22/98	NS	NS	NS	1/2	NO	11/0	110

	CONCENTRATIONS (EGAL)							
WELL NO:	DATE	TPHa	TPHg	BENZENE	TOEUISNIS	ETHYL- BENZENE	TOTAL XYLENES	MTBE
MW-6	12/28/99	NS	NS	NS	NS	NS	NS	NS
	03/15/00	NS	NS	NS	NS	NS	NS	NS
Cont.	06/28/00	NS	NS	NS NS	NS	NS	NS	NS
	09/14/00	NS	NS	NS	NS	NS	NS	NS
	12/11/00	NS	NS	NS	NS	NS	NS	NS
	03/14/01	NS	NS	NS	NS	NS	NS	NS
	06/13/01	NS	NS	NS	NS	NS	NS	NS
	08/29/01	NS	NS	NS	NS	NS	NS	NS
	12/13/01	NS	NS	NS	NS	NS	NS	NS
MW-7	02/20/97	1,500,000	15,000 <sup>(m)</sup>	81	51	ND	ND	NS
	05/28/97	440,000 <sup>(b)</sup>	390,000 <sup>(m)</sup>	ND	ND	ND	ND	NS
	09/19/97	910,000	3,600	110	64	37	ND	ND
	11/17/97	18,000,000 <sup>(c)</sup>	15,000 <sup>(c)</sup>	11 <b>0</b> <sup>(c)</sup>	41 <sup>(c)</sup>	12 <sup>(c)</sup>	110 <sup>(c)</sup>	ND <sup>(c)</sup>
	02/27/98	290,000	45,000	80	60	ND	ND	ND
	05/27/98	1,600	140	2.3	0.9	0.9	3	ND
	10/01/98	89,000	710 <sup>(n)</sup>	39	2.4	11	31	ND
	12/22/98	240,000 <sup>(o)</sup>	3,900 <sup>(g)</sup>	51	ND	ND	ND	ND
	12/28/99	300,000	2,300	51	5.3	13	27	ND
	03/14/00	640,000	620	31	5.3	9.9	31	NA
	06/28/00	2,900,000	3,200#	15	ND	3.2	30	ND
	09/14/00	15,000,000	1,900	11	ND	10	39	ND
	12/12/00	340,000	4,500	ND	ND	ND	17	ND
	03/14/01	170,000	8,000	ND	ND	ND	ND	ND
	06/13/01	19,000	100	0.99	ND	ND	ND	6.2
	08/29/01	27,000*	120#	3.9	ND	ND	ND	5
	12/12/01	6,900*	610#	ND	ND	ND	ND	ND
MW-8	02/20/97	2,500	340 <sup>(a)</sup>	2.1	_ 53	7.1	94	NS
	05/28/97	200 <sup>(b,s)</sup>	480 <sup>(a)</sup>	2.5	12	ND	76	NS
	09/19/97	7,000	1,000	0.8	5	0.5	130	ND
	11/17/97	520	250	1.4	2.1	0.7	3	ND
	02/27/98	150	ND	ND	ND	ND	ND _	ND
	05/27/98	70	ND	ND	ND	ND	ND	ND _
	10/01/98	440 <sup>(t)</sup>	ND	ND	ND	ND	ND	ND NZ
	12/22/98	NS	NS	NS _	NS	NS	NS	NS
	12/28/99	130	ND	ND_	ND	ND	ND	ND NA
	03/14/00	170	ND	ND	ND	ND	ND	
	06/28/00	300*	ND	ND ND	ND	ND ND	ND ND	ND ND
	09/14/00	310	ND	ND	ND ND	ND ND	ND ND	ND ND
	12/11/00	15,000	ND	ND ND	ND ND	ND	ND ND	ND
	03/14/01	130	ND	ND ND	ND ND	ND	ND ND	ND
	06/13/01	100 160*	ND ND	ND ND	ND ND	ND	ND	ND
	08/29/01 12/13/01	97*	ND	ND	ND ND	ND ND	ND	ND
OW-1	12/13/01	7,700	3,400	11	ND	ND	2.6	ND
<b>∪ ₩</b> -1	03/15/00	5,300	700	1.7	ND ND	ND	ND	ND
	06/29/00	1,300*	140#	4	ND	ND	2.2	6.6
	09/14/00	5,800	180	ND	ND	ND	ND	ND
	12/12/00	230	110	3.4	ND	ND	ND	ND
	03/14/01	2,200	110	4	ND	ND	0.5	ND
	06/13/01	1,500	120	2.5	ND	ND_	ND	ND
	08/29/01	1,200*	130#	ND	ND	ND	ND	ND
	12/12/01	3,100*	76#	ND	ND	ND	ND	ND
OW-2	12/28/99	3,300	770	36	ND	ND	1.7	16

### 725 Julie Ann Way Oakland, California

iki iki iki 29a	0.34	ilia.	1.54	CONCE	NTRATIONS	(μg/L)		7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
WELL NO.	DATE	TPHd	TPHg	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	MIBE
OW-2	03/15/00	1,100	350	24	ND	ND	ND	9.3
Cont.	06/29/00	850*	160#	7.4	ND	ND	ND	13
	09/14/00	6,300	590	26	0.79	ND	1.7	17
	12/12/00	320	210	6.6	ND	ND	ND	7.4
	03/14/01	960	320	5.6	ND	ND	ND _	ND
	06/13/01	900	250	2.9	ND	ND _	ND_	10
	08/29/01	1,400*	270#	5.3	ND	ND	ND	ND
	12/12/01	4,100*	280#	14	ND	ND	ND	11

#### Notes:

mg/L - micrograms per liter

NS - Well not sampled

TPHd - Total Petroleum Hydrocarbons as diesel

ND - Not detected at or above the laboratory detection limit

TPHg - Total Petroleum Hydrocarbons as gasoline

NA - Not analyzed

MTBE - Methyl tert butyl ether

- (a) Laboratory reports that chromatogram indicates gasoline and unidentified hydrocarbons >C8.
- (b) Laboratory reports that the laboratory control sample failed for this batch, as well as when it was initially analyzed on 6/3/97. All results should be considered as estimated values. No additional sample was available for re-extraction.
- (c) Laboratory reports reporting limits for diesel and gas/BTEX elevated due to high levels of target compound. Samples run at dilution.
- (d) Laboratory reports the peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C09 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.
- (c) Laboratory reports reporting limit(s) raised due to high level of analyte present in sample.
- (f) Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C09 to n-C36. Quantitation is based on a diesel reference between n-C10 and n-C24 only.
- (g) Laboratory reports that chromatogram indicates diesel and unidentified hydrocarbons >C20.
- (h) Analyzed by USEPA Method 8015, modified.
- (i) Analyzed by USEPA Method 8020.
- (j) Diesel range concentration reported. A nonstandard diesel pattern was observed in the chromatogram.
- \* Hydrocarbon reported does not match the diesel standard.
- # Hydrocarbon reported (in the gasoline range) does not match lab standard.

### TABLE 3 PH, DISSOLVED OXYGEN, AND OXIDATION REDUCTION POTENTIAL MEASUREMENTS PENSKE TRUCK LEASING FACILITY

WDD		m : olif	Tiera D.O Film	ORP
NO.	DATE	(units)	(mg/L)	(millivolts)
MW-1	12/28/99	7.92	0.87	-211
	03/14/00	7.29	1.12	-23
	06/28/00	8.26	0.55	-248
	09/14/00	6.92	0.36	-316
	12/11/00	7.05	1.34	-55
τ.	03/14/01	7.07	1.24	-66
	06/13/01	7.05	1.20	-109
	08/29/01	7.78	NM	-63
	12/12/01	6.93	1.28	
MW-2	12/28/99	7.94	0.96	-38
	03/15/00	7.28	1.43	-255
	06/28/00	7.52	0.89	-221
	09/14/00	7.44	0.61	-310
	12/11/00	7.28	1.96	24
	03/14/01	7.34	1.46	11
1	06/13/01	7.07	0.95	-12
	08/29/01	7.24	NM	70
	12/12/01	7.13	0.88	13
MW-3	12/28/99	NM	NM	NM
	03/14/00	NM	NM	NM
	06/28/00	NM _	NM	NM
	09/14/00	NM	NM	NM
	12/11/00	NM	NM	NM
	03/14/01	NM	NM	NM
	06/13/01	NM	NM	NM
	08/29/01	NM	NM	NM
	12/13/01	NM	NM	NM
MW-4	12/28/99	7.38	0.80	-201
	03/14/00	6.97	2.11	35
	06/28/00	6.87	3.57	-34
	09/14/00	7.23	1.06	16
1	12/11/00	6.99	2.27	74
	03/14/01	6.81	1.28	-91 20
1	06/13/01	6.97	0.97	-30 104
	08/29/01	7.45	NM 0.24	104
	12/13/01	6.88	0.34	-118
MW-5	12/28/99	7.55	1.14	-118 NM
	03/14/00	NM	NM 1.79	-103
1	06/28/00	7.57	1./9 NM	-103 NM
	09/14/00	NM 7.28	4.14	-11
	12/11/00	7.28 NM	NM	NM
	03/14/01 06/13/01	7.04	3.61	-44
	08/29/01	NM	NM	NM
	12/13/01	7.05	3.26	52
	12/13/01	7.03	1 3.20	1

TABLE 3
PH, DISSOLVED OXYGEN, AND OXIDATION REDUCTION POTENTIAL MEASUREMENTS
PENSKE TRUCK LEASING FACILITY

WELL		ni ni	D.O.	· ; _ ORP
NO.	DATE	(units)	(mg/L)	(milliyolfs)
MW-6	12/28/99	NM	NM	NM
	03/14/00	NM	NM	NM
	06/28/00	NM	NM	NM
	09/14/00	NM	NM	NM
	12/11/00	NM	NM	NM
	03/14/01	NM	NM	NM
	06/13/01	NM	NM	NM
	08/29/01	NM	NM	NM
	12/13/01	NM	NM	NM
MW-7	12/28/99	7.94	1.30	-58
	03/14/00	7.23	1.05	-260
	06/28/00	7.18	5.76	-164
	09/14/00	7.06	0.65	-306
	12/12/00	7.02	1.25	-70
	03/14/01	7.10	0.94	-6
	06/13/01	7.03	1.77	-94
	08/29/01	7.34	NM	58
	12/12/01	7.09	0.98	47
MW-8	12/28/99	7.79	0.42	-136
	03/14/00	7.05	1.53	-27
	06/28/00	8.86	1.87	-77
	09/14/00	7.32	1.07	-166
	12/12/00	7.05	1.16	-61
	03/14/01	7.21	2.55	16
	06/13/01	7.10	2.43	-21
	08/29/01	7.52	NM	9
	12/13/01	7.15	1.55	12
OW-1	12/28/99	7.67	0.99	-89
	03/15/00	7.31	1.16	-55
	06/29/00	6.34	3.29	-48
	09/14/00	7.02	0.98	-115
	12/12/00	6.94	1.98	-5
	03/14/01	7.04	2.89	-5
	06/13/01	6.76	1.11	-58
	08/29/01	7.04	NM	-39
	12/12/01	6.83	1.17	-46
OW-2	12/28/99	7.69	1.79	-58
J., 2	03/15/00	7.25	0.99	-35
	06/29/00	6.44	2.39	-66
	09/14/00	7.21	1.33	-89
	12/12/00	6.90	1.44	-76
Ī	03/14/01	7.16	2.68	-54

### TABLE 3

### PH, DISSOLVED OXYGEN, AND OXIDATION REDUCTION POTENTIAL MEASUREMENTS PENSKE TRUCK LEASING FACILITY

### 725 Julie Ann Way Oakland, California

WELL NO.	DATE	pH (units)	D.O. (mg/L)	ORP (millivolts)
OW-2	06/13/01	6.97	1.15	-92
Cont.	08/29/01	7.16	NM	-93
	12/12/01	6.81	1.36	-61

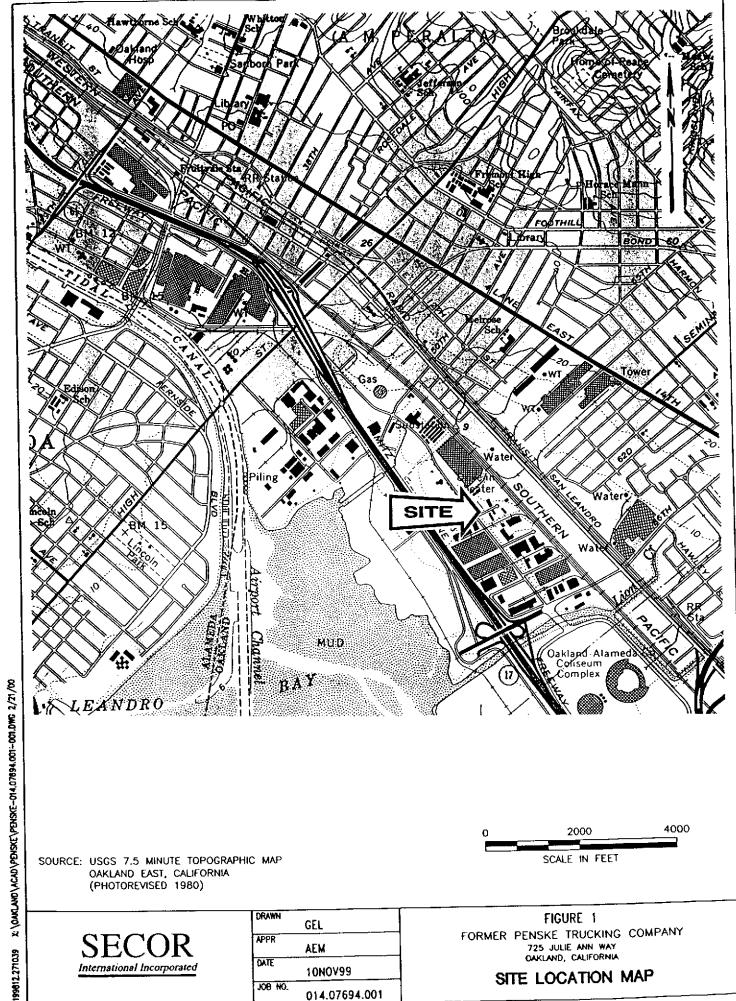
#### Notes:

D.O. - Dissolved Oxygen

mg/L - milligrams per liter

ORP - Oxidation Reduction Potential

NM - Not Measured

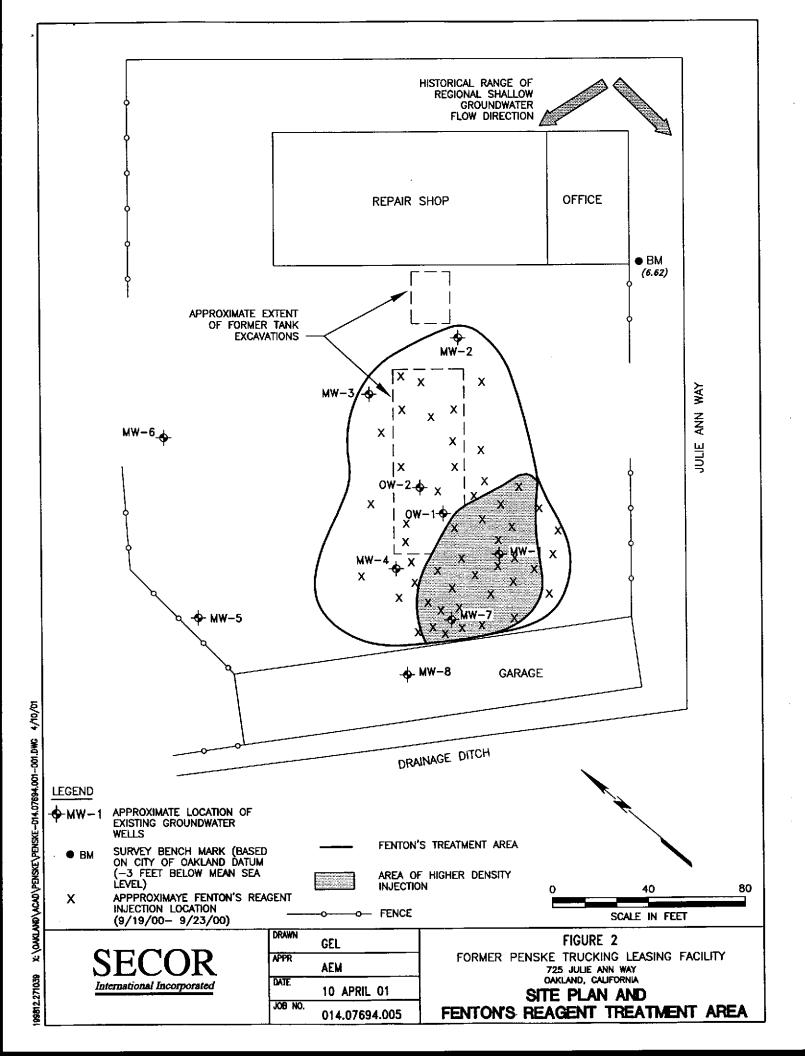


International Incorporated

DRAWN	GEL
APPR	AEM
DATE	10NOV99
JOB NO.	014.07694.001

725 JULIE ANN WAY OAKLAND, CALIFORNIA

SITE LOCATION MAP



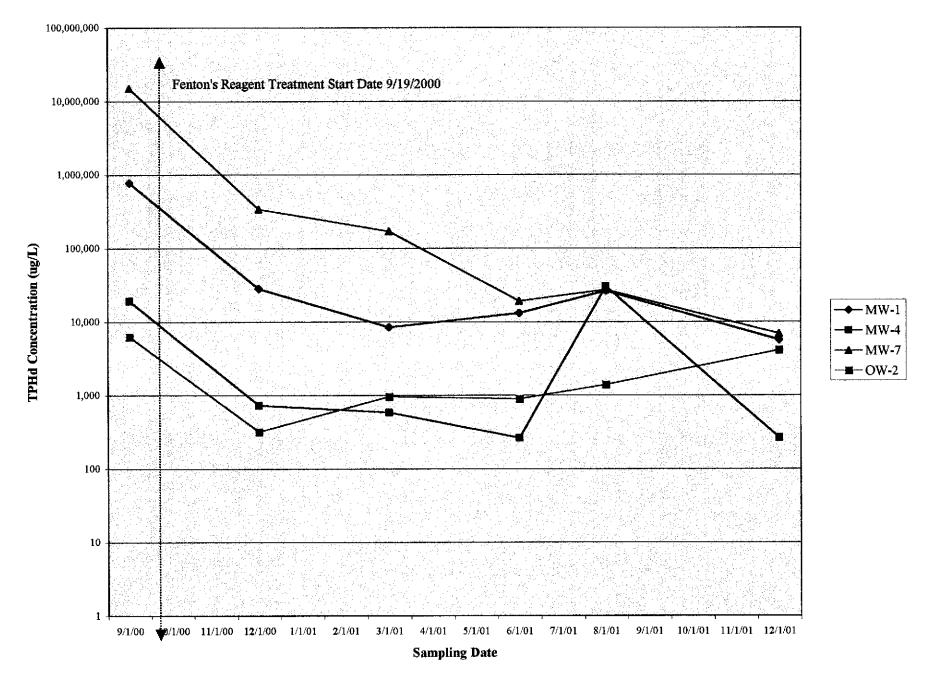


Figure 3: TPHd Concentration Trends - Baseline and Post-Treatment Results