Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
Lower Yard									
Marine Diesel Spill Area									
A	3/23/90	0.5	—	—	17.5	—	—	—	—
B1	3/23/90	0.2	—	—	1,446	—	—	—	—
B2	3/23/90	0.5	—	—	137	—	—	—	—
B3	3/23/90	1.0	—	—	8.8	—	—	—	—
C1	3/23/90	0.5	—	—	3,723	—	—	—	—
C2	3/23/90	0.8	—	—	10,698	—	—	—	—
D1	3/23/90	0.6	—	—	14,381	—	—	—	—
D2	3/23/90	1.3	—	—	2,108	—	—	—	—
D3	3/23/90	2.5	—	—	562	—	—	—	—
E1	3/23/90	3.5	—	—	139	—	—	—	—
Former Soil Stockpile Area									
DP-1	6/90	2.0	—	—	7,900	—	—	—	—
DP-2	6/90	2.0	—	—	5,500	—	—	—	—
DP-3	6/90	2.0	—	—	280	—	—	—	—
DP-4	6/90	2.0	—	—	47	—	—	—	—
DP-4	6/90	8.0	—	—	358	—	—	—	—
TP-1	9/90	6.0	<25	1,800	1,500	<0.025	<0.025	<0.025	0.035
TP-2	9/90	12.0	<50	4,200	740	<0.036	0.099	0.061	0.93
TP-3	9/90	12.0	<50	7,500	6,500	<0.025	<0.025	0.98	2.1
TP-4	9/90	6.0	<5	<5	12	<0.025	<0.025	<0.025	<0.025

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
General Lower Yard									
HA-24	4/30/91	1.0	14	160	3,100	—	—	—	—
HA-25[f]	4/30/91	2.0	<10	1,200	11,000	—	—	—	—
HA-101A	12/23/92	2.5	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
HA-102A	12/23/92	2.0	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
LM-1	4/17/89	3.0	—	—	260	—	—	—	—
LM-1	4/17/89	8.0	—	—	120	—	—	—	—
LM-2	4/17/89	1.5	—	—	65	—	—	—	—
LM-3	4/17/89	2.0	—	—	360	—	—	—	—
MW-27-1 (BNRR)	5/3/91	2.5	<5	<5	<5	—	—	—	—
MW-27-3 (BNRR)	5/3/91	12.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-28-2 (BNRR)	5/3/91	7.5	<5	<5	<5	—	—	—	—
MW-28-3 (BNRR)	5/3/91	12.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-29-2 (BNRR)	5/3/91	7.5	<5	<5	<5	—	—	—	—
MW-29-3 (BNRR)	5/3/91	12.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-101B	12/22/92	5.5	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
MW-101C	12/22/92	8.0	43J	<25[d]	—	<0.05J	0.1J	0.3J	0.8J
MW-102B	12/22/92	6.0	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
MW-102C	12/22/92	8.0	2.7J	2,360*[d]	—	<0.05J	3.7J	5.1J	33.6J
MW-103B	12/22/92	6.0	<5J	2,670J*[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
MW-103C	12/22/92	8.0	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
MW-104A	12/22/92	5.0	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J
MW-104B	12/22/92	7.5	<5J	<25[d]	—	<0.05J	<0.1J	<0.1J	<0.1J

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
TP-5	9/90	2.0	<5	180	530	<0.025	<0.025	<0.025	<0.025
TP-5	9/90	10.0	<5	690	92	<0.025	<0.025	<0.025	<0.025
TP-6	9/90	6.0	<5	<5	30	<0.025	<0.025	<0.025	<0.025
TP-7	9/90	6.0	<5	500	610	<0.025	<0.025	<0.025	<0.025
TP-7	9/90	12.0	<5	<5	49	<0.025	0.097	<0.025	<0.025
TP-8	9/90	6.0	<5	<5	36	<0.025	<0.025	<0.025	<0.025
TP-9	9/90	12.0	<5	530	330	<0.025	<0.025	<0.025	0.16
TP-10	9/90	8.0	<5	<5	24	<0.025	0.028	<0.025	<0.025
TP-11	9/90	4.0	<100	8,200	7,700	<0.470	7.2	<0.470	1.3
TP-12	9/90	4.0	<25	4,800	9,400	3.0	1.2	1.7	9.5
TP-13	9/90	6.0	<100	9,200	8,100	0.030	0.099	<0.025	0.019
TP-14	9/90	8.0	<50	3,200	1,800	0.043	0.038	<0.025	0.23
TP-15	9/90	6.0	1,300	4,100	11,000	<1.3	<1.3	3.6	13.0
TP-16	9/90	6.0	23	550	1,500	<1.3	3.4	<1.3	100.0
TP-17	9/90	6.0	<5	<5	56	<0.025	<0.025	<0.025	<0.025
TP-18	9/90	6.0	2,800	8,900	8,100	<2.5	<2.5	43.0	110.0
TP-19	9/90	6.0	<5	10	80	<0.037	0.130	<0.37	1.6
TP-20	9/90	6.0	170	12,000	12,000	<2.5	17.0	<2.5	310.0
TP-21	9/90	7.0	6	240	87	<0.25	<0.25	<0.25	2.3
TP-22	9/90	6.0	<5	<5	19	<0.025	<0.025	<0.025	<0.025
TP-23	9/90	6.0	<100	15,000	16,000	0.2	0.35	0.87	1.7
TP-24	9/90	6.0	<200	23,000	13,000	0.18	0.24	0.21	1.3
TP-25	9/90	6.0	<100	13,000	14,000	<2.5	<2.5	19.0	3.3

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
Upper Yard									
HA-1	2/88[e]	1.0	6.2	39	12,000	—	—	—	—
HA-1	2/88	2.5	6.9	71	550	—	—	—	—
HA-2	2/88	1.0	<1	<10	130	—	—	—	—
HA-2	2/88	3.6	<1	<10	36	—	—	—	—
HA-3	2/88	1.0	<1	<10	470	—	—	—	—
HA-3	2/88	3.5	<1	<10	34	—	—	—	—
HA-4	2/88	1.0	<1	<10	9	—	—	—	—
HA-4	2/88	3.0	<1	<10	11	—	—	—	—
HA-5	2/88	1.0	<1	<10	56	—	—	—	—
HA-5	2/88	5.5	57	320	100	—	—	—	—
HA-6	2/88	1.0	<1	<10	<5	—	—	—	—
HA-6	2/88	5.5	<1	<10	47	—	—	—	—
HA-7	2/88	1.0	<1	<10	880	—	—	—	—
HA-7	2/88	3.0	<1	255	2,000	—	—	—	—
HA-8	2/88	1.0	<1	<10	1,100	—	—	—	—
HA-8	2/88	2.5	1.3	38	210	—	—	—	—
HA-9	2/88	2.0	<1	52	700	—	—	—	—
HA-9	2/88	4.0	<1	<10	480	—	—	—	—
HA-10	2/88	1.0	<1	<10	82	—	—	—	—
HA-10	2/88	3.0	<1	<10	170	—	—	—	—
HA-11	2/88	1.0	<1	<10	86	—	—	—	—
HA-11	2/88	3.9	<1	<10	21	—	—	—	—
HA-12	2/88	1.0	<1	<10	30	—	—	—	—

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
HA-12	2/88	7.2	<1	<10	190	—	—	—	—
HA-13	5/3/91	1.0	<5	<5	—	—	—	—	—
HA-14	5/3/91	1.0	<5	<5	—	—	—	—	—
HA-15	4/29/91	3.0	<5	<5	—	<0.025	<0.025	<0.025	<0.025
HA-16	4/30/91	2.0	1,500	9,300	460	—	—	—	—
HA-16	4/30/91	5.5	390	1,800	21,000	—	—	—	—
HA-17	5/1/91	2.5	<5	<5	—	—	—	—	—
HA-18	5/1/91	2.0	<5	<5	—	—	—	—	—
HA-19	5/1/91	6.0	<5	<5	—	<0.025	<0.025	<0.025	<0.025
HA-19	5/1/91	9.0	<5	<5	—	—	—	—	—
HA-20	5/1/91	1.0	<5	<5	—	—	—	—	—
HA-20	5/1/91	5.0	<5	<5	—	—	—	—	—
HA-21	5/2/91	1.0	310	2,700	—	—	—	—	—
HA-21	5/2/91	5.0	<5	<5	—	—	—	—	—
HA-22	5/2/91	3.0	<5	260	570	—	—	—	—
HA-22	5/2/91	9.0	<5	150	—	—	—	—	—
HA-22	5/2/91	10.0	7	90	—	—	—	—	—
HA-23	5/3/91	1.0	1,300	19,000	22,000	<0.025	0.33	0.55	2.0
HA-23	5/3/91	5.5	<5	<5	56	<0.025	<0.025	<0.025	<0.025
HA-26	4/30/91	2.0	<5	<5	—	—	—	—	—
HA-26	5/2/91	5.0	<5	<5	—	—	—	—	—
HA-27	5/8/91	4.0	—	—	—	<0.025	<0.025	<0.025	<0.025
HA-27	5/8/91	6.0	—	—	—	<0.025	<0.025	<0.025	<0.025
MW-1	2/88[e]	23.5	<1	<10	<5	—	—	—	—

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
MW-2	2/88	3.5	2.5	<10	190	—	—	—	—
MW-3	2/88	28.5	<1	<10	<5	—	—	—	—
MW-4	2/88	34.0	<1	<10	<5	—	—	—	—
MW-5	2/88	13.5	<1	<10	<5	—	—	—	—
MW-6	2/88	8.5	<1	<10	<5	—	—	—	—
MW-7U-3	4/29/91	12.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW7U-16	4/29/91	77.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW9U-1	4/30/91	2.5	2,700	19,000	30,000	<0.025	0.085	0.44	3.3
MW9U-2	4/30/91	7.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW9U-4	4/30/91	17.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW9U-12	5/1/91	57.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-10U-1B	5/2/91	5.0	550	6,700	10,000	—	—	—	—
MW-10U-4	5/2/91	17.5	<5	<5	—	—	—	—	—
MW-11U-1	5/1/91	2.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-11U-9	5/1/91	41.5	<5	<5	—	—	—	—	—
MW-13U-1	4/29/91	2.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
MW-13U-4	4/29/91	17.5	<5	<5	—	<0.025	<0.025	<0.025	<0.025
Garage Ditch 0.5	3/8/91	0.5	—	—	—	<0.040	<0.040	<0.040	0.049
Garage Ditch 1.5	5/3/91	1.5	—	—	—	<0.025	<0.025	<0.025	<0.025
TP-26	4/29/91	6.4	<5	<5	11	—	—	—	—
TP-27	4/29/91	7.0	<5	<5	46	—	—	—	—
TP-27	4/29/91	10.0	<5	<5	53	—	—	—	—
TP-28	4/29/91	1.0	<5	<5	420	—	—	—	—
TP-29	4/29/91	1.0	<5	<5	11	—	—	—	—
						—	—	—	—

Table 2-1
Soil Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
Detention Basin No. 1									
Composite Tar Sample[g]	8/5/88	1 - 3	—	—	370,000	<0.25; <1.0[h]	0.49; <1.0[h]	<0.25; 1.7[h]	1.93; 16[h]
Composite Soil Sample[g]	8/5/88	0	—	—	140,000	<1,100; <1.0[h]	<1,100; <1.0[h]	<1,100; 3.9[h]	1,340; 21.8[h]

NOTE: Results are in mg/kg.

—=not analyzed

J = The associated numerical value is an estimated quantity.

[a] Analyzed by EPA Method 8015M, WTPH-G, or WTPH-D unless otherwise specified.

[b] Analyzed by EPA Method 418.1.

[c] Analyzed by EPA Method 8020 unless otherwise specified.

[d] Sample analyzed for TPH-O by Ecology Method WTPH-D extended; MW-101C = 130 mg/kg, MW-103B = 2,250 mg/kg, HA-101A = 140 mg/kg, and HA-102A = 140 mg/kg.

All other samples were below method detection limits (100 mg/kg).

[e] Laboratory reports for samples collected in 2/88 only state that the samples were analyzed for gasoline and diesel by GC; the method was not specified.

[f] Sample HA-25, 2.0' was also analyzed for volatile organic compounds by EPA Method 8010; methylene chloride was detected at a concentration of 0.22 mg/kg. HA-25, 2.0' was also analyzed for PCBs by EPA Method 8080. PCB concentrations were less than detection limits of 0.033 mg/kg.

[g] Sixty-eight semivolatile organic compounds were analyzed by Method 8270; none were detected at or above the detection limit.

[h] Thirty-one VOCs were analyzed by Methods 8010/8020 and 34 VOCs were analyzed by Method 8240; only the constituents listed were detected; results for Methods 8010/8020 are listed first and results for Method 8240 are listed second; the laboratory report states that the composite soil sample matrix was an oil.

* Chromatogram did not match typical diesel fingerprint.

Table 2-2
Soil Metals Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Depth Sampled (feet)	Lead[a]
Lower Yard			
HA-25	05/02/91	2.0	<10
HA-101A	12/23/92	2.5	<5
HA-102A	12/23/92	2.0	<5
MW-28	05/03/91	3.0	<10
MW-101B	12/22/92	5.5	<5
MW-101C	12/22/92	8.0	16
MW-102B	12/22/92	6.0	<5
MW-102C	12/22/92	8.0	<5
MW-103B	12/22/92	6.0	17
MW-103C	12/22/92	8.0	<5
MW-104A	12/22/92	5.0	<5
MW-104B	12/22/92	7.5	<5
Upper Yard			
HA-3	2/88[b]	1.0	13.0
HA-7	2/88	1.0	13.0
HA-8	2/88	1.0	10.0
HA-9	2/88	2.0	4.7
HA-10	2/88	1.0	3.0
HA-11	2/88	1.0	3.3
HA-12	2/88	1.0	5.0
HA-19	05/01/91	6.0	<10
TP-29	4/29/91	1.0	<10

NOTE: Results are in mg/kg.

[a] Analyzed by EPA Method 6010 or 7420 unless otherwise specified.

[b] Laboratory reports for samples collected in 2/88 do not specify the method used.

Table 2-3
Lower Yard Soil TCLP Data
UNOCAL Edmonds Bulk Fuel Terminal

Analyte	Test Pit 12 (4 feet)	Test Pit 13 (6 feet)	Test Pit 18 (6 feet)	TC Regulatory Limit
Metals				
Arsenic	<0.03	<0.03	<0.005	5.0
Barium	0.45	<0.45	<0.1	100.0
Cadmium	<0.005	<0.005	<0.01	1.0
Chromium	<0.01	<0.01	<0.02	5.0
Lead	<0.03	<0.03	0.1	5.0
Mercury	<0.005	<0.005	<0.0005	0.2
Selenium	<0.03	<0.03	<0.005	1.0
Silver	<0.01	<0.01	<0.02	5.0
Organics				
Benzene	0.013	<0.001	0.036	0.5
Carbon tetrachloride	<0.001	<0.001	<0.005	0.5
Chlorobenzene	<0.001	<0.001	<0.005	100.0
2-methylphenol (o-cresol)	<10	<10	—	200.0
4-methylphenol (p-cresol)	<10	<10	—	200.0
1,4-dichlorobenzene	<0.01	<0.01	<0.01	7.5
Pentachlorophenol	<0.05	<0.05	<0.05	100.0
Trichloroethylene	<0.01	<0.01	<0.01	0.5
2,4,6-trichlorophenol	<0.01	<0.01	<0.01	2.0
Vinyl chloride	<0.001	<0.001	<0.005	0.2

NOTE: Results in mg/L.

— = Not analyzed.

TC = Toxicity Characteristic; WAC 173-303-090(8).

Table 2-4
Groundwater Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
Lower Yard								
HA-101	12/28/92	<0.050	<0.05[d]	—	<0.0005	<0.001	<0.001	<0.001
HA-102	12/28/92	<0.050	<0.05[d]	—	<0.0005	<0.001	<0.001	<0.001
LM-1[e]	4/19/89	—	—	1.40	0.110	<0.0005	<0.0005	0.0055
LM-2[e]	4/19/89	—	—	1.80	<0.0005	<0.0005	<0.0005	<0.0005
LM-3[e]	4/19/89	—	—	0.98	0.0018	<0.0005	<0.0005	<0.0005
MW-1[e]	4/19/89	—	—	0.84	<0.0005	<0.0005	<0.0005	<0.0005
MW-2[e]	4/19/89	—	—	1.50	0.0022	<0.0005	0.040	0.053
MW-27 (BNRR)	5/8/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	<0.0005
MW-28 (BNRR)	5/8/91	<1.00	<1.00	—	<0.0005	0.0007	0.0009	0.0014
MW-29 (BNRR)	5/8/91	<1.00	<1.00	—	0.0005	<0.0005	<0.0005	<0.0005
MW-101	12/28/92	1.720	0.960[+d]	—	0.585	0.026	0.051	0.173
MW-102	12/28/92	1.260	0.790[+d]	—	0.001	0.001	0.004	0.007
MW-103	12/28/92	0.190[*]	4.960[d]	—	<0.0005	<0.001	<0.001	0.006
MW-104	12/28/92	15.00 J	0.460[+d]	—	0.115J	0.188J	0.355J	2.900J
Upper Yard								
HA-5[f]	2/24/88	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-1	02/24/88[g]	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-1U	5/7/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	<0.0005
MW-2	2/24/88	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-2U	5/7/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	2/24/88	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-4[f]	2/24/88	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-4U	5/7/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	<0.0005
MW-5	2/24/88	—	—	<5.00	<0.005	<0.005	<0.005	<0.005
MW-7U	5/8/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	<0.0005

Table 2-4
Groundwater Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-IR[b]	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
MW-10U	5/8/91	<1.00	<1.00	—	<0.0005	<0.0005	<0.0005	0.0008
MW-11U	5/8/91	<1.00	<1.00	2.30	<0.0005	<0.0005	<0.0005	<0.0005
MW-13U	5/8/91	<1.00	<1.00	2.20	<0.0005	<0.0005	<0.0005	<0.0005

NOTE: Results are in mg/L.

J = The associated numerical value is an estimated quantity.

— = Not analyzed.

[a] Analyzed by EPA Method 8015M, WTPH-G, or WTPH-D unless otherwise specified.

[b] Analyzed by EPA Method 418.1.

[c] Analyzed by EPA Method 602 or 8020 unless otherwise specified.

[d] Sample analyzed for TPH-O by Ecology Method WTPH-D extended: MW-103 = 1.27 mg/L. HA-101 = 0.22 mg/L. All other samples were below method detection limits (0.2 mg/L).

[e] Sample was also analyzed for 68 semivolatile organic compounds by EPA Method 8270; incomplete laboratory data sheets are available; for the incomplete results, only one constituent was detected at or above the detection limits (20 µg/L naphthalene in MW-2).

[f] Sample also analyzed for volatile chlorinated hydrocarbons by an unspecified method. Results were reported for 11 constituents. The only constituent detected was benzene (10 µg/L) in MW-4.

[g] Laboratory reports for samples collected on 2/24/88 only state that the samples were analyzed for gasoline and diesel by GC with headspace; the method was not specified.

* Chromatogram did not match the typical gasoline fingerprint.

+ Chromatogram did not match the typical diesel fingerprint.

Table 2-5
Groundwater Metals Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	Total Lead[a]
Lower Yard		
HA-101	12/28/92	0.002
HA-102	12/28/92	0.052
MW-101	12/28/92	<0.002
MW-102	12/28/92	<0.002
MW-103	12/28/92	<0.002
MW-104	12/28/92	<0.002

NOTE: Results are in mg/L.

[a] Analyzed by EPA Method 7421.

Table 2-6
Surface Water Petroleum Hydrocarbon Data
UNOCAL Edmonds Bulk Fuel Terminal

Location Number	Date Sampled	TPH as Gasoline[a]	TPH as Diesel[a]	TPH-Irb	Benzene[c]	Toluene[c]	Ethylbenzene[c]	Total Xylenes[c]
Detention Basin No. 1								
1	8/5/88	—	—	0.630	<0.0025	<0.0025	<0.0025	<0.0025
2	8/5/88	—	—	0.930	<0.0005	<0.0005	<0.0005	<0.0005
3	8/5/88	—	—	0.560	ND[d]	ND[d]	ND[d]	ND[d]

NOTE: Results are in mg/L

— = not analyzed

[a] Analyzed by EPA Method 8015M, WTPH-G, or WTPH-D unless otherwise specified

[b] Analyzed by EPA Method 418.1

[c] Analyzed by EPA Method 602 or 8020 unless otherwise specified

[d] Laboratory data sheets not available for this sample; detection limits not known

Table 2-7
UST Decommissioning Soil TPH, BTEX, and Lead Data
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Depth (feet)	Date Collected	Results of Analyses (mg/kg)							
			Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/8020				EPA Method 7420
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
Garage Diesel Tank Excavation Samples										
D1NEXWE-9	9	10/27/94	-	13	70	-	-	-	-	-
D1NEXWW-9	9	10/27/94	-	< 10	< 25	-	-	-	-	-
D1WEXW-9.5	9.5	10/27/94	-	< 10	< 25	-	-	-	-	-
D1SEXWW-10	10	10/27/94	-	< 10	< 25	-	-	-	-	-
D1SEXWE-9	9	10/27/94	-	< 10	< 25	-	-	-	-	-
D1EEXW-10	10	10/27/94	-	< 10	< 25	-	-	-	-	-
D1EXBE-12.5	12.5	10/27/94	-	< 10	< 25	-	-	-	-	-
D1EXBW-12.5	12.5	10/27/94	-	11	29	-	-	-	-	-
Garage Diesel Tank Product Line Trench Samples										
NTRNCH-3	3	10/31/94	-	1200	990	-	-	-	-	-
ETRNCHN-2.5	2.5	10/31/94	-	< 10	< 25	-	-	-	-	-
ETRNCHS-2.5	2.5	10/31/94	-	13	80	-	-	-	-	-

Table 2-7
UST Decommissioning Soil TPH, BTEX, and Lead Data
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Depth (feet)	Date Collected	Results of Analyses (mg/kg)							
			Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/8020				EPA Method 7420
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
Waste Oil Tank Excavation Samples										
WOEXEW-6	6	10/27/94	-	11	69	-	-	-	-	17
WOEXSW-5	5	10/27/94	-	< 10	63	-	-	-	-	-
WOEXWWF-6	6	11/3/94	-	< 10	< 25	-	-	-	-	< 10
WOEXNWF-7	7	11/3/94	-	< 10	48	-	-	-	-	18
WOEXBF-9.5	9.5	11/3/94	-	< 10	60	-	-	-	-	< 10
Diesel Additive Tank Excavation Samples										
DAEXNW-3.5	3.5	10/28/94	-	6700	570	-	-	-	-	-
DAEXSW-3.5	3.5	10/28/94	-	< 10	-	-	-	-	-	-
DAEXEW-3.5	3.5	10/28/94	-	14	-	-	-	-	-	-
DAEXWW-3.5	3.5	10/28/94	-	12	-	-	-	-	-	-
Boiler Tank Excavation Samples										
D2EXNW-7	7	10/28/94	-	< 10	-	-	-	-	-	-
D2EXSW-10	10	10/28/94	-	< 10	-	-	-	-	-	-
D2EXEW-7	7	10/28/94	-	< 10	-	-	-	-	-	-
D2EXWW-8	8	10/28/94	-	52	-	-	-	-	-	-
D2EXB-13	13	10/28/94	-	16	-	-	-	-	-	-
D2EXTB-10.5	10.5	11/3/94	-	2000	-	-	-	-	-	-

Table 2-7
UST Decommissioning Soil TPH, BTEX, and Lead Data
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Depth (feet)	Date Collected	Results of Analyses (mg/kg)							
			Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/8020				EPA Method 7420
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
Foam Shed Fuel Tank Excavation Samples										
GTEXWW-3.5	3.5	10/31/94	4.9	< 10 (< 10)	< 25 (28)	< 0.050	< 0.050	< 0.050	0.14	27
GTEXNWF-5	5	11/1/94	< 1.0	16	34	< 0.050	< 0.050	< 0.050	< 0.10	26
GTEXSWF-4	4	11/1/94	< 1.0	< 10	< 25	< 0.050	< 0.050	< 0.050	< 0.10	25
GTEXEW-4	4	11/1/94	2.0	< 10	< 25	< 0.050	< 0.050	< 0.050	< 0.10	23
GTEXB-6.5	6.5	11/1/94	< 1.0	< 10	< 25	< 0.050	< 0.050	< 0.050	< 0.10	27

NOTE: TPH-G = Total petroleum hydrocarbons as gasoline.

TPH-D = Total petroleum hydrocarbons as diesel.

TPH-O = Total petroleum hydrocarbons as oil.

mg/kg = milligrams per kilogram.

Sample number abbreviations:

NW = north wall of excavation

SW = south wall of excavation

EW = east wall of excavation

WW = west wall of excavation

B = bottom of excavation

- = not analyzed.

< = less than concentration indicated.

( ) = duplicate results

Table 2-8
UST Decommissioning Soil VOC and SVOC Data
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Depth (feet)	Date Collected	Results of Analyses (mg/kg)									
			EPA Method 8240		EPA Method 8270							EPA Method 8310
			Toluene	Xylenes	Dibenzo-furan	Di-n-butyl phthalate	Fluorene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene	Chrysene
Waste Oil Tank Excavation Samples												
WOEXEW-6	6	10/27/94	< 0.10	< 0.25	-	-	-	-	-	-	-	-
WOEXWWF-6	6	11/3/94	< 0.10	< 0.25	-	-	-	-	-	-	-	-
WOEXNWF-7	7	11/3/94	< 0.10	< 0.25	-	-	-	-	-	-	-	-
WOEXBF-9.5	9.5	11/3/94	< 0.10	< 0.25	-	-	-	-	-	-	-	-
Diesel Additive Tank Excavation Samples												
DAEXNW-3.5	3.5	10/28/94	< 0.10	< 0.25	< 0.10	< 0.50	< 0.10	0.11	< 0.10	0.13	0.13	< 1.0
DAEXSW-3.5	3.5	10/28/94	< 0.10	< 0.25	< 0.10	0.58	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.010
DAEXEW-3.5	3.5	10/28/94	< 0.10	< 0.25	< 0.10	< 0.50	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.010
DAEXWW-3.5	3.5	10/28/94	< 0.10	< 0.25	< 0.10	< 0.50	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.010

NOTE: mg/kg = milligrams per kilogram.

- = not analyzed.

< = less than concentration indicated.

Sample number abbreviations:

NW = north wall of excavation

SW = south wall of excavation

EW = east wall of excavation

WW = west wall of excavation

B = botom of excavation

Only analytes with at least one detection shown; 34 VOCs and 68 SVOCs analyzed.

Table 4-1
Well Completion Details
UNOCAL Edmonds Bulk Fuel Terminal

Location	Diameter[a]	Measuring Point Elevation[b]	Ground Elevation[b]	Screen Depth[c]		Filter Pack Depth[c]		Depth to Bottom[c]	Screen Elevation[b]	
				Top	Bottom	Top	Bottom		Top	Bottom
Lower Yard Monitoring Wells										
LM-1	2	13.60	13.80	4.6	14.6	3	15	14.6	9.20	-0.80
LM-2	2	10.64	11.10	2.5	8	2	9.1	8.0	8.60	3.10
LM-3	2	10.24	11.00	2.9	8.1	2	9.3	8.1	8.10	2.90
MW-1	2	14.23	14.80	3.7	13.7	2	14	13.7	11.10	1.10
MW-10	2	14.13	14.13	3.1	13.1	2	14	13.1	11.03	1.03
MW-101	2	17.52	15.32	5	15	---[d]	---	15.2	10.32	0.32
MW-102	2	18.73	16.18	5	15	---	---	15.2	11.18	1.18
MW-103	2	15.63	13.50	5	15	---	---	15.2	8.50	-1.50
MW-104	2	16.64	14.74	5	15	---	---	15.2	9.74	-0.26
MW-105	2	16.67	17.00	4.6	14.6	2.5	15	14.6	12.40	2.40
MW-106	2	17.66	16.00	3.8	13.8	1.8	14.5	16.0	12.20	2.20
MW-107	2	16.80	15.10	3.8	13.8	2.8	14.3	16.0	11.30	1.30
MW-108	1	14.89	13.39	3.65	13.75	2.5	14	13.85	9.74	-0.36
MW-109	1	16.12	14.42	3.3	13.4	2.5	14	14.0	11.12	1.02
MW-11	2	14.24	14.24	3.4	13.4	2	14	13.4	10.84	0.84
MW-110	2	14.41	14.71	3.6	13.6	2.5	14.5	14.1	11.11	1.11
MW-111	2	15.15	15.60	4.5	14.5	2.5	15.5	14.5	11.10	1.10
MW-112	2	12.99	13.29	3.8	13.8	2.5	14.5	14.3	9.49	-0.51
MW-113	2	13.39	13.74	4.3	14.3	2.5	14.8	14.8	9.44	-0.56
MW-114	2	13.58	13.83	3.5	13.5	2	14.5	14.0	10.33	0.33
MW-115	2	13.64	13.94	3.7	13.7	2.5	14.5	14.2	10.24	0.24
MW-116	2	12.70	13.00	3.6	13.6	2.5	14.5	13.5	9.40	-0.60
MW-117	2	12.93	13.33	3.5	13.5	2	14.5	14.5	9.83	-0.17

Table 4-1
Well Completion Details
UNOCAL Edmonds Bulk Fuel Terminal

Location	Diameter[a]	Measuring Point Elevation[b]	Ground Elevation[b]	Screen Depth[c]		Filter Pack Depth[c]		Depth to Bottom[c]	Screen Elevation[b]	
				Top	Bottom	Top	Bottom		Top	Bottom
MW-118	2	13.91	14.31	3.8	13.8	2.5	14.5	14.3	10.51	0.51
MW-119	2	14.21	14.66	3.3	13.3	2	14.5	13.8	11.36	1.36
MW-120	2	13.95	14.25	36.0	41.0	34.0	42.3	41.0	-21.75	-26.75
MW-121	2	18.42	15.47	30.0	40.0	27.5	41.5	40.0	-14.53	-24.53
MW-122	2	18.08	15.35	30.0	40.0	27.66	41.5	40.0	-14.65	-24.65
MW-123	2	14.19	14.59	4.2	14.2	2.5	14.7	14.66	10.39	0.39
MW-124	2	14.31	14.31	4.1	14.1	2	14.6	14.64	10.21	0.21
MW-125	2	13.89	14.24	3.9	13.9	2	14.4	14.35	10.34	0.34
MW-126	2	14.99	15.39	3.7	13.7	1.5	14.5	14.21	11.69	1.69
MW-127	2	14.04	14.40	4.2	14.2	2.5	15	14.70	10.20	0.20
MW-128	2	14.54	14.94	4.5	14.5	2.5	15	14.95	10.44	0.44
MW-129	2	17.77	15.77	4.1	14.1	2	14.6	14.62	11.67	1.67
MW-13	2	15.23	15.23	3.5	13.5	2	14	13.5	11.73	1.73
MW-130	2	15.38	15.68	4	14	2	14.5	14.47	11.68	1.68
MW-131	2	14.34	14.64	4.4	14.4	2.5	15	14.93	10.24	0.24
MW-132	2	15.21	15.46	4.2	14.2	2.5	14.6	14.70	11.26	1.26
MW-133	2	15.03	15.23	3.7	13.7	2.5	14.2	14.21	11.53	1.53
MW-134	2	37.95	38.20	19.3	29.2	17	30.5	29.70	18.90	9.00
MW-135	1	20.68	19.08	5.9	15.9	4	16.5	16.03	13.18	3.18
MW-136	1	18.55	16.79	4.1	14.1	2	14.5	15.50	12.69	2.69
MW-137	2	17.32	15.50	3.7	13.7	2.7	14.7	16.0	11.80	1.80
MW-138	2	16.87	15.20	3.7	13.7	2	14.5	15.8	11.50	1.50
MW-139	2	14.71	13.90	3.5	13.5	2	14.5	15.0	10.40	0.40
MW-15	2	14.15	14.55	3	13	2	14	13.0	11.55	1.55

Table 4-1
Well Completion Details
UNOCAL Edmonds Bulk Fuel Terminal

Location	Diameter[a]	Measuring Point Elevation[b]	Ground Elevation[b]	Screen Depth[c]		Filter Pack Depth[c]		Depth to Bottom[c]	Screen Elevation[b]	
				Top	Bottom	Top	Bottom		Top	Bottom
MW-17	2	14.19	14.64	4	14	3.7	14	14.0	10.64	0.64
MW-19	2	14.56	14.91	4.3	14.3	2.7	14.3	14.3	10.61	0.61
MW-2	2	13.03	13.20	3.4	13.4	2	14	13.4	9.80	-0.20
MW-20	2	17.27	14.97	3.5	13.5	1.8	14	14.0	11.47	1.47
MW-21	2	13.79	14.00	3.8	13.8	2.4	14	13.8	10.20	0.20
MW-22	2	16.64	14.24	4.3	14	2.5	14	14.0	9.94	0.24
MW-25	2	14.73	15.25	3.9	13.9	2	13.9	13.9	11.35	1.35
MW-26	2	15.01	15.36	3.5	13.5	2	14	13.5	11.86	1.86
MW-27	2	13.96	14.22	3.8	14.6	2	14.5	14.6	10.42	-0.38
MW-28	2	15.42	15.92	5	15	2.5	15	15.0	10.92	0.92
MW-3	2	13.64	13.90	3.6	13.6	2	14	13.6	10.30	0.30
MW-5	2	14.80	15.00	5.2	15.2	2	16	15.2	9.80	-0.20
MW-6	2	13.50	13.85	3.2	13.2	2	14	13.2	10.65	0.65
MW-7	2	16.32	14.00	3	13	2	14	13.0	11.00	1.00
MW-8	2	15.62	13.22	2.6	12.6	2	14	12.6	10.62	0.62
MW-E	2	16.98	17.36	---	---	---	---	18.68	---	---
MW-W	2	15.70	15.90	---	---	---	---	18.95	---	---
Upper Yard Wells and Piezometers										
HA-12	2	89.00	87.20	2.2	7.2	---	---	7.2	85.00	80.00
HA-5	2	125.98	124.15	3	8	---	---	8.0	121.15	116.15
MW-10U	2	39.82	40.12	8.5	18.5	5.5	18.5	18.5	31.62	21.62
MW-11U	2	82.38	82.58	51	61	48	61.5	61.0	31.58	21.58
MW-13U	2	28.07	28.45	15	24	12	25	24.0	13.45	4.45
MW-201	2	111.88	112.20	108.9	118.9	95	120	119.25	3.30	-6.70

Table 4-1
Well Completion Details
UNOCAL Edmonds Bulk Fuel Terminal

Location	Diameter[a]	Measuring Point Elevation[b]	Ground Elevation[b]	Screen Depth[c]		Filter Pack Depth[c]		Depth to Bottom[c]	Screen Elevation[b]	
				Top	Bottom	Top	Bottom		Top	Bottom
MW-202	2	99.03	97.23	92.2	97.2	89	99	97.45	5.03	0.03
MW-203	2	33.63	31.33	18.9	28.9	17	30	29.42	12.43	2.43
MW-204	2	42.19	39.94	28.9	38.8	26.5	40	30.0	11.04	1.14
MW-5U	2	87.29	87.64	9	26	7.4	26	26.0	78.64	61.64
MW-7U	2	86.29	86.60	75	90	72.4	90	90.0	11.60	-3.40
P-201D	1	154.48	155.00	165	169.3	160	169.9	169.9	-10.00	-14.30
P-201I	1	154.49	155.00	59	68.3	57	68.9	68.9	96.00	86.70
P-201S	1	154.47	155.00	35.9	44.9	35	45.6	45.6	119.10	110.10
P-202D	1	104.72	105.10	95.9	104.9	93	105.6	105.6	9.20	0.20
P-202I	1	104.76	105.10	57.2	66.2	55.5	66.9	66.9	47.90	38.90
P-202S	1	104.79	105.10	16	25	14.2	25.7	25.7	89.10	80.10
P-203D	1	106.23	106.60	98	107	96	107.7	107.7	8.60	-0.40
P-203I	1	106.22	106.60	56.3	65.3	52.5	66	66.0	50.30	41.30
P-203S	1	106.24	106.60	13.2	22.2	11	22.9	22.9	93.40	84.40

NOTE: [a] Inches.

[b] Feet above mean lower low water datum.

[c] Feet below ground surface.

[d] Not available.

Table 5-1
Physical Parameters Test Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample ID	Water Content (%)		Wet Density (pcf)		Dry Density (pcf)	Saturation[a]		Specific Gravity	Porosity[a]	Hydraulic Conductivity (cm/sec)	Liquid Limit	Plastic Limit	Plasticity Index
	Before	After	Before	After		Before	After						
SB-227-12.5	29	—	—	—	—	—	—	—	—	—	47	22	25
SB-233.5.5	26	—	—	—	—	—	—	—	—	—	41	22	19
MW-109-7.5	68	—	—	—	—	—	—	—	—	—	78	35	43
MW-120-26.5[b]	13	25	91	128	—	0.31	1.0	2.75	0.38	1×10^{-7}	25	18	7
MW-121-34.5	—	—	—	115	76	—	—	2.66	0.54	—	—	—	—
MW-124-10	—	—	—	134	116	—	—	2.75	0.32	—	—	—	—
MW-126-10	—	—	—	129	105	—	—	2.73	0.38	—	—	—	—
MW-128-7	—	—	—	121	97	—	—	2.67	0.42	—	—	—	—
MW-129-10[c]	26	25	128	127	—	1.0	1.0	2.68	0.39	1×10^{-5}	—	—	—
MW-131-11.5[b]	22	21	127	130	—	0.96	1.0	2.68	0.38	3×10^{-6}	—	—	—
MW-132-10	—	—	—	128	104	—	—	2.70	0.38	—	—	—	—
MW-139-10	—	—	—	124	100	—	—	2.68	0.40	—	—	—	—
MW-201-45[b]	19	19	128	132	—	0.91	0.98	—	—	5×10^{-8}	26	16	10
MW-202-87[c]	26	26	125	124	—	1.0	1.0	2.67	0.41	4×10^{-5}	—	—	—
MW-203-27.5	—	—	—	139	120	—	—	2.70	0.29	—	—	—	—
MW-204A-15[b]	28	27	122	124	—	0.98	1.0	—	—	4×10^{-6}	—	—	—

NOTE: pcf = pounds per cubic foot.

— = not analyzed.

NA = not applicable.

[a] Saturation and porosity data based on measured specific gravity. If specific gravity not measured, then a specific gravity of 2.7 was assumed.

[b] Hydraulic conductivity tests performed by using a flexible wall permeameter.

[c] Hydraulic conductivity tests performed by using a rigid wall permeameter.

Table 5-2
Tidal Response Study Summary
UNOCAL Edmonds Bulk Fuel Terminal RI

Location	Maximum Water Elevation	Minimum Water Elevation	Water Elevation Range	Elevations on 1/18/96			Shortest Distance to Puget Sound (ft)	Tidal Efficiency (%)	Time Lag (min)	Estimated Hydraulic Conductivity (cm/sec)
				Lowest Low Tide 21:11	Highest High Tide 14:08	Mean				
Shallow Wells										
MW-7	11.70	10.51	1.19	11.04	11.04	10.88	570	---	---	---
MW-8	9.62	7.94	1.68	8.38	9.34	8.77	430	7.2	4,583	0.002
MW-20	9.89	8.19	1.70	8.64	9.51	8.96	450	5.0	4,582	0.002
MW-26	11.12	10.86	0.26	11.05	11.09	11.02	730	---	---	---
MW-105	9.36	8.60	0.76	8.75	8.85	8.76	240	---	---	---
MW-109	11.74	9.58	2.16	10.14	10.17	9.99	900	---	---	---
MW-112	9.69	8.87	0.82	9.34	9.35	9.19	620	---	---	---
MW-115	9.85	8.36	1.49	8.86	9.49	9.05	510	5.4	4,589	0.002
MW-123	9.50	8.15	1.35	8.80	9.38	8.90	500	---	---	---
MW-124	9.75	7.67	2.08	8.06	9.52	8.78	390	12.2	3,067	0.003
MW-129	10.56	9.78	0.78	10.00	10.03	10.08	1,100	---	---	---
Deep Wells										
MW-120	9.95	7.43	2.52	7.82	9.67	8.79	480	11.3	3,038	0.005
MW-121	10.07	8.10	1.97	8.54	9.72	9.04	490	11.5	4,560	0.002
MW-122	11.32	10.26	1.06	10.53	10.86	10.59	1,100	---	---	---
Surface Water										
D-3	12.73	9.68	3.05	10.51	10.89	10.45	NA	---	---	---
DB-1	9.41	7.49	1.92	7.61	7.59	7.58	NA	---	---	---
TB	12.01	9.17	2.84	9.60	10.98	10.05	NA	---	---	---
Dock	13.15	-2.34	15.49	-1.50	12.09	7.28	NA	---	---	---

NOTE: --- = not possible to calculate due to lack of matching data
NA = not applicable
All water elevations in feet relative to the mean lower low water datum
Mean water elevations for period from approximately 1/18/96 (00:00) to 1/19/96 (00:50)
Hydraulic conductivity calculated using method of Todd (1980), assuming S = 0.15, aquifer thickness = 50 feet, and period = 24 hr 50 min.

Table 5-3
Horizontal Hydraulic Conductivity Results
UNOCAL Edmonds Bulk Fuel Terminal

Location	Lithology	Formation	Horizontal Hydraulic Conductivity (cm/sec)
Lower Yard			
MW-101	Silty sand	Fill/Alluvium	7×10^{-3}
MW-112	Sand with silt, silty sand	Fill/Alluvium	2×10^{-2}
MW-119	Interbedded silty sand and silt with sand	Fill/Alluvium	4×10^{-3}
MW-120	Interbedded sandy silt, silty sand, sand with silt, and sand	Alluvium	7×10^{-4}
MW-127	Elastic silt, sand	Alluvium	8×10^{-3}
MW-131	Sand	Alluvium	1×10^{-2}
		Mean:	9×10^{-3}
Upper Yard			
MW-7U	Silty sand	Whidbey	2×10^{-2}
MW-13U	Sand with silt	Whidbey	1×10^{-1}
MW-203	Sand	Whidbey	1×10^{-2}
		Mean:	5×10^{-2}

NOTE: Mean = Arithmetic mean.

Table 6-1a
Comparison of Vadose Zone Soil Results to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Analyte	LOWER YARD						
		Direct Contact-based Screening			Groundwater-based Screening		
	Maximum Detection	Screening Level[a]	Frequency Above Level	Percent Above Level	Screening Level[b]	Frequency Above Level	Percent Above Level
TPH (as diesel)	120,000	143,043[C]	1/247	0.4	2,000	42/247	17
TPH (as motor oil)	27,000	--	--	--	5,000	14/247	5.7
TPH (as gasoline)	12,000	--	--	--	1,000	25/241	10.4
Benzene	78	4,530	0/242	0	--	--	--
Toluene	350	700,000	0/242	0	--	--	--
Ethylbenzene	160	350,000	0/242	0	--	--	--
Xylenes, Total	590	7,000,000	0/242	0	--	--	--
Acenaphthene	2.9	210,000	0/242	0	--	--	--
Acenaphthylene	2.4	--	--	--	--	--	--
Anthracene	5.3	1,050,000	0/242	0	--	--	--
Benzo(a)anthracene	1.8	18	0/242	0	--	--	--
Benzo(a)pyrene	1	18	0/242	0	--	--	--
Benzo(b)fluoranthene	1	18	0/242	0	--	--	--
Benzo(g,h,i)perylene	1.6	--	--	--	--	--	--
Benzo(k)fluoranthene	0.55	18	0/242	0	--	--	--
Chrysene	14	18	0/242	0	--	--	--
Dibenzo(a,h)anthracene	0.089	18	0/242	0	--	--	--
Fluoranthene	59	140,000	0/242	0	--	--	--
Fluorene	6.8	140,000	0/242	0	--	--	--
Indeno(1,2,3-cd)pyrene	0.35	18	0/242	0	--	--	--
Naphthalene	35.5	140,000	0/242	0	--	--	--
Phenanthrene	16	--	--	--	--	--	--
Pyrene	8.3	105,000	0/242	0	--	--	--
Antimony	200	1,400	0/8	0	--	--	--
Arsenic	2,000	219	5/10	50	--	--	--
Cadmium	15	3,500	0/133	0	--	--	--

Table 6-1a
Comparison of Vadose Zone Soil Results to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Chromium	250	17,500	0/133	0	--	--	--
Copper	4,200	130,000	0/8	0	--	--	--
Lead	2,100	1,000	4/133	3	--	--	--
Mercury	0.1	1,050	0/8	0	--	--	--
Zinc	24,000	1,050,000	0/133	0	--	--	--

Notes: All values in mg/kg.

— = no criterion.

ND = not detected in any sample.

[a] Method C industrial cleanup levels (from Cleanup Levels and Risk Calculations [CLARC II] table [Ecology, 1996]) except:

(1) TPH based on the Interim TPH Policy (Ecology, 1997) and human-health-based risk equation calculations (direct contact only),

(2) the chromium cleanup level shown is for chromium VI (the chromium III cleanup level is 3,500,000 mg/kg), and

(3) the lead cleanup level shown is the Method A industrial cleanup level since a Method C lead cleanup level (formula value) is not available.

[b] Based on the Interim TPH Policy and residual saturation values specified by the Ecology site manager.

[c] Site-specific, human-health-based, direct-contact, Method C soil screening level calculated per Interim TPH Policy and fractionated soil data. Value reflects the sum of total aliphatics and aromatics, representing TPH in the gas, diesel, and oil ranges.

Table 6-1b
Comparison of Vadose Zone Soil Results to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Analyte	UPPER YARD			
		Direct Contact-based Screening		
	Maximum Detection	Screening Level[a]	Frequency Above Level	Percent Above Level
TPH (as diesel)	24,530	3443[b]	9/90	10
TPH (as motor oil)	6,500	—	—	—
TPH (as gasoline)	550	—	—	—
Benzene	0.18	34.50	0/85	0
Toluene	0.076	16,000	0/85	0
Ethylbenzene	0.23	8,000	0/85	0
Xylenes, Total	1.6	160,000	0/85	0
Acenaphthene	ND	4,800	0/87	0
Acenaphthylene	ND	—	—	—
Anthracene	0.25	24,000	0/87	0
Benzo(a)anthracene	0.46	0.137	1/87	1.1
Benzo(a)pyrene	0.26	0.137	1/87	1.1
Benzo(b)fluoranthene	0.14	0.137	1/87	1.1
Benzo(g,h,i)perylene	0.61	—	—	—
Benzo(k)fluoranthene	0.19	0.137	1/87	1.1
Chrysene	1.2	0.137	3/87	3.4
Dibenzo(a,h)anthracene	0.0071	0.137	0/87	0
Fluoranthene	7.1	3,200	0/87	0
Fluorene	1.4	3,200	0/87	0
Indeno(1,2,3-cd)pyrene	0.28	0.137	1/87	1.1
Naphthalene	1.1	3,200	0/87	0
Phenanthrene	2.5	—	—	—
Pyrene	0.78	2,400	0/87	0
Antimony	130	32	3/15	20.0
Arsenic	2,000	9.0[c]	8/15	53.3
Cadmium	8.9	80	0/52	0

Table 6-1b
Comparison of Vadose Zone Soil Results to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Chromium	120	400	0/52	0
Copper	4,100	2,960	1/15	6.7
Lead	1,500	250	3/52	5.8
Mercury	0.76	24	0/15	0
Zinc	12,000	24,000	0/52	0

Notes: All values in mg/kg.

— = no criterion.

ND = not detected in any sample.

[a] Method B residential cleanup levels (from Cleanup Levels and Risk Calculations [CLARC II] table [Ecology, 1996]) except:

(1) TPH based on the Interim TPH Policy (Ecology, 1997) and human-health-based risk equation calculations (direct contact only),

(2) the chromium cleanup level shown is for chromium VI (the chromium III cleanup level is 80,000 mg/kg), and

(3) the lead cleanup level shown is the Method A residential cleanup level since a Method B lead cleanup level is not available.

[b] Site-specific, human-health-based, direct-contact, Method B soil screening level calculated per Interim TPH Policy and fractionated soil data.

Value reflects the sum of total aliphatics and aromatics, representing TPH in the gas, diesel, and oil ranges.

[c] The soil PQL is above the Method B residential ground water screening level; therefore, the value shown is the soil PQL.

Table 6-2
Method B Surface Water Screening Levels (ug/L)
UNOCAL Edmonds Bulk Fuel Terminal

Chemical	ATI/MAS PQL[1]	B SW[2]	SFW[3]	SMW[3]	HHO[4]	FFW[5]	FMW[5]
TPH (as diesel)	240	—	—	—	—	—	—
TPH (as motor oil)	710	—	—	—	—	—	—
TPH (as gasoline)	100	—	—	—	—	—	—
Oil and Grease	10,000	—	—	—	—	—	—
Benzene	5.0	43	—	—	710 a,c	—	—
Toluene	5.0	48,500	—	—	2,000,000 a	—	—
Ethylbenzene	5.0	6,910	—	—	290,000 a	—	—
Xylenes, Total	5.0	—	—	—	—	—	—
Acenaphthene	0.60	643	—	—	110,000 a	—	—
Acenaphthylene	1.2	—	—	—	—	—	—
Anthracene	0.06	25,900	—	—	1,100,000 a	—	—
Benzo(a)anthracene	0.12	0.0296	—	—	0.31 c	—	—
Benzo(a)pyrene	0.06	0.0296	—	—	0.31 c	—	—
Benzo(b)fluoranthene	0.12	0.0296	—	—	0.31 c	—	—
Benzo(g,h,i)perylene	0.12	—	—	—	—	—	—
Benzo(k)fluoranthene	0.06	0.0296	—	—	0.31 c	—	—
Chrysene	0.06	0.0296	—	—	0.31 c	—	—
Dibenzo(a,h)anthracene	0.12	0.0296	—	—	0.31 c	—	—
Fluoranthene	0.24	90.2	—	—	3,700 a	—	—
Fluorene	0.12	3,460	—	—	14,000 a	—	—
Indeno(1,2,3-cd)pyrene	0.06	0.0296	—	—	0.31 c	—	—
Naphthalene	0.60	988	—	—	—	—	—
Phenanthrene	0.06	—	—	—	—	—	—
Pyrene	0.06	2,590	—	—	110,000 a	—	—
Antimony	8.2	1,040	—	—	43,000 a	—	—
Arsenic	6.5	0.0842	190 d,dd	36 d,cc,dd,ll	1.4 a,b,c	190	36
Cadmium	11	20.3	1.0 j,d,dd	9.3 d,dd	n	1.0+	9.3
Chromium (tri/ hex)	24	162,000/810	178 n,d,gg /10d,dd,jj	-- gg/50 d,dd,ll	n/n	180+/10	—/50
Copper	4.1	2,660	11.4 p,d,dd	3.1 d,dd,ll	—	11+	2.4
Lead	8.0	—	2.5 r,d,dd	8.1 d,dd,ll	n	2.5+	8.1
Mercury	1.7	—	0.012 d,s,ff	0.025 d,s,ff	1.5	0.012	0.025
Zinc	24	16,500	104 bb,d,dd	81.0 d,dd,ll	—	100	81

Table 6-2
Method B Surface Water Screening Levels (ug/L)
UNOCAL Edmonds Bulk Fuel Terminal

NOTE --- = no criterion.

\+ = hardness-dependent criteria (100 mg/L CaC03 used).

[1] From Analytical Technologies, Inc. (ATI)/Multichem Analytical Services (MAS).

[2] Method B surface water formula values from Ecology's Cleanup Levels and Risk Calculations (CLARC II) Table, February 1996.

[3] Water Quality Standards for surface waters of the State of Washington, WAC 173-201A-040 Toxic Substances; freshwater chronic (SFW) and marine water chronic (SMW).

d = a 4-day average concentration not to be exceeded more than once every three years on the average.

j = $\leq (0.909)(e^{(0.7852[\ln(\text{hardness})]-3.490)})$, calculated using hardness = 100 mg/L. Conversion factor (CF) of 0.909 is hardness dependent.

CF is calculated for other hardnesses as follows: CF = 1.101672 - [(ln hardness)(0.041838)].

n = $\leq (0.860)(e^{(0.8190[\ln(\text{hardness})]+1.561)})$, calculated using hardness = 100 mg/L.

p = $\leq (0.960)(e^{(0.8545[\ln(\text{hardness})]-1.465)})$, calculated using hardness = 100 mg/L.

r = $\leq (0.791)(e^{(1.273[\ln(\text{hardness})]-4.705)})$, calculated using hardness = 100 mg/L. Conversion factor (CF) of 0.791 is hardness dependent.

CF is calculated for other hardnesses as follows: CF = 1.46203 - [(ln hardness)(0.145712)].

s = if the four-day average chronic concentration is exceeded more than once in a three-year period, the edible portion of the consumed species should be analyzed. Said edible tissue concentrations shall not be allowed to exceed 1.0 mg/kg of methylmercury.

bb = $\leq (0.986)(e^{(0.8473[\ln(\text{hardness})]+0.7614)})$, calculated using hardness = 100 mg/L.

cc = Nonlethal effects (growth, C-14 uptake, and chlorophyll production) to diatoms (*Thalassiosira aestivalis* and *Skeletonema costatum*) which are common to Washington's waters have been noted at levels below the established criteria. The importance of these effects to the diatom populations and the aquatic system is sufficiently in question to persuade the state to adopt the USEPA National Criteria value (36 ug/L) as the state threshold criteria, however, wherever practical the ambient concentrations should not be allowed to exceed a chronic marine concentration of 21 ug/L.

dd = these ambient criteria are for the dissolved fraction. The cyanide criteria are based on the weak acid dissociable method. The metals criteria may not be used to calculate total recoverable effluent limits unless the seasonal partitioning of the dissolved to total metals in the ambient water are known. When this information is absent, these metals criteria shall be applied as total recoverable values, determined by back-calculation, using the conversion factors incorporated in the criterion equations. Metals criteria may be adjusted on a site-specific basis when data are made available to the department clearly demonstrating the effective use of the water effects ratio approach established by USEPA, as generally guided by the procedures in Water Quality Handbook, December 1983, as supplemented or replaced. Information whis is used to develop effluent limits based on applying metals partitioning studies or the water effects rati approach shall be identified in the permit fact sheet developed pursuant to WAC 173-220-060 or 173-226-110, as appropriate, and shall be made available for the public comment period required pursuant to WAC 173-220-050 or 173-226-130(3), as appropriate.

ff = these criteria are based on the total-recoverable fraction of the metal.

gg = where methods to measure trivalent chromium are unavailable, these criteria are to be represented by total-recoverable chromium.

ll = Marine conversion factors (CF) used for calculating dissolved metals concentrations. Conversion factors are applicable to both acute and chronic criteria for all metals except mercury. CF for mercury is applicable to the acute criterion only. Conversion factors are already incorporated into the criteria in the table. Dissolved criterion = criterion x CF: arsenic (1.000), cadmium (0.994), chromium (VI) (0.993), copper (0.83), lead (0.951), mercury (0.85), nickel (0.990), selenium (0.998), silver (0.85), and zinc (0.946).

Table 6-2
Method B Surface Water Screening Levels (ug/L)
UNOCAL Edmonds Bulk Fuel Terminal

[4] Water Quality Standards; Numeric Criteria for Priority Toxic Pollutants; 40 CFR 131; for human health, consumption of organisms (HHO).

a = criteria revised to reflect current agency q_1^* or RfD, as contained in the Integrated Risk Information System (IRIS). The fish tissue bioconcentration factor (BCF) from the 1980 criteria documents was retained in all cases.

b = the criteria refer to the inorganic form only.

c = criteria in the matrix based on carcinogenicity (10^{-5} risk).

n = EPA is not promulgating human health criteria for this contaminant. However, permit authorities should address this contaminant in NPDES permit actions using the State's existing narrative criteria for toxics.

[5] Federal Criteria for Priority Toxic Pollutants, 40 CFR 131, freshwater chronic (FFW) and marine chronic (FMW); from 60 FR 22236. Criteria are for dissolved metals except for mercury which is for total metals.

Table 6-3
Comparison of Site-wide Aquifer Groundwater Results
UNOCAL Edmonds Bulk Fuel Terminal

Analyte[a]	Screening Level[b]	First Quarter			Second Quarter			Third Quarter			Fourth Quarter		
		Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level
TPH (as diesel)	—	—	—	—	—	—	—	—	—	—	—	—	—
TPH (as motor oil)	—	—	—	—	—	—	—	—	—	—	—	—	—
TPH (as gasoline)	—	—	—	—	—	—	—	—	—	—	—	—	—
Benzene	0.043	1.5	10/36	27.8	3.8	8/32	25	3.8	7/31	22.6	2.3	7/30	23.3
Toluene	48.5	0.18	0/36	0	0.11	0/32	0	0.13	0/31	0	0.07	0/30	0
Ethylbenzene	6.91	0.29	0/36	0	0.26	0/32	0	0.52	0/31	0	0.32	0/30	0
Xylenes, Total	—	—	—	—	—	—	—	—	—	—	—	—	—
Acenaphthene	0.643	0.000215	0/36	0	0.0012	0/32	0	0.0026	0/31	0	0.0008	0/30	0
Acenaphthylene	—	0.0075	—	—	0.016	—	—	0.015	—	—	0.0094	—	—
Anthracene	25.9	0.0011	0/36	0	0.00035	0/32	0	0.00045	0/31	0	0.000175	0/30	0
Benzo(a)anthracene	0.00012[c]	0.012	1/36	2.8	ND	0/32	0	ND	0/31	0	0.000013	0/30	0
Benzo(a)pyrene	0.00006[c]	0.000011	0/36	0	0.0011	1/32	3.1	0.00095	1/31	3.2	ND	0/30	0
Benzo(b)fluoranthene	0.00012[c]	ND	0/36	0	ND	0/32	0	ND	0/31	0	ND	0/30	0
Benzo(g,h,i)perylene	—	0.015	—	—	0.00013	—	—	0.000043	—	—	0.000048	—	—
Benzo(k)fluoranthene	0.00006[c]	0.000012	0/36	0	ND	0/32	0	0.0000086	0/31	0	ND	0/30	0
Chrysene	0.00006[c]	0.00035	4/36	11.1	0.013	2/32	6.3	0.011	3/31	9.7	0.000265	3/30	10
Dibenzo(a,h)anthracene	0.00012[c]	ND	0/36	0	0.000038	0/32	0	0.00016	1/31	3.2	ND	0/30	0
Fluoranthene	0.0902	0.0021	0/36	0	0.018	0/32	0	0.014	0/31	0	0.003475	0/30	0
Fluorene	3.46	0.0022	0/36	0	0.0032	0/32	0	0.0035	0/31	0	0.0042	0/30	0
Indeno(1,2,3-cd)pyrene	0.00006[c]	7.8E-06	0/36	0	0.000026	0/32	0	0.000017	0/31	0	.00001055	0/30	0
Naphthalene	0.988	0.045	0/36	0	0.042	0/32	0	0.042	0/31	0	0.062	0/30	0
Phenanthrene	—	0.007	—	—	0.0046	—	—	0.0021	—	—	0.0024	—	—
Pyrene	2.59	0.00028	0/36	0	0.004	0/32	0	0.00019	0/31	0	0.00035	0/30	0
Antimony, dissolved	1.04	—	—	—	—	—	—	—	—	—	0.0033	0/30	0
Antimony, total	1.04	—	—	—	—	—	—	—	—	—	0.00095	0/30	0
Arsenic, dissolved	0.0065[c]	—	—	—	—	—	—	—	—	—	0.0425	6/30	20
Arsenic, total	0.0065[c]	—	—	—	—	—	—	—	—	—	0.051	7/30	23.3
Cadmium, dissolved	0.011[c]	0.0017	0/36	0	0.003	0/32	0	0.0011	0/31	0	0.0034	0/30	0
Cadmium, total	0.011[c]	0.0022	0/36	0	0.0022	0/32	0	0.00088	0/31	0	0.0027	0/30	0

Table 6-3
Comparison of Site-wide Aquifer Groundwater Results
UNOCAL Edmonds Bulk Fuel Terminal

Analyte[a]	Screening Level[b]	First Quarter			Second Quarter			Third Quarter			Fourth Quarter		
		Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level
Chromium (hex), dissolved	0.024[d]	0.012	0/36	0	0.011	0/32	0	0.0058	0/31	0	0.01	0/30	0
Chromium (hex), total	0.024[d]	0.099	4/36	11.1	0.022	0/32	0	0.023	0/31	0	0.021	0/30	0
Copper, dissolved	0.0041[c]	—	—	—	—	—	—	—	—	—	0.0145	1/30	3.3
Copper, total	0.0041[c]	—	—	—	—	—	—	—	—	—	0.017	9/30	30
Lead, dissolved	0.008[c]	0.0027	0/36	0	0.0058	0/32	0	0.0035	0/31	0	0.00135	0/30	0
Lead, total	0.008[c]	0.012	2/36	5.6	0.045	1/32	3.1	0.055	2/31	6.5	0.034	1/30	3.3
Mercury, dissolved	0.0017[c]	0.00021	0/36	0	0.00018	0/32	0	0.00024	0/31	0	0.0002	0/30	0
Mercury, total	0.0017[c]	0.00015	0/36	0	0.00085	0/32	0	0.00035	0/31	0	0.00023	0/30	0
Zinc, dissolved	0.081	0.12	2/36	5.6	0.22	1/32	3.1	0.063	0/31	0	0.027	0/30	0
Zinc, total	0.081	0.15	3/36	8.3	0.32	2/32	6.3	0.41	1/31	3.2	0.18	1/30	3.3

NOTE: All values in mg/L.

— = no criterion.

ND = not detected in any sample.

[a] Only detected analytes listed.

[b] The value listed is the most stringent surface water screening level from Table 6-2.

[c] The PQL is above the most stringent surface water screening level from Table 6-2; therefore, the value shown is the PQL.

[d] The PQL is above the most stringent surface water screening level for chromium VI (Table 6-2); therefore, the value shown is the PQL; the chromium III screening level is 0.178.

Table 6-4
Comparison of Site-wide Aquifer Beneath the Upper Yard to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Analyte[a]	Screening Level[b]	First Quarter			Second Quarter			Third Quarter			Fourth Quarter		
		Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level
TPH (as diesel)	1.0[c]	0.11	0/6	0	8.6	1/6	17	1.16	1/6	17	0.47	0/6	0
TPH (as motor oil)	1.0[c]	—	—	—	—	—	—	—	—	—	—	—	—
TPH (as gasoline)	1.0[c]	—	—	—	—	—	—	—	—	—	—	—	—
Benzene	0.005[d]	ND	0/6	0	ND	0/6	0	0.0092	2/6	33	0.0017	0/6	0
Toluene	1.6	0.0021	0/6	0	ND	0/6	0	0.096	0/6	0	0.028	0/6	0
Ethylbenzene	0.8	0.0007	0/6	0	ND	0/6	0	0.019	0/6	0	0.009	0/6	0
Xylenes, Total	16	0.0036	0/6	0	ND	0/6	0	0.15	0/6	0	0.073	0/6	0
Acenaphthene	0.96	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Acenaphthylene	—	ND	—	—	ND	—	—	0.00063	—	—	ND	—	—
Anthracene	4.8	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Benzo(a)anthracene	0.00012[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Benzo(a)pyrene	0.00006[d]	0.000011	0/6	0	0.000012	0/6	0	0.000013	0/6	0	ND	0/6	0
Benzo(b)fluoranthene	0.00012[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Benzo(g,h,i)perylene	—	0.000028	—	—	0.000066	—	—	0.000041	—	—	ND	—	—
Benzo(k)fluoranthene	0.00006[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Chrysene	0.00006[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Dibenzo(a,h)anthracene	0.00012[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Fluoranthene	0.64	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Fluorene	0.64	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Indeno(1,2,3-cd)pyrene	0.00006[d]	0.0000078	0/6	0	0.000026	0/6	0	0.000017	0/6	0	ND	0/6	0
Naphthalene	0.32	ND	0/6	0	ND	0/6	0	0.0036	0/6	0	0.0025	0/6	0
Phenanthrene	—	ND	—	—	ND	—	—	0.0075	—	—	ND	—	—
Pyrene	0.48	0.000033	0/6	0	ND	0/6	0	0.000019	0/6	0	6.9E-06	0/6	0
Antimony, dissolved	0.0082[d]	—	—	—	—	—	—	—	—	—	0.0022	0/6	0
Antimony, total	0.0082[d]	—	—	—	—	—	—	—	—	—	0.0009	0/6	0
Arsenic, dissolved	0.0065[d]	—	—	—	—	—	—	—	—	—	0.0065	0/6	0
Arsenic, total	0.0065[d]	—	—	—	—	—	—	—	—	—	0.0082	1/6	17
Cadmium, dissolved	0.011[d]	0.0014	0/6	0	0.0017	0/6	0	ND	0/6	0	ND	0/6	0
Cadmium, total	0.011[d]	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0

Table 6-4
Comparison of Site-wide Aquifer Beneath the Upper Yard to Screening Levels
UNOCAL Edmonds Bulk Fuel Terminal

Analyte[a]	Screening Level[b]	First Quarter			Second Quarter			Third Quarter			Fourth Quarter		
		Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level	Maximum Detection	Frequency Above Level	Percent Above Level
Chromium (hex), dissolved	0.08[f]	0.0036	0/6	0	ND	0/6	0	ND	0/6	0	0.0061	0/6	0
Chromium (hex), total	0.08[f]	0.099	1/6	17	0.022	0/6	0	0.023	0/6	0	0.021	0/6	0
Copper, dissolved	0.592	—	—	—	—	—	—	—	—	—	0.0022	0/6	0
Copper, total	0.592	—	—	—	—	—	—	—	—	—	0.0075	0/6	0
Lead, dissolved	0.015[g]	ND	0/6	0	ND	0/6	0	0.0007	0/6	0	ND	0/6	0
Lead, total	0.015[g]	0.012	0/6	0	0.0057	0/6	0	0.0034	0/6	0	0.0017	0/6	0
Mercury, dissolved	0.0048	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Mercury, total	0.0048	ND	0/6	0	ND	0/6	0	ND	0/6	0	ND	0/6	0
Zinc, dissolved	4.8	0.025	0/6	0	0.013	0/6	0	0.015	0/6	0	0.026	0/6	0
Zinc, total	4.8	0.15	0/6	0	0.058	0/6	0	0.025	0/6	0	0.027	0/6	0

Note: All values in mg/L.

— = no criterion.

ND = not detected in any sample.

[a] Only detected analytes listed.

[b] Method B groundwater cleanup levels (from Cleanup Levels and Risk Calculations [CLARC II] table [Ecology, 1996]).

[c] There is no Method B or federal drinking water standard for TPH; the value shown is the Method A cleanup level (based on prevention of adverse aesthetic effects [odor and taste]) and is for the sum of TPH-G, TPH-D, and TPH-O.

[d] The PQL (see Table 6-2) is above the Method B cleanup level; therefore, the value shown is the PQL.

[e] There is no Method B groundwater cleanup level for antimony; the value shown is the federal drinking water standard (MCL) from 40 CFR Part 141.

[f] Cleanup level shown is for chromium VI; chromium III cleanup level is 16 mg/L.

[g] There is no Method B groundwater cleanup level for lead; the value shown is the federal drinking water standard (MCL action level) from 40 CFR Part 141.

Table 6-5
Comparison of Surface/Storm Water Results to Screening Levels (mg/L)
UNOCAL Edmonds Bulk Fuel Terminal

Analyte[a]	SAMPLING SITE[b]									Potential[e] Cleanup Level
	SW-1[c]	SW-2	SW-3	SW-4	SW-5	SW-6	STW-U44[d]	STW-L32	STW-API	
TPH-G, D & O	0.53	0.53	0.53	0.53	1.17	0.59	0.78	1.92J	0.74	10[f]
Oil and grease	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10
Benzene	0.0002	0.0002	0.0002	0.0002	.0005J	.0007J	.0005J	.002J	.0002J	0.043
Toluene	0.0002	0.0002	.0005J	.0005J	.0002J	.0004J	.0004J	0.0003	0.0002	48.5
Ethylbenzene	0.0002	0.0002	0.0005	0.0004	0.0004	.0003J	0.0002	0.004	0.0002	6.91
Xylenes	0.0005	0.0005	.0001J	.0002J	.0007J	.012J	.0017J	0.114	0.0005	—
Anthracene	.000023J	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	—	25.9
Benzo(a)anthracene	0.00021	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	—	0.00006
Benzo(a)pyrene	0.00029	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	.000015J	—	0.00006
Benzo(b)flouranthene	0.0003	0.000006	0.000006	0.000006	0.000006	0.000006	0.000006	0.000006	—	0.00012
Benzo(g,h,i)perylene	.00017J	0.000006	0.000006	0.000006	0.000006	0.000006	0.000006	0.000006	—	—
Benzo(k)flouranthene	0.00015	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	—	0.00006
Chrysene	0.00027	0.000003	0.000003	0.000003	.000012J	.000016J	0.000003	0.000099	—	0.00006
Fluoranthene	0.00077	0.000012	0.000012	0.000012	0.000012	0.000012	0.000012	.000086J	—	0.0902
Indeno(1,2,3,-cd)pyrene	0.00022	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	—	0.00006
Phenanthrene	0.00029	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	.000010J	—	—
Pyrene	0.00056	0.000003	.000006J	0.000003	.000021J	.000027J	0.000003	0.000082	—	2.59
Antimony[g]	0.0004	0.0004	0.0004	0.0004	0.0004	.0006J	0025J	.0019J	0.0004	1.04
Arsenic	.0046J	.0020J	.0023J	.0023J	.0022J	.0029J	.0030J	.0070J	.0036J	0.0065
Cadmium	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.006	.0012J	.0011J	0.011
Chromium[h]	.0083J	.0020J	.0045J	.0021J	.0045J	.0057J	.0062J	.015J	.0098J	0.024
Copper	0.008	.0022J	.0031J	0.0047	.005J	0.007	0.0055	0.011	.0020J	0.0041
Lead	.012J	.0018J	.0030J	.0028J	.0035J	.0076J	.011J	.031J	.0055J	0.008
Zinc[h]	0.058	.0147J	.0237J	.0200J	0.059	0.076	0.15	0.41	0.094	0.081
Total Suspended Solids	123	7	10.7	18	20	44.3	69	110	44	45[i]

Table 6-5
Comparison of Surface/Storm Water Results to Screening Levels (mg/L)
UNOCAL Edmonds Bulk Fuel Terminal

NOTE: J = Estimated quantity

[a] Only detected analytes are listed.

[b] Stations SW-1, SW-2, SW-3 and SW-4 were located in the drainage ditch and tidal basin. SW-5 and SW-6 were located in Detention Basins No. 1 and 2, respectively. STW-U44 and STW-L32 are the upper and lower yard stormwater sampling stations, respectively. STW-API reflects total site runoff, lower and upper yards.

[c] Results shown for surface water collected from SW-1 through sw-6 are averages of the 3 samples collected at each station; non-detects assumed at one-half the MDL.

[d] Results shown for stormwater collected at STW-U44, STW-L32, and STW-API, are the highest results, grab or composite, for that station.

[e] The value shown is the most stringent potential cleanup level from Table 6-2.

[f] There is no state or federal water quality standard for TPH; the value shown is the state water quality standard for oil and grease (Ecology, 1987).

[g] All sampling results are for total (vs. dissolved) metals.

[h] Chromium and zinc found in associated blanks for several samples.

[i] Value shown is a discharge limitation previously applied to the Terminal.

Table 6-6
Summary Statistics - Soil Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/kg)	Maximum Detected (mg/kg)	Average (mg/kg)	Median (mg/kg)	Minimum Detection Limit (mg/kg)	Maximum Detection Limit (mg/kg)	Distribution	UCL 95 (mg/kg)
Lower Yard											
Antimony	8	8	100	4.4	200	99	115	NA	NA	neither	150
Arsenic	10	10	100	2	2000	807	379	NA	NA	neither	1280
Cadmium	133	12	9	0.089	15	0.563	0.33	0.057	1.6	NA	M (15)
Chromium	133	133	100	11	250	30.4	23	NA	NA	neither	35
Copper	8	8	100	13	4200	2100	2450	NA	NA	neither	3210
Lead	133	133	100	0.96	2100	80.7	7.1	NA	NA	neither	130
Mercury	8	6	75	0.048	0.11	0.074	0.064	0.045	0.085	neither	M (0.110)
Zinc	133	133	100	14	24000	737	34	NA	NA	neither	1260
Upper Yard											
Antimony	15	13	87	4.5	130	23.7	8.5	1.3	1.5	neither	M (130)
Arsenic	15	15	100	3.7	2000	220	11	NA	NA	neither	446
Cadmium	52	13	25	0.068	8.9	0.411	0.16	0.063	0.83	NA	M (8.9)
Chromium	52	52	100	15	120	39.1	32.5	NA	NA	Lognormal	44
Copper	15	15	100	14	4100	449	30	NA	NA	neither	905
Lead	52	52	100	1.8	1500	78.9	6.4	NA	NA	neither	140
Mercury	15	12	80	0.058	0.76	0.096	0.081	0.045	0.059	neither	0.175
Zinc	52	52	100	18	12000	562	63.5	NA	NA	neither	NC
Lower Yard											
TPH-D	247	187	76	13	120000	1990	130	11	16	Lognormal	18060
TPH-O	247	176	71	45	27000	1170	220	40	66	Lognormal	2640
TPH-G	243	131	54	2.8	12000	467	4.3	2.6	6	Lognormal	M (12000)
Benzene	242	60	25	0.012	78	0.845	0.012	0.01	1.1	NA	M (78)
Toluene	242	79	33	0.012	350	2.19	0.012	0.01	0.23	NA	M (350)
Ethylbenzene	242	96	40	0.013	160	4.09	0.013	0.01	0.023	NA	M (160)
Total Xylenes	242	132	55	0.012	590	12.2	0.018	0.01	0.023	Lognormal	486

Table 6-6
Summary Statistics - Soil Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/kg)	Maximum Detected (mg/kg)	Average (mg/kg)	Median (mg/kg)	Minimum Detection Limit (mg/kg)	Maximum Detection Limit (mg/kg)	Distribution	UCL 95 (mg/kg)
Upper Yard											
TPH-D	90	31	34	16	24000	683	13	10	16	NA	M (24000)
TPH-O	90	21	23	53	6500	399	52	42	63	NA	M (6500)
TPH-G	88	19	22	3.6	550	22.3	3.3	2.7	4.1	NA	M (550)
Benzene	85	4	5	0.017	0.18	0.015	0.013	0.01	0.019	NA	M (0.180)
Toluene	85	8	9	0.013	0.076	0.053	0.013	0.01	0.019	NA	M (0.076)
Ethylbenzene	85	7	8	0.017	0.23	0.019	0.013	0.01	0.019	NA	M (0.230)
Total Xylenes	85	11	13	0.014	1.6	0.053	0.013	0.01	0.019	NA	M (1.60)
Lower Yard											
Acenaphthene	242	24	10	0.01	2.9	0.05	0.0098	0.0084	0.91	NA	M (2.90)
Acenaphthylene	242	48	20	0.02	2.4	0.072	0.02	0.017	0.95	NA	M (2.40)
Anthracene	242	120	50	0.001	5.3	0.131	0.0017	0.00084	0.048	neither	M (5.30)
Benzo(a)anthracene	242	50	21	0.0011	1.8	0.0278	0.001	0.00084	0.097	NA	M (1.80)
Benzo(a)pyrene	242	128	53	0.00095	1	0.0307	0.0038	0.00084	0.091	neither	M (1.00)
Benzo(b)fluoranthene	242	21	9	0.0027	1	0.0134	0.002	0.0017	0.18	NA	M (1.00)
Benzo(g,h,i)perylene	242	58	24	0.0027	1.6	0.0309	0.0021	0.0017	0.18	NA	M (1.60)
Benzo(k)fluoranthene	242	89	37	0.0011	0.55	0.0139	0.0013	0.00084	0.091	NA	M (0.550)
Chrysene	242	161	67	0.0013	14	0.289	0.019	0.00084	0.055	Lognormal	M (14.0)
Dibenzo(a,h)anthracene	242	16	7	0.0023	0.089	0.0076	0.002	0.0017	0.18	NA	M (0.089)
Fluoranthene	242	147	61	0.0066	59	1.55	0.046	0.0034	0.39	neither	M (59.0)
Fluorene	242	121	50	0.0022	6.8	0.343	0.0027	0.0017	0.038	neither	M (6.80)
Indeno(1,2,3-cd)pyrene	242	83	34	0.0011	0.35	0.0182	0.0011	0.00084	0.091	NA	M (0.350)
Naphthalene	242	90	37	0.011	35.5	0.938	0.01	0.0085	0.019	NA	M (35.5)
Phenanthrene	242	192	79	0.0012	16	0.616	0.015	0.00086	0.0014	Lognormal	M (16.0)
Pyrene	242	111	46	0.0015	8.3	0.143	0.0105	0.00084	0.091	NA	M (8.30)

Table 6-6
Summary Statistics - Soil Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/kg)	Maximum Detected (mg/kg)	Average (mg/kg)	Median (mg/kg)	Minimum Detection Limit (mg/kg)	Maximum Detection Limit (mg/kg)	Distribution	UCL 95 (mg/kg)
Upper Yard											
Acenaphthene	87	0	0	NA	NA	NA	NA	0.0087	0.2	NA	NA
Acenaphthylene	87	0	0	NA	NA	NA	NA	0.017	0.2	NA	NA
Anthracene	87	13	15	0.0019	0.25	0.0088	0.0011	0.00087	0.02	NA	M (0.250)
Benzo(a)anthracene	87	5	6	0.0031	0.46	0.007	0.001	0.00087	0.022	NA	M (0.460)
Benzo(a)pyrene	87	20	23	0.0011	0.26	0.0076	0.0011	0.00087	0.02	NA	M (0.260)
Benzo(b)fluoranthene	87	6	7	0.0058	0.14	0.0059	0.0021	0.0017	0.04	NA	M (0.140)
Benzo(g,h,i)perylene	87	24	28	0.0029	0.61	0.0184	0.0022	0.0017	0.046	NA	M (0.610)
Benzo(k)fluoranthene	87	11	13	0.0012	0.19	0.0048	0.0011	0.00087	0.022	NA	M (0.190)
Chrysene	87	46	53	0.0012	1.2	0.038	0.0013	0.0009	0.0013	neither	M (1.20)
Dibenzo(a,h)anthracene	87	1	1	0.0071	NA	NA	NA	0.0017	0.04	NA	NA
Fluoranthene	87	48	55	0.0044	7.1	0.273	0.008	0.0036	0.04	neither	M (7.10)
Fluorene	87	20	23	0.0022	1.4	0.0568	0.0021	0.0017	0.0025	NA	M (1.40)
Indeno(1,2,3-cd)pyrene	87	18	21	0.0014	0.28	0.0084	0.0011	0.00087	0.022	NA	M (0.280)
Naphthalene	87	7	8	0.016	1.1	0.0365	0.01	0.0087	0.013	NA	M (1.10)
Phenanthrene	87	51	59	0.0026	2.5	0.0938	0.0037	0.00087	0.0021	Lognormal	M (2.50)
Pyrene	87	24	28	0.0011	0.78	0.0337	0.0011	0.00087	0.0013	NA	M (0.780)

NOTE: NA = not available.

M indicates default to maximum value, maximum value listed in parentheses.

Table 6-7
Summary Statistics - Saturated Soil
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detected	Minimum Detected	Maximum Detected	Average	Median	Minimum Detection Limit	Maximum Detection Limit	Distribution	UCL 95
Cadmium	21	4	19	0.12	0.23	0.19	0.2	0.065	0.43	NA	M (0.23)
Chromium	21	21	100	9.1	37	17	4.7	0.22	0.33	Lognormal	19.58
Lead	21	21	100	0.8	29	3.8	0.82	0.084	0.83	Neither	M (29)
Zinc	21	21	100	14	45	24	7.2	0.27	0.4	Lognormal	27.16
TPH-D	33	15	45	9.5	4,500	1031	14	11	120	NA	M (4,500)
TPH-O	33	12	36	51	1700	556	52	46	480	NA	M (1,700)
TPH-G	33	15	45	2.7	10,000	1257	3.6	2.9	310	NA	M (10,000)
Benzene	33	10	30	0.023	4.1	0.49	0.013	0.011	1.2	NA	M (4.1)
Ethylbenzene	33	14	42	0.015	22	3.1	0.014	0.011	1.2	NA	M (22)
Toluene	33	8	24	0.021	6.9	1.17	0.013	0.011	1.2	NA	M (6.9)
Total Xylenes	33	17	52	0.013	37	3.7	0.016	0.011	1.2	Lognormal	M (37)
Acenaphthene	33	0	0	NA	NA	NA	0.01	0.0096	0.19	NA	NA
Acenaphthylene	33	5	15	0.026	0.7	0.345	0.021	0.019	0.18	NA	M (0.7)
Anthracene	33	7	21	0.0034	0.6	0.2	0.0011	0.00096	0.02	NA	M (0.6)
Benzo(a)anthracene	33	4	12	0.0033	0.12	0.046	0.0011	0.00096	0.02	NA	M (0.12)
Benzo(a)pyrene	33	8	24	0.001	0.14	0.027	0.0011	0.00091	0.0099	NA	M (0.14)
Benzo(b)fluoranthene	33	0	0	NA	NA	NA	0.0021	0.0019	0.037	NA	NA
Benzo(g,h,i)perylene	33	2	6	0.042	0.043	0.042	0.0021	0.0019	0.038	NA	M (0.043)
Benzo(k)fluoranthene	33	5	5	0.0013	0.099	0.029	0.0011	0.00091	0.0099	NA	M (0.099)
Chrysene	33	10	30	0.0014	0.53	0.078	0.0011	0.00094	0.02	NA	M (0.53)
Dibenzo(a,h)anthracene	33	0	0	NA	NA	NA	0.0021	0.0019	0.038	NA	NA
Fluoranthene	33	16	48	0.0037	6.2	1.16	0.0087	0.0038	0.08	NA	M (6.2)
Fluorene	33	12	36	0.0031	1.5	0.36	0.0023	0.0019	0.04	NA	M (1.5)
Indeno(1,2,3-cd)pyrene	33	2	6	0.0037	0.027	0.015	0.0011	0.00091	0.019	NA	M (0.027)

Table 6-7
Summary Statistics - Saturated Soil
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detected	Minimum Detected	Maximum Detected	Average	Median	Minimum Detection Limit	Maximum Detection Limit	Distribution	UCL 95
Naphthalene	33	12	36	0.023	6.2	1.56	0.011	0.0094	0.19	NA	M (6.2)
Phenanthrene	33	19	58	0.0032	1.7	0.307	0.0038	0.00096	0.02	Lognormal	M (1.7)
Pyrene	33	6	18	0.0019	0.017	0.0051	0.0011	0.00094	0.019	NA	M (0.017)

NOTE: All samples collected in the lower yard.

NA = not available or not calculable.

"Neither" indicates sample distribution is neither normal or lognormal.

M indicates default to maximum value, maximum value listed in parentheses.

Table 6–8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
BSS-101	01/09/96	0.00	120000	58000	110	0.098 J	0.13 J	<0.026	0.50
BSS-102	01/09/96	0.00	210000	120000	54 J	<0.042	0.31 J	<0.042	1.2
BSS-103	01/09/96	0.00	100000	57000	52 J	0.093 J	0.18 J	<0.029	0.80
BSS-104	10/02/95	0.50	20000	33000	<9.6	<0.037	<0.037	<0.037	<0.037
BSS-105	10/18/95	2.50	470	470	<3.9	0.018 J	<0.015	<0.015	<0.015
BSS-105	10/18/95	5.00	19	<59	<3.8	0.016 J	<0.015	<0.015	<0.015
BSS-105	10/18/95	7.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
BSS-106	10/26/95	1.50	530	640	<7.9	<0.030	<0.030	<0.030	<0.030
BSS-107A	11/01/95	0.40	400000	190000	190 E	0.24 E	0.57 E	2.1 E	4.6 E
BSS-108	10/26/95	1.40	510	780	<5.8	<0.022	<0.022	<0.022	<0.022
BSS-109	10/26/95	0.80	190	260	<4.1	<0.016	<0.016	<0.016	<0.016
BSS-110	10/18/95	1.00	<14	<56	5.1 J	<0.014	<0.014	<0.014	<0.014
BSS-110	10/18/95	2.50	<14	<54	<3.5	<0.014	<0.014	<0.014	<0.014
BSS-110	10/18/95	5.00	<13	<53	<3.4	<0.013	<0.013	<0.013	<0.013
BSS-110	10/18/95	7.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
BSS-111	10/26/95	0.30	110000	100000	<9.3 E	<0.036 E	<0.036 E	<0.036 E	<0.036 E
BSS-201	01/09/96	0.00	1800	2000	13 J	<0.016	<0.016	<0.016	<0.016
MW-105	12/19/95	1.00	18	110	<2.8	<0.011	<0.011	<0.011	<0.011
MW-105	12/19/95	3.50	<11	<44	<2.9	<0.011	<0.011	<0.011	0.013 J
MW-105	12/19/95	5.00	<11	<44	<2.9	<0.011	<0.011	<0.011	<0.011
MW-105	12/19/95	7.50	<12	<47	<3.1	<0.012	<0.012	<0.012	<0.012
MW-105	12/19/95	10.00	<11	<46	<3.0	0.015 J	<0.011	0.019 J	<0.011
MW-105	12/19/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-106	12/18/95	1.00	13	<44	<2.8	<0.011	<0.011	0.018 J	0.018 J
MW-106	12/18/95	3.50	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
MW-106	12/18/95	5.00	<11	<45	<3.0	<0.011	<0.011	0.024 J	0.089 J
MW-106	12/18/95	7.50	<12	<49	<3.2	<0.012	0.014 J	<0.012	0.031 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-106	12/18/95	10.00	<12	<47	3.5 J	<0.012	0.022 J	0.016 J	0.044 J
MW-106	12/18/95	12.50	13	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-107	12/18/95	1.00	<11	<44	<2.8	<0.011	<0.011	<0.011	<0.011
MW-107	12/18/95	3.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
MW-107	12/18/95	5.00	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
MW-107	12/18/95	7.50	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-107	12/18/95	12.50	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-108	09/26/95	1.00	37	75	<3.1	<0.012	<0.012	<0.012	<0.012
MW-108	09/26/95	2.50	35	66	<3.9	<0.015	<0.015	<0.015	<0.015
MW-108	09/26/95	7.50	<19	<75	<4.9	<0.019	<0.019	<0.019	<0.019
MW-108	09/26/95	10.00	<15	<59	<3.8	<0.015	<0.015	<0.015	<0.015
MW-108	09/26/95	12.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
MW-109	10/03/95	1.00	<11	<43	<2.8	<0.011	<0.011	<0.011	0.014 J
MW-109	10/03/95	2.50	18	59	<3.1	<0.012	<0.012	<0.012	0.013 J
MW-109	10/03/95	5.00	<16	<66	<4.3	<0.016	<0.016	<0.016	0.019 J
MW-109	10/03/95	7.50	<15	<61	<3.9	0.033 J	0.024 J	<0.015	0.081 J
MW-109	10/03/95	10.00	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
MW-109	10/03/95	12.50	<12	<48	<3.1	<0.012	0.015 J	<0.012	0.044 J
MW-110	09/20/95	1.00	16	<42	<2.7	<0.010	<0.010	<0.010	<0.010
MW-110	09/20/95	2.50	620	780	940	<0.011	0.68 E	0.084 E	1.4 E
MW-110	09/20/95	4.00	2200	290	2400	<0.22 E	3.0 E	0.57 JE	7.2 E
MW-110	09/20/95	12.50	2000	450	2700 E	0.056 JE	1.6 E	0.42 E	3.7 E
MW-110	09/20/95	14.00	4500	1100	930	0.028 E	1.0 E	0.21 E	1.5 E
MW-111	09/20/95	1.00	<11	<43	2.9 J	<0.011	<0.011	<0.011	<0.011
MW-111	09/20/95	3.50	<11	<44	<2.9	<0.011	<0.011	<0.011	<0.011
MW-112	09/19/95	1.00	270	180	5.8 J	<0.011	<0.011	<0.011	0.014 J
MW-112	09/19/95	3.50	1800	1300	30	0.023 J	0.037 J	0.044 J	0.029 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-112	09/19/95	6.00	2600	1700	91	0.29	0.12 J	0.17	0.14
MW-112	09/19/95	8.50	590	430	<3.8	0.029 J	<0.015	<0.015	<0.015
MW-113	09/19/95	1.00	1100	330	3600	4.9 JE	47 E	41 E	250 E
MW-113	09/19/95	3.50	1100	330	5600 E	17 E	94 E	55 E	470 E
MW-114	09/19/95	1.00	1200	630	45	<0.011	<0.011	<0.011	0.038 J
MW-114	09/19/95	3.50	16000	18000	120	0.021 J	0.14	0.18	1.1
MW-115	09/19/95	1.00	1100	1000	7.1 J	<0.012	<0.012	0.029 J	<0.012
MW-115	09/19/95	3.50	36000 E	20000 E	270	0.14	0.97	1.4	5.9
MW-115	09/19/95	7.50	140	160	<3.3	<0.013	<0.013	<0.013	<0.013
MW-115	09/19/95	10.00	14	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-115	09/19/95	12.50	620	400	<3.3	<0.013	<0.013	<0.013	<0.013
MW-116	09/19/95	1.00	1200	790	78	<0.011	0.071 J	0.024 J	0.21
MW-116	09/19/95	3.50	970	670	66	<0.013	0.057 J	0.019 J	0.21
MW-117	09/19/95	1.00	640	420	39	0.029 J	0.042 J	0.036 J	0.15
MW-117	09/19/95	5.00	16000	13000	370 J	0.74 E	1.6 E	0.74 E	2.4 E
MW-118	09/20/95	1.00	<13	<52	5.2 J	0.10 J	0.082 J	<0.013	0.077 J
MW-118	09/20/95	4.50	1600	220	4000 E	44	130 E	1.3 JE	85
MW-118	09/20/95	7.50	26	<40	6.8 J	0.42	0.032 J	<0.010	0.077 J
MW-118	09/20/95	12.50	17	54	<3.2	0.025 J	0.013 J	0.028 J	0.024 J
MW-119	09/20/95	2.50	510	2000	<2.7	0.012 J	<0.011	<0.011	0.012 J
MW-119	09/20/95	3.50	2500	3200	14 J	<0.013	0.13 J	0.034 J	0.24
MW-121	10/03/95	7.00	3400	1700	10000	<0.22 E	22 E	1.4 JE	37 E
MW-121	10/03/95	10.00	1400	740	800	<0.11 E	0.75 JE	<0.11 E	2.8 E
MW-121	10/03/95	13.00	34	<49	79	<0.012	0.078 J	<0.012	0.26
MW-121	10/03/95	18.50	200	110	23 J	<0.011	0.026 J	<0.011	0.081 J
MW-121	12/26/95	1.50	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
MW-121	12/26/95	5.50	550	<46	4300	<0.23 E	4.4 E	<0.23 E	17 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-122	09/25/95	7.00	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
MW-122	09/26/95	10.00	<13	53	<3.3	<0.013	<0.013	<0.013	<0.013
MW-122	09/26/95	13.00	<12	<48	<3.1	<0.012	<0.012	<0.012	0.013 J
MW-125	10/04/95	1.00	52	57	<3.0	<0.011	<0.011	<0.011	<0.011
MW-125	10/04/95	3.00	1400	2300	67	<0.012	0.20	0.28	0.73
MW-130	10/05/95	1.00	60 E	61 E	7.4 J	0.098 J	0.41	0.031 J	0.75
MW-130	10/05/95	3.00	3600 E	890 E	6200 E	13 E	150 E	3.1 JE	550 E
MW-133	10/04/95	1.00	53	140	<3.0	<0.011	<0.011	<0.011	<0.011
MW-133	10/04/95	3.00	990	480	<3.1	<0.012	<0.012	<0.012	0.024 J
MW-133	10/04/95	5.00	120000 E	27000 E	230	0.18 J	1.7	0.24 J	2.4
MW-133	10/04/95	7.50	<12 E	<49 E	<3.2	<0.012	<0.012	<0.012	<0.012
MW-133	10/04/95	12.50	<13 E	<52 E	<3.4	<0.013	<0.013	<0.013	<0.013
MW-135	11/10/95	1.00	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
MW-135	11/10/95	5.00	66	250	<2.7	<0.011	<0.011	<0.011	<0.011
MW-136	11/09/95	1.00	52	220	<2.9	<0.011	<0.011	<0.011	<0.011
MW-136	11/09/95	4.50	92	100	3.4 J	<0.011	<0.011	<0.011	<0.011
MW-137	12/18/95	3.50	<11	<43	<2.8	<0.011	<0.011	<0.011	0.015 J
MW-137	12/18/95	5.00	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-137	12/18/95	7.50	<14	<54	<3.5	<0.014	<0.014	<0.014	<0.014
MW-137	12/18/95	10.00	15	<54	<3.5	<0.014	<0.014	<0.014	<0.014
MW-137	12/18/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-138	12/19/95	3.50	<12	97	<3.1	<0.012	<0.012	<0.012	<0.012
MW-138	12/19/95	5.00	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-138	12/19/95	7.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-138	12/19/95	10.00	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
MW-138	12/19/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-139	12/19/95	1.00	87	300	<3.1	<0.012	<0.012	0.016 J	0.020 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-139	12/19/95	3.50	220	450	<3.9	<0.015	<0.015	<0.015	<0.015
MW-139	12/19/95	5.00	<14	<56	<3.6	<0.014	<0.014	<0.014	<0.014
MW-139	12/19/95	7.50	<14	<54	<3.5	<0.014	<0.014	<0.014	0.016 J
MW-139	12/19/95	10.00	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-139	12/19/95	12.50	33	120	<3.4	<0.013	<0.013	<0.013	<0.013
SB-101	09/27/95	1.00	2000 E	820 E	210	<0.011	0.79	0.25	1.1
SB-101	09/27/95	4.00	1100 E	290 E	1700 E	<0.012	5.0 E	1.6 E	3.9 E
SB-102	09/28/95	1.00	5700	2000	330	0.023 JE	0.26 E	0.069 JE	1.0 E
SB-102	09/28/95	2.50	2600	240	57	<0.014	0.023 J	<0.014	0.045 J
SB-103	09/28/95	1.00	2300	380	740	0.090 JE	3.8 E	0.81 E	5.5 E
SB-103	09/28/95	3.50	5100	280	3400	1.3 JE	20 E	5.0 E	15 E
SB-104	09/28/95	1.00	2400 E	1900 E	1600	0.27 JE	10 E	2.2 E	16 E
SB-104	09/28/95	3.50	3900 E	580 E	1000	0.060 JE	3.6 E	0.66 E	3.6 E
SB-104	09/28/95	5.00	260 E	<53 E	210	0.55 JE	2.1 E	0.45 JE	1.4 E
SB-104	09/28/95	6.50	450 E	51 E	3600	4.1 JE	17 E	6.9 JE	15 E
SB-104A	11/09/95	9.00	<12	<48	28 J	0.23	0.16	0.049 J	0.25
SB-104A	11/09/95	11.50	<12	<47	3.6 J	<0.012	<0.012	<0.012	<0.012
SB-104A	11/09/95	14.00	<12	<49	3.9 J	0.040 J	<0.012	<0.012	<0.012
SB-105	09/28/95	1.00	<11 E	<45 E	<2.9	<0.011	<0.011	<0.011	<0.011
SB-105	09/28/95	3.50	<12 E	<47 E	4.1 J	<0.012	<0.012	<0.012	<0.012
SB-106	09/21/95	1.00	3700	300	2100	1.6 JE	3.5 E	2.5 E	5.5 E
SB-106	09/21/95	3.00	11000	880	3900	8.7 E	8.2 E	8.3 E	11 E
SB-107	09/28/95	1.00	470 E	280 E	4.3 J	<0.012	<0.012	<0.012	<0.012
SB-107	09/28/95	3.50	34 E	<51 E	8.0 J	<0.013	0.015 J	<0.013	0.028 J
SB-108	09/28/95	2.50	5800	390	2300	<0.23 JE	1.4 JE	<0.23 JE	4.5 E
SB-108	09/28/95	3.50	2700	180	760	<0.012 E	0.41 E	0.033 JE	1.4 E
SB-108	09/28/95	5.00	1600	260	420	0.053 JE	0.39 E	0.16 JE	1.7 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-108	09/28/95	6.50	27	<54	570	0.10 JE	0.55 E	0.18 JE	1.8 E
SB-108	09/28/95	8.00	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-109	09/27/95	4.00	960 E	310 E	8.0 J	<0.012	0.014 J	<0.012	0.041 J
SB-109	09/28/95	1.00	6000 E	2800 E	600	<0.11	0.83 JE	0.24 JE	1.4 E
SB-110	09/27/95	1.00	2100 E	690 E	11 J	0.060 J	0.083 J	0.020 J	0.41
SB-110	09/27/95	3.50	<13 E	<52 E	8.2 J	<0.013	0.046 J	0.029 J	0.32
SB-111	09/27/95	2.50	17 E	<49 E	<3.2	<0.012	<0.012	<0.012	<0.012
SB-111	09/27/95	4.00	<15 E	<62 E	<4.0	0.024 J	<0.015	0.033 J	0.026 J
SB-112	09/27/95	1.00	7900 E	9900 E	680	0.14 JE	0.86 JE	0.16 JE	3.0 E
SB-112	09/27/95	3.50	26 E	<48 E	<3.1	0.035 J	0.013 J	0.043 J	0.049 J
SB-113	10/02/95	1.00	<11	<42	<2.7	<0.011	<0.011	<0.011	<0.011
SB-113	10/02/95	5.50	13	<48	<3.1	<0.012	<0.012	<0.012	0.013 J
SB-114	10/05/95	1.00	25000 E	12000 E	25 J	<0.022	<0.022	<0.022	0.097 J
SB-114	10/05/95	2.50	41 E	73 E	<4.1	<0.016	<0.016	<0.016	<0.016
SB-115	10/18/95	1.00	5900	6400	<2.9	<0.011	<0.011	<0.011	<0.011
SB-115	10/18/95	2.50	920	930	110	<0.012	0.071 J	0.016 J	0.15
SB-116	09/25/95	1.00	2000	3000	<2.7	<0.011	<0.011	<0.011	<0.011
SB-116	09/25/95	2.50	260	450	<2.8	<0.011	<0.011	<0.011	<0.011
SB-117	10/03/95	1.00	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
SB-117	11/15/95	4.40	1300	1200	<4.0	<0.015	<0.015	<0.015	<0.015
SB-118	09/27/95	1.00	1000	1900	<2.8	<0.011	<0.011	0.012 J	0.012 J
SB-118	09/27/95	5.00	1800	270	6300 E	<1.1 E	12 E	1.5 JE	25 E
SB-119	10/06/95	1.00	330 E	280 E	4.1 J	<0.011	<0.011	<0.011	0.014 J
SB-119	10/06/95	3.00	670 E	240 E	2700	<0.22 E	5.8 E	<0.22 E	13 E
SB-120	10/19/95	1.00	160	160	<2.8	<0.011	<0.011	<0.011	<0.011
SB-120	10/19/95	2.50	870	68	7.2 J	<0.011	<0.011	<0.011	<0.011
SB-121	09/21/95	1.00	1800	11000	120	<0.011	0.076 J	0.015 J	0.38

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-121	09/21/95	3.00	4100	16000	750	<0.11 E	0.74 JE	0.22 JE	2.5 E
SB-122	09/22/95	1.00	380	1100	29 J	0.034 J	<0.012	<0.012	0.043 J
SB-122	09/22/95	5.00	1900 E	1600 E	8.2 J	<0.014	0.019 J	<0.014	0.15
SB-123	09/21/95	1.00	3600	3800	53	<0.011	0.036 J	<0.011	0.10 J
SB-123	09/21/95	2.50	9900 E	3300 E	730	0.19 E	0.66 E	0.33 E	1.5 E
SB-124	09/21/95	1.00	25	81	5.6 J	<0.011	<0.011	<0.011	0.029 J
SB-124	09/21/95	3.00	<11	<44	<2.9	<0.011	<0.011	<0.011	<0.011
SB-125	09/22/95	1.00	<13	<50	<3.3	<0.013	<0.013	<0.013	0.016 J
SB-125	09/22/95	2.50	1300	140	4300	0.58 JE	7.6 E	2.0 JE	10 E
SB-126	09/25/95	1.00	23000 E	8200 E	400	3.2	1.9	0.77 J	3.2
SB-126	09/25/95	3.00	13000 E	6400 E	430	4.9	2.2	0.52 J	5.3
SB-127	09/25/95	1.00	43	130	3.8 J	<0.011	<0.011	<0.011	<0.011
SB-127	09/25/95	4.50	17	55	7.6 J	<0.011	<0.011	<0.011	<0.011
SB-128	09/25/95	1.00	<11	<43	4.4 J	<0.011	<0.011	<0.011	<0.011
SB-128	09/25/95	4.00	44	<45	9.1 J	<0.011	<0.011	<0.011	<0.011
SB-129	09/22/95	1.00	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
SB-129	09/22/95	3.00	4600	550	<3.0	<0.011	<0.011	<0.011	<0.011
SB-130	09/28/95	2.50	2900	75	1600	1.8 JE	8.6 E	0.80 JE	40 E
SB-130	09/28/95	4.00	1900 E	450 E	2900	4.0 E	23 E	0.59 JE	89 E
SB-131	09/28/95	1.00	85 E	59 E	44	0.045 J	0.57	0.021 J	2.3
SB-131	09/28/95	4.00	420 E	110 E	17 J	2.3	0.16	0.040 J	0.29
SB-132	10/06/95	1.00	190	360	<3.2	<0.012	<0.012	<0.012	<0.012
SB-132	10/06/95	4.00	<13	<53	<3.5	<0.013	0.017 J	<0.013	0.047 J
SB-133	09/28/95	1.00	<11 E	<46 E	<3.0	<0.011	<0.011	<0.011	<0.011
SB-133	09/28/95	3.50	<13 E	<50 E	<3.3	<0.013	<0.013	<0.013	<0.013
SB-134	09/28/95	1.00	170 E	510 E	170	<0.011	0.35	<0.011	1.8
SB-134	09/28/95	3.00	1700 E	750 E	3600 E	<0.21 E	6.5 E	<0.21 E	13 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-135	09/28/95	1.00	<11 E	<43 E	16 J	<0.011	<0.011	<0.011	0.037 J
SB-135	09/28/95	5.00	<11 E	<45 E	<3.0	<0.011	<0.011	<0.011	<0.011
SB-136	09/21/95	1.00	110	320	3.5 J	<0.011	<0.011	<0.011	<0.011
SB-136	09/21/95	3.00	4600	4100	4.1 J	<0.013	<0.013	<0.013	<0.013
SB-137	09/28/95	1.00	400	67	4.0 J	<0.012	<0.012	<0.012	0.016 J
SB-137	09/28/95	3.00	13	<49	4.2 J	<0.012	<0.012	<0.012	0.018 J
SB-138	09/21/95	1.00	700	170	85	0.17	1.5	0.11 J	0.65
SB-138	09/21/95	3.00	3100	540	4200	15 E	65 E	8.7 E	90 E
SB-139	09/27/95	1.00	39	200	<2.8	<0.011	<0.011	<0.011	0.034 J
SB-139	09/27/95	3.50	520 E	150 E	400 J	<0.22	2.5	<0.22	12
SB-140	09/27/95	1.00	<11	45	<2.8	<0.011	<0.011	<0.011	<0.011
SB-140	09/27/95	3.50	<11	<44	<2.9	<0.011	<0.011	<0.011	0.026 J
SB-141	10/05/95	1.00	94 E	410 E	<3.0	<0.011	<0.011	0.014 J	0.018 J
SB-141	10/05/95	4.00	<11 E	<44 E	<2.8	<0.011	<0.011	<0.011	<0.011
SB-141	10/05/95	9.00	<13 E	<53 E	<3.4	0.048 J	0.022 J	0.20	0.14
SB-142	10/03/95	1.00	71	250	<2.8	<0.011	<0.011	<0.011	<0.011
SB-142	10/03/95	3.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-143	09/22/95	1.00	890	710	57	0.030 J	1.7	0.086 J	2.3
SB-143	09/22/95	2.50	41	<51	5.4 J	0.020 J	0.051 J	<0.013	0.021 J
SB-144	11/02/95	1.00	1300	1100	<3.0	<0.012	<0.012	<0.012	<0.012
SB-144	11/02/95	3.00	3900	2600	300	<0.011	<0.011	<0.011	0.18
SB-145	09/26/95	7.00	<12	<47	<3.1	<0.012	<0.012	<0.012	<0.012
SB-145	10/02/95	1.00	16	200	<3.1	<0.012	<0.012	<0.012	<0.012
SB-146A	11/02/95	1.00	69	<52	11 J	<0.013	<0.013	<0.013	<0.013
SB-146A	11/02/95	3.50	810	120	61	<0.012	<0.012	<0.012	0.066 J
SB-146A	11/02/95	5.00	2400	380	220	<0.013	0.075 JE	<0.013	0.43 E
SB-147	09/26/95	1.00	40	110	<2.8	<0.011	<0.011	<0.011	<0.011

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-147	09/26/95	3.50	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
SB-148	09/25/95	1.00	140	280	---	---	---	---	---
SB-148	09/25/95	2.50	130	120	---	---	---	---	---
SB-148	09/25/95	4.00	180	110	---	---	---	---	---
SB-149	09/25/95	1.00	120	310	<2.7	<0.011	<0.011	<0.011	0.018 J
SB-149	09/25/95	4.00	<11	<45	<3.0	<0.011	<0.011	<0.011	0.028 J
SB-149	09/25/95	5.50	32	62	<3.0	<0.011	<0.011	<0.011	<0.011
SB-150	09/25/95	1.00	2200 E	1500 E	650	0.37 JE	2.2 E	1.1 E	3.4 E
SB-150	09/25/95	3.00	4500	1400	5200	0.81 JE	22 E	6.0 E	22 E
SB-151	09/27/95	2.50	160 E	120 E	11 J	<0.011	0.017 J	<0.011	0.059 J
SB-151	09/27/95	6.50	39	86	<3.0	<0.011	<0.011	<0.011	<0.011
SB-153	09/27/95	1.50	66 E	390 E	14 J	<0.012	0.078 J	<0.012	0.38
SB-153	09/27/95	3.50	360 E	1300 E	290	<0.012	3.2	0.067 J	17
SB-154	09/21/95	1.00	74	140	18 J	0.041 J	0.046 J	0.021 J	0.16
SB-154	09/21/95	5.00	44	53	96	0.084 J	0.17	0.15	0.27
SB-155	09/21/95	1.00	<12	<49	73	<0.012	0.15 E	0.095 JE	0.21 E
SB-155	09/21/95	3.00	<13	<52	<3.4	0.022 J	<0.013	<0.013	<0.013
SB-156	10/03/95	1.00	200 E	450 E	14 J	0.018 J	0.061 J	0.085 J	0.55
SB-156	10/03/95	2.50	<11	<44	<2.9	<0.011	<0.011	<0.011	0.020 J
SB-156	10/03/95	5.00	<12	<48	<3.1	<0.012	0.017 J	0.013 J	0.039 J
SB-156	10/03/95	6.50	<13	<50	4.6 J	<0.013	0.015 J	<0.013	0.074 J
SB-156	10/03/95	8.00	<12	<47	<3.1	<0.012	<0.012	<0.012	<0.012
SB-157	09/21/95	1.00	35	78	6.0 J	<0.011	0.019 J	<0.011	0.16
SB-157	09/21/95	3.00	8000	850	12000	3.5 JE	160 E	13 E	590 E
SB-158	10/03/95	1.00	42	120	<2.8	<0.011	<0.011	<0.011	<0.011
SB-158	10/03/95	3.50	<11	<45	<3.0	<0.011	<0.011	<0.011	<0.011
SB-159	09/22/95	1.00	180	250	1700	0.066 JE	1.9 E	0.37 E	5.1 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 5-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-159	09/22/95	4.00	110	120	4100	3.6 E	23 E	3.0 E	40 E
SB-161	09/25/95	1.00	58	160	3.9 J	0.017 J	<0.011	<0.011	<0.011
SB-161	09/25/95	5.00	8900	2100	6000	9.7 JE	74 E	8.0 JE	140 E
SB-162	09/26/95	1.00	230	130	13 J	<0.011	<0.011	<0.011	<0.011
SB-162	09/26/95	3.00	280	500	4.4 J	<0.012	<0.012	<0.012	<0.012
SB-163	09/26/95	1.00	74	100	<2.9	<0.011	<0.011	<0.011	<0.011
SB-163	09/26/95	3.50	<11	<45	<3.0	<0.011	<0.011	<0.011	<0.011
SB-164	09/25/95	1.00	18	<45	120	<0.011	0.21 E	0.042 JE	0.44 E
SB-164	09/25/95	3.00	170	140	5.1 J	<0.011	<0.011	<0.011	<0.011
SB-164	09/25/95	5.00	35	96	<3.4	<0.013	<0.013	0.026 J	<0.013
SB-165	09/25/95	1.00	1200	1600	160	0.015 J	0.058 J	0.040 J	0.25
SB-165	09/25/95	2.50	150	220	4.5 J	<0.012	<0.012	<0.012	<0.012
SB-165	09/25/95	4.00	200	310	<3.2	<0.012	0.021 J	<0.012	<0.012
SB-166	09/25/95	1.00	64	140	<2.9	<0.011	<0.011	<0.011	<0.011
SB-166	09/25/95	2.50	79	200	<2.8	<0.011	<0.011	<0.011	<0.011
SB-166	09/25/95	4.00	650	800	21 J	0.035 J	0.029 J	0.046 J	0.14
SB-167	09/22/95	1.00	<10	<42	<2.7	<0.010	<0.010	<0.010	0.019 J
SB-167	09/22/95	3.00	250	380	<2.8	<0.011	<0.011	<0.011	<0.011
SB-168	09/25/95	1.00	14	<42	<2.7	<0.011	<0.011	<0.011	<0.011
SB-168	09/25/95	3.00	<12	<48	4.7 J	<0.012	<0.012	0.048 J	0.026 J
SB-169	10/06/95	1.00	54	220	<2.9	<0.011	<0.011	<0.011	0.014 J
SB-169	10/25/95	5.00	<10	<41	<2.7	<0.010	<0.010	<0.010	<0.010
SB-170	09/20/95	1.00	320	780	<3.2	<0.012	<0.012	0.015 J	0.033 J
SB-171	09/20/95	2.00	46	63	<3.1	<0.012	<0.012	<0.012	<0.012
SB-171	09/20/95	3.00	1100	2000	<6.0	<0.023	<0.023	<0.023	<0.023
SB-172	10/04/95	2.50	240 E	340 E	<3.1	<0.012	<0.012	<0.012	<0.012
SB-172	10/04/95	4.00	<17	94	<4.3	<0.017	<0.017	<0.017	<0.017 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-173	09/20/95	4.00	8400	20000	<4.4	<0.017	<0.017	<0.017	0.036 J
SB-173	09/20/95	4.50	2200	1400	43	<0.012	<0.012	<0.012	<0.012
SB-174	09/20/95	4.00	350	710	<3.3	<0.013	<0.013	<0.013	<0.013
SB-174	09/20/95	5.00	450	390	30 J	<0.013	<0.013	<0.013	0.056 J
SB-175	09/26/95	2.50	18	84	<2.8	<0.011	<0.011	<0.011	<0.011
SB-176	10/31/95	1.00	130	380	<3.0	<0.011	<0.011	<0.011	<0.011
SB-176	10/31/95	5.00	1600	1700	16 J	<0.012	<0.012	<0.012	<0.012
SB-177	10/31/95	1.00	110	210	<2.9	<0.011	<0.011	<0.011	<0.011
SB-177	10/31/95	3.00	250	420	6.7 J	<0.013	<0.013	<0.013	<0.013
SB-178	10/31/95	1.00	140	380	6.2 J	<0.014	<0.014	<0.014	<0.014
SB-178	10/31/95	6.00	15000	7100	2600 JE	78 E	63 E	350 E	310 E
SB-179	10/31/95	1.00	130	450	<2.9	<0.011	<0.011	<0.011	<0.011
SB-179	10/31/95	4.50	310	310	230	1.2 E	2.0 E	1.4 E	11 E
SB-180	10/31/95	1.00	440	440	5.5 J	<0.011	<0.011	<0.011	<0.011
SB-180	10/31/95	4.50	2200 E	2500 E	230	0.14	2.2	0.17	13
SB-180	10/31/95	7.50	1600	1600	35	<0.011	0.037 J	<0.011	0.19
SB-181	10/31/95	1.00	200	540	21 J	0.015 J	0.58	<0.011	1.5
SB-181	10/31/95	7.50	13000	5800	52	<0.012	0.035 J	<0.012	0.11 J
SB-182	11/01/95	1.00	220	440	<2.8	<0.011	<0.011	<0.011	<0.011
SB-182	11/01/95	5.00	760	1000	17 J	<0.012	0.027 J	<0.012	0.077 J
SS-101	09/12/95	0.00	150	300	<2.9	<0.011	<0.011	<0.011	<0.011
SS-102	09/12/95	0.00	210	1300	<2.8	<0.011	<0.011	<0.011	<0.011
SS-103	09/12/95	0.00	1800	3100	840	0.061	0.37	0.22	2.1
SS-104	09/12/95	0.00	300	1200	21 J	<0.012	0.052 J	0.020 J	0.12
SS-105	09/12/95	0.00	88	250	4.1 J	<0.011	<0.011	<0.011	0.051 J
SS-109	09/12/95	0.00	230	1100	<2.7	---	---	---	---
SS-110	09/12/95	0.00	89	300	<2.7	---	---	---	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SS-111	09/12/95	0.00	81	310	---	---	---	---	---
SS-112	09/12/95	0.00	87	370	<2.7	---	---	---	---
SS-113	09/12/95	0.00	110	390	---	---	---	---	---
SS-114	09/12/95	0.00	190	1300	---	---	---	---	---
SS-LEVEE1	09/26/95	0.00	28	110	<2.8	<0.011	<0.011	<0.011	<0.011
SS-LEVEE2	09/26/95	0.00	70	220	<3.4	<0.013	<0.013	<0.013	0.014 J
SSMW-109	09/26/95	0.00	130	650	78	<0.019	<0.019	<0.019	<0.019

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-201	10/11/95	2.50	33	110	<2.8	<0.011	<0.011	<0.011	<0.011
MW-201	10/11/95	7.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
MW-201	10/11/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-204	10/09/95	2.50	<12	<49	11 J	<0.012	0.020 J	<0.012	0.043 J
MW-204	10/09/95	7.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
MW-204	10/09/95	12.50	<15	<60	<3.9	<0.015	<0.015	<0.015	<0.015
SB-201	09/29/95	2.50	100	200	<3.1	<0.012	<0.012	<0.012	<0.012
SB-201	09/29/95	7.50	<12	<49	3.9 J	<0.012	<0.012	<0.012	0.036 J
SB-201	09/29/95	12.50	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
SB-202	10/02/95	2.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-202	10/02/95	7.50	<12	<49	6.1 J	<0.012	<0.012	<0.012	<0.012
SB-202	10/02/95	12.50	<10	<42	2.8 J	<0.010	<0.010	<0.010	<0.010
SB-203	10/02/95	2.50	<13	<53	<3.4	<0.013	<0.013	<0.013	<0.013
SB-203	10/02/95	7.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-203	10/02/95	12.50	<11	<44	<2.9	<0.011	<0.011	<0.011	<0.011
SB-204	09/29/95	2.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-204	09/29/95	7.50	<12	87	<3.2	<0.012	<0.012	<0.012	<0.012
SB-204	09/29/95	12.50	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
SB-205	09/29/95	2.50	<13	<50	<3.3	<0.013	<0.013	<0.013	0.016 J
SB-205	09/29/95	7.50	<11	<46	<3.0	<0.011	<0.011	<0.011	<0.011
SB-205	09/29/95	12.50	<11	<43	<2.8	<0.011	<0.011	<0.011	<0.011
SB-206	11/09/95	2.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-206	11/09/95	7.50	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
SB-206	11/09/95	12.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-207	11/08/95	2.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-207	11/08/95	7.50	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
SB-207	11/08/95	12.50	25	270	<3.1	0.18	0.017 J	0.076 J	0.021 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6--8

TPH and BTEX in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-208	11/15/95	2.50	39	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-209	10/20/95	1.00	5100	2200	32 J	<0.014	<0.014	<0.014	<0.014
SB-209	10/20/95	7.50	<16	<63	<4.1	<0.016	<0.016	<0.016	<0.016
SB-209	10/20/95	10.00	<14	<56	<3.6	<0.014	<0.014	<0.014	<0.014
SB-209	11/07/95	12.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-210	09/19/95	2.50	390	270	<3.0	<0.011	<0.011	<0.011	<0.011
SB-210	09/19/95	7.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-210	09/19/95	12.50	150	<53	4.0 J	<0.013	<0.013	<0.013	<0.013
SB-211	09/19/95	2.50	24000	5300	530 E	0.020 JE	0.23 E	0.058 JE	0.94 E
SB-211	11/02/95	7.50	<15	<59	<3.8	<0.015	<0.015	<0.015	<0.015
SB-211	11/02/95	12.50	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
SB-213	09/14/95	2.50	60	<53	<3.4	<0.013	<0.013	<0.013	<0.013
SB-213	09/15/95	6.00	31	<53	46	<0.013	<0.013	<0.013	0.062 J
SB-214	11/16/95	2.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-214	11/16/95	7.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-214	11/16/95	12.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-215	11/17/95	2.50	16	<52	8.5 J	<0.013	<0.013	<0.013	<0.013
SB-215	11/17/95	7.50	<11	<45	<3.0	<0.011	<0.011	<0.011	<0.011
SB-215	11/17/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-217	11/17/95	2.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-217	11/17/95	7.50	<10	<42	<2.7	<0.010	<0.010	<0.010	<0.010
SB-219	11/17/95	2.50	4800	<48	62	<0.012	<0.012	<0.012	<0.012
SB-219	11/17/95	7.50	<12	<47	8.5 J	<0.012	<0.012	<0.012	<0.012
SB-219	11/17/95	10.00	200	<47	59	<0.012	<0.012	<0.012	<0.012
SB-220	11/17/95	2.50	3900	<47	550	<0.012	0.15 E	<0.012	0.39 E
SB-220	11/17/95	7.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
SB-220	11/17/95	12.50	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-8

TPH and BTEX in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-221	11/02/95	2.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
SB-221	11/02/95	5.00	860	<49	82	<0.012	<0.012	<0.012	<0.012
SB-221	11/02/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-222	11/07/95	2.50	<11	53	<3.0	<0.011	<0.011	<0.011	<0.011
SB-222	11/07/95	7.50	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
SB-222	11/07/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-223	11/07/95	2.50	36	310	<3.1	<0.012	<0.012	<0.012	<0.012
SB-223	11/07/95	7.50	<12 E	<47 E	<3.1	<0.012	<0.012	<0.012	<0.012
SB-223	11/08/95	12.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-224	10/20/95	2.50	39	160	<3.2	<0.012	<0.012	<0.012	<0.012
SB-224	10/20/95	7.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-224	10/20/95	12.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-225	09/13/95	2.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-225	09/13/95	7.50	<13	<51	<3.3	<0.013	<0.013	0.030 J	0.017 J
SB-226	11/13/95	2.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-226	11/13/95	7.50	<13	<53	<3.5	<0.013	<0.013	<0.013	<0.013
SB-226	11/14/95	9.50	<13	<50	4.7 J	<0.013	<0.013	<0.013	<0.013
SB-227	10/27/95	2.50	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
SB-227	10/27/95	7.50	<14	<55	<3.6	<0.014	<0.014	<0.014	<0.014
SB-227	10/27/95	12.50	<13	<53	<3.4	<0.013	<0.013	<0.013	<0.013
SB-228	09/15/95	2.50	17	<59	<3.8	<0.015	<0.015	<0.015	<0.015
SB-228	09/15/95	7.50	<14	<54	7.8 J	<0.014	<0.014	<0.014	<0.014
SB-228	09/15/95	12.50	<14	<54	<3.5	<0.014	<0.014	<0.014	<0.014
SB-229	09/18/95	2.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-229	09/18/95	7.50	<14	<56	<3.6	<0.014	<0.014	0.017 J	<0.014
SB-229	09/18/95	12.50	<13	<53	<3.4	<0.013	<0.013	<0.013	<0.013
SB-230	09/14/95	2.50	<14	<54	<3.5	<0.014	<0.014	<0.014	<0.014

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–8

TPH and BTEX in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	TPH (as motor oil) (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-230	09/14/95	7.50	<12	<48	<3.1	<0.012	<0.012	0.015 J	<0.012
SB-231	10/27/95	2.50	<13	<53	<3.5	<0.013	<0.013	<0.013	<0.013
SB-231	10/27/95	7.50	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-231	10/27/95	12.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
SB-232	11/02/95	2.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
SB-232	11/02/95	7.50	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
SB-232	11/02/95	12.50	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
SB-233	10/27/95	4.00	<12	<47	<3.0	<0.012	<0.012	<0.012	<0.012
SB-233	10/27/95	7.50	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
SB-233	10/27/95	12.50	<11	<45	<2.9	<0.011	<0.011	<0.011	<0.011
SS-201	09/12/95	0.00	10000 E	1800 E	14 J	<0.011	0.11	<0.011	0.64
SS-202	09/11/95	0.00	340	1400	<3.1	<0.012	<0.012	<0.012	<0.012
SS-204	09/11/95	0.00	1700	6500	<3.1	<0.012	<0.012	<0.012	<0.012
SS-205	09/11/95	0.00	1200	4800	<2.8	<0.011	<0.011	<0.011	<0.011
SS-206	09/11/95	0.00	310	620	<3.3	<0.013	<0.013	0.016 J	0.025 J
SS-207	09/11/95	0.00	33	240	<3.4	<0.013	<0.013	<0.013	<0.013
SS-209	09/11/95	0.00	670	2600	<3.3	<0.013	<0.013	<0.013	<0.013
SS-210	09/13/95	0.00	25	58	3.6 J	0.017 J	<0.013	0.016 J	0.015 J
SS-211	09/11/95	0.00	200	1000	<2.9	<0.011	<0.011	0.013 J	<0.011
SS-212	09/11/95	0.00	420	1600	<3.1	<0.012	<0.012	<0.012	<0.012
SS-213	09/11/95	0.00	690	2300	19 J	0.030 J	0.11 J	0.041 J	1.6 J
T-203	10/13/95	4.30	4500	640	150	<0.013	0.11	<0.013	0.29
T-203	10/13/95	8.00	830	160	77	<0.013	0.028	<0.013	0.14
T-204	10/13/95	8.00	130	<49	8.2	<0.012	<0.012	<0.012	<0.012

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
BSS-101	01/09/96	0.00	<22 E	400 E	<1100 E	18000 E	22000 E	2800 E	<1800 E
BSS-102	01/09/96	0.00	2000	1100	<1700	39000	76000	3600	250000
BSS-103	01/09/96	0.00	410 E	220 E	<1200 E	9200 E	11000 E	1300 E	47000 E
BSS-104	10/02/95	0.50	<31 E	<62 E	<31 E	21 JE	<150 E	540 E	5700 JE
BSS-105	10/18/95	2.50	<13 E	<25 E	<13 E	68 E	270 E	54 E	2200 E
BSS-105	10/18/95	5.00	<12	<25	<12	<2.5	5.4 J	<1.2	29 J
BSS-105	10/18/95	7.50	<11	<21	<11	<2.1	<1.1	<1.1	5.9 J
BSS-106	10/26/95	1.50	<25	<51	<25	<5.1	<2.5	<2.5	210
BSS-107A	11/01/95	0.40	2300 EJ	<690 E	<350 E	13000 EJ	39000 E	1200 E	160000 E
BSS-108	10/26/95	1.40	<19	<37	<19	<3.7	11 J	<1.9	33 J
BSS-109	10/26/95	0.80	<13	<26	<13	<2.6	10 J	<1.3	22 J
BSS-110	10/18/95	1.00	<12	<23	<12	<2.3	3.1 J	<1.2	7.4 J
BSS-110	10/18/95	2.50	<11	<23	<11	29	39	<1.1	330
BSS-110	10/18/95	5.00	25 J	<22	<11	<2.2	12	<1.1	<4.4
BSS-110	10/18/95	7.50	<11	<21	<11	<2.1	2.1 J	<1.1	6.5 J
BSS-111	10/26/95	0.30	<30	<60	<30	<6.0	<3.0	<3.0	<12
BSS-201	01/09/96	0.00	<14 E	<27 E	<14 E	<2.7 E	21 E	<2.8 E	130 E
MW-105	12/19/95	1.00	<9.1	<18	<9.1	3.4 J	71	21	250
MW-105	12/19/95	3.50	<9.2	<18	<9.2	<1.8	6.6 J	<0.92	<3.7
MW-105	12/19/95	5.00	<9.3	<19	<9.3	<1.9	21	<0.93	200
MW-105	12/19/95	7.50	<9.8	<20	<9.8	<2.0	2.3 J	<0.98	4.2 J
MW-105	12/19/95	10.00	<9.6	<19	<9.6	<1.9	<0.96	<0.96	<3.8
MW-105	12/19/95	12.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.1
MW-106	12/18/95	1.00	<9.1	<18	<9.1	<1.8	33	6.8 J	84
MW-106	12/18/95	3.50	<9.0	<18	<9.0	2.2 J	39	8.6 J	130
MW-106	12/18/95	5.00	<9.5	<19	<9.5	<1.9	4.9 J	<0.95	<3.8
MW-106	12/18/95	7.50	<10	<20	<10	<2.0	2.5 J	<1.0	4.6 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
BSS-101	01/09/96	0.00	<440 E	550 E	<110 E	<220 E	210 E	<110 E	<220 E
BSS-102	01/09/96	0.00	<690	1000	14000	<350	330	<170	<350
BSS-103	01/09/96	0.00	<250 E	240 E	<120 E	<250 E	<120 E	<120 E	<250 E
BSS-104	10/02/95	0.50	7500 E	1700 E	14000 E	<310 E	310 JE	300 JE	<310 E
BSS-105	10/18/95	2.50	270 E	<1.3 E	670 E	<2.5 E	<1.3 E	<1.3 E	<2.5 E
BSS-105	10/18/95	5.00	3.3 J	<1.2	6.2 J	<2.5	<1.2	<1.2	<2.5
BSS-105	10/18/95	7.50	1.3 J	<1.1	3.0 J	<2.1	<1.1	<1.1	<2.1
BSS-106	10/26/95	1.50	200	<2.5	210	<5.1	<2.5	8.2 J	<5.1
BSS-107A	11/01/95	0.40	<700 E	<700 E	<700 E	<69 E	<35 E	<69 E	<69 E
BSS-108	10/26/95	1.40	49	<1.9	53	<3.7	<1.9	12 J	<3.7
BSS-109	10/26/95	0.80	6.4 J	<1.3	5.9 J	<2.6	<1.3	<1.3	<2.6
BSS-110	10/18/95	1.00	<1.2	<1.2	<1.2	<2.3	<1.2	<1.2	<2.3
BSS-110	10/18/95	2.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3
BSS-110	10/18/95	5.00	<1.1	<1.1	6.4 J	<2.2	<1.1	<1.1	<2.2
BSS-110	10/18/95	7.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
BSS-111	10/26/95	0.30	780	<3.0	860	<6.0	71	110	<6.0
BSS-201	01/09/96	0.00	150 E	<1.4 E	210 E	<2.7 E	<1.4 E	58 E	4.1 E
MW-105	12/19/95	1.00	230	130	210	320	140	240	<1.8
MW-105	12/19/95	3.50	<0.92	2.7 J	6.6 J	6.1 J	2.3 J	5.5 J	<1.8
MW-105	12/19/95	5.00	<0.93	<0.93	37	11 J	<0.93	12	<1.9
MW-105	12/19/95	7.50	2.3 J	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0
MW-105	12/19/95	10.00	11	<0.96	8.3 J	<1.9	<0.96	<0.96	<1.9
MW-105	12/19/95	12.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
MW-106	12/18/95	1.00	78	39	59	85	39	70	6.8 J
MW-106	12/18/95	3.50	130	72	90	120	57	110	11 J
MW-106	12/18/95	5.00	6.5 J	1.1 J	4.6 J	4.8 J	1.3 J	3.9 J	<1.9
MW-106	12/18/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
BSS-101	01/09/96	0.00	1300 E	<110 E
BSS-102	01/09/96	0.00	<350	<170
BSS-103	01/09/96	0.00	<250 E	<120 E
BSS-104	10/02/95	0.50	<310 E	250 E
BSS-105	10/18/95	2.50	<2.5 E	<1.3 E
BSS-105	10/18/95	5.00	<2.5	<1.2
BSS-105	10/18/95	7.50	<2.1	<1.1
BSS-106	10/26/95	1.50	<5.1	<2.5
BSS-107A	11/01/95	0.40	1800 E	<35 E
BSS-108	10/26/95	1.40	<3.7	<1.9
BSS-109	10/26/95	0.80	<2.6	<1.3
BSS-110	10/18/95	1.00	<2.3	<1.2
BSS-110	10/18/95	2.50	<2.3	<1.1
BSS-110	10/18/95	5.00	<2.2	<1.1
BSS-110	10/18/95	7.50	<2.1	<1.1
BSS-111	10/26/95	0.30	<6.0	<3.0
BSS-201	01/09/96	0.00	130 E	89 E
MW-105	12/19/95	1.00	340	320
MW-105	12/19/95	3.50	9.0 J	6.1 J
MW-105	12/19/95	5.00	<1.9	9.3
MW-105	12/19/95	7.50	<2.0	<0.98
MW-105	12/19/95	10.00	<1.9	<0.96
MW-105	12/19/95	12.50	<2.1	<1.0
MW-106	12/18/95	1.00	92	88
MW-106	12/18/95	3.50	130	130
MW-106	12/18/95	5.00	6.7 J	3.6 J
MW-106	12/18/95	7.50	<2.0	<1.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-106	12/18/95	10.00	<9.7	<19	<9.7	<1.9	1.9 J	<0.97	<3.9
MW-106	12/18/95	12.50	<10	<20	<10	<2.0	4.2 J	<1.0	<4.0
MW-107	12/18/95	1.00	<9.1	<18	<9.1	<1.8	20	2.8 J	<3.6
MW-107	12/18/95	3.50	<9.7	<19	<9.7	<1.9	2.1 J	<0.97	<3.9
MW-107	12/18/95	5.00	<9.7	<19	<9.7	<1.9	1.7 J	<0.97	<3.9
MW-107	12/18/95	7.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<4.0
MW-107	12/18/95	12.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<4.0
MW-108	09/26/95	1.00	<10	<20	<10	<2.0	10	<1.0	22 J
MW-108	09/26/95	2.50	<12	<25	<12	<2.5	26	3.6 J	94 J
MW-108	09/26/95	7.50	<16	<31	<16	<3.1	3.8 J	<1.6	14 J
MW-108	09/26/95	10.00	<12	<25	<12	<2.5	6.7 J	<1.2	43 J
MW-108	09/26/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<8.7
MW-109	10/03/95	1.00	<9.0	<18	<9.0	<1.8	1.3 J	<0.90	<3.6
MW-109	10/03/95	2.50	<10	<20	<10	<2.0	2.6 J	<1.0	8.4 J
MW-109	10/03/95	5.00	<14	<27	<14	<2.7	4.8 J	<1.4	<5.5
MW-109	10/03/95	7.50	<13	<25	<13	<2.5	<1.3	<1.3	<5.1
MW-109	10/03/95	10.00	<11	<21	<11	<2.1	<1.1	<1.1	<4.3
MW-109	10/03/95	12.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<4.0
MW-110	09/20/95	1.00	<8.7	<17	<8.7	<1.7	2.9 J	<0.87	13 J
MW-110	09/20/95	2.50	<9.2	<18	<9.2	<1.8	<0.92	<0.92	7.7 J
MW-110	09/20/95	4.00	3500 E	390 E	<470 E	1300 E	1100 E	<47 E	<190 E
MW-110	09/20/95	12.50	6200 E	700 E	<97 E	1500 E	1700 E	600 E	4900 E
MW-110	09/20/95	14.00	3500 E	390 E	<99 E	890 E	1100 E	420 E	2800 E
MW-111	09/20/95	1.00	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<3.6
MW-111	09/20/95	3.50	<9.2	<18	<9.2	<1.8	<0.92	<0.92	<3.7
MW-112	09/19/95	1.00	170	<18	<9.2	260	430	150	1400 X
MW-112	09/19/95	3.50	16 J	<18	<9.1	160	250	150	1000 X

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-106	12/18/95	10.00	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
MW-106	12/18/95	12.50	1.4 J	<1.0	1.5 J	<2.0	<1.0	4.8 J	<2.0
MW-107	12/18/95	1.00	40	17	32	43	18	31	2.8 J
MW-107	12/18/95	3.50	<0.97	<0.97	1.0 J	<1.9	<0.97	<0.97	<1.9
MW-107	12/18/95	5.00	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
MW-107	12/18/95	7.50	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<2.0
MW-107	12/18/95	12.50	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<2.0
MW-108	09/26/95	1.00	14	<1.0	14	<2.0	1.7 J	6.3 J	<2.0
MW-108	09/26/95	2.50	75	19	42	<2.5	16	27 J	<2.5
MW-108	09/26/95	7.50	2.3 J	<1.6	<1.6	<3.1	<1.6	<1.6	<3.1
MW-108	09/26/95	10.00	1.9 J	<1.2	<1.2	<2.5	<1.2	<1.2	<2.5
MW-108	09/26/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
MW-109	10/03/95	1.00	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
MW-109	10/03/95	2.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-109	10/03/95	5.00	<1.4	<1.4	<1.4	<2.7	<1.4	1.5 J	<2.7
MW-109	10/03/95	7.50	<1.3	<1.3	<1.3	<2.5	<1.3	<1.3	<2.5
MW-109	10/03/95	10.00	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
MW-109	10/03/95	12.50	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<2.0
MW-110	09/20/95	1.00	<0.87	<0.87	2.1 J	<1.7	<0.87	<0.87	<1.7
MW-110	09/20/95	2.50	15	<0.92	9.2	<1.8	<0.92	2.3 J	<1.8
MW-110	09/20/95	4.00	100 JE	<47 E	<47 E	<94 E	<47 E	<47 E	<94 E
MW-110	09/20/95	12.50	<19 E	<9.7 E	<9.7 E	<19 E	<9.7 E	14 JE	<38 E
MW-110	09/20/95	14.00	<9.9 E	46 JE	<9.9 E	<20 E	<9.9 E	<9.9 E	<20 E
MW-111	09/20/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
MW-111	09/20/95	3.50	<0.92	<0.92	<0.92	<1.8	<0.92	<0.92	<1.8
MW-112	09/19/95	1.00	<0.92	43	<9.2	<1.8	19	24 J	<1.8
MW-112	09/19/95	3.50	<0.91	98	<4.6	<1.8	17	35 J	<1.8

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-106	12/18/95	10.00	<1.9	<0.97
MW-106	12/18/95	12.50	<2.0	<1.0
MW-107	12/18/95	1.00	57	50
MW-107	12/18/95	3.50	<1.9	<0.97
MW-107	12/18/95	5.00	<1.9	<0.97
MW-107	12/18/95	7.50	<2.0	<0.99
MW-107	12/18/95	12.50	<2.0	<0.99
MW-108	09/26/95	1.00	<2.0	<1.0
MW-108	09/26/95	2.50	<2.5	<1.2
MW-108	09/26/95	7.50	<3.1	<1.6
MW-108	09/26/95	10.00	<2.5	<1.2
MW-108	09/26/95	12.50	<2.2	<1.1
MW-109	10/03/95	1.00	<1.8	<0.90
MW-109	10/03/95	2.50	<2.0	<1.0
MW-109	10/03/95	5.00	<2.7	<1.4
MW-109	10/03/95	7.50	<2.5	<1.3
MW-109	10/03/95	10.00	<2.1	<1.1
MW-109	10/03/95	12.50	<2.0	<0.99
MW-110	09/20/95	1.00	<1.7	1.9 J
MW-110	09/20/95	2.50	8.9 J	5.0 J
MW-110	09/20/95	4.00	<94 E	<47 E
MW-110	09/20/95	12.50	<38 E	<19 E
MW-110	09/20/95	14.00	43 JE	<9.9 E
MW-111	09/20/95	1.00	<1.8	<0.89
MW-111	09/20/95	3.50	<1.8	<0.92
MW-112	09/19/95	1.00	42	28
MW-112	09/19/95	3.50	29	<0.91

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-112	09/19/95	6.00	31 JE	63 JE	<10 E	490 E	1200 E	320 E	6200 XE
MW-112	09/19/95	8.50	<12	<25	<12	9.0 J	31	<1.2	160 X
MW-113	09/19/95	1.00	4500	110 J	<9.3	260	460	69	1100 X
MW-113	09/19/95	3.50	12000	530	<9.4	670	1400	180	3100 X
MW-114	09/19/95	1.00	<9.2	<18	<9.2	290	8.2 J	320	270 X
MW-114	09/19/95	3.50	150 E	<22 E	<11 E	820 E	1700 E	100 E	8800 XE
MW-115	09/19/95	1.00	<9.7 E	<19 E	<9.7 E	280 E	760 E	300 E	390 XE
MW-115	09/19/95	3.50	590 E	52 JE	<10 E	1400 E	3800 E	780 E	18000 XE
MW-115	09/19/95	7.50	<11	<21	<11	19 J	22	<2.1	95 X
MW-115	09/19/95	10.00	<10	<21	<10	6.8 J	19	<1.0	100 X
MW-115	09/19/95	12.50	<11	<21	<11	88	200	42 J	920 X
MW-116	09/19/95	1.00	<9.4 E	33 JE	<9.4 E	340 E	530 E	300 E	2200 XE
MW-116	09/19/95	3.50	<10	27	<10	220	280	170	1200 X
MW-117	09/19/95	1.00	<9.4	<19	<9.4	15 J	8.2 J	10 J	66 X
MW-117	09/19/95	5.00	580 E	140 E	<11 E	2000 E	3900 E	950 E	14000 XE
MW-118	09/20/95	1.00	120	<22	<11	4.5 J	17	7.1 J	73
MW-118	09/20/95	4.50	6900 E	310 E	<110 E	1000 E	1800 E	<26 E	4600 E
MW-118	09/20/95	7.50	16 J	<17	<8.4	4.5 J	9.7	<0.84	<3.4
MW-118	09/20/95	12.50	21 J	<20	<10	2.8 J	4.5 J	<1.0	<4.1
MW-119	09/20/95	2.50	21 J	<18	<8.8	89	140	33	<3.5
MW-119	09/20/95	3.50	<11 E	<22 E	<11 E	88 E	65 E	33 E	530 E
MW-121	10/03/95	7.00	4700 E	550 E	<190 E	910 E	1000 E	<19 E	3100 E
MW-121	10/03/95	10.00	2700 E	<180 E	<91 E	350 E	420 E	<9.1 E	<37 E
MW-121	10/03/95	13.00	29 J	<21	<10	<2.1	3.6 J	<1.0	15 J
MW-121	10/03/95	18.50	170	<19	<9.6	25	17	3.4 J	94
MW-121	12/26/95	1.50	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<3.6
MW-121	12/26/95	5.50	<9.6	<19	<9.6	<1.9	22	<0.96	<3.8

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-112	09/19/95	6.00	<1.0 E	120 E	<20 E	<2.0 E	27 E	41 JE	<2.0 E
MW-112	09/19/95	8.50	<1.2	<1.2	<2.4	<2.5	<1.2	<2.5	<2.5
MW-113	09/19/95	1.00	<0.93	70	<46	<1.9	11	22 J	<1.9
MW-113	09/19/95	3.50	<47	<47	<47	<95	<47	<47	<95
MW-114	09/19/95	1.00	<0.92	<4.6	<4.6	<1.8	17	15 J	<1.8
MW-114	09/19/95	3.50	<55 E	270 E	<55 E	<110 E	<55 E	<55 E	34 E
MW-115	09/19/95	1.00	<0.97 E	120 E	<9.7 E	<1.9 E	29 E	44 JE	<1.9 E
MW-115	09/19/95	3.50	<50 E	400 E	<50 E	<100 E	<50 E	62 E	<100 E
MW-115	09/19/95	7.50	<1.1	<1.1	<1.1	<2.1	<1.1	<2.1	<2.1
MW-115	09/19/95	10.00	<1.0	<1.0	<1.0	<2.1	<1.0	<2.0	<2.1
MW-115	09/19/95	12.50	<1.1	16	<1.1	<2.1	1.3 J	2.8 J	<2.1
MW-116	09/19/95	1.00	220 JE	140 E	<19 E	<1.9 E	39 E	31 JE	<1.9 E
MW-116	09/19/95	3.50	120 J	31	140	<2.1	26	19 J	<2.1
MW-117	09/19/95	1.00	140	<0.94	<0.94	<1.9	25	17 J	<1.9
MW-117	09/19/95	5.00	<55 E	460 E	2700 E	<100 E	400 E	120 E	<100 E
MW-118	09/20/95	1.00	<1.1	<1.1	<1.1	<2.2	1.9 J	4.5 J	<2.2
MW-118	09/20/95	4.50	<11 E	56 JE	<11 E	<22 E	<11 E	<11 E	<22 E
MW-118	09/20/95	7.50	<0.84	<0.84	<0.84	<1.7	<0.84	<0.84	<1.7
MW-118	09/20/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-119	09/20/95	2.50	<0.88	<8.8	180	<1.8	23	34	<1.8
MW-119	09/20/95	3.50	<11 E	<11 E	490 E	<2.2 E	68 E	64 E	12 JE
MW-121	10/03/95	7.00	<19 E	<19 E	530 E	<37 E	19 E	19 E	<37 E
MW-121	10/03/95	10.00	<9.1 E	<9.1 E	200 E	<18 E	99 E	140 E	<18 E
MW-121	10/03/95	13.00	<1.0	<1.0	2.5 J	<2.1	<1.0	<1.0	<2.1
MW-121	10/03/95	18.50	<0.96	<0.96	17	<1.9	<0.96	1.3 J	<1.9
MW-121	12/26/95	1.50	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
MW-121	12/26/95	5.50	<0.96	<0.96	5.4 J	<1.9	<0.96	<0.96	<1.9

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 3-9
PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-112	09/19/95	6.00	42 E	<1.0 E
MW-112	09/19/95	8.50	<2.5	<1.2
MW-113	09/19/95	1.00	17 J	3.4 J
MW-113	09/19/95	3.50	<95	<47
MW-114	09/19/95	1.00	23	<0.92
MW-114	09/19/95	3.50	77 E	<1.1 E
MW-115	09/19/95	1.00	55 E	<0.97 E
MW-115	09/19/95	3.50	<50 E	<50 E
MW-115	09/19/95	7.50	<2.1	<1.1
MW-115	09/19/95	10.00	<2.1	<1.0
MW-115	09/19/95	12.50	<2.1	<1.1
MW-116	09/19/95	1.00	35 E	<0.94 E
MW-116	09/19/95	3.50	<2.1	<1.0
MW-117	09/19/95	1.00	<1.9	<0.94
MW-117	09/19/95	5.00	<100 E	<55 E
MW-118	09/20/95	1.00	<2.2	<1.1
MW-118	09/20/95	4.50	<22 E	<11 E
MW-118	09/20/95	7.50	<1.7	<0.84
MW-118	09/20/95	12.50	<2.0	<1.0
MW-119	09/20/95	2.50	18	<0.88
MW-119	09/20/95	3.50	<2.2 E	<1.1 E
MW-121	10/03/95	7.00	<37 E	<19 E
MW-121	10/03/95	10.00	<18 E	27 E
MW-121	10/03/95	13.00	<2.1	<1.0
MW-121	10/03/95	18.50	<1.9	3.7 J
MW-121	12/26/95	1.50	<1.8	<0.90
MW-121	12/26/95	5.50	2.7 J	<0.96

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-122	09/25/95	7.00	<10	<21	<10	<2.1	<1.0	<1.0	<8.3
MW-122	09/26/95	10.00	<11	<21	<11	<2.1	<1.1	<1.1	<8.5
MW-122	09/26/95	13.00	<10	<20	<10	<2.0	<1.0	<1.0	<8.0
MW-125	10/04/95	1.00	40 J	<19	<9.6	<1.9	1.5 J	<0.96	<3.8
MW-125	10/04/95	3.00	<10	<20	<10	7.3 J	2.4 J	11	32 J
MW-130	10/05/95	1.00	30 J	<18	<9.2	<1.8	6.8 J	<0.92	18 J
MW-130	10/05/95	3.00	35500 E	1500 JE	<92 E	1700 E	3150 E	240 E	7500 E
MW-133	10/04/95	1.00	<9.5	<19	<9.5	<1.9	5.8 J	<0.95	22 J
MW-133	10/04/95	3.00	64 JE	<20 E	<10 E	260 E	610 E	190 E	2000 E
MW-133	10/04/95	5.00	430 E	240 E	<200 E	5100 E	9800 E	2800 E	29000 E
MW-133	10/04/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-133	10/04/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
MW-135	11/10/95	1.00	<9.0	<18	<9.0	<1.8	<1.8	<0.90	<7.2
MW-135	11/10/95	5.00	<8.8	<18	<8.8	<1.8	9.6 J	<0.88	<7.0
MW-136	11/09/95	1.00	<9.2	<18	<9.2	<1.8	6.5 J	2.9 J	19 J
MW-136	11/09/95	4.50	<9.5	<19	<9.5	10 J	14 J	4.6 J	51 J
MW-137	12/18/95	3.50	<9.0	<18	<9.0	<1.8	4.9 J	<0.90	10 J
MW-137	12/18/95	5.00	<9.9	<20	<9.9	<2.0	3.5 J	<0.99	<4.0
MW-137	12/18/95	7.50	<11	<23	<11	<2.3	6.2 J	<1.1	12 J
MW-137	12/18/95	10.00	<11	<23	48 J	15 J	4.4 J	<1.1	16 J
MW-137	12/18/95	12.50	<10	<20	31 J	15 J	<1.0	<1.0	<4.1
MW-138	12/19/95	3.50	<9.8	<20	<9.8	<2.0	24	<0.98	<3.9
MW-138	12/19/95	5.00	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-138	12/19/95	7.50	<10	<20	<10	8.6 J	100	26	<4.1
MW-138	12/19/95	10.00	<11	<21	<11	<2.1	<1.1	<1.1	<4.2
MW-138	12/19/95	12.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-139	12/19/95	1.00	<9.9	<20	<9.9	<2.0	17	1.6 J	39 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-122	09/25/95	7.00	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
MW-122	09/26/95	10.00	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
MW-122	09/26/95	13.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-125	10/04/95	1.00	<0.96	<0.96	1.5 J	<1.9	<0.96	<0.96	<1.9
MW-125	10/04/95	3.00	52	<1.0	44	<2.0	<1.0	<1.0	<2.0
MW-130	10/05/95	1.00	<0.92	<0.92	12	<1.8	<0.92	<0.92	<1.8
MW-130	10/05/95	3.00	<9.2 E	<9.2 E	790 E	<18 E	<9.2 E	31 E	<18 E
MW-133	10/04/95	1.00	<0.95	<0.95	8.8 J	<1.9	<0.95	<0.95	<1.9
MW-133	10/04/95	3.00	<1.0 E	<1.0 E	300 E	<2.0 E	<1.0 E	<1.0 E	<2.0 E
MW-133	10/04/95	5.00	2700 E	<20 E	4200 E	<42 E	<20 E	<20 E	<42 E
MW-133	10/04/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-133	10/04/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
MW-135	11/10/95	1.00	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
MW-135	11/10/95	5.00	24	<0.88	12	<1.8	<0.88	4.6 J	<1.8
MW-136	11/09/95	1.00	23	<0.92	13	<1.8	2.8 J	3.9 J	<1.8
MW-136	11/09/95	4.50	<0.95	<0.95	19	<1.9	<0.95	4.5 J	<1.9
MW-137	12/18/95	3.50	9.1	3.8 J	7.5 J	13 J	4.4 J	9.8	<1.8
MW-137	12/18/95	5.00	7.1 J	3.0 J	5.7 J	8.1 J	3.0 J	5.5 J	<2.0
MW-137	12/18/95	7.50	<1.1	<1.1	2.9 J	<2.3	<1.1	1.8 J	<2.3
MW-137	12/18/95	10.00	12	4.5 J	5.7 J	<2.3	4.0 J	9.3 J	<2.3
MW-137	12/18/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-138	12/19/95	3.50	45	9.2 J	27	38	12	24	<2.0
MW-138	12/19/95	5.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-138	12/19/95	7.50	200	85	130	120	62	150	<2.0
MW-138	12/19/95	10.00	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
MW-138	12/19/95	12.50	1.3 J	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-139	12/19/95	1.00	28	<0.99	21	13 J	14	22	<2.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-122	09/25/95	7.00	<2.1	<1.0
MW-122	09/26/95	10.00	<2.1	<1.1
MW-122	09/26/95	13.00	<2.0	<1.0
MW-125	10/04/95	1.00	<1.9	<0.96
MW-125	10/04/95	3.00	35	<1.0
MW-130	10/05/95	1.00	<1.8	<0.92
MW-130	10/05/95	3.00	210 E	<9.2 E
MW-133	10/04/95	1.00	3.0 J	3.0 J
MW-133	10/04/95	3.00	170 E	<1.0 E
MW-133	10/04/95	5.00	1600 E	<20 E
MW-133	10/04/95	7.50	<2.0	<1.0
MW-133	10/04/95	12.50	<2.2	<1.1
MW-135	11/10/95	1.00	<1.8	<0.90
MW-135	11/10/95	5.00	<1.8	9.3
MW-136	11/09/95	1.00	<1.8	9.3
MW-136	11/09/95	4.50	<1.9	5.1 J
MW-137	12/18/95	3.50	12 J	11
MW-137	12/18/95	5.00	8.9 J	7.4 J
MW-137	12/18/95	7.50	2.7 J	1.2 J
MW-137	12/18/95	10.00	<2.3	12
MW-137	12/18/95	12.50	<2.0	<1.0
MW-138	12/19/95	3.50	37	28
MW-138	12/19/95	5.00	<2.0	<1.0
MW-138	12/19/95	7.50	170	140
MW-138	12/19/95	10.00	<2.1	<1.1
MW-138	12/19/95	12.50	<2.0	<1.0
MW-139	12/19/95	1.00	33	17

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-139	12/19/95	3.50	<12	<25	<12	4.1 J	11 J	1.7 J	36 J
MW-139	12/19/95	5.00	<12	<23	<12	<2.3	6.6 J	<1.2	54
MW-139	12/19/95	7.50	<11	<23	<11	<2.3	<1.1	<1.1	<4.5
MW-139	12/19/95	10.00	<10	<20	<10	<2.0	<1.0	<1.0	<4.0
MW-139	12/19/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
SB-101	09/27/95	1.00	130 E	<18 E	22 JE	140 E	250 E	82 E	490 JE
SB-101	09/27/95	4.00	5100 E	94 JE	960 E	1400 E	3700 E	560 E	3200 E
SB-102	09/28/95	1.00	370 E	53 JE	100 E	340 E	610 E	160 JE	2800 E
SB-102	09/28/95	2.50	1100 JE	<24 E	<240 E	2200 E	3900 E	150 JE	<95 E
SB-103	09/28/95	1.00	300 E	78 JE	<9.5 E	510 E	720 E	150 JE	<74 E
SB-103	09/28/95	3.50	2800 E	260 E	340 JE	1900 E	3200 E	430 E	11000 E
SB-104	09/28/95	1.00	1100 JE	76 JE	68 JE	190 E	270 E	100 JE	1300 E
SB-104	09/28/95	3.50	5900 E	550 E	370 E	1500 E	1700 E	230 E	<77 E
SB-104	09/28/95	5.00	1300 E	32 J	<11	33	53	<1.1	45
SB-104	09/28/95	6.50	660	<20	<9.9	32	74	14	100
SB-104A	11/09/95	9.00	620	26 J	<9.9	15 J	41	7.0 J	130
SB-104A	11/09/95	11.50	23 J	<19	<9.7	<1.9	3.2 J	<0.97	<7.8
SB-104A	11/09/95	14.00	85 J	<21	<10	<2.1	5.8 J	<1.0	18 J
SB-105	09/28/95	1.00	<9.4	<19	<9.4	<1.9	<0.94	<0.94	<3.7
SB-105	09/28/95	3.50	<9.8	<20	<9.8	<2.0	<0.98	<0.98	<3.9
SB-106	09/21/95	1.00	24 JE	130 JE	210 JE	1300 E	1800 E	60 JE	<79 E
SB-106	09/21/95	3.00	34 JE	584 E	<480 E	3800 E	4600 E	240 JE	<390 E
SB-107	09/28/95	1.00	<10	<20	<10	2.4 J	22	1.2 J	110
SB-107	09/28/95	3.50	15 JE	<21 E	<11 E	140 E	99 E	51 JE	990 E
SB-108	09/28/95	2.50	1700 JE	<19 JE	430 E	730 E	1600 E	210 E	<76 E
SB-108	09/28/95	3.50	2700 E	<20 E	1300 JE	3300 E	7100 E	1100 E	8000 E
SB-108	09/28/95	5.00	1500 E	<26	110 J	200	360 E	34	400

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-139	12/19/95	3.50	44	<1.2	26	<2.5 J	5.5 J	<1.2	<2.5
MW-139	12/19/95	5.00	2.8 J	<1.2	<1.2	<2.3	<1.2	3.1 J	<2.3
MW-139	12/19/95	7.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3
MW-139	12/19/95	10.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-139	12/19/95	12.50	2.4 J	<1.1	1.6 J	<2.2	<1.1	<1.1	<2.2
SB-101	09/27/95	1.00	200 JE	<0.90 E	250 E	<1.8 E	<0.90 E	130 JE	6.7 JE
SB-101	09/27/95	4.00	1100 JE	110 JE	360 E	<1.9 E	<0.97 E	170 JE	8.6 JE
SB-102	09/28/95	1.00	<45 E	<45 E	56 E	<1.8 E	93 E	76 JE	<1.8 E
SB-102	09/28/95	2.50	<24 E	70 JE	<24 E	<2.4 E	<24 E	<24 E	<2.4 E
SB-103	09/28/95	1.00	<19 E	<19 E	1000 E	<1.9 E	<19 E	110 JE	<37 E
SB-103	09/28/95	3.50	<18 E	<18 E	510 E	<1.8 E	<18 E	<18 E	<1.8 E
SB-104	09/28/95	1.00	210 E	<0.93 E	470 E	<1.9 E	<19 E	<0.93 E	<1.9 E
SB-104	09/28/95	3.50	<19 E	130 JE	230 E	<38 E	<19 E	<19 E	<38 E
SB-104	09/28/95	5.00	<1.1	<1.1	3.9 J	<2.2	<1.1	<1.1	<2.2
SB-104	09/28/95	6.50	<0.99	3.3 J	11	<2.0	1.5	<0.99	<2.0
SB-104A	11/09/95	9.00	17	<0.99	18	<2.0	<0.99	1.6 J	<2.0
SB-104A	11/09/95	11.50	2.3 J	<0.97	3.1 J	<1.9	<0.97	<0.97	<1.9
SB-104A	11/09/95	14.00	5.4 J	<1.0	4.5 J	<2.1	<1.0	1.3 J	<2.1
SB-105	09/28/95	1.00	6.7 J	2.1 J	4.1 J	<1.9	1.6 J	4.3 J	<1.9
SB-105	09/28/95	3.50	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0
SB-106	09/21/95	1.00	<9.8 E	<9.8 E	<9.8 E	<20 E	<9.8 E	<9.8 E	<20 E
SB-106	09/21/95	3.00	<48 E	<48 E	<48 E	<97 E	<48 E	<48 E	<97 E
SB-107	09/28/95	1.00	<1.0	<1.0	82	<2.0	<1.0	2.8 J	<2.0
SB-107	09/28/95	3.50	220 JE	<1.1 E	380 E	<2.1 E	19 E	<1.1 E	<2.1 E
SB-108	09/28/95	2.50	<19 E	<19 E	180 JE	<38 E	<19 E	<19 E	<1.9 E
SB-108	09/28/95	3.50	<50 E	<50 E	700 E	<39 E	43 JE	59 E	<2.0 E
SB-108	09/28/95	5.00	<1.3	12 J	42	<2.6	1.9 J	2.4 J	<2.6

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9
PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-139	12/19/95	3.50	<2.5	15
MW-139	12/19/95	5.00	<2.3	1.6 J
MW-139	12/19/95	7.50	<2.3	<1.1
MW-139	12/19/95	10.00	<2.0	<1.0
MW-139	12/19/95	12.50	<2.2	<1.1
SB-101	09/27/95	1.00	<1.8 E	150 E
SB-101	09/27/95	4.00	<1.9 E	110 E
SB-102	09/28/95	1.00	<1.8 E	170 E
SB-102	09/28/95	2.50	<48 E	<24 E
SB-103	09/28/95	1.00	320 JE	<19 E
SB-103	09/28/95	3.50	<36 E	<18 E
SB-104	09/28/95	1.00	210 E	<0.93 E
SB-104	09/28/95	3.50	<38 E	30 JE
SB-104	09/28/95	5.00	<2.2	<1.1
SB-104	09/28/95	6.50	<2.0	<0.99
SB-104A	11/09/95	9.00	<2.0	<0.99
SB-104A	11/09/95	11.50	<1.9	<0.97
SB-104A	11/09/95	14.00	<2.1	<1.0
SB-105	09/28/95	1.00	2.7 J	4.3 J
SB-105	09/28/95	3.50	<2.0	<0.98
SB-106	09/21/95	1.00	<20 E	<9.8 E
SB-106	09/21/95	3.00	<97 E	<48 E
SB-107	09/28/95	1.00	<2.0	<1.0
SB-107	09/28/95	3.50	<2.1 E	<1.1 E
SB-108	09/28/95	2.50	<38 E	<19 E
SB-108	09/28/95	3.50	<39 E	<20 E
SB-108	09/28/95	5.00	<2.6	<1.3

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9
PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-108	09/28/95	6.50	<11	<23	<11	<2.3	8.8 J	<1.1	17 J
SB-108	09/28/95	8.00	<10	<20	<10	<2.0	3.0 J	<1.0	5.3 J
SB-109	09/27/95	4.00	550 E	80 JE	<9.8 E	1300 E	2600 E	590 E	7800 E
SB-109	09/28/95	1.00	11 JE	<950 E	<470 E	1500 E	1700 E	680 E	8500 E
SB-110	09/27/95	1.00	140 E	<19 E	<9.6 E	220 E	280 E	<0.96 E	1300 JE
SB-110	09/27/95	3.50	<11	<22	<11	<2.2	2.4 J	<1.1	<8.7
SB-111	09/27/95	2.50	<10	<21	<10	10 J	15	14	66 J
SB-111	09/27/95	4.00	5600	<26	19 J	<2.6	3.1 J	<1.3	<10
SB-112	09/27/95	1.00	840 E	120 JE	<9.4 E	1100 E	1700 E	230 E	6900 E
SB-112	09/27/95	3.50	76 J	<20	<9.9	30	43	<0.99	99
SB-113	10/02/95	1.00	<8.8	<18	<8.8	<1.8	7.7 J	1.2 J	66
SB-113	10/02/95	5.50	<10	<20	<10	<2.0	2.8 J	<1.0	11 J
SB-114	10/05/95	1.00	400 E	138 JE	<910 E	4800 E	8200 E	1200 E	59000 E
SB-114	10/05/95	2.50	<13	<26	<13	4.7 J	13	<1.3	70
SB-115	10/18/95	1.00	97 E	<19 E	<9.4 E	370 E	1000 E	100 E	4900 E
SB-115	10/18/95	2.50	13 JE	58 JE	<9.7 E	370 JE	890 E	110 E	3600 E
SB-116	09/25/95	1.00	<8.8	<18	<8.8	<1.8	18	5.0 J	86
SB-116	09/25/95	2.50	<8.9	<18	<8.9	<1.8	16	3.2 J	60 J
SB-117	10/03/95	1.00	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<3.6
SB-117	11/15/95	4.40	<13	<26	<13	5.1 J	58	1.5 J	440
SB-118	09/27/95	1.00	<8.9	<18	<8.9	<1.8	15	5.5 J	110
SB-118	09/27/95	5.00	3800	450	<9.3	<38	220	<19	640
SB-119	10/06/95	1.00	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<3.6
SB-119	10/06/95	3.00	1700	310	<9.3	75	99	35	370
SB-120	10/19/95	1.00	<9.1	<18	<9.1	<1.8	<0.91	<0.91	<3.6
SB-120	10/19/95	2.50	2000	105 J	<9.2	110	<0.92	<0.92	<3.7
SB-121	09/21/95	1.00	<9.0	<18	<9.0	160	12 J	15 J	<3.6

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-108	09/28/95	6.50	<1.1	<1.1	1.4 J	<2.3	<1.1	<1.1	<2.3
SB-108	09/28/95	8.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-109	09/27/95	4.00	<20 E	<0.98 E	190 E	<2.0 E	<0.98 E	160 JE	<2.0 E
SB-109	09/28/95	1.00	<47 E	<47 E	2200 E	<95 E	<47 E	120 JE	6.1 JE
SB-110	09/27/95	1.00	<19 E	<0.96 E	63 E	<1.9 E	4.2 JE	6.4 JE	<1.9 E
SB-110	09/27/95	3.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-111	09/27/95	2.50	96	<1.0	80	<2.1	<1.0	15 J	<2.1
SB-111	09/27/95	4.00	1.5 J	<1.3	<1.3	<2.6	<1.3	1.7 J	<2.6
SB-112	09/27/95	1.00	970 E	<0.94 E	820 E	40 E	<19 E	420 JE	<1.9 E
SB-112	09/27/95	3.50	5.9 J	<0.99	7.3 J	<2.0	<0.99	<0.99	<2.0
SB-113	10/02/95	1.00	130	<0.88	65	<1.8	7.2 J	6.3 J	<1.8
SB-113	10/02/95	5.50	11	<1.0	3.8 J	<2.0	1.5 J	3.4 J	<2.0
SB-114	10/05/95	1.00	<91 E	<91 E	14000 E	<180 E	<91 E	<91 E	<180 E
SB-114	10/05/95	2.50	<1.3	<1.3	17	<2.6	<1.3	<1.3	<2.6
SB-115	10/18/95	1.00	380 E	<0.94 E	670 E	<1.9 E	<0.94 E	39 E	2.3 JE
SB-115	10/18/95	2.50	300 E	<0.97 E	630 E	<1.9 E	<0.97 E	35 E	<1.9 E
SB-116	09/25/95	1.00	<0.88	<0.88	86	<1.8	<0.88	34	<1.8
SB-116	09/25/95	2.50	<0.89	<0.89	43	<1.8	<0.89	<0.89	<1.8
SB-117	10/03/95	1.00	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
SB-117	11/15/95	4.40	<1.3	22	140	<2.6	5.3 J	5.8 J	<2.6
SB-118	09/27/95	1.00	30	<0.89	41	<1.8	2.7 J	4.2 J	<1.8
SB-118	09/27/95	5.00	61	<19	82	<38	<19	<19	<1.9
SB-119	10/06/95	1.00	12	<0.90	14	<1.8	<0.90	2.0 J	<1.8
SB-119	10/06/95	3.00	<0.93	<0.93	100	<1.9	9.1 J	10	<1.9
SB-120	10/19/95	1.00	25	<0.91	34	<1.8	2.3 J	<0.91	<1.8
SB-120	10/19/95	2.50	4.2 J	<0.92	7.1 J	<1.8	<0.92	<0.92	<1.8
SB-121	09/21/95	1.00	<0.90	11	43	<1.8	1.5 J	2.7 J	<1.8

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-108	09/28/95	6.50	<2.3	<1.1
SB-108	09/28/95	8.00	<2.0	<1.0
SB-109	09/27/95	4.00	<2.0 E	18 E
SB-109	09/28/95	1.00	<95 E	160 JE
SB-110	09/27/95	1.00	<1.9 E	11 E
SB-110	09/27/95	3.50	<2.2	<1.1
SB-111	09/27/95	2.50	<2.1	<1.0
SB-111	09/27/95	4.00	<2.6	<1.3
SB-112	09/27/95	1.00	<1.9 E	170 JE
SB-112	09/27/95	3.50	<2.0	<0.99
SB-113	10/02/95	1.00	<1.8	<0.88
SB-113	10/02/95	5.50	<2.0	1.4 J
SB-114	10/05/95	1.00	<180 E	<91 E
SB-114	10/05/95	2.50	<2.6	<1.3
SB-115	10/18/95	1.00	<1.9 E	<0.94 E
SB-115	10/18/95	2.50	<1.9 E	<0.97 E
SB-116	09/25/95	1.00	<1.8	<0.88
SB-116	09/25/95	2.50	5.4 J	75
SB-117	10/03/95	1.00	<1.8	<0.90
SB-117	11/15/95	4.40	<2.6	<1.3
SB-118	09/27/95	1.00	<1.8	6.9 J
SB-118	09/27/95	5.00	<38	<19
SB-119	10/06/95	1.00	<1.8	<0.90
SB-119	10/06/95	3.00	<1.9	<0.93
SB-120	10/19/95	1.00	<1.8	<0.91
SB-120	10/19/95	2.50	<1.8	<0.92
SB-121	09/21/95	1.00	22	1.4 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-121	09/21/95	3.00	150 E	<19 E	10 JE	430 E	380 E	31 JE	<19 E
SB-123	09/21/95	1.00	<8.9	<18	<8.9	4.5 J	21	7.6 J	130
SB-123	09/21/95	2.50	840 JE	<36 E	320 JE	3500 E	3500 E	170 JE	<14 E
SB-124	09/21/95	1.00	<8.8	<18	<8.8	45	88	14	270
SB-124	09/21/95	3.00	<9.2	<18	<9.2	<1.8	1.7 J	<0.92	<3.7
SB-126	09/25/95	1.00	230 E	140 JE	<510 E	1100 E	2200 E	900 E	14000 E
SB-126	09/25/95	3.00	5300 E	620 JE	<240 E	6800 E	11000 E	2500 E	45000 E
SB-127	09/25/95	1.00	<9.2	<18	<9.2	<1.8	<0.92	1.2 J	19 J
SB-127	09/25/95	4.50	<9.4	<19	<9.4	<1.9	<0.94	<0.94	<7.5
SB-128	09/25/95	1.00	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<7.1
SB-128	09/25/95	4.00	<9.5	<19	<9.5	<1.9	3.8 J	<0.95	23 J
SB-130	09/28/95	2.50	1700 JE	<23 JE	200 E	1100 E	1700 E	<23 E	<90 E
SB-130	09/28/95	4.00	4500 E	260 JE	140 E	1400 E	2400 E	<27 E	<110 E
SB-131	09/28/95	1.00	95 J	<20	<10	<2.0	9.4 J	<1.0	16 J
SB-131	09/28/95	4.00	3700 E	100 JE	190 E	700 E	1100 E	<22 E	4000 E
SB-132	10/06/95	1.00	<10 E	<20 E	<10 E	<2 E	6.2 EJ	<1.0 E	11 EJ
SB-132	10/06/95	4.00	<11	<22	<11	<2.2	<1.1	<1.1	<4.4
SB-133	09/28/95	1.00	<9.6	<19	<9.6	<1.9	<0.96	<0.96	<3.8
SB-133	09/28/95	3.50	<10	<21	<10	<2.1	5.9 J	<1.0	15 J
SB-134	09/28/95	1.00	89	<18	<8.8	5.6 J	7.1 J	3.2 J	90
SB-134	09/28/95	3.00	2100 E	<360 E	<180 E	460 E	430 E	<18 E	<71 E
SB-135	09/28/95	1.00	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<3.6
SB-135	09/28/95	5.00	<9.5	<19	<9.5	<1.9	1.4 J	<0.95	<3.8
SB-136	09/21/95	1.00	<9.1	<18	<9.1	2.2 J	22	15	<74
SB-136	09/21/95	3.00	22 E	79 E	99 E	820 E	1400 E	250 E	<88 E
SB-137	09/28/95	1.00	<9.8	<20	<9.8	<2.0	4.8 J	<0.98	48
SB-137	09/28/95	3.00	<10	<20	<10	<2.0	<1.0	<1.0	<4.1

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-121	09/21/95	3.00	<4.7 E	48 E	<4.7 E	<9.4 E	<4.7 E	7.3 JE	<9.4 E
SB-123	09/21/95	1.00	230	<0.89	210	<1.8	30	60	10 J
SB-123	09/21/95	2.50	<45 E	930 E	<18 E	<35 E	76 JE	93 JE	<35 E
SB-124	09/21/95	1.00	<0.88	<0.88	51	<1.8	2.6 J	5.3 J	<1.8
SB-124	09/21/95	3.00	<0.92	<0.92	<0.92	<1.8	<0.92	<0.92	<1.8
SB-126	09/25/95	1.00	2000 E	<51 E	4100 E	<100 E	<51 E	120 JE	<100 E
SB-126	09/25/95	3.00	3400 E	<24 E	5200 E	<48 E	85 JE	130 JE	<48 E
SB-127	09/25/95	1.00	16	<0.92	20	<1.8	2.2 J	3.8 J	<1.8
SB-127	09/25/95	4.50	<0.94	<0.94	2.3 J	<1.9	<0.94	<0.94	<1.9
SB-128	09/25/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-128	09/25/95	4.00	<0.95	<0.95	7.5 J	<1.9	<0.95	<0.95	<1.9
SB-130	09/28/95	2.50	<23 E	<23 E	<23 E	<2.3 E	<23 E	<23 E	<2.3 E
SB-130	09/28/95	4.00	<27 E	<27 E	230 JE	<2.8 E	23 E	<27 E	<2.8 E
SB-131	09/28/95	1.00	<1.0	<1.0	7.3 J	<2.0	1.2 J	<1.0	<2.0
SB-131	09/28/95	4.00	<22 E	<22 E	68 E	<2.2 E	<22 E	<22 E	<2.2 E
SB-132	10/06/95	1.00	3.5 EJ	<1.0 E	5.0 EJ	<2.0 E	<1.0 E	<1.0 E	<2.0 E
SB-132	10/06/95	4.00	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-133	09/28/95	1.00	<0.96	<0.96	<0.96	<1.9	<0.96	<0.96	<1.9
SB-133	09/28/95	3.50	<1.0	<1.0	2.6 J	<2.1	<1.0	<1.0	<2.1
SB-134	09/28/95	1.00	<0.88	<0.88	75	<1.8	8.6 J	<0.88	<1.8
SB-134	09/28/95	3.00	<18 E	<18 E	<18 E	<1.8 E	<18 E	<0.89 E	<1.8 E
SB-135	09/28/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-135	09/28/95	5.00	<0.95	<0.95	<0.95	<1.9	<0.95	<0.95	<1.9
SB-136	09/21/95	1.00	<0.91	<0.91	<0.91	27	10	12	<1.8
SB-136	09/21/95	3.00	<11 E	<11 E	<11 E	<22 E	57 E	80 E	<2. E
SB-137	09/28/95	1.00	55	31	39	<2.0	17	19	<2.0
SB-137	09/28/95	3.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-121	09/21/95	3.00	<9.4 E	<4.7 E
SB-123	09/21/95	1.00	97	16
SB-123	09/21/95	2.50	<35 E	<44 E
SB-124	09/21/95	1.00	3.8 J	<0.88
SB-124	09/21/95	3.00	<1.8	<0.92
SB-126	09/25/95	1.00	<100 E	<51 E
SB-126	09/25/95	3.00	<48 E	<60 E
SB-127	09/25/95	1.00	<1.8	<0.92
SB-127	09/25/95	4.50	<1.9	<0.94
SB-128	09/25/95	1.00	<1.8	<0.89
SB-128	09/25/95	4.00	<1.9	<0.95
SB-130	09/28/95	2.50	<45 E	<23 E
SB-130	09/28/95	4.00	<2.8 E	160 E
SB-131	09/28/95	1.00	<2.0	<1.0
SB-131	09/28/95	4.00	<2.2 E	<22 E
SB-132	10/06/95	1.00	<2.0 E	3.7 EJ
SB-132	10/06/95	4.00	<2.2	<1.1
SB-133	09/28/95	1.00	<1.9	<0.96
SB-133	09/28/95	3.50	<2.1	<1.0
SB-134	09/28/95	1.00	<1.8	<0.88
SB-134	09/28/95	3.00	<36 E	<18 E
SB-135	09/28/95	1.00	<1.8	<0.89
SB-135	09/28/95	5.00	<1.9	<0.95
SB-136	09/21/95	1.00	37	10
SB-136	09/21/95	3.00	60 E	<1. E
SB-137	09/28/95	1.00	<2.0	19
SB-137	09/28/95	3.00	<2.0	<1.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-138	09/21/95	1.00	2700	88 J	49 J	330	530	13 J	<22
SB-138	09/21/95	3.00	1300 JE	300 E	<220 E	2300 E	3500 E	190 JE	<87 E
SB-139	09/27/95	1.00	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<7.2
SB-139	09/27/95	3.50	1600 E	35 JE	<9.0 E	160 E	240 E	36 JE	780 E
SB-140	09/27/95	1.00	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<7.1
SB-140	09/27/95	3.50	<9.2	<18	<9.2	<1.8	<0.92	<0.92	<7.4
SB-141	10/05/95	1.00	<9.6	<19	<9.6	<1.9	9.8	2.9 J	34 J
SB-141	10/05/95	4.00	<9.1	<18	<9.1	<1.8	<0.91	<0.91	<3.6
SB-141	10/05/95	9.00	<11	<22	<11	<2.2	<1.1	<1.1	<4.4
SB-142	10/03/95	1.00	<8.9	<18	<8.9	<1.8	2.1 J	<0.89	6.6 J
SB-142	10/03/95	3.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.1
SB-144	11/02/95	1.00	<9.7	<19	<9.7	52	20	13	<3.9
SB-144	11/02/95	3.00	<9.5 E	180 JE	<190 E	1400 E	1500 E	690 E	8100 E
SB-145	09/26/95	7.00	<9.8	<20	<9.8	<2.0	<0.98	<0.98	<7.8
SB-145	10/02/95	1.00	<9.9	<20	<9.9	<2.0	17	<0.99	<4.0
SB-146A	11/02/95	1.00	<11	<22	<11	<2.2	3.3 J	<1.1	<4.3
SB-146A	11/02/95	3.50	<10	<21	<10	81	8.4 J	5.3 J	<4.1
SB-146A	11/02/95	5.00	<11 E	<21 E	<11 E	400 E	28 E	41 E	<4.2 E
SB-147	09/26/95	1.00	<9.0	<18	<9.0	<1.8	4.7 J	<0.90	28 J
SB-147	09/26/95	3.50	<10	<21	<10	<2.1	2.2 J	<1.0	<8.3
SB-148	09/25/95	1.00	<9.2	<18	<9.2	<1.8	12	2.4 J	<7.3
SB-148	09/25/95	2.50	120 E	21 JE	<9.2 E	110 E	120 E	32 E	400 E
SB-148	09/25/95	4.00	<9.8	<20	<9.8	18 J	36	4.0 J	150
SB-149	09/25/95	1.00	<8.8	<18	<8.8	<1.8	7.8 J	<0.88	54 J
SB-149	09/25/95	4.00	<9.5	<19	<9.5	<1.9	2.5 J	<0.95	<7.6
SB-149	09/25/95	5.50	73 J	<19	<9.6	17 J	28	3.3 J	100
SB-150	09/25/95	1.00	380 E	<18 E	<9.1 E	<1.8 E	690 E	<18 E	3200 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-138	09/21/95	1.00	<5.5	24	<1.1	<2.1	9.7 J	8.8 J	<2.1
SB-138	09/21/95	3.00	<22 E	90 JE	<22 E	<43 E	<22 E	<22 E	<43 E
SB-139	09/27/95	1.00	20	<0.90	<0.90	<1.8	2.6 J	15 J	<1.8
SB-139	09/27/95	3.50	50 E	<0.90 E	97 E	<1.8 E	3.1 JE	4.7 JE	<1.8 E
SB-140	09/27/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-140	09/27/95	3.50	<0.92	<0.92	<0.92	<1.8	<0.92	<0.92	<1.8
SB-141	10/05/95	1.00	58	<0.96	36	<1.9	<0.96	<0.96	<1.9
SB-141	10/05/95	4.00	<0.91	<0.91	<0.91	<1.8	<0.91	<0.91	<1.8
SB-141	10/05/95	9.00	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-142	10/03/95	1.00	6.9 J	<0.89	2.8 J	<1.8	1.1 J	2.1 J	<1.8
SB-142	10/03/95	3.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
SB-144	11/02/95	1.00	160	<0.97	170	<1.9	<0.97	36	<1.9
SB-144	11/02/95	3.00	<19 E	<19 E	2100 E	<38 E	<19 E	250 E	<38 E
SB-145	09/26/95	7.00	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0
SB-145	10/02/95	1.00	47	2.3 J	29	9.5 J	26	18	<2.0
SB-146A	11/02/95	1.00	10 J	<1.1	8.8 J	<2.2	<1.1	2.4 J	<2.2
SB-146A	11/02/95	3.50	<1.0	<1.0	30	<2.1	<1.0	<1.0	<2.1
SB-146A	11/02/95	5.00	<1.1 E	<1.1 E	140 E	<2.1 E	<1.1 E	20 E	<2.1 E
SB-147	09/26/95	1.00	7.5 J	<0.90	13	<1.8	<0.90	<0.90	<1.8
SB-147	09/26/95	3.50	2.3 J	<1.0	1.3 J	<2.1	<1.0	<1.0	<2.1
SB-148	09/25/95	1.00	51	<0.92	24	<1.8	<0.92	15	<1.8
SB-148	09/25/95	2.50	140 E	<1.8 E	160 E	<1.8 E	<0.92 E	<0.92 E	<1.8 E
SB-148	09/25/95	4.00	<0.98	<0.98	24	<2.0	<0.98	<0.98	<2.0
SB-149	09/25/95	1.00	300	93	120	220	110	240 J	21
SB-149	09/25/95	4.00	3.2 J	<0.95	<0.95	<1.9	<0.95	<0.95	<1.9
SB-149	09/25/95	5.50	19	<0.96	19	<1.9	3.2 J	6.5 J	<1.9
SB-150	09/25/95	1.00	230 E	<9.1 E	450 E	<1.8 E	30 E	17 E	<1.8 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-138	09/21/95	1.00	19 J	<1.1
SB-138	09/21/95	3.00	<43 E	<22 E
SB-139	09/27/95	1.00	<1.8	<0.90
SB-139	09/27/95	3.50	<1.8 E	<0.90 E
SB-140	09/27/95	1.00	<1.8	<0.89
SB-140	09/27/95	3.50	<1.8	<0.92
SB-141	10/05/95	1.00	<1.9	29
SB-141	10/05/95	4.00	<1.8	<0.91
SB-141	10/05/95	9.00	<2.2	<1.1
SB-142	10/03/95	1.00	<1.8	4.5 J
SB-142	10/03/95	3.50	<2.1	<1.0
SB-144	11/02/95	1.00	<1.9	51
SB-144	11/02/95	3.00	<38 E	150 E
SB-145	09/26/95	7.00	<2.0	<0.98
SB-145	10/02/95	1.00	<2.0	34
SB-146A	11/02/95	1.00	3.9 J	3.8 J
SB-146A	11/02/95	3.50	13 J	<1.0
SB-146A	11/02/95	5.00	<2.1 E	29 E
SB-147	09/26/95	1.00	<1.8	<0.90
SB-147	09/26/95	3.50	<2.1	<1.0
SB-148	09/25/95	1.00	<1.8	<0.92
SB-148	09/25/95	2.50	<1.8 E	22 E
SB-148	09/25/95	4.00	<2.0	<0.98
SB-149	09/25/95	1.00	140	140
SB-149	09/25/95	4.00	<1.9	<0.95
SB-149	09/25/95	5.50	<1.9	10
SB-150	09/25/95	1.00	<1.8 E	130 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-150	09/25/95	3.00	7100 E	680 E	<9.5 E	2300 E	2900 E	430 E	13000 E
SB-151	09/27/95	2.50	<9.0	<18	<9.0	20	45	6.7 J	260
SB-151	09/27/95	6.50	<9.6	<19	<9.6	2.2 J	4.2 J	<0.96	24 J
SB-153	09/27/95	1.50	88 J	<20	<9.9	<2.0	4.2 J	1.6 J	73 J
SB-153	09/27/95	3.50	3300 E	100 JE	<10 E	250 E	430 E	35 JE	1200 JE
SB-154	09/21/95	1.00	<10	<21	<10	9.4 J	20	<1.0	<4.1
SB-154	09/21/95	5.00	140	<22	<11	66	61	1.2 J	<4.4
SB-155	09/21/95	1.00	<10	<21	<10	2.4 J	12	<1.0	31 J
SB-155	09/21/95	3.00	<11	<22	<11	<2.2	7.9 J	<1.1	<4.3
SB-156	10/03/95	1.00	<9.2	<18	<9.2	11 J	24	3.5 J	90
SB-156	10/03/95	2.50	<9.2	<18	<9.2	<1.8	<0.92	<0.92	<3.7
SB-156	10/03/95	5.00	<10	<20	<10	<2.0	<1.0	<1.0	<4.0
SB-156	10/03/95	6.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.2
SB-156	10/03/95	8.00	<9.8	<20	<9.8	<2.0	<0.98	<0.98	<3.9
SB-157	09/21/95	1.00	41 J	<18	<8.9	<1.8	4.6 J	<0.89	<3.6
SB-157	09/21/95	3.00	25000 E	1400 JE	<460 E	2500 E	3500 E	<46 E	<190 E
SB-158	10/03/95	1.00	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<3.6
SB-158	10/03/95	3.50	<9.5	<19	<9.5	<1.9	<0.95	<0.95	<3.8
SB-161	09/25/95	1.00	<8.8	<18	<8.8	3.3 J	22	4.6 J	41 J
SB-161	09/25/95	5.00	31000 E	2400 JE	<480 E	4100 E	5600 E	<48 E	27000 E
SB-162	09/26/95	1.00	<9.2	<18	<9.2	20	18	6.3 J	95
SB-162	09/26/95	3.00	61 J	<20	<9.9	14 J	80	7.9 J	180
SB-163	09/26/95	1.00	<9.3	<19	<9.3	2.2 J	4.7 J	<0.93	21 J
SB-163	09/26/95	3.50	<9.5	<19	<9.5	<1.9	3.9 J	<0.95	33 J
SB-164	09/25/95	1.00	<9.4	<19	<9.4	12 J	15	9.9	49 J
SB-164	09/25/95	3.00	<9.6	<19	<9.6	<1.9	7.5 J	1.0 J	56 J
SB-164	09/25/95	5.00	<11	<22	<11	<2.2	9.7 J	<1.1	16 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-150	09/25/95	3.00	760 E	<19 E	1400 E	<1.9 E	<0.95 E	72 E	<1.9 E
SB-151	09/27/95	2.50	37	<0.90	77	<1.8	<0.90	13 J	<1.8
SB-151	09/27/95	6.50	<0.96	<0.96	6.5 J	<1.9	<0.96	1.8 J	<1.9
SB-153	09/27/95	1.50	<0.99	<0.99	42	<2.0	8.5 J	<0.99	<2.0
SB-153	09/27/95	3.50	110 JE	<1.0 E	160 E	<2.0 E	9.2 JE	<1.0 E	<2.0 E
SB-154	09/21/95	1.00	<1.0	3.8 J	<1.0	<2.1	1.9 J	2.9 J	<2.1
SB-154	09/21/95	5.00	<1.1	<1.1	18	<2.2	<1.1	<1.1	<2.2
SB-155	09/21/95	1.00	<1.0	<1.0	5.0 J	<2.1	<1.0	<1.0	<2.1
SB-155	09/21/95	3.00	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-156	10/03/95	1.00	17	<0.92	27	<1.8	2.2 J	0.95 J	<1.8
SB-156	10/03/95	2.50	<0.92	<0.92	<0.92	<1.8	<0.92	<0.92	<1.8
SB-156	10/03/95	5.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-156	10/03/95	6.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
SB-156	10/03/95	8.00	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0
SB-157	09/21/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-157	09/21/95	3.00	<46 E	<46 E	<46 E	<93 E	<46 E	<46 E	<93 E
SB-158	10/03/95	1.00	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-158	10/03/95	3.50	<0.95	<0.95	<0.95	<1.9	<0.95	<0.95	<1.9
SB-161	09/25/95	1.00	32	12	14	21	6.9 J	21	<1.8
SB-161	09/25/95	5.00	1100 E	<48 E	2500 E	<96 E	<48 E	<48 E	<96 E
SB-162	09/26/95	1.00	39	<0.92	64	<1.8	<0.92	4.3 J	<1.8
SB-162	09/26/95	3.00	200	<0.99	76	<2.0	8.1 J	11	<2.0
SB-163	09/26/95	1.00	9.4	<0.93	5.1 J	<1.9	<0.93	1.9 J	<1.9
SB-163	09/26/95	3.50	64	<0.95	29	<1.9	5.2 J	1.7 J	<1.9
SB-164	09/25/95	1.00	9.9	<0.94	17	<1.9	<0.94	<0.94	<1.9
SB-164	09/25/95	3.00	23	<0.96	52	<1.9	<0.96	3.6 J	<1.9
SB-164	09/25/95	5.00	12	<1.1	3.7 J	<2.2	<1.1	2.1 J	<2.2

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-150	09/25/95	3.00	<1.9 E	<0.95 E
SB-151	09/27/95	2.50	<1.8	12
SB-151	09/27/95	6.50	<1.9	1.2 J
SB-153	09/27/95	1.50	<2.0	<0.99
SB-153	09/27/95	3.50	<2.0 E	<1.0 E
SB-154	09/21/95	1.00	6.5 J	<1.0
SB-154	09/21/95	5.00	4.3 J	<1.1
SB-155	09/21/95	1.00	<2.1	<1.0
SB-155	09/21/95	3.00	<2.2	<1.1
SB-156	10/03/95	1.00	<1.8	<0.92
SB-156	10/03/95	2.50	<1.8	<0.92
SB-156	10/03/95	5.00	<2.0	<1.0
SB-156	10/03/95	6.50	<2.1	<1.0
SB-156	10/03/95	8.00	<2.0	<0.98
SB-157	09/21/95	1.00	3.9 J	<0.89
SB-157	09/21/95	3.00	<93 E	<46 E
SB-158	10/03/95	1.00	<1.8	1.6 J
SB-158	10/03/95	3.50	<1.9	<0.95
SB-161	09/25/95	1.00	8.2 J	9.1
SB-161	09/25/95	5.00	<96 E	<48 E
SB-162	09/26/95	1.00	<1.8	<0.92
SB-162	09/26/95	3.00	<2.0	<0.99
SB-163	09/26/95	1.00	<1.9	<0.93
SB-163	09/26/95	3.50	<1.9	7.2 J
SB-164	09/25/95	1.00	<1.9	<0.94
SB-164	09/25/95	3.00	<1.9	7.7 J
SB-164	09/25/95	5.00	<2.2	<1.1

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-165	09/25/95	1.00	13 JE	<18 E	<9.2 E	77 E	32 E	25 E	280 E
SB-165	09/25/95	2.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<7.9
SB-165	09/25/95	4.00	<10	<20	<10	8.8 J	30	7.4 J	110
SB-166	09/25/95	1.00	<9.3	<19	<9.3	<1.9	<0.93	<0.93	<7.4
SB-166	09/25/95	2.50	<9.1	<18	<9.1	<1.8	6.1 J	<0.91	54 J
SB-166	09/25/95	4.00	54 J	<19	10 J	34	190	47	420
SB-168	09/25/95	1.00	<8.8	<18	<8.8	<1.8	<0.88	<0.88	<7.0
SB-168	09/26/95	3.00	<10	<20	<10	<2.0	55	8.8 J	120
SB-169	10/06/95	1.00	<9.3	<19	<9.3	<1.9	5.7 J	<0.93	<3.7
SB-169	10/26/95	5.00	<8.6	<17	<8.6	<1.7	3.4 J	<0.86	8.9 J
SB-170	09/20/95	1.00	<10	<20	<10	<2.0	<1.0	27 J	42 X
SB-171	09/20/95	2.00	<9.8	<20	<9.8	2.7 J	5.9 J	<0.98	54 X
SB-171	09/20/95	3.00	<19 E	<39 E	<19 E	220 E	190 E	370 E	2000 XE
SB-172	10/04/95	2.50	1100 JE	39 JE	2900 E	3600 E	16000 E	5300 E	<200 E
SB-172	10/04/95	4.00	<14	<28	<14	18 J	65	6.8 J	54 J
SB-173	09/20/95	4.00	<14 E	<28 E	<14 E	<2.8 E	<1.4 E	<1.4 E	94 XE
SB-173	09/20/95	4.50	<9.9	<20	<9.9	100	58	32	740 X
SB-174	09/20/95	4.00	<11	<21	<11	<2.1	<1.1	130	50 X
SB-174	09/20/95	5.00	<11 E	<21 E	<11 E	170 E	26 E	300 E	290 XE
SB-175	09/26/95	2.50	<9.1	<18	<9.1	<1.8	4.2 J	<0.91	12 J
SB-176	10/31/95	1.00	<9.6	<19	<9.6	<1.9	5.8 J	<0.96	17 J
SB-176	10/31/95	5.00	62 JE	<20 E	<10 E	68 E	320 E	68 E	630 E
SB-177	10/31/95	1.00	<9.4	<19	<9.4	<1.9	6.1 J	<0.94	<3.7
SB-177	10/31/95	3.00	92 J	<21	33 J	52	390	87	<21
SB-178	10/31/95	1.00	<11	<23	<11	<2.3	14	<1.1	39 J
SB-178	10/31/95	6.00	19000 E	1200 JE	<97 E	450 E	2000 E	770 E	9500 E
SB-179	10/31/95	1.00	<9.3	<19	<9.3	<1.9	<0.93	5.6 J	<63

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-165	09/25/95	1.00	180 E	<0.92 E	290 E	<1.8 E	<0.92 E	130 JE	23 E
SB-165	09/25/95	2.50	170	<0.99	160	<2.0	<0.99	78 J	<2.0
SB-165	09/25/95	4.00	42	<1.0	53	<2.0	4.9 J	11	<2.0
SB-166	09/25/95	1.00	8.6 J	<0.93	5.3 J	<1.9	<0.93	1.1 J	<1.9
SB-166	09/25/95	2.50	<0.91	<0.91	12	<1.8	<0.91	2.3 J	<1.8
SB-166	09/25/95	4.00	380	160	220	190	120	290 J	16 J
SB-168	09/25/95	1.00	<0.88	<0.88	<0.88	<1.8	<0.88	<0.88	<1.8
SB-168	09/25/95	3.00	89	9.4 J	26	<2.0	<1.0	8.4 J	<2.0
SB-169	10/06/95	1.00	13	<0.93	9.1 J	<1.9	2.7 J	4.7 J	<1.9
SB-169	10/25/95	5.00	2.1 J	<0.86	1.6 J	<1.7	<0.86	<0.86	<1.7
SB-170	09/20/95	1.00	<1.0	<1.0	41	<2.0	<1.0	11 J	<2.0
SB-171	09/20/95	2.00	<0.98	<0.98	21	<2.0	<0.98	<2.0	<2.0
SB-171	09/20/95	3.00	<1.9 E	<1.9 E	35 E	<3.9 E	43 E	360 JE	<3.9 E
SB-172	10/04/95	2.50	8300 E	1800 E	2300 E	1000 E	550 E	1000 E	89 E
SB-172	10/04/95	4.00	41	4.9 J	7.5 J	<2.8	1.8 J	24	<2.8
SB-173	09/20/95	4.00	<1.4 E	<1.4 E	59 E	<2.8 E	<1.4 E	42 JE	<2.8 E
SB-173	09/20/95	4.50	27	<0.99	<0.99	<2.0	<0.99	5.5 J	<2.0
SB-174	09/20/95	4.00	<1.1	<1.1	<1.1	<2.1	30	56 J	<2.1
SB-174	09/20/95	5.00	280 E	25 E	<1.1 E	<2.1 E	16 E	36 JE	<2.1 E
SB-175	09/26/95	2.50	11	<0.91	7.5 J	8.2 J	3.1 J	3.1 J	<1.8
SB-176	10/31/95	1.00	23	<0.96	20	<1.9	<0.96	<0.96	<1.9
SB-176	10/31/95	5.00	670 E	<1.0 E	420 E	<2.0 E	<1.0 E	<1.0 E	3.7 JE
SB-177	10/31/95	1.00	<0.94	<0.94	5.0 J	<1.9	1.9 J	2.2 J	<1.9
SB-177	10/31/95	3.00	580	150	250	<2.1	100	370	<2.1
SB-178	10/31/95	1.00	<1.1	<1.1	22	<2.3	<1.1	<1.1	<2.3
SB-178	10/31/95	6.00	4600 E	<97 E	9700 E	<19 E	<9.7 E	<9.7 E	<19 E
SB-179	10/31/95	1.00	72	<0.93	54	<1.9	<0.93	<0.93	<1.9

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-165	09/25/95	1.00	<1.8 E	110 E
SB-165	09/25/95	2.50	260	59
SB-165	09/25/95	4.00	<2.0	<1.0
SB-166	09/25/95	1.00	<1.9	<0.93
SB-166	09/25/95	2.50	<1.8	<0.91
SB-166	09/25/95	4.00	240	200
SB-168	09/25/95	1.00	<1.8	<0.88
SB-168	09/25/95	3.00	<2.0	<1.0
SB-169	10/06/95	1.00	<1.9	4.9 J
SB-169	10/25/95	5.00	<1.7	1.1 J
SB-170	09/20/95	1.00	50	<1.0
SB-171	09/20/95	2.00	<2.0	<0.98
SB-171	09/20/95	3.00	190 E	38 E
SB-172	10/04/95	2.50	420 E	350 E
SB-172	10/04/95	4.00	<2.8	2.5 J
SB-173	09/20/95	4.00	160 E	120 E
SB-173	09/20/95	4.50	<2.0	<0.99
SB-174	09/20/95	4.00	110	17
SB-174	09/20/95	5.00	<2.1 E	<1.1 E
SB-175	09/26/95	2.50	<1.8	5.0 J
SB-176	10/31/95	1.00	33	<0.96
SB-176	10/31/95	5.00	170 E	<1.0 E
SB-177	10/31/95	1.00	4.9 J	<0.94
SB-177	10/31/95	3.00	260	200
SB-178	10/31/95	1.00	16 J	3.6 J
SB-178	10/31/95	6.00	<19 E	<9.7 E
SB-179	10/31/95	1.00	<1.9	<0.93

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-179	10/31/95	4.50	710	<19	<9.7	54	120	23	160
SB-180	10/31/95	1.00	180	<19	<9.4	<1.9	22	4.2 J	140
SB-180	10/31/95	4.50	260	<20	<10	43	190	28	<20
SB-180	10/31/95	7.50	47 JE	<19 E	<9.5 E	74 E	180 E	46 E	1500 E
SB-181	10/31/95	1.00	340	<18	<9.2	<1.8	19	<0.92	24 J
SB-181	10/31/95	7.50	760 J	180 J	<200	1500	3000	550	11000
SB-182	11/01/95	1.00	<9.0	<18	<9.0	<1.8	16	<0.90	56
SB-182	11/01/95	5.00	16 J	<19	<9.7	14 J	30	3.8 J	63
SS-101	09/12/95	0.00	<9.2	<18	<9.2	4.8 J	22	64	51
SS-102	09/12/95	0.00	<9.0	<18	<9.0	<1.8	7.7 J	<0.90	19 J
SS-103	09/12/95	0.00	240	<40	110	92	380	68	<4.0
SS-104	09/12/95	0.00	<10	<20	<10	<2.0	6.0 J	<1.0	18 J
SS-105	09/12/95	0.00	<9.2	<18	<9.2	<1.8	13	<0.92	54
SS-109	09/12/95	0.00	<8.8	<18	<8.8	<1.8	16	3.4 J	44
SS-110	09/12/95	0.00	<8.7	<17	<8.7	<1.7	11	1.2 J	25 J
SS-111	09/12/95	0.00	<8.5	<17	<8.5	<1.7	21	2.5 J	67
SS-112	09/12/95	0.00	<8.5	<17	<8.5	<1.7	14	2.2 J	51
SS-113	09/12/95	0.00	<8.6	<17	<8.6	<1.7	5.6 J	<0.86	18 J
SS-114	09/12/95	0.00	<8.8	<18	<8.8	<1.8	5.7 J	<0.88	14 J
SS-LEVEE1	09/26/95	0.00	<9.1	<18	<9.1	<1.8	4.7 J	<0.91	12 J
SS-LEVEE2	09/26/95	0.00	<11	<22	<11	<2.2	1.2 J	<1.1	<8.7
SSMW-109	09/26/95	0.00	<15	<31	<15	<3.1	14 J	<1.5	40 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-179	10/31/95	4.50	78	<0.97	67	<1.9	<0.97	<0.97	<1.9
SB-180	10/31/95	1.00	44	<0.94	75	<1.9	5.0 J	6.9 J	<1.9
SB-180	10/31/95	4.50	250	19	89	<2.0	31	62	<2.0
SB-180	10/31/95	7.50	<9.5 E	100 E	710 E	<1.9 E	<0.95 E	<0.95 E	<1.9 E
SB-181	10/31/95	1.00	<0.92	<0.92	8.7 J	<1.8	<0.92	5.1 J	<1.8
SB-181	10/31/95	7.50	<20	<20	1400	<39	<20	44 J	<39
SB-182	11/01/95	1.00	<0.90	<0.90	35	<1.8	<0.90	<0.90	<1.8
SB-182	11/01/95	5.00	90	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
SS-101	09/12/95	0.00	130	100	450	340	220	550	<1.8
SS-102	09/12/95	0.00	15	4.0 J	13	12 J	3.8 J	14	<1.8
SS-103	09/12/95	0.00	<0.99	110	<2.0	<2.0	43	140	24
SS-104	09/12/95	0.00	14	2.3 J	18	11 J	3.1 J	3.5 J	<2.0
SS-105	09/12/95	0.00	42	21	33	22	13	21	<1.8
SS-109	09/12/95	0.00	36	19	32	38	30	55	<1.8
SS-110	09/12/95	0.00	29	11	34	57	33	86	<1.7
SS-111	09/12/95	0.00	49	29	37	46	26	54	3.1 J
SS-112	09/12/95	0.00	41	19	31	38	23	44	3.1 J
SS-113	09/12/95	0.00	16	7.6 J	17	22	13	30	<1.7
SS-114	09/12/95	0.00	14	7.2 J	23	28	16	19	<1.8
SS-LEVEE1	09/26/95	0.00	9.8	<0.91	5.5 J	2.7 J	2.0 J	3.7 J	<1.8
SS-LEVEE2	09/26/95	0.00	4.1 J	<1.1	1.5 J	<2.2	<1.1	1.9 J	<2.2
SSMW-109	09/26/95	0.00	43	3.6 J	24	24 J	15	11 J	<3.1

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-179	10/31/95	4.50	23	17
SB-180	10/31/95	1.00	<1.9	14
SB-180	10/31/95	4.50	<2.0	42
SB-180	10/31/95	7.50	<1.9 E	<0.95 E
SB-181	10/31/95	1.00	<1.8	<0.92
SB-181	10/31/95	7.50	<39	<20
SB-182	11/01/95	1.00	<1.8	22
SB-182	11/01/95	5.00	<1.9	<0.97
SS-101	09/12/95	0.00	600	340
SS-102	09/12/95	0.00	28	12
SS-103	09/12/95	0.00	250	80
SS-104	09/12/95	0.00	9.1 J	7.6 J
SS-105	09/12/95	0.00	21	14
SS-109	09/12/95	0.00	50	51
SS-110	09/12/95	0.00	46	49
SS-111	09/12/95	0.00	77	59
SS-112	09/12/95	0.00	82	52
SS-113	09/12/95	0.00	30	34
SS-114	09/12/95	0.00	45	36
SS-LEVEE1	09/26/95	0.00	<1.8	5.4 J
SS-LEVEE2	09/26/95	0.00	<2.2	2.3 J
SSMW-109	09/26/95	0.00	<3.1	18

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-201	10/11/95	2.50	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<3.6
MW-201	10/11/95	7.50	<9.7	<19	<9.7	<1.9	<0.97	<0.97	<3.9
MW-201	10/11/95	12.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-204	10/09/95	2.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-204	10/09/95	7.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
MW-204	10/09/95	12.50	<12 E	<25 E	<12 E	<2.5 E	<1.2 E	<1.2 E	7.3 JE
SB-201	09/29/95	2.50	<9.9	<20	<9.9	6.8 J	25	<0.99	110
SB-201	09/29/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-201	09/29/95	12.50	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<3.5
SB-202	10/02/95	2.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
SB-202	10/02/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-202	10/02/95	12.50	<8.7	<17	<8.7	<1.7	<0.87	<0.87	<3.5
SB-203	10/02/95	2.50	<11	<22	<11	<2.2	15	<1.1	30 J
SB-203	10/02/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-203	10/02/95	12.50	<9.2	<18	<9.2	<1.8	<0.92	<0.92	<3.7
SB-204	09/29/95	2.50	<11	<21	<11	<2.1	<1.1	<1.1	<4.3
SB-204	09/29/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-204	09/29/95	12.50	<9.0	<18	<9.0	<1.8	<0.90	<0.90	<3.6
SB-205	09/29/95	2.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.2
SB-205	09/29/95	7.50	<9.6	<19	<9.6	<1.9	<0.96	<0.96	<3.8
SB-205	09/29/95	12.50	<8.9	<18	<8.9	<1.8	<0.89	<0.89	<3.5
SB-206	11/09/95	2.50	<10	<20	<10	<2.0	<2.0	<1.0	<8.2
SB-206	11/09/95	7.50	<9.9	<20	<9.9	<2.0	<2.0	<0.99	<8.0
SB-206	11/09/95	12.50	<11	<21	<11	<2.1	<2.1	<1.1	<8.4
SB-207	11/08/95	2.50	<11	<22	<11	11 J	5.4 J	1.9 J	<4.3
SB-207	11/08/95	7.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.2
SB-207	11/08/95	12.50	<10	<20	<10	<2.0	3.9 J	<1.0	10 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9
PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-201	10/11/95	2.50	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
MW-201	10/11/95	7.50	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
MW-201	10/11/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-204	10/09/95	2.50	<1.0	<1.0	1.3 J	<2.0	<1.0	<1.0	<2.0
MW-204	10/09/95	7.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
MW-204	10/09/95	12.50	<1.2 E	<1.2 E	<1.2 E	<2.5 E	<1.2 E	1.8 JE	<2.5 E
SB-201	09/29/95	2.50	24	<0.99	28	<2.0	<0.99	2.5 J	<2.0
SB-201	09/29/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-201	09/29/95	12.50	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-202	10/02/95	2.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-202	10/02/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-202	10/02/95	12.50	<0.87	<0.87	<0.87	<1.7	<0.87	<0.87	<1.7
SB-203	10/02/95	2.50	18	<1.1	3.9 J	<2.2	<1.1	<1.1	<2.2
SB-203	10/02/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-203	10/02/95	12.50	<0.92	<0.92	2.9 J	<1.8	<0.92	<0.92	<1.8
SB-204	09/29/95	2.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
SB-204	09/29/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-204	09/29/95	12.50	<0.90	<0.90	<0.90	<1.8	<0.90	<0.90	<1.8
SB-205	09/29/95	2.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
SB-205	09/29/95	7.50	<0.96	<0.96	<0.96	<1.9	<0.96	<0.96	<1.9
SB-205	09/29/95	12.50	<0.89	<0.89	<0.89	<1.8	<0.89	<0.89	<1.8
SB-206	11/09/95	2.50	1.5 J	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-206	11/09/95	7.50	2.4 J	<0.99	1.3 J	<2.0	<0.99	<0.99	<2.0
SB-206	11/09/95	12.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
SB-207	11/08/95	2.50	<1.1	<1.1	32	<2.2	<1.1	<1.1	<2.2
SB-207	11/08/95	7.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
SB-207	11/08/95	12.50	12	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9
PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-201	10/11/95	2.50	<1.8	1.8 J
MW-201	10/11/95	7.50	<1.9	<0.97
MW-201	10/11/95	12.50	<2.0	<1.0
MW-204	10/09/95	2.50	<2.0	3.1 J
MW-204	10/09/95	7.50	<2.2	<1.1
MW-204	10/09/95	12.50	<2.5 E	<1.2 E
SB-201	09/29/95	2.50	<2.0	<0.99
SB-201	09/29/95	7.50	<2.0	<1.0
SB-201	09/29/95	12.50	<1.8	<0.89
SB-202	10/02/95	2.50	<2.2	<1.1
SB-202	10/02/95	7.50	<2.0	<1.0
SB-202	10/02/95	12.50	<1.7	<0.87
SB-203	10/02/95	2.50	<2.2	<1.1
SB-203	10/02/95	7.50	<2.0	<1.0
SB-203	10/02/95	12.50	<1.8	<0.92
SB-204	09/29/95	2.50	<2.1	<1.1
SB-204	09/29/95	7.50	<2.0	<1.0
SB-204	09/29/95	12.50	<1.8	<0.90
SB-205	09/29/95	2.50	<2.1	<1.0
SB-205	09/29/95	7.50	<1.9	<0.96
SB-205	09/29/95	12.50	<1.8	<0.89
SB-206	11/09/95	2.50	<2.0	<1.0
SB-206	11/09/95	7.50	<2.0	<0.99
SB-206	11/09/95	12.50	<2.1	<1.1
SB-207	11/08/95	2.50	<2.2	<1.1
SB-207	11/08/95	7.50	<2.1	<1.0
SB-207	11/08/95	12.50	<2.0	<1.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-208	11/15/95	2.50	<11	<21	<11	<2.1	11	<1.1	29 J
SB-209	10/20/95	1.00	360	<23	<22	910	1700	160	4600
SB-209	10/20/95	7.50	<13	<26	<13	4.5 J	6.6 J	<1.3	22 J
SB-209	10/20/95	10.00	<12	<23	<12	<2.3	9.5 J	<1.2	<4.6
SB-209	11/07/95	12.50	<11	<21	<11	9.6 J	25	<1.1	77
SB-210	09/19/95	2.50	<9.5	<19	<9.5	<1.9	<0.95	<0.95	5.5 X
SB-210	09/19/95	7.50	<10	<20	<10	99	220	59	680 X
SB-210	09/19/95	12.50	<11	<22	<11	25	110	50	410 X
SB-211	09/19/95	2.50	140	<21	<10	290	320	73	960 X
SB-211	11/02/95	7.50	<12	<25	<12	<2.5	<1.2	<1.2	<4.9
SB-211	11/02/95	12.50	<10	<21	<10	<2.1	5.5 J	<1.0	15 J
SB-213	09/14/95	2.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.4
SB-213	09/15/95	6.00	<11	<22	<11	6.7 J	<1.1	<1.1	<4.4
SB-214	11/16/95	2.50	<11	<22	<11	<2.2	<1.1	<1.1	4.8 J
SB-214	11/16/95	7.50	<11	<22	<11	<2.2	13	<1.1	28 J
SB-214	11/16/95	12.50	<11	<21	<11	<2.1	8.3 J	<1.1	17 J
SB-215	11/17/95	2.50	<11	<22	<11	3.7 J	<1.1	<1.1	<4.3
SB-215	11/17/95	7.50	<9.5	<19	<9.5	<1.9	<0.95	<0.95	<3.8
SB-215	11/17/95	12.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-217	11/17/95	2.50	<10	<21	<10	<2.1	<1.0	<1.0	7.2 J
SB-217	11/17/95	7.50	<8.7	<17	<8.7	<1.7	<0.87	<0.87	4.4 J
SB-219	11/17/95	2.50	1100 JE	<20 E	<200 E	1100 E	1900 E	<20 E	5800 E
SB-219	11/17/95	7.50	<9.8	<20	<9.8	7.4 J	20	<0.98	63
SB-219	11/17/95	10.00	<9.8	<20	<9.8	23	48	<0.98	160
SB-220	11/17/95	2.50	1000 JE	<20 E	<190 E	1400 E	2500 E	<19 E	7100 E
SB-220	11/17/95	7.50	<9.7	<19	<9.7	2.2 J	6.6 J	<0.97	25 J
SB-220	11/17/95	12.50	<9.9	<20	<9.9	<2.0	9.2 J	<0.99	28 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-208	11/15/95	2.50	<1.1	<1.1	7.6 J	<2.1	<1.1	<1.1	<2.1
SB-209	10/20/95	1.00	780	<22	1200	<2.3	<22	35 J	<2.3
SB-209	10/20/95	7.50	<1.3	<1.3	<1.3	<2.6	<1.3	<1.3	<2.6
SB-209	10/20/95	10.00	<1.2	<1.2	4.6 J	<2.3	<1.2	<1.2	<2.3
SB-209	11/07/95	12.50	<1.1	<1.1	7.0 J	<2.1	<1.1	<1.1	<2.1
SB-210	09/19/95	2.50	<0.95	<0.95	3.8 J	<1.9	<0.95	<0.95	<1.9
SB-210	09/19/95	7.50	<1.0	<1.0	<1.0	<2.0	1.2 J	2.6 J	<2.0
SB-210	09/19/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<2.2	<2.2
SB-211	09/19/95	2.50	<1.0	<1.0	<1.0	<2.1	8.8 J	7.7 J	<2.1
SB-211	11/02/95	7.50	<1.2	<1.2	<1.2	<2.5	<1.2	<1.2	<2.5
SB-211	11/02/95	12.50	<1.0	<1.0	3.0 J	<2.1	<1.0	<1.0	<2.1
SB-213	09/14/95	2.50	2.7 J	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-213	09/15/95	6.00	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-214	11/16/95	2.50	2.6 J	<1.1	5.1 J	<2.2	<1.1	1.4 J	<2.2
SB-214	11/16/95	7.50	<1.1	<1.1	5.6 J	<2.2	<1.1	<1.1	<2.2
SB-214	11/16/95	12.50	<1.1	<1.1	3.3 J	<2.1	<1.1	<1.1	<2.1
SB-215	11/17/95	2.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-215	11/17/95	7.50	<0.95	<0.95	<0.95	<1.9	<0.95	<0.95	<1.9
SB-215	11/17/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-217	11/17/95	2.50	<1.0	<1.0	1.9 J	<2.1	<1.0	<1.0	<2.1
SB-217	11/17/95	7.50	<0.87	<0.87	2.2 J	<1.7	<0.87	<0.87	<1.7
SB-219	11/17/95	2.50	140 JE	<20 E	79 JE	<40 E	<20 E	<20 E	<40 E
SB-219	11/17/95	7.50	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0
SB-219	11/17/95	10.00	<0.98	<0.98	2.4 J	<2.0	<0.98	<0.98	<2.0
SB-220	11/17/95	2.50	170 JE	29 JE	91 JE	<39 E	<19 E	<19 E	<39 E
SB-220	11/17/95	7.50	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
SB-220	11/17/95	12.50	<0.99	<0.99	3.7 J	<2.0	<0.99	<0.99	<2.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-208	11/15/95	2.50	17 J	1.4 J
SB-209	10/20/95	1.00	<46	<22
SB-209	10/20/95	7.50	<2.6	<1.3
SB-209	10/20/95	10.00	4.3 J	<1.2
SB-209	11/07/95	12.50	5.7 J	<1.1
SB-210	09/19/95	2.50	<1.9	<0.95
SB-210	09/19/95	7.50	<2.0	<1.0
SB-210	09/19/95	12.50	<2.2	<1.1
SB-211	09/19/95	2.50	<2.1	<1.0
SB-211	11/02/95	7.50	<2.5	<1.2
SB-211	11/02/95	12.50	4.5 J	<1.0
SB-213	09/14/95	2.50	<2.2	<1.1
SB-213	09/15/95	6.00	<2.2	<1.1
SB-214	11/16/95	2.50	<2.2	1.6 J
SB-214	11/16/95	7.50	12 J	<1.1
SB-214	11/16/95	12.50	2.9 J	<1.1
SB-215	11/17/95	2.50	<2.2	<1.1
SB-215	11/17/95	7.50	<1.9	<0.95
SB-215	11/17/95	12.50	<2.0	<1.0
SB-217	11/17/95	2.50	<2.1	<1.0
SB-217	11/17/95	7.50	<1.7	<0.87
SB-219	11/17/95	2.50	<40 E	<20 E
SB-219	11/17/95	7.50	<2.0	<0.98
SB-219	11/17/95	10.00	<2.0	<0.98
SB-220	11/17/95	2.50	<39 E	<19 E
SB-220	11/17/95	7.50	<1.9	<0.97
SB-220	11/17/95	12.50	<2.0	<0.99

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-221	11/02/95	2.50	<9.7	<19	<9.7	<1.9	<0.97	<0.97	<3.9
SB-221	11/02/95	5.00	<10	<20	<10	3.1 J	<1.0	4.8 J	34 J
SB-221	11/02/95	12.50	<10	<21	<10	<2.1	130	23	<4.1
SB-222	11/07/95	2.50	<9.6	<19	<9.5	<1.9	3.7 J	<0.95	10 J
SB-222	11/07/95	7.50	<10	<21	<10	<2.1	2.6 J	<1.0	20 J
SB-222	11/07/95	12.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-223	11/07/95	2.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<4.0
SB-223	11/07/95	7.50	<9.8	<20	<9.8	<2.0	<0.98	<0.98	5.8 J
SB-223	11/08/95	12.50	<11	<21	<11	<2.1	<1.1	<1.1	5.9 J
SB-224	10/20/95	2.50	<10	<21	<10	<2.1	<1.0	<1.0	20 J
SB-224	10/20/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-224	10/20/95	12.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
SB-225	09/13/95	2.50	<10	<21	<10	<2.1	4.4 J	<1.0	<4.1
SB-225	09/13/95	7.50	<11	<21	<11	<2.1	3.3 J	<1.1	<4.2
SB-226	11/13/95	2.50	<11	<22	<11	5.2 J	13 J	<1.1	24 J
SB-226	11/13/95	7.50	<11	<22	<11	4.5 J	9.0 J	<1.1	20 J
SB-226	11/14/95	9.50	<10	<21	<10	<2.1	8.2 J	<1.0	20 J
SB-227	10/27/95	2.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.0
SB-227	10/27/95	7.50	<11	<23	<11	<2.3	2.8 J	<1.1	9.0 J
SB-227	10/27/95	12.50	<11	<22	<11	<2.2	11	<1.1	20 J
SB-228	09/15/95	2.50	<12	<25	<12	5.4 J	12 J	<2.4	<4.9
SB-228	09/15/95	7.50	<11	<23	<11	<2.3	3.1 J	<1.1	<4.5
SB-228	09/15/95	12.50	<11	<23	<11	<2.3	4.4 J	<1.1	<4.5
SB-229	09/18/95	2.50	<11	<21	<11	<2.1	<1.1	<1.1	<4.3
SB-229	09/18/95	7.50	<12	<23	<12	<2.3	<1.2	<1.2	<4.6
SB-229	09/18/95	12.50	<11	<22	<11	<2.2	6.8 J	<1.1	<4.4
SB-230	09/14/95	2.50	<11	<23	<11	<2.3	3.5 J	<1.1	<4.5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-221	11/02/95	2.50	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
SB-221	11/02/95	5.00	<1.0	<1.0	10	<2.0	<1.0	<1.0	<2.0
SB-221	11/02/95	12.50	170	29	40	<2.1	6.7 J	19	<2.1
SB-222	11/07/95	2.50	<0.95	<0.95	<0.95	<1.9	<0.95	<0.95	<1.9
SB-222	11/07/95	7.50	<1.0	<1.0	2.8 J	<2.1	<1.0	<1.0	<2.1
SB-222	11/07/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-223	11/07/95	2.50	18	<0.99	<0.99	<2.0	<0.99	<0.99	<2.0
SB-223	11/07/95	7.50	1.1 J	<0.98	1.5 J	<2.0	<0.98	<0.98	<2.0
SB-223	11/08/95	12.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
SB-224	10/20/95	2.50	<1.0	<1.0	14	<2.1	<1.0	12	<2.1
SB-224	10/20/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-224	10/20/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-225	09/13/95	2.50	<1.0	<1.0	1.2 J	<2.1	<1.0	<1.0	<2.1
SB-225	09/13/95	7.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
SB-226	11/13/95	2.50	<1.1	<1.1	5.7 J	<2.2	<1.1	1.3 J	<2.2
SB-226	11/13/95	7.50	<1.1	<1.1	4.9 J	<2.2	<1.1	1.6 J	<2.2
SB-226	11/14/95	9.50	<1.0	<1.0	4.7 J	<2.1	<1.0	<1.0	<2.1
SB-227	10/27/95	2.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-227	10/27/95	7.50	<1.1	<1.1	1.5 J	<2.3	<1.1	<1.1	<2.3
SB-227	10/27/95	12.50	<1.1	<1.1	2.8 J	<2.2	<1.1	<1.1	<2.2
SB-228	09/15/95	2.50	<1.2	<1.2	<1.2	<2.5	<1.2	<1.2	<2.5
SB-228	09/15/95	7.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3
SB-228	09/15/95	12.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3
SB-229	09/18/95	2.50	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
SB-229	09/18/95	7.50	<1.2	<1.2	<1.2	<2.3	<1.2	<1.2	<2.3
SB-229	09/18/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
SB-230	09/14/95	2.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-221	11/02/95	2.50	<1.9	<0.97
SB-221	11/02/95	5.00	<2.0	<1.0
SB-221	11/02/95	12.50	<2.1	5.0 J
SB-222	11/07/95	2.50	<1.9	6.5 J
SB-222	11/07/95	7.50	<2.1	<1.0
SB-222	11/07/95	12.50	<2.0	<1.0
SB-223	11/07/95	2.50	<2.0	<0.99
SB-223	11/07/95	7.50	<2.0	<0.98
SB-223	11/08/95	12.50	<2.1	<1.1
SB-224	10/20/95	2.50	<2.1	22
SB-224	10/20/95	7.50	<2.0	<1.0
SB-224	10/20/95	12.50	<2.0	<1.0
SB-225	09/13/95	2.50	3.3 J	<1.0
SB-225	09/13/95	7.50	<2.1	<1.1
SB-226	11/13/95	2.50	<2.2	<1.1
SB-226	11/13/95	7.50	12 J	1.5 J
SB-226	11/14/95	9.50	13 J	<1.0
SB-227	10/27/95	2.50	<2.0	<1.0
SB-227	10/27/95	7.50	<2.3	<1.1
SB-227	10/27/95	12.50	8.9 J	<1.1
SB-228	09/15/95	2.50	<2.5	<1.2
SB-228	09/15/95	7.50	<2.3	<1.1
SB-228	09/15/95	12.50	<2.3	<1.1
SB-229	09/18/95	2.50	<2.1	<1.1
SB-229	09/18/95	7.50	<2.3	<1.2
SB-229	09/18/95	12.50	5.2 J	<1.1
SB-230	09/14/95	2.50	<2.3	<1.1

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-230	09/14/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.0
SB-231	10/27/95	2.50	<11	<22	<11	<2.2	15	<1.1	31 J
SB-231	10/27/95	7.50	<10	<20	<10	<2.0	7.1 J	<1.0	12 J
SB-231	10/27/95	12.50	<11	<22	<11	<2.2 J	16	<1.1	35 J
SB-232	11/02/95	2.50	<9.7	<19	<9.7	<1.9	<0.97	<0.97	<3.9
SB-232	11/02/95	7.50	<11	<21	<11	<2.1	15	<1.1	34 J
SB-232	11/02/95	12.50	24 J	<19	<9.7	<1.9	8.7 J	<0.97	15 J
SB-233	10/27/95	4.00	<9.7	<19	<9.7	<1.9	3.1 J	<0.97	<3.9
SB-233	10/27/95	7.50	<10	<21	<10	<2.1	9.3 J	<1.0	21 J
SB-233	10/27/95	12.50	<9.4	<19	<9.4	<1.9	<0.94	<0.94	<3.7
SS-201	09/12/95	0.00	<9.2 E	<18 E	<9.2 E	4.0 JE	73 E	31 E	2700 E
SS-202	09/11/95	0.00	<9.8	<20	<9.8	<2.0	90	<0.98	200
SS-204	09/11/95	0.00	<9.8	<20	<9.8	<2.0	47	15	91
SS-205	09/11/95	0.00	<9.1	<18	<9.1	<1.8	31	36	130
SS-206	09/11/95	0.00	16 J	<21	<10	<2.1	13	2.6 J	38 J
SS-207	09/11/95	0.00	<11	<22	<11	<2.2	3.2 J	<1.1	5.8 J
SS-209	09/11/95	0.00	<11	<21	<11	<2.1	14	2.7 J	35 J
SS-210	09/13/95	0.00	<11	<21	<11	<2.1	<1.1	<1.1	<4.2
SS-211	09/11/95	0.00	<9.3	<19	<9.3	<1.9	9.5	<0.93	24 J
SS-212	09/11/95	0.00	<9.8	<20	<9.8	<2.0	17	<0.98	28 J
SS-213	09/11/95	0.00	120 JE	<200 E	<100 E	960 E	630 E	250 E	<40 E

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6--9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-230	09/14/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-231	10/27/95	2.50	<1.1	<1.1	5.1 J	<2.2	<1.1	<1.1	<2.2
SB-231	10/27/95	7.50	<1.0	<1.0	2.0 J	<2.0	<1.0	<1.0	<2.0
SB-231	10/27/95	12.50	<1.1	<1.1	5.9 J	<2.2	<1.1	<1.1	<2.2
SB-232	11/02/95	2.50	<0.97	<0.97	<0.97	<1.9	<0.97	<0.97	<1.9
SB-232	11/02/95	7.50	2.7 J	<1.1	6.0 J	<2.1	<1.1	<1.1	<2.1
SB-232	11/02/95	12.50	2.2 J	<0.97	3.0 J	<1.9	<0.97	<0.97	<1.9
SB-233	10/27/95	4.00	2.9 J	<0.97	2.2 J	<1.9	<0.97	1.1 J	<1.9
SB-233	10/27/95	7.50	<1.0	<1.0	3.5 J	<2.1	<1.0	<1.0	<2.1
SB-233	10/27/95	12.50	<0.94	<0.94	<0.94	<1.9	<0.94	<0.94	<1.9
SS-201	09/12/95	0.00	570 E	<0.92 E	<0.92 E	5.8 JE	4.8 JE	7.4 JE	<1.8 E
SS-202	09/11/95	0.00	190	21	96	110	57	85	<2.0
SS-204	09/11/95	0.00	79	<0.98	120	74	17	50	<2.0
SS-205	09/11/95	0.00	100	<9.1	300	140	46	62	<1.8
SS-206	09/11/95	0.00	<1.0	3.1 J	19	<2.1	1.2 J	4.0 J	<2.1
SS-207	09/11/95	0.00	2.8 J	<1.1	7.1 J	6.5 J	<1.1	2.3 J	<2.2
SS-209	09/11/95	0.00	30	<1.1	99	48	9.9 J	25	<2.1
SS-210	09/13/95	0.00	3.2 J	<1.1	3.0 J	<2.1	<1.1	<1.1	<2.1
SS-211	09/11/95	0.00	24	<0.93	51	<1.9	<0.93	18	<1.9
SS-212	09/11/95	0.00	9.9	<0.98	21	<2.0	3.9 J	10	7.1 J
SS-213	09/11/95	0.00	580 E	460 E	1000 E	<20 E	190 E	260 E	<20 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–9

PAHs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-230	09/14/95	7.50	<2.0	<1.0
SB-231	10/27/95	2.50	12 J	<1.1
SB-231	10/27/95	7.50	5.1 J	<1.0
SB-231	10/27/95	12.50	10 J	<1.1
SB-232	11/02/95	2.50	<1.9	<0.97
SB-232	11/02/95	7.50	<2.1	<1.1
SB-232	11/02/95	12.50	<1.9	<0.97
SB-233	10/27/95	4.00	<1.9	<0.97
SB-233	10/27/95	7.50	<2.1	<1.0
SB-233	10/27/95	12.50	<1.9	<0.94
SS-201	09/12/95	0.00	<1.8 E	6.5 JE
SS-202	09/11/95	0.00	150	120
SS-204	09/11/95	0.00	110	67
SS-205	09/11/95	0.00	110	48
SS-206	09/11/95	0.00	28	<1.0
SS-207	09/11/95	0.00	26	3.5 J
SS-209	09/11/95	0.00	75	42
SS-210	09/13/95	0.00	3.8 J	1.5 J
SS-211	09/11/95	0.00	180	25
SS-212	09/11/95	0.00	68	31
SS-213	09/11/95	0.00	610 E	280 E

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
BSS-101	01/09/96	0.00	<6.1 E	5.1 J	0.55 J	23	23	50	0.14 J
BSS-102	01/09/96	0.00	<9.5 E	8.4 J	1.0 J	38	42	95	0.20 J
BSS-103	01/09/96	0.00	<7.0 E	6.6 J	0.78 J	34	30	38	0.16 J
BSS-104	10/02/95	0.50	9.8 JE	18	<0.21	38	43	79 E	0.76 JE
BSS-105	10/18/95	2.50	<1.7 E	2.7 JE	0.81 J	26	24	2.3 JE	<0.070
BSS-105	10/18/95	5.00	<1.8 E	2.9 JE	0.39 J	27	20	2.6 JE	<0.085
BSS-105	10/18/95	7.50	<1.5 E	1.4 JE	<0.073	11	4.6	0.63 JE	<0.059
BSS-107A	11/01/95	0.40	<2.4	5.3 J	0.37 J	9.3	30	240	1.4
BSS-110	10/18/95	1.00	<1.6 E	6.0 JE	0.20 J	29	23	3.0 E	<0.063
BSS-110	10/18/95	2.50	<1.6 E	3.9 JE	0.14 J	22	15	2.0 JE	<0.060
BSS-110	10/18/95	5.00	<1.5 E	2.4 JE	0.18 J	20	13	1.6 JE	<0.057
BSS-110	10/18/95	7.50	<1.4 E	2.0 JE	0.16 J	15	8.6	0.96 E	<0.055
BSS-111	10/26/95	0.30	<4.3 U	30 J	<0.22	51	100	240	3.7
BSS-201	01/09/96	0.00	<9.3 E	7.2	0.47 J	27	35	45 J	0.081 J
MW-105	12/19/95	1.00	---	---	0.38 J	28	---	86 E	---
MW-105	12/19/95	3.50	---	---	0.11 J	26	---	6.2 E	---
MW-105	12/19/95	5.00	---	---	0.16 J	24	---	6.3 E	---
MW-105	12/19/95	7.50	---	---	<0.070	11	---	1.8 JE	---
MW-105	12/19/95	10.00	---	---	<0.064	10	---	1.2 E	---
MW-105	12/19/95	12.50	---	---	0.26 J	10	---	1.3 E	---
MW-106	12/18/95	1.00	---	---	0.19 J	26	---	3.1 JE	---
MW-106	12/18/95	3.50	---	---	0.17 J	26	---	11 E	---
MW-106	12/18/95	5.00	---	---	0.094 J	14	---	3.6 JE	---
MW-106	12/18/95	7.50	---	---	0.11 J	18	---	1.8 JE	---
MW-106	12/18/95	10.00	---	---	0.22 J	22	---	1.4 JE	---
MW-106	12/18/95	12.50	---	---	0.29 J	17	---	1.5 E	---
MW-107	12/18/95	1.00	---	---	0.19 J	30	---	24 E	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
BSS-101	01/09/96	0.00	120 E
BSS-102	01/09/96	0.00	250 E
BSS-103	01/09/96	0.00	130 E
BSS-104	10/02/95	0.50	130
BSS-105	10/18/95	2.50	29
BSS-105	10/18/95	5.00	36
BSS-105	10/18/95	7.50	16
BSS-107A	11/01/95	0.40	150
BSS-110	10/18/95	1.00	39
BSS-110	10/18/95	2.50	29
BSS-110	10/18/95	5.00	28
BSS-110	10/18/95	7.50	21
BSS-111	10/26/95	0.30	160
BSS-201	01/09/96	0.00	190 E
MW-105	12/19/95	1.00	230
MW-105	12/19/95	3.50	32
MW-105	12/19/95	5.00	32
MW-105	12/19/95	7.50	19
MW-105	12/19/95	10.00	18
MW-105	12/19/95	12.50	17
MW-106	12/18/95	1.00	31
MW-106	12/18/95	3.50	35
MW-106	12/18/95	5.00	23
MW-106	12/18/95	7.50	32
MW-106	12/18/95	10.00	29
MW-106	12/18/95	12.50	25
MW-107	12/18/95	1.00	35

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
MW-107	12/18/95	3.50	---	---	0.14 J	27	---	2.7 JE	---
MW-107	12/18/95	5.00	---	---	0.14 J	19	---	2.0 JE	---
MW-107	12/18/95	7.50	---	---	0.13 J	15	---	0.98 JE	---
MW-107	12/18/95	12.50	---	---	0.097 J	13	---	1.0 JE	---
MW-109	10/03/95	1.00	---	---	<0.31	19	---	1.4 J	---
MW-109	10/03/95	2.50	---	---	<0.35	20	---	1.7 J	---
MW-109	10/03/95	5.00	---	---	<0.42	35	---	5.0 E	---
MW-109	10/03/95	7.50	---	---	<0.43	37	---	4.6 E	---
MW-109	10/03/95	10.00	---	---	<0.14	13	---	1.3 E	---
MW-109	10/03/95	12.50	---	---	<0.12	9.1	---	0.80 J	---
MW-111	09/20/95	1.00	---	---	<0.31	23	---	1.6	---
MW-111	09/20/95	3.50	---	---	<0.31	24	---	1.4	---
MW-112	09/19/95	1.00	---	---	<0.31	22	---	12	---
MW-112	09/19/95	3.50	---	---	<0.30	20	---	10	---
MW-112	09/19/95	6.00	---	---	<0.36	25	---	3.5 JE	---
MW-112	09/19/95	8.50	---	---	<0.42	27	---	2.7 JE	---
MW-114	09/19/95	1.00	---	---	<0.31	24	---	9.0	---
MW-114	09/19/95	3.50	---	---	<0.39	24	---	11	---
MW-116	09/19/95	1.00	---	---	<0.32	26	---	18	---
MW-116	09/19/95	3.50	---	---	<0.35	26	---	15	---
MW-117	09/19/95	1.00	---	---	<0.32	19	---	22	---
MW-117	09/19/95	5.00	---	---	<0.16	29	---	91	---
MW-118	09/20/95	1.00	---	---	<1.6	58	---	5.6	---
MW-118	09/20/95	4.50	---	---	<0.77	48	---	30	---
MW-118	09/20/95	7.50	---	---	<0.11	14	---	0.96	---
MW-118	09/20/95	12.50	---	---	<0.15	17	---	0.92	---
MW-121	10/03/95	7.00	---	---	<0.31	18	---	15	---

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 3-10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
MW-107	12/18/95	3.50	28
MW-107	12/18/95	5.00	22
MW-107	12/18/95	7.50	22
MW-107	12/18/95	12.50	17
MW-109	10/03/95	1.00	18
MW-109	10/03/95	2.50	21
MW-109	10/03/95	5.00	44
MW-109	10/03/95	7.50	34
MW-109	10/03/95	10.00	17
MW-109	10/03/95	12.50	14
MW-111	09/20/95	1.00	28
MW-111	09/20/95	3.50	26
MW-112	09/19/95	1.00	31
MW-112	09/19/95	3.50	23
MW-112	09/19/95	6.00	25
MW-112	09/19/95	8.50	32
MW-114	09/19/95	1.00	38
MW-114	09/19/95	3.50	25
MW-116	09/19/95	1.00	32
MW-116	09/19/95	3.50	34
MW-117	09/19/95	1.00	35
MW-117	09/19/95	5.00	190
MW-118	09/20/95	1.00	64
MW-118	09/20/95	4.50	75
MW-118	09/20/95	7.50	19
MW-118	09/20/95	12.50	20
MW-121	10/03/95	7.00	36

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
MW-121	10/03/95	10.00	---	---	<0.28	15	---	29	---
MW-121	10/03/95	13.00	---	---	<0.34	16	---	2.0 J	---
MW-121	10/03/95	18.50	---	---	<0.32	15	---	2.5	---
MW-122	09/25/95	7.00	---	---	<0.38	21	---	1.4 E	---
MW-122	09/26/95	10.00	---	---	<0.14	13	---	1.5 E	---
MW-122	09/26/95	13.00	---	---	<0.13	11	---	1.0 E	---
MW-130	10/05/95	1.00	---	---	<0.32	20	---	4.8	---
MW-130	10/05/95	3.00	---	---	<0.33	26	---	4.6	---
MW-136	11/09/95	1.00	---	---	<0.063	15	---	12	---
MW-137	12/18/95	3.50	---	---	0.17 J	25	---	5.9 E	---
MW-137	12/18/95	5.00	---	---	0.19 J	28	---	2.6 E	---
MW-137	12/18/95	7.50	---	---	0.33 J	45	---	4.9 E	---
MW-137	12/18/95	10.00	---	---	0.084 J	13	---	3.7 JE	---
MW-137	12/18/95	12.50	---	---	<0.068	15	---	1.3 E	---
MW-138	12/19/95	3.50	---	---	0.23 J	25	---	11 E	---
MW-138	12/19/95	5.00	---	---	0.10 J	13	---	1.4 E	---
MW-138	12/19/95	7.50	---	---	0.17 J	28	---	16 E	---
MW-138	12/19/95	10.00	---	---	0.13 J	13	---	1.3 E	---
MW-138	12/19/95	12.50	---	---	0.089 J	15	---	1.3 E	---
MW-139	12/19/95	1.00	---	---	0.16 J	24	---	9.1 E	---
MW-139	12/19/95	3.50	---	---	0.28 J	24	---	7.1 E	---
MW-139	12/19/95	5.00	---	---	0.37 J	28	---	3.1 JE	---
MW-139	12/19/95	7.50	---	---	0.23 J	18	---	1.9 JE	---
MW-139	12/19/95	10.00	---	---	0.12 J	14	---	1.0 E	---
MW-139	12/19/95	12.50	---	---	0.20 J	12	---	1.3 E	---
SB-102	09/28/95	1.00	---	---	<0.33	24	---	17	---
SB-102	09/28/95	2.50	---	---	<0.40	24	---	5.5	---

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
MW-121	10/03/95	10.00	45
MW-121	10/03/95	13.00	20
MW-121	10/03/95	18.50	24
MW-122	09/25/95	7.00	24
MW-122	09/26/95	10.00	21
MW-122	09/26/95	13.00	14
MW-130	10/05/95	1.00	27
MW-130	10/05/95	3.00	28
MW-136	11/09/95	1.00	27
MW-137	12/18/95	3.50	29
MW-137	12/18/95	5.00	29
MW-137	12/18/95	7.50	64
MW-137	12/18/95	10.00	21
MW-137	12/18/95	12.50	20
MW-138	12/19/95	3.50	38
MW-138	12/19/95	5.00	18
MW-138	12/19/95	7.50	38
MW-138	12/19/95	10.00	18
MW-138	12/19/95	12.50	18
MW-139	12/19/95	1.00	31
MW-139	12/19/95	3.50	27
MW-139	12/19/95	5.00	37
MW-139	12/19/95	7.50	23
MW-139	12/19/95	10.00	21
MW-139	12/19/95	12.50	19
SB-102	09/28/95	1.00	56
SB-102	09/28/95	2.50	34

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SB-104	09/28/95	1.00	---	---	<0.32	20	---	4.4	---
SB-104	09/28/95	3.50	---	---	<0.34	16	---	6.0	---
SB-104	09/28/95	5.00	---	---	<0.38	26	---	2.6	---
SB-104	09/28/95	6.50	---	---	<0.34	14	---	2.1	---
SB-104A	11/09/95	9.00	---	---	<0.065	16	---	1.4 J	---
SB-104A	11/09/95	11.50	---	---	0.20 BJ	14	---	1.1 J	---
SB-104A	11/09/95	14.00	---	---	<0.065	12	---	1.5 J	---
SB-106	09/21/95	1.00	---	---	<0.34	32	---	6.5 E	---
SB-106	09/21/95	3.00	---	---	<0.33	19	---	11 E	---
SB-107	09/28/95	1.00	---	---	<0.36	27	---	4.8	---
SB-107	09/28/95	3.50	---	---	<0.72	33	---	15	---
SB-108	09/28/95	2.50	---	---	<0.34	18	---	3.8	---
SB-108	09/28/95	3.50	---	---	<0.35	21	---	3.7	---
SB-108	09/28/95	5.00	---	---	<0.94	63	---	7.9	---
SB-108	09/28/95	6.50	---	---	<0.40	28	---	3.5	---
SB-108	09/28/95	8.00	---	---	<0.35	23	---	2.4	---
SB-110	09/27/95	1.00	---	---	<0.34	33	---	11	---
SB-110	09/27/95	3.50	---	---	<0.70	39	---	5.1	---
SB-112	09/27/95	1.00	---	---	<0.31	21	---	31	---
SB-112	09/27/95	3.50	---	---	<0.35	25	---	7.0	---
SB-115	10/18/95	1.00	---	2.0 JE	0.089 J	18	---	18 E	---
SB-115	10/18/95	2.50	---	2.7 JE	<0.069	16	---	4.1 E	---
SB-118	09/27/95	1.00	---	---	<0.30	24	---	2.1	---
SB-118	09/27/95	5.00	---	---	<0.33	24	---	1.7	---
SB-120	10/19/95	1.00	---	---	<0.063	14	---	3.0 E	---
SB-120	10/19/95	2.50	---	---	<0.065	13	---	5.5 E	---
SB-121	09/21/95	1.00	---	---	<0.31	20	---	1.5 E	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SB-104	09/28/95	1.00	29
SB-104	09/28/95	3.50	22
SB-104	09/28/95	5.00	33
SB-104	09/28/95	6.50	21
SB-104A	11/09/95	9.00	20
SB-104A	11/09/95	11.50	23
SB-104A	11/09/95	14.00	18
SB-106	09/21/95	1.00	45
SB-106	09/21/95	3.00	33
SB-107	09/28/95	1.00	33
SB-107	09/28/95	3.50	77
SB-108	09/28/95	2.50	36
SB-108	09/28/95	3.50	33
SB-108	09/28/95	5.00	84
SB-108	09/28/95	6.50	37
SB-108	09/28/95	8.00	28
SB-110	09/27/95	1.00	99
SB-110	09/27/95	3.50	42
SB-112	09/27/95	1.00	410
SB-112	09/27/95	3.50	28
SB-115	10/18/95	1.00	31
SB-115	10/18/95	2.50	28
SB-118	09/27/95	1.00	22
SB-118	09/27/95	5.00	24
SB-120	10/19/95	1.00	15
SB-120	10/19/95	2.50	14
SB-121	09/21/95	1.00	21

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SB-121	09/21/95	3.00	---	---	<0.34	22	---	1.3 E	---
SB-123	09/21/95	1.00	---	---	<0.31	21	---	13 E	---
SB-123	09/21/95	2.50	---	---	<0.29	19	---	1.2 E	---
SB-125	09/22/95	1.00	---	---	<0.37	26	---	1.7 JE	---
SB-125	09/22/95	2.50	---	---	<0.36	21	---	1.4 JE	---
SB-127	09/25/95	1.00	---	---	<0.13	19	---	5.5 E	---
SB-127	09/25/95	4.50	---	---	<0.34	22	---	3.2 E	---
SB-130	09/28/95	2.50	---	---	<0.80	49	---	11	---
SB-130	09/28/95	4.00	---	---	<0.92	52	---	17	---
SB-131	09/28/95	1.00	---	---	<0.69	39	---	10	---
SB-131	09/28/95	4.00	---	---	<0.39	25	---	3.1 J	---
SB-133	09/28/95	1.00	---	---	<0.34	24	---	2.7 J	---
SB-133	09/28/95	3.50	---	---	<0.73	41	---	5.2	---
SB-134	09/28/95	1.00	---	---	<0.30	21	---	6.9	---
SB-134	09/28/95	3.00	---	---	<0.28	23	---	2.9	---
SB-137	09/28/95	1.00	---	---	<0.68	32	---	5.8	---
SB-137	09/28/95	3.00	---	---	<0.72	55	---	5.1	---
SB-139	09/27/95	1.00	---	---	<0.28	18	---	10	---
SB-139	09/27/95	3.50	---	---	<0.32	20	---	3.6	---
SB-141	10/05/95	1.00	---	---	<0.34	23	---	11	---
SB-141	10/05/95	4.00	---	---	<0.32	13	---	2.6	---
SB-141	10/05/95	9.00	---	---	<0.16	15	---	2.5	---
SB-143	09/22/95	1.00	---	---	<0.30	20	---	5.0 E	---
SB-143	09/22/95	2.50	---	---	<0.37	21	---	1.9 JE	---
SB-145	09/26/95	7.00	---	---	<0.33	28	---	2.1 JE	---
SB-145	10/02/95	1.00	---	---	<0.066	19	---	15 JE	---
SB-147	09/26/95	1.00	---	---	<0.33	20	---	4.3 E	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10
Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SB-121	09/21/95	3.00	24
SB-123	09/21/95	1.00	33
SB-123	09/21/95	2.50	22
SB-125	09/22/95	1.00	25
SB-125	09/22/95	2.50	21
SB-127	09/25/95	1.00	28
SB-127	09/25/95	4.50	24
SB-130	09/28/95	2.50	52
SB-130	09/28/95	4.00	63
SB-131	09/28/95	1.00	55
SB-131	09/28/95	4.00	27
SB-133	09/28/95	1.00	28
SB-133	09/28/95	3.50	63
SB-134	09/28/95	1.00	28
SB-134	09/28/95	3.00	25
SB-137	09/28/95	1.00	39
SB-137	09/28/95	3.00	42
SB-139	09/27/95	1.00	31
SB-139	09/27/95	3.50	22
SB-141	10/05/95	1.00	31
SB-141	10/05/95	4.00	22
SB-141	10/05/95	9.00	23
SB-143	09/22/95	1.00	23
SB-143	09/22/95	2.50	25
SB-145	09/26/95	7.00	31
SB-145	10/02/95	1.00	390
SB-147	09/26/95	1.00	35

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SB-147	09/26/95	3.50	---	---	<0.35	37	---	8.0 E	---
SB-149	09/25/95	1.00	---	---	<0.30	21	---	13 E	---
SB-149	09/25/95	4.00	---	---	<0.33	36	---	4.6 E	---
SB-149	09/25/95	5.50	---	---	<0.34	24	---	11 E	---
SB-151	09/27/95	2.50	---	---	<0.32	16	---	8.0	---
SB-151	09/27/95	6.50	---	---	<0.35	18	---	3.1	---
SB-153	09/27/95	1.50	---	---	<0.36	35	---	14	---
SB-153	09/27/95	3.50	---	---	<0.35	34	---	7.3	---
SB-155	09/21/95	1.00	---	---	<0.75	49	---	5.5 E	---
SB-155	09/21/95	3.00	---	---	<0.78	53	---	5.2 E	---
SB-157	09/21/95	1.00	---	---	<0.30	17	---	2.0 E	---
SB-157	09/21/95	3.00	---	---	<0.13	17	---	3.3 JE	---
SB-159	09/22/95	1.00	---	---	<0.36	36	---	7.1 E	---
SB-159	09/22/95	4.00	---	---	<0.36	28	---	8.7 E	---
SB-161	09/25/95	1.00	---	---	<0.31	24	---	3.6 E	---
SB-161	09/25/95	5.00	---	---	<0.34	23	---	5.5 E	---
SB-163	09/26/95	1.00	---	---	<0.31	29	---	3.8 E	---
SB-163	09/26/95	3.50	---	---	<0.32	21	---	2.1 E	---
SB-165	09/25/95	1.00	---	---	<0.12	24	---	110 E	---
SB-165	09/25/95	2.50	---	---	<0.36	23	---	20 E	---
SB-165	09/25/95	4.00	---	---	<0.35	29	---	28 E	---
SB-168	09/25/95	1.00	---	---	<0.30	21	---	2.3 E	---
SB-168	09/25/95	3.00	---	---	<0.33	27	---	6.2 E	---
SB-170	09/20/95	1.00	---	---	<0.15	16	---	18	---
SB-172	10/04/95	2.50	---	---	<0.33	23	---	4.4	---
SB-172	10/04/95	4.00	---	---	<0.49	36	---	6.1	---
SB-174	09/20/95	4.00	---	---	<0.35	25	---	13	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SB-147	09/26/95	3.50	52
SB-149	09/25/95	1.00	49
SB-149	09/25/95	4.00	38
SB-149	09/25/95	5.50	33
SB-151	09/27/95	2.50	54
SB-151	09/27/95	6.50	32
SB-153	09/27/95	1.50	45
SB-153	09/27/95	3.50	41
SB-155	09/21/95	1.00	56
SB-155	09/21/95	3.00	64
SB-157	09/21/95	1.00	25
SB-157	09/21/95	3.00	23
SB-159	09/22/95	1.00	47
SB-159	09/22/95	4.00	37
SB-161	09/25/95	1.00	23
SB-161	09/25/95	5.00	27
SB-163	09/26/95	1.00	30
SB-163	09/26/95	3.50	19
SB-165	09/25/95	1.00	120
SB-165	09/25/95	2.50	59
SB-165	09/25/95	4.00	49
SB-168	09/25/95	1.00	21
SB-168	09/25/95	3.00	34
SB-170	09/20/95	1.00	63
SB-172	10/04/95	2.50	25
SB-172	10/04/95	4.00	43
SB-174	09/20/95	4.00	31

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SB-174	09/20/95	5.00	---	---	<0.37	26	---	11	---
SB-178	10/31/95	1.00	---	---	<0.081	25	---	15	---
SB-178	10/31/95	6.00	---	---	0.25 J	32	---	80	---
SB-179	10/31/95	1.00	---	---	<0.066	17	---	13	---
SB-179	10/31/95	4.50	---	---	<0.066	20	---	19	---
SB-182	11/01/95	1.00	---	---	<0.061	19	---	36	---
SB-182	11/01/95	5.00	---	---	<0.066	19	---	17	---
SS-101	09/12/95	0.00	4.4 JE	18 E	<0.065	23	39	24	<0.050
SS-102	09/12/95	0.00	70 E	740 JE	4.1	100	1400	990	0.067 J
SS-103	09/12/95	0.00	180 E	2000	15	180	3800	2100	0.060 J
SS-104	09/12/95	0.00	200 E	1700 JE	13	250	3500	1600	0.10 J
SS-105	09/12/95	0.00	170 E	1700 JE	12	230	4200	2100	0.11 J
SS-109	09/12/95	0.00	---	---	<0.058	16	---	15	---
SS-110	09/12/95	0.00	---	---	<0.061	15	---	19	---
SS-111	09/12/95	0.00	---	---	<0.058	21	---	13	---
SS-112	09/12/95	0.00	---	---	<0.060	15	---	23	---
SS-113	09/12/95	0.00	---	---	<0.057	22	---	14	---
SS-114	09/12/95	0.00	---	---	<0.12	26	---	13	---
SSMW-109	09/26/95	0.00	5.4 JE	13 E	<0.22	26	28	36 E	0.11 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SB-174	09/20/95	5.00	40
SB-178	10/31/95	1.00	120
SB-178	10/31/95	6.00	82
SB-179	10/31/95	1.00	39
SB-179	10/31/95	4.50	49
SB-182	11/01/95	1.00	43
SB-182	11/01/95	5.00	35
SS-101	09/12/95	0.00	130 E
SS-102	09/12/95	0.00	6900 E
SS-103	09/12/95	0.00	23000 E
SS-104	09/12/95	0.00	21000 E
SS-105	09/12/95	0.00	24000 E
SS-109	09/12/95	0.00	56
SS-110	09/12/95	0.00	40
SS-111	09/12/95	0.00	70
SS-112	09/12/95	0.00	42
SS-113	09/12/95	0.00	54
SS-114	09/12/95	0.00	49
SSMW-109	09/26/95	0.00	43

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
MW-201	10/11/95	2.50	---	---	<0.29	33	---	3.9	---
MW-201	10/11/95	7.50	---	---	<0.34	31	---	3.1	---
MW-201	10/11/95	12.50	---	---	<0.36	28	---	4.2	---
MW-204	10/09/95	2.50	---	---	<0.35	23	---	7.4	---
MW-204	10/09/95	7.50	---	---	<0.37	19	---	1.8 J	---
MW-204	10/09/95	12.50	---	---	<0.43	27	---	11	---
SB-201	09/29/95	2.50	---	---	<0.34	24	---	5.2	---
SB-201	09/29/95	7.50	---	---	<0.35	17	---	2.7	---
SB-201	09/29/95	12.50	---	---	<0.12	14	---	2.2	---
SB-202	10/02/95	2.50	---	---	<0.73	21	---	9.9 E	---
SB-202	10/02/95	7.50	---	---	<0.36	24	---	8.0 E	---
SB-202	10/02/95	12.50	---	---	<0.31	13	---	2.3 E	---
SB-203	10/02/95	2.50	---	---	<0.40	21	---	9.9 E	---
SB-203	10/02/95	7.50	---	---	<0.36	19	---	7.2 E	---
SB-203	10/02/95	12.50	---	---	<0.13	12	---	3.6 E	---
SB-204	09/29/95	2.50	---	---	<0.78	24	---	7.2	---
SB-204	09/29/95	7.50	---	---	<0.37	23	---	6.2	---
SB-204	09/29/95	12.50	---	---	<0.32	13	---	1.7 J	---
SB-206	11/09/95	2.50	---	---	<0.067	43	---	19	---
SB-206	11/09/95	7.50	---	---	<0.065	35	---	92	---
SB-206	11/09/95	12.50	---	---	<0.072	36	---	6.2	---
SB-208	11/15/95	2.50	---	---	0.095 BJ	45	---	6.2 E	---
SB-210	09/19/95	2.50	---	---	<0.66	36	---	4.5	---
SB-210	09/19/95	7.50	---	---	<0.36	24	---	3.1	---
SB-210	09/19/95	12.50	---	---	<0.40	26	---	3.4 JE	---
SB-214	11/16/95	2.50	---	---	<0.079	85	---	7.4	---
SB-214	11/16/95	7.50	---	---	0.36 J	60	---	9.2	---

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
MW-201	10/11/95	2.50	32
MW-201	10/11/95	7.50	31
MW-201	10/11/95	12.50	44
MW-204	10/09/95	2.50	42
MW-204	10/09/95	7.50	22
MW-204	10/09/95	12.50	72
SB-201	09/29/95	2.50	34
SB-201	09/29/95	7.50	22
SB-201	09/29/95	12.50	22
SB-202	10/02/95	2.50	60
SB-202	10/02/95	7.50	47
SB-202	10/02/95	12.50	22
SB-203	10/02/95	2.50	59
SB-203	10/02/95	7.50	39
SB-203	10/02/95	12.50	20
SB-204	09/29/95	2.50	53
SB-204	09/29/95	7.50	44
SB-204	09/29/95	12.50	23
SB-206	11/09/95	2.50	67
SB-206	11/09/95	7.50	62
SB-206	11/09/95	12.50	61
SB-208	11/15/95	2.50	70
SB-210	09/19/95	2.50	39
SB-210	09/19/95	7.50	31
SB-210	09/19/95	12.50	39
SB-214	11/16/95	2.50	84
SB-214	11/16/95	7.50	92

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-10
Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SB-214	11/16/95	12.50	---	---	0.23 J	32	---	5.2	---
SB-220	11/17/95	2.50	---	---	<0.064	15	---	2.7 J	---
SB-220	11/17/95	7.50	---	---	<0.068 J	27	---	3.0 J	---
SB-220	11/17/95	12.50	---	---	<0.069	29	---	3.8 J	---
SB-222	11/07/95	2.50	---	---	<0.065	24	---	4.8 E	---
SB-222	11/07/95	7.50	---	---	<0.070	34	---	4.4 E	---
SB-222	11/07/95	12.50	---	---	<0.073	26	---	5.2 E	---
SB-223	11/07/95	2.50	---	---	0.31 J	29	---	32 E	---
SB-223	11/07/95	7.50	---	---	<0.066	33	---	4.2 E	---
SB-223	11/08/95	12.50	---	---	<0.075	43	---	6.6 E	---
SB-224	10/20/95	2.50	---	---	<0.074	22	---	3.9	---
SB-224	10/20/95	7.50	---	---	<0.069	18	---	2.7	---
SB-224	10/20/95	12.50	---	---	<0.070	15	---	3.1	---
SB-226	11/13/95	2.50	---	---	0.21 BJ	61	---	7.5 E	---
SB-226	11/13/95	7.50	---	---	0.25 BJ	53	---	7.9 E	---
SB-226	11/14/95	9.50	---	---	<0.071	32	---	4.2 E	---
SB-228	09/15/95	2.50	---	---	<0.83	63	---	12	---
SB-228	09/15/95	7.50	---	---	<0.80	58	---	11	---
SB-228	09/15/95	12.50	---	---	<0.74	58	---	10	---
SB-230	09/14/95	2.50	---	---	<0.37	38	---	4.2 J	---
SB-230	09/14/95	7.50	---	---	<0.14	26	---	2.0 J	---
SB-232	11/02/95	2.50	---	---	<0.066	30	---	2.7	---
SB-232	11/02/95	7.50	---	---	<0.073	40	---	4.1	---
SB-232	11/02/95	12.50	---	---	<0.069	27	---	3.5	---
SS-201	09/12/95	0.00	83 E	680 JE	3.1	54	1200	920	<0.052
SS-202	09/11/95	0.00	13 JE	13	0.17 J	25	150	27	0.058 J
SS-204	09/11/95	0.00	5.7 JE	13	<0.070	29	30	190	0.17 J

Values represent total concentrations unless noted. < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SB-214	11/16/95	12.50	51
SB-220	11/17/95	2.50	18
SB-220	11/17/95	7.50	34
SB-220	11/17/95	12.50	40
SB-222	11/07/95	2.50	25
SB-222	11/07/95	7.50	39
SB-222	11/07/95	12.50	45
SB-223	11/07/95	2.50	280
SB-223	11/07/95	7.50	46
SB-223	11/08/95	12.50	71
SB-224	10/20/95	2.50	26
SB-224	10/20/95	7.50	27
SB-224	10/20/95	12.50	26
SB-226	11/13/95	2.50	78
SB-226	11/13/95	7.50	81
SB-226	11/14/95	9.50	52
SB-228	09/15/95	2.50	98
SB-228	09/15/95	7.50	88
SB-228	09/15/95	12.50	90
SB-230	09/14/95	2.50	56
SB-230	09/14/95	7.50	30
SB-232	11/02/95	2.50	85
SB-232	11/02/95	7.50	48
SB-232	11/02/95	12.50	40
SS-201	09/12/95	0.00	7800 E
SS-202	09/11/95	0.00	1000
SS-204	09/11/95	0.00	140

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 3-10
Metals in Soil
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
SS-205	09/11/95	0.00	57 JE	510	2.6 J	93	930	900	0.76 J
SS-205	01/24/96	0.50	<1.3 E	3.7	0.21 J	17	19 E	3.9	0.13 J
SS-206	09/11/95	0.00	7.4 JE	11	<0.15	46	61	13	0.12 J
SS-207	09/11/95	0.00	10 JE	8.9	<0.37	74	52	30	0.062 J
SS-209	09/11/95	0.00	8.5 JE	5.1	<0.37	30	25	28	0.096 J
SS-210	09/13/95	0.00	9.7 JE	7.5 J	<0.37	52	40	14	0.081 J
SS-211	09/11/95	0.00	4.5 JE	4.7	<0.13	19	24	29	0.12 J
SS-212	09/11/95	0.00	5.5 JE	4.9	<0.14	23	14	35	0.062 J
SS-213	09/11/95	0.00	13 JE	11	<0.14	65	29	47	0.080 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6--10

Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
SS-205	09/11/95	0.00	4900
SS-205	01/24/96	0.50	80 E
SS-206	09/11/95	0.00	83
SS-207	09/11/95	0.00	110
SS-209	09/11/95	0.00	65
SS-210	09/13/95	0.00	75
SS-211	09/11/95	0.00	42
SS-212	09/11/95	0.00	140
SS-213	09/11/95	0.00	450

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-11

TC Metals in Soil

UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TCLP Arsenic (mg/l)	TCLP Cadmium (mg/l)	TCLP Chromium (mg/l)	TCLP Lead (mg/l)	TCLP Mercury (mg/l)
SS-103	09/12/95	0.00	0.068 BJ	0.040	0.13	0.93	<0.00016
SS-203	09/12/95	0.00	0.053 BJ	0.011	0.011 J	0.14	<0.00016
SS-205	09/11/95	0.00	<0.018	0.0086 J	<0.0031	0.37	<0.00016

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-107	SB-107	SB-131	SB-131
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	1.00	3.50	1.00	4.00
Chloromethane		<0.6	<0.6	<0.6	<3
Bromomethane		<2.8	<2.8	<2.7	<14
Vinyl chloride		<0.6	<0.6	<0.6	<3
Chloroethane		<0.8	<0.8	<0.7	<4
Methylene chloride		3 J	3 J	2 J	<6
Acetone		28 J	28 J	74	<20
Carbon disulfide		<1	<1	<1	<7
1,1-Dichloroethene		<0.4	<0.4	<0.4	<2
1,1-Dichloroethane		<0.3	<0.3	<0.2	<1
cis-1,2-Dichloroethene		<0.4	<0.4	<0.4	<2
trans-1,2-Dichloroethene		<0.4	<0.4	<0.4	<2
Chloroform		<0.1	<0.1	<0.1	<1
1,2-Dichloroethane		<0.3	<0.3	<0.2	<1
2-Butanone		<3	<3	<2	<13
1,1,1-Trichloroethane		<0.3	<0.3	<0.2	<1
Carbon tetrachloride		<0.4	<0.4	<0.4	<2
Vinyl acetate		<4	<4	<4	<20
Bromodichloromethane		<0.3	<0.3	<0.2	<1
1,2-Dichloropropane		<0.4	<0.4	<0.4	<2
cis-1,3-Dichloropropene		<0.3	<0.3	<0.2	<1
Trichloroethene		<0.5	<0.5	<0.5	<3
Dibromochloromethane		<0.3	<0.3	<0.2	<1
1,1,2-Trichloroethane		<0.1	<0.1	<0.1	<1
Benzene		<0.4 J	<0.4 J	13	9100
trans-1,3-Dichloropropene		<0.3	<0.3	<0.2	<1
Bromoform		<0.4	<0.4	<0.4	<2
2-Hexanone		<1	<1	<1	<7
4-Methyl-2-pentanone		<1	<1	<1	<7
Tetrachloroethene		<0.5	<0.5	<0.5	<3
1,1,2,2-Tetrachloroethane		<0.4	<0.4	<0.4	<2
Toluene		<0.5	<0.5	1 J	130 J
Chlorobenzene		<0.9	<0.9	<0.9	<5
Ethylbenzene		2 J	2 J	42	23000

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-107	SB-107	SB-131	SB-131
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	1.00	3.50	1.00	4.00
Styrene		<0.5	<0.5	<0.5	<3
m & p Xylenes		2 J	2 J	160	27000
1,2-Dibromoethane		<0.4	<0.4	<0.4	<2
o-Xylene		1 J	1 J	18	280 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-133	SB-133	SB-134	SB-134
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	1.00	3.50	1.00	3.00
Chloromethane		<0.6	<0.6	<26	<3
Bromomethane		<2.5	<2.8	<120	<12
Vinyl chloride		<0.6	<0.6	<26	<3
Chloroethane		<0.7	<0.8	<32	<3
Methylene chloride		2 J	2 J	<47	9 BJ
Acetone		35	24 J	<160	<16
Carbon disulfide		<1	<1	<53	<5
1,1-Dichloroethene		<0.3	<0.4	<16	<2
1,1-Dichloroethane		<0.2	<0.3	<11	<1
cis-1,2-Dichloroethene		<0.3	<0.4	<16	<2
trans-1,2-Dichloroethene		<0.3	<0.4	<16	<2
Chloroform		<0.1	<0.1	<5	<1
1,2-Dichloroethane		<0.2	<0.3	<11	<1
2-Butanone		<2	<3	<110	<11
1,1,1-Trichloroethane		<0.2	<0.3	<11	<1
Carbon tetrachloride		<0.3	<0.4	<16	<2
Vinyl acetate		<3	<4	<160	<16
Bromodichloromethane		<0.2	<0.3	<11	<1
1,2-Dichloropropane		<0.3	<0.4	<16	<2
cis-1,3-Dichloropropene		<0.2	<0.3	<11	<1
Trichloroethene		<0.5	<0.5	<21	<2
Dibromochloromethane		<0.2	<0.3	<11	<1
1,1,2-Trichloroethane		<0.1	<0.1	<5	<1
Benzene		<0.3	<0.4	64 J	120 J
trans-1,3-Dichloropropene		<0.2	<0.3	<11	<1
Bromoform		<0.3	<0.4	<16	<2
2-Hexanone		<1	<1	<53	<5
4-Methyl-2-pentanone		<1	<1	<53	<5
Tetrachloroethene		<0.5	<0.5	<21	<2
1,1,2,2-Tetrachloroethane		<0.3	<0.4	<16	<2
Toluene		<0.5	<0.5	180 J	15 J
Chlorobenzene		<0.8	<0.9	<37	<4
Ethylbenzene		<0.5	<0.5	2200	1300

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-133	SB-133	SB-134	SB-134
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	1.00	3.50	1.00	3.00
Styrene		<0.5	<0.5	<21	<2
m & p Xylenes		<0.8	<0.9 J	16000	11000
1,2-Dibromoethane		<0.3	<0.4	<16	<2
o-Xylene		<0.3	<0.4	1500	98

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-144	SB-144	SS-101
	DATE	11/02/95	11/02/95	09/12/95
	DEPTH (ft)	1.00	3.00	0.00
Chloromethane		<0.6	<0.6	<0.55 E
Bromomethane		<2.6	<2.5	<2.4 E
Vinyl chloride		<0.6	<0.6	<0.55 E
Chloroethane		<0.7	<0.7	<0.44 E
Methylene chloride		<1.0	2 E	6.6 BJ
Acetone		<3	<3	<1.0 E
Carbon disulfide		<1	<1	<0.29 E
1,1-Dichloroethene		<0.3	<0.3	<0.33 E
1,1-Dichloroethane		<0.2	<0.2	<0.22 E
cis-1,2-Dichloroethene		<0.3	<0.3	<0.33 E
trans-1,2-Dichloroethene		<0.3	<0.3	<0.33 E
Chloroform		<0.1	<0.1	<0.11 E
1,2-Dichloroethane		<0.2	<0.2	<0.22 E
2-Butanone		<2	<2	<4.4 E
1,1,1-Trichloroethane		<0.2	<0.2	<0.22 E
Carbon tetrachloride		<0.3	<0.3	<0.33 E
Vinyl acetate		<3	<3	<4.9 E
Bromodichloromethane		<0.2	<0.2	<0.22 E
1,2-Dichloropropane		<0.3	<0.3	<0.33 E
cis-1,3-Dichloropropene		<0.2	<0.2	<0.22 E
Trichloroethene		<0.5	<0.5	<0.44 E
Dibromochloromethane		<0.2	<0.2	<0.22 E
1,1,2-Trichloroethane		<0.1	<0.1	<0.11 E
Benzene		<0.3	2 E	<0.33 E
trans-1,3-Dichloropropene		<0.2	<0.2	<0.22 E
Bromoform		<0.3	<0.3	<0.33 E
2-Hexanone		<1	<1	<0.80 E
4-Methyl-2-pentanone		<1	<1	<0.44 E
Tetrachloroethene		<0.5	<0.5	<0.44 E
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<0.22 E
Toluene		<0.5	4 E	<0.44 E
Chlorobenzene		<0.8	<0.8	<0.77 E
Ethylbenzene		<0.5	1 E	<0.44 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-144	SB-144	SS-101
	DATE	11/02/95	11/02/95	09/12/95
	DEPTH (ft)	1.00	3.00	0.00
Styrene		<0.5	<0.5	<0.44 E
m & p Xylenes		<0.8	1 E	<0.77 E
1,2-Dibromoethane		<0.3	<0.3	<0.33 E
o-Xylene		<0.3	0.5 E	<0.33 E

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-202	SB-202	SB-202	SB-203
	DATE	10/02/95	10/02/95	10/02/95	10/02/95
	DEPTH (ft)	2.50	7.50	12.50	2.50
Chloromethane		<0.6	<0.6	<0.5	<3
Bromomethane		<2.9	<2.7	<2.3	<14
Vinyl chloride		<0.6	<0.6	<0.5	<3
Chloroethane		<0.8	<0.7	<0.6	<4
Methylene chloride		2 J	15	<0.9	12 J
Acetone		110	82	<3	150
Carbon disulfide		<1	<1	<1	<7
1,1-Dichloroethene		<0.4	<0.4	<0.3	<2
1,1-Dichloroethane		<0.3	<0.2	<0.2	<1
cis-1,2-Dichloroethene		<0.4	<0.4	<0.3	<2
trans-1,2-Dichloroethene		<0.4	<0.4	<0.3	<2
Chloroform		<0.1	<0.1	<0.1	<1
1,2-Dichloroethane		<0.3	<0.2	<0.2	<1
2-Butanone		40	17 J	<2	<13
1,1-Trichloroethane		<0.3	<0.2	<0.2	<1
Carbon tetrachloride		<0.4	<0.4	<0.3	<2
Vinyl acetate		<4	<4	<3	<20
Bromodichloromethane		<0.3	<0.2	<0.2	<1
1,2-Dichloropropane		<0.4	<0.4	<0.3	<2
cis-1,3-Dichloropropene		<0.3	<0.2	<0.2	<1
Trichloroethene		<0.5	<0.5	<0.4	<3
Dibromochloromethane		<0.3	<0.2	<0.2	<1
1,1,2-Trichloroethane		<0.1	<0.1	<0.1	<1
Benzene		<0.4	<0.4	<0.3	<2
trans-1,3-Dichloropropene		<0.3	<0.2	<0.2	<1
Bromoform		<0.4	<0.4	<0.3	<2
2-Hexanone		<1	<1	<1	<7
4-Methyl-2-pentanone		<1	<1	<1	<7
Tetrachloroethene		0.6 J	<0.5	<0.4	<3
1,1,2,2-Tetrachloroethane		<0.4	<0.4	<0.3	<2
Toluene		2 J	<0.5	<0.4	<3
Chlorobenzene		<0.9	<0.9	<0.7	<5
Ethylbenzene		<0.5	<0.5	<0.4	<3

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-202	SB-202	SB-202	SB-203
	DATE	10/02/95	10/02/95	10/02/95	10/02/95
	DEPTH (ft)	2.50	7.50	12.50	2.50
Styrene		<0.5	<0.5	<0.4	<3
m & p Xylenes		<0.9	<0.9	<0.7	<5
1,2-Dibromoethane		<0.4	<0.4	<0.3	<2
o-Xylene		<0.4	<0.4	<0.3	<2

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-203	SB-203
	DATE	10/02/95	10/02/95
	DEPTH (ft)	7.50	12.50
Chloromethane		<0.6	<0.6
Bromomethane		<2.7	<2.4
Vinyl chloride		<0.6	<0.6
Chloroethane		<0.7	<0.7
Methylene chloride		3 J	<1.0
Acetone		85	<3
Carbon disulfide		<1	<1
1,1-Dichloroethene		<0.4	<0.3
1,1-Dichloroethane		<0.2	<0.2
cis-1,2-Dichloroethene		<0.4	<0.3
trans-1,2-Dichloroethene		<0.4	<0.3
Chloroform		<0.1	<0.1
1,2-Dichloroethane		<0.2	<0.2
2-Butanone		12 J	<2
1,1,1-Trichloroethane		<0.2	<0.2
Carbon tetrachloride		<0.4	<0.3
Vinyl acetate		<4	<3
Bromodichloromethane		<0.2	<0.2
1,2-Dichloropropane		<0.4	<0.3
cis-1,3-Dichloropropene		<0.2	<0.2
Trichloroethene		<0.5	<0.4
Dibromochloromethane		<0.2	<0.2
1,1,2-Trichloroethane		<0.1	<0.1
Benzene		<0.4	<0.3
trans-1,3-Dichloropropene		<0.2	<0.2
Bromoform		<0.4	<0.3
2-Hexanone		<1	<1
4-Methyl-2-pentanone		<1	<1
Tetrachloroethene		<0.5	<0.4
1,1,2,2-Tetrachloroethane		<0.4	<0.3
Toluene		<0.5	<0.4
Chlorobenzene		<0.9	<0.8
Ethylbenzene		<0.5	<0.4

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ---= Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-12

VOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/kg)	SITE	SB-203	SB-203
	DATE	10/02/95	10/02/95
	DEPTH (ft)	7.50	12.50
Styrene		<0.5	<0.4
m & p Xylenes		<0.9	<0.8
1,2-Dibromoethane		<0.4	<0.3
o-Xylene		<0.4	<0.3

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-107	SB-131	SB-131	SB-133
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	3.50	1.00	4.00	3.50
Phenol		<0.018	<0.017	0.14 J	<0.017
Bis(2-chloroethyl)ether		<0.026	<0.20	<0.027	<0.026
2-Chlorophenol		<0.032	<0.031	<0.034	<0.032
1,3-Dichlorobenzene		<0.034	<0.032	<0.035	<0.033
1,4-Dichlorobenzene		<0.022	<0.020	<0.022	<0.021
1,2-Dichlorobenzene		<0.024	<0.023	<0.025	<0.024
2-Methylphenol		<0.027	<0.025	<0.028	<0.026
4-Methylphenol		<0.025	<0.024	<0.026	<0.025
N-Nitroso-di-n-propylamine		<0.031	<0.030	<0.032	<0.031
Hexachloroethane		<0.027	<0.026	<0.028	<0.027
Nitrobenzene		<0.022	<0.021	<0.023	<0.022
Isophorone		<0.022	<0.021	<0.023	<0.022
2-Nitrophenol		<0.028	<0.027	<0.029	<0.028
2,4-Dimethylphenol		<0.066	<0.063	<0.068	<0.065
is(2-chloroethoxy)methane		<0.025	<0.024	<0.026	<0.025
2,4-Dichlorophenol		<0.024	<0.023	<0.025	<0.024
1,2,4-Trichlorobenzene		<0.028	<0.027	<0.029	<0.028
Naphthalene		<0.022	0.13 J	1.5	<0.021
4-Chloroaniline		<0.030	<0.029	<0.032	<0.030
Hexachlorobutadiene		<0.030	<0.029	<0.031	<0.030
4-Chloro-3-methylphenol		<0.035	<0.033	<0.036	<0.035
2-Methylnaphthalene		<0.032	0.12 J	1.7	<0.032
Hexachlorocyclopentadiene		<0.013	<0.012	<0.014	<0.013
2,4,6-Trichlorophenol		<0.018	<0.017	<0.018	<0.017
2,4,5-Trichlorophenol		<0.040	<0.038	<0.042	<0.040
2-Chloronaphthalene		<0.024	<0.023	<0.025	<0.024
2-Nitroaniline		<0.015	<0.014	<0.015	<0.015
Dimethyl phthalate		<0.018	<0.017	<0.018	<0.017
Acenaphthylene		<0.023	<0.022	<0.024	<0.023
2,6-Dinitrotoluene		<0.025	<0.024	<0.026	<0.025
3-Nitroaniline		<0.15	<0.150	<0.16	<0.15
Acenaphthene		<0.026	<0.025	<0.027	<0.026
2,4-Dinitrophenol		<0.18	<0.18	<0.19	<0.18

Values represent total concentrations unless noted. < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-107	SB-131	SB-131	SB-133
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	3.50	1.00	4.00	3.50
4-Nitrophenol		<0.23	<0.22	<0.24	<0.23
Dibenzofuran		<0.025	<0.024	<0.026	<0.025
2,4-Dinitrotoluene		<0.023	<0.022	<0.024	<0.023
Diethylphthalate		<0.028	<0.027	<0.029	<0.028
4-Chlorophenyl phenyl ether		<0.029	<0.028	<0.030	<0.029
Fluorene		<0.026	<0.025	0.17 J	<0.026
4-Nitroaniline		<0.027	<0.026	<0.029	<0.027
4,6-Dinitro-2-methylphenol		<0.13	<0.130	<0.14	<0.13
N-Nitrosodiphenylamine		<0.018	<0.017	<0.019	<0.018
4-Bromophenyl phenyl ether		<0.023	<0.022	<0.024	<0.023
Hexachlorobenzene		<0.022	<0.021	<0.023	<0.022
Pentachlorophenol		<0.092	<0.088	<0.096	<0.091
Phenanthrene		<0.023	0.024 J	0.31	<0.023
Anthracene		<0.020	<0.019	<0.021	<0.020
Di-n-butylphthalate		0.029 J	0.020	<0.022	<0.021
Fluoranthene		<0.019	<0.018	0.035 J	<0.018
Pyrene		<0.026	<0.024	0.047 J	<0.025
Butyl benzyl phthalate		<0.019	<0.018	<0.019	<0.018
3,3'-Dichlorobenzidine		<0.033	<0.032	<0.035	<0.033
Benzo(a)anthracene		<0.021	<0.020	<0.021	<0.020
Chrysene		<0.027	<0.026	0.023 J	<0.027
Bis(2-ethylhexyl)phthalate		0.24 BJ	0.20 JB	0.85 B	0.21 BJ
Di-n-octyl phthalate		<0.025	<0.024	<0.026	<0.025
Benzo(b)fluoranthene		<0.026	<0.025	<0.027	<0.026
Benzo(k)fluoranthene		<0.027	<0.026	<0.028	<0.027
Benzo(a)pyrene		<0.019	<0.018	<0.020	0.056 J
Indeno(1,2,3-cd)pyrene		<0.087	<0.083	<0.090	<0.086
Dibenz(a,h)anthracene		<0.021	<0.020	<0.022	<0.021
Benzo(g,h,i)perylene		<0.026	<0.024	<0.027	<0.025
N-Nitrosodimethylamine		<0.049	<0.046	<0.050	<0.048
Aniline		<0.21	<0.20	<0.22	<0.21
Benzyl alcohol		<0.061	<0.058	<0.064	<0.060
Bis(2-chloroisopropyl)ether		<0.078	<0.075	<0.082	<0.078

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-107	SB-131	SB-131	SB-133
	DATE	09/28/95	09/28/95	09/28/95	09/28/95
	DEPTH (ft)	3.50	1.00	4.00	3.50
Benzoic acid		<0.24	<0.23	<0.25	<0.24
Benzidine		<2.1	<2.0	<2.2	<2.1

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-134	SS-101
	DATE	09/28/95	09/12/95
	DEPTH (ft)	3.00	0.00
Phenol		<0.060	<0.015
Bis(2-chloroethyl)ether		<0.089	<0.023
2-Chlorophenol		<0.11	<0.028
1,3-Dichlorobenzene		<0.11	<0.029
1,4-Dichlorobenzene		<0.073	<0.019
1,2-Dichlorobenzene		<0.083	<0.021
2-Methylphenol		<0.090	<0.023
4-Methylphenol		<0.084	<0.022
N-Nitroso-di-n-propylamine		<0.11	<0.027
Hexachloroethane		<0.091	<0.024
Nitrobenzene		<0.074	<0.019
Isophorone		<0.076	<0.020
2-Nitrophenol		<0.096	<0.025
2,4-Dimethylphenol		<0.22	<0.057
Bis(2-chloroethoxy)methane		<0.086	<0.022
2,4-Dichlorophenol		<0.083	<0.021
1,2,4-Trichlorobenzene		<0.094	<0.024
Naphthalene		5.1	<0.019
4-Chloroaniline		<0.10	<0.027
Hexachlorobutadiene		<0.10	<0.026
4-Chloro-3-methylphenol		<0.12	<0.031
2-Methylnaphthalene		4.6	<0.028
Hexachlorocyclopentadiene		<0.044	<0.011
2,4,6-Trichlorophenol		<0.060	<0.015
2,4,5-Trichlorophenol		<0.14	<0.035
2-Chloronaphthalene		<0.081	<0.021
2-Nitroaniline		<0.050	<0.013
Dimethyl phthalate		<0.060	<0.015
Acenaphthylene		<0.079	<0.020
2,6-Dinitrotoluene		<0.084	<0.022
3-Nitroaniline		<0.52	<0.13
Acenaphthene		0.36 J	<0.023
2,4-Dinitrophenol		<0.62	<0.16

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-134	SS-101
	DATE	09/28/95	09/12/95
	DEPTH (ft)	3.00	0.00
4-Nitrophenol		<0.79	<0.20
Dibenzofuran		0.32 J	<0.022
2,4-Dinitrotoluene		<0.077	<0.020
Diethylphthalate		<0.096	<0.024
4-Chlorophenyl phenyl ether		<0.099	<0.025
Fluorene		0.61 J	<0.023
4-Nitroaniline		<0.093	<0.024
4,6-Dinitro-2-methylphenol		<0.45	<0.12
N-Nitrosodiphenylamine		<0.061	<0.016
4-Bromophenyl phenyl ether		<0.077	<0.020
Hexachlorobenzene		<0.076	<0.020
Pentachlorophenol		<0.31	<0.080
Phenanthrene		0.56 J	<0.020
Anthracene		<0.069	<0.018
Di-n-butylphthalate		<0.073	<0.019
Fluoranthene		<0.063	<0.016
Pyrene		<0.087	<0.022
Butyl benzyl phthalate		<0.063	<0.016
3,3'-Dichlorobenzidine		<0.11	<0.029
Benzo(a)anthracene		<0.070	<0.018
Chrysene		<0.093	<0.024
Bis(2-ethylhexyl)phthalate		0.29 BJ	<0.035
Di-n-octyl phthalate		<0.086	<0.022
Benzo(b)fluoranthene		<0.089	<0.023
Benzo(k)fluoranthene		<0.091	<0.023
Benzo(a)pyrene		<0.064	<0.016
Indeno(1,2,3-cd)pyrene		<0.29	<0.076
Dibenz(a,h)anthracene		<0.071	<0.018
Benzo(g,h,i)perylene		<0.087	<0.022
N-Nitrosodimethylamine		<0.16	<0.042
Aniline		<0.71	<0.18
Benzyl alcohol		<0.21	<0.053
Bis(2-chloroisopropyl)ether		<0.27	<0.069

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-134	SS-101
	DATE	09/28/95	09/12/95
	DEPTH (ft)	3.00	0.00
Benzoic acid		<0.82	<0.21
Benzidine		<7.1	<1.8

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6–13

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-202
	DATE	10/02/95
	DEPTH (ft)	12.50
Phenol		<0.015
Bis(2-chloroethyl)ether		<0.022
2-Chlorophenol		<0.027
1,3-Dichlorobenzene		<0.028
1,4-Dichlorobenzene		<0.018
1,2-Dichlorobenzene		<0.020
2-Methylphenol		<0.022
4-Methylphenol		<0.021
N-Nitroso-di-n-propylamine		<0.026
Hexachloroethane		<0.022
Nitrobenzene		<0.018
Isophorone		<0.018
2-Nitrophenol		<0.023
2,4-Dimethylphenol		<0.054
.s(2-chloroethoxy)methane		<0.021
2,4-Dichlorophenol		<0.020
1,2,4-Trichlorobenzene		<0.023
Naphthalene		<0.018
4-Chloroaniline		<0.025
Hexachlorobutadiene		<0.025
4-Chloro-3-methylphenol		<0.029
2-Methylnaphthalene		<0.027
Hexachlorocyclopentadiene		<0.011
2,4,6-Trichlorophenol		<0.015
2,4,5-Trichlorophenol		<0.033
2-Chloronaphthalene		<0.020
2-Nitroaniline		<0.012
Dimethyl phthalate		<0.015
Acenaphthylene		<0.019
2,6-Dinitrotoluene		<0.021
3-Nitroaniline		<0.13
Acenaphthene		<0.022
2,4-Dinitrophenol		<0.15

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-202
	DATE	10/02/95
	DEPTH (ft)	12.50
4-Nitrophenol		<0.19
Dibenzofuran		<0.021
2,4-Dinitrotoluene		<0.019
Diethylphthalate		<0.023
4-Chlorophenyl phenyl ether		<0.024
Fluorene		<0.022
4-Nitroaniline		<0.023
4,6-Dinitro-2-methylphenol		<0.11
N-Nitrosodiphenylamine		<0.015
4-Bromophenyl phenyl ether		<0.019
Hexachlorobenzene		<0.018
Pentachlorophenol		<0.076
Phenanthrene		<0.019
Anthracene		<0.017
Di-n-butylphthalate		<0.018
Fluoranthene		<0.015
Pyrene		<0.021
Butyl benzyl phthalate		<0.015
3,3'-Dichlorobenzidine		<0.028
Benzo(a)anthracene		<0.017
Chrysene		<0.023
Bis(2-ethylhexyl)phthalate		0.11 U
Di-n-octyl phthalate		<0.021
Benzo(b)fluoranthene		<0.022
Benzo(k)fluoranthene		<0.022
Benzo(a)pyrene		<0.016
Indeno(1,2,3-cd)pyrene		<0.072
Dibenz(a,h)anthracene		<0.017
Benzo(g,h,i)perylene		<0.021
N-Nitrosodimethylamine		<0.040
Aniline		<0.17
Benzyl alcohol		<0.051
Bis(2-chloroisopropyl)ether		<0.065

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

SVOCs in Soil
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in mg/kg)	SITE	SB-202
	DATE	10/02/95
	DEPTH (ft)	12.50
Benzoic acid		<0.20
Benzidine		<1.7

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

Table 6-14
Glyphosate Results
UNOCAL Edmonds Bulk Fuel Terminal

Sampling Location	Date Collected	Glyphosate Concentration (mg/kg)
Surface Soil		
SS-206	9/11/95	<0.050
SS-207	9/11/95	<0.050
SS-210	9/13/95	<0.050
Catch Basin Sediment		
CB-U31	2/7/96	<0.050

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Table 6–15

TPH and BTEX in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	Motor Oil (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
MW-108	09/26/95	7.50	<19	<75	<4.9	<0.019	<0.019	<0.019	<0.019
MW-108	09/26/95	10.00	<15	<59	<3.8	<0.015	<0.015	<0.015	<0.015
MW-108	09/26/95	12.50	<13	<52	<3.4	<0.013	<0.013	<0.013	<0.013
MW-109	10/03/95	7.50	<15	<61	<3.9	0.033 J	0.024 J	<0.015	0.081 J
MW-109	10/03/95	10.00	<13	<51	<3.3	<0.013	<0.013	<0.013	<0.013
MW-109	10/03/95	12.50	<12	<48	<3.1	<0.012	0.015 J	<0.012	0.044 J
MW-110	09/20/95	12.50	2000	450	2700 E	0.056 JE	1.6 E	0.42 E	3.7 E
MW-110	09/20/95	14.00	4500	1100	930	0.028 E	1.0 E	0.21 E	1.5 E
MW-112	09/19/95	6.00	2600	1700	91	0.29	0.12 J	0.17	0.14
MW-112	09/19/95	8.50	590	430	<3.8	0.029 J	<0.015	<0.015	<0.015
MW-115	09/19/95	7.50	140	160	<3.3	<0.013	<0.013	<0.013	<0.013
MW-115	09/19/95	10.00	14	<49	<3.2	<0.012	<0.012	<0.012	<0.012
MW-115	09/19/95	12.50	620	400	<3.3	<0.013	<0.013	<0.013	<0.013
MW-118	09/20/95	12.50	17	54	<3.2	0.025 J	0.013 J	0.028 J	0.024 J
MW-121	10/03/95	7.00	3400	1700	10000	<0.22 E	22 E	1.4 JE	37 E
MW-121	10/03/95	10.00	1400	740	800	<0.11 E	0.75 JE	<0.11 E	2.8 E
MW-121	10/03/95	13.00	34	<49	79	<0.012	0.078 J	<0.012	0.26
MW-121	10/03/95	18.50	200	110	23 J	<0.011	0.026 J	<0.011	0.081 J
MW-122	09/25/95	7.00	<13	<50	<3.3	<0.013	<0.013	<0.013	<0.013
MW-122	09/26/95	10.00	<13	53	<3.3	<0.013	<0.013	<0.013	<0.013
MW-122	09/26/95	13.00	<12	<48	<3.1	<0.012	<0.012	<0.012	0.013 J
MW-133	10/04/95	7.50	<12 E	<49 E	<3.2	<0.012	<0.012	<0.012	<0.012
MW-133	10/04/95	12.50	<13 E	<52 E	<3.4	<0.013	<0.013	<0.013	<0.013
MW-139	12/19/95	7.50	<14	<54	<3.5	<0.014	<0.014	<0.014	0.016 J
MW-139	12/19/95	10.00	<12	<48	<3.1	<0.012	<0.012	<0.012	<0.012
MW-139	12/19/95	12.50	33	120	<3.4	<0.013	<0.013	<0.013	<0.013
SB-104	09/28/95	6.50	450 E	51 E	3600	4.1 JE	17 E	6.9 JE	15 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

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Tab -15

TPH and BTEX in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

Date: 02/22/00

SITE	DATE	DEPTH (ft)	TPH (as diesel) (mg/kg)	Motor Oil (mg/kg)	TPH (as gasoline) (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)
SB-104A	11/09/95	9.00	<12	<48	28 J	0.23	0.16	0.049 J	0.25
SB-104A	11/09/95	11.50	<12	<47	3.6 J	<0.012	<0.012	<0.012	<0.012
SB-104A	11/09/95	14.00	<12	<49	3.9 J	0.040 J	<0.012	<0.012	<0.012
SB-108	09/28/95	6.50	27	<54	570	0.10 JE	0.55 E	0.18 JE	1.8 E
SB-108	09/28/95	8.00	<12	<49	<3.2	<0.012	<0.012	<0.012	<0.012
SB-156	10/03/95	6.50	<13	<50	4.6 J	<0.013	0.015 J	<0.013	0.074 J
SB-156	10/03/95	8.00	<12	<47	<3.1	<0.012	<0.012	<0.012	<0.012

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

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Table 6-16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

Date: 02/22/00

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
MW-108	09/26/95	7.50	<16	<31	<16	<3.1	3.8 J	<1.6	14 J
MW-108	09/26/95	10.00	<12	<25	<12	<2.5	6.7 J	<1.2	43 J
MW-108	09/26/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<8.7
MW-109	10/03/95	7.50	<13	<25	<13	<2.5	<1.3	<1.3	<5.1
MW-109	10/03/95	10.00	<11	<21	<11	<2.1	<1.1	<1.1	<4.3
MW-109	10/03/95	12.50	<9.9	<20	<9.9	<2.0	<0.99	<0.99	<4.0
MW-110	09/20/95	12.50	6200 E	700 E	<97 E	1500 E	1700 E	600 E	4900 E
MW-110	09/20/95	14.00	3500 E	390 E	<99 E	890 E	1100 E	420 E	2800 E
MW-112	09/19/95	6.00	31 JE	63 JE	<10 E	490 E	1200 E	320 E	6200 XE
MW-112	09/19/95	8.50	<12	<25	<12	9.0 J	31	<1.2	160 X
MW-115	09/19/95	7.50	<11	<21	<11	19 J	22	<2.1	95 X
MW-115	09/19/95	10.00	<10	<21	<10	6.8 J	19	<1.0	100 X
MW-115	09/19/95	12.50	<11	<21	<11	88	200	42 J	920 X
MW-118	09/20/95	12.50	21 J	<20	<10	2.8 J	4.5 J	<1.0	<4.1
MW-121	10/03/95	7.00	4700 E	550 E	<190 E	910 E	1000 E	<19 E	3100 E
MW-121	10/03/95	10.00	2700 E	<180 E	<91 E	350 E	420 E	<9.1 E	<37 E
MW-121	10/03/95	13.00	29 J	<21	<10	<2.1	3.6 J	<1.0	15 J
MW-121	10/03/95	18.50	170	<19	<9.6	25	17	3.4 J	94
MW-122	09/25/95	7.00	<10	<21	<10	<2.1	<1.0	<1.0	<8.3
MW-122	09/26/95	10.00	<11	<21	<11	<2.1	<1.1	<1.1	<8.5
MW-122	09/26/95	13.00	<10	<20	<10	<2.0	<1.0	<1.0	<8.0
MW-133	10/04/95	7.50	<10	<20	<10	<2.0	<1.0	<1.0	<4.1
MW-133	10/04/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
MW-139	12/19/95	7.50	<11	<23	<11	<2.3	<1.1	<1.1	<4.5
MW-139	12/19/95	10.00	<10	<20	<10	<2.0	<1.0	<1.0	<4.0
MW-139	12/19/95	12.50	<11	<22	<11	<2.2	<1.1	<1.1	<4.3
SB-104	09/28/95	6.50	660	<20	<9.9	32	74	14	100

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

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Table 6–16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k)fluor anthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
MW-108	09/26/95	7.50	2.3 J	<1.6	<1.6	<3.1	<1.6	<1.6	<3.1
MW-108	09/26/95	10.00	1.9 J	<1.2	<1.2	<2.5	<1.2	<1.2	<2.5
MW-108	09/26/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
MW-109	10/03/95	7.50	<1.3	<1.3	<1.3	<2.5	<1.3	<1.3	<2.5
MW-109	10/03/95	10.00	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
MW-109	10/03/95	12.50	<0.99	<0.99	<0.99	<2.0	<0.99	<0.99	<2.0
MW-110	09/20/95	12.50	<19 E	<9.7 E	<9.7 E	<19 E	<9.7 E	14 JE	<38 E
MW-110	09/20/95	14.00	<9.9 E	46 JE	<9.9 E	<20 E	<9.9 E	<9.9 E	<20 E
MW-112	09/19/95	6.00	<1.0 E	120 E	<20 E	<2.0 E	27 E	41 JE	<2.0 E
MW-112	09/19/95	8.50	<1.2	<1.2	<2.4	<2.5	<1.2	<2.5	<2.5
MW-115	09/19/95	7.50	<1.1	<1.1	<1.1	<2.1	<1.1	<2.1	<2.1
MW-115	09/19/95	10.00	<1.0	<1.0	<1.0	<2.1	<1.0	<2.0	<2.1
MW-115	09/19/95	12.50	<1.1	16	<1.1	<2.1	1.3 J	2.8 J	<2.1
MW-118	09/20/95	12.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-121	10/03/95	7.00	<19 E	<19 E	530 E	<37 E	19 E	19 E	<37 E
MW-121	10/03/95	10.00	<9.1 E	<9.1 E	200 E	<18 E	99 E	140 E	<18 E
MW-121	10/03/95	13.00	<1.0	<1.0	2.5 J	<2.1	<1.0	<1.0	<2.1
MW-121	10/03/95	18.50	<0.96	<0.96	17	<1.9	<0.96	1.3 J	<1.9
MW-122	09/25/95	7.00	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
MW-122	09/26/95	10.00	<1.1	<1.1	<1.1	<2.1	<1.1	<1.1	<2.1
MW-122	09/26/95	13.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-133	10/04/95	7.50	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-133	10/04/95	12.50	<1.1	<1.1	<1.1	<2.2	<1.1	<1.1	<2.2
MW-139	12/19/95	7.50	<1.1	<1.1	<1.1	<2.3	<1.1	<1.1	<2.3
MW-139	12/19/95	10.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
MW-139	12/19/95	12.50	2.4 J	<1.1	1.6 J	<2.2	<1.1	<1.1	<2.2
SB-104	09/28/95	6.50	<0.99	3.3 J	11	<2.0	1.5	<0.99	<2.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

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Table 6-16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
MW-108	09/26/95	7.50	<3.1	<1.6
MW-108	09/26/95	10.00	<2.5	<1.2
MW-108	09/26/95	12.50	<2.2	<1.1
MW-109	10/03/95	7.50	<2.5	<1.3
MW-109	10/03/95	10.00	<2.1	<1.1
MW-109	10/03/95	12.50	<2.0	<0.99
MW-110	09/20/95	12.50	<38 E	<19 E
MW-110	09/20/95	14.00	43 JE	<9.9 E
MW-112	09/19/95	6.00	42 E	<1.0 E
MW-112	09/19/95	8.50	<2.5	<1.2
MW-115	09/19/95	7.50	<2.1	<1.1
MW-115	09/19/95	10.00	<2.1	<1.0
MW-115	09/19/95	12.50	<2.1	<1.1
MW-118	09/20/95	12.50	<2.0	<1.0
MW-121	10/03/95	7.00	<37 E	<19 E
MW-121	10/03/95	10.00	<18 E	27 E
MW-121	10/03/95	13.00	<2.1	<1.0
MW-121	10/03/95	18.50	<1.9	3.7 J
MW-122	09/25/95	7.00	<2.1	<1.0
MW-122	09/26/95	10.00	<2.1	<1.1
MW-122	09/26/95	13.00	<2.0	<1.0
MW-133	10/04/95	7.50	<2.0	<1.0
MW-133	10/04/95	12.50	<2.2	<1.1
MW-139	12/19/95	7.50	<2.3	<1.1
MW-139	12/19/95	10.00	<2.0	<1.0
MW-139	12/19/95	12.50	<2.2	<1.1
SB-104	09/28/95	6.50	<2.0	<0.99

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

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Table 6–16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

Date: 02/22/00

SITE	DATE	DEPTH (ft)	Naphthalene (ug/kg)	Acenaphthylene (ug/kg)	Acenaphthene (ug/kg)	Fluorene (ug/kg)	Phenanthrene (ug/kg)	Anthracene (ug/kg)	Fluoranthene (ug/kg)
SB-104A	11/09/95	9.00	620	26 J	<9.9	15 J	41	7.0 J	130
SB-104A	11/09/95	11.50	23 J	<19	<9.7	<1.9	3.2 J	<0.97	<7.8
SB-104A	11/09/95	14.00	85 J	<21	<10	<2.1	5.8 J	<1.0	18 J
SB-108	09/28/95	6.50	<11	<23	<11	<2.3	8.8 J	<1.1	17 J
SB-108	09/28/95	8.00	<10	<20	<10	<2.0	3.0 J	<1.0	5.3 J
SB-156	10/03/95	6.50	<10	<21	<10	<2.1	<1.0	<1.0	<4.2
SB-156	10/03/95	8.00	<9.8	<20	<9.8	<2.0	<0.98	<0.98	<3.9

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Pyrene (ug/kg)	Benzo(a) anthracene (ug/kg)	Chrysene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k)fluor anthene (ug/kg)	Benzo(a)pyrene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)
SB-104A	11/09/95	9.00	17	<0.99	18	<2.0	<0.99	1.6 J	<2.0
SB-104A	11/09/95	11.50	2.3 J	<0.97	3.1 J	<1.9	<0.97	<0.97	<1.9
SB-104A	11/09/95	14.00	5.4 J	<1.0	4.5 J	<2.1	<1.0	1.3 J	<2.1
SB-108	09/28/95	6.50	<1.1	<1.1	1.4 J	<2.3	<1.1	<1.1	<2.3
SB-108	09/28/95	8.00	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0
SB-156	10/03/95	6.50	<1.0	<1.0	<1.0	<2.1	<1.0	<1.0	<2.1
SB-156	10/03/95	8.00	<0.98	<0.98	<0.98	<2.0	<0.98	<0.98	<2.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 3-16

PAHs in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	DEPTH (ft)	Benzo(g,h,i) perylene (ug/kg)	Indeno (1,2,3-cd) pyrene (ug/kg)
SB-104A	11/09/95	9.00	<2.0	<0.99
SB-104A	11/09/95	11.50	<1.9	<0.97
SB-104A	11/09/95	14.00	<2.1	<1.0
SB-108	09/28/95	6.50	<2.3	<1.1
SB-108	09/28/95	8.00	<2.0	<1.0
SB-156	10/03/95	6.50	<2.1	<1.0
SB-156	10/03/95	8.00	<2.0	<0.98

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

DRAFT

Table 6–17

Metals in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

Date: 02/22/00

SITE	DATE	DEPTH (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
MW-109	10/03/95	7.50	---	---	<0.43	37	---	4.6 E	---
MW-109	10/03/95	10.00	---	---	<0.14	13	---	1.3 E	---
MW-109	10/03/95	12.50	---	---	<0.12	9.1	---	0.80 J	---
MW-112	09/19/95	6.00	---	---	<0.36	25	---	3.5 JE	---
MW-112	09/19/95	8.50	---	---	<0.42	27	---	2.7 JE	---
MW-118	09/20/95	12.50	---	---	<0.15	17	---	0.92	---
MW-121	10/03/95	7.00	---	---	<0.31	18	---	15	---
MW-121	10/03/95	10.00	---	---	<0.28	15	---	29	---
MW-121	10/03/95	13.00	---	---	<0.34	16	---	2.0 J	---
MW-121	10/03/95	18.50	---	---	<0.32	15	---	2.5	---
MW-122	09/25/95	7.00	---	---	<0.38	21	---	1.4 E	---
MW-122	09/26/95	10.00	---	---	<0.14	13	---	1.5 E	---
MW-122	09/26/95	13.00	---	---	<0.13	11	---	1.0 E	---
MW-139	12/19/95	7.50	---	---	0.23 J	18	---	1.9 JE	---
MW-139	12/19/95	10.00	---	---	0.12 J	14	---	1.0 E	---
MW-139	12/19/95	12.50	---	---	0.20 J	12	---	1.3 E	---
SB-104	09/28/95	6.50	---	---	<0.34	14	---	2.1	---
SB-104A	11/09/95	9.00	---	---	<0.065	16	---	1.4 J	---
SB-104A	11/09/95	11.50	---	---	0.20 BJ	14	---	1.1 J	---
SB-104A	11/09/95	14.00	---	---	<0.065	12	---	1.5 J	---
SB-108	09/28/95	6.50	---	---	<0.40	28	---	3.5	---
SB-108	09/28/95	8.00	---	---	<0.35	23	---	2.4	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series.

Upper Yard sampling locations = 200 series.

DRAFT

Table 6–17

Metals in Saturated Soils
UNOCAL Edmonds Bulk Fuel Terminal

Date: 02/22/00

SITE	DATE	DEPTH (ft)	Zinc (mg/kg)
MW-109	10/03/95	7.50	34
MW-109	10/03/95	10.00	17
MW-109	10/03/95	12.50	14
MW-112	09/19/95	6.00	25
MW-112	09/19/95	8.50	32
MW-118	09/20/95	12.50	20
MW-121	10/03/95	7.00	36
MW-121	10/03/95	10.00	45
MW-121	10/03/95	13.00	20
MW-121	10/03/95	18.50	24
MW-122	09/25/95	7.00	24
MW-122	09/26/95	10.00	21
MW-122	09/26/95	13.00	14
MW-139	12/19/95	7.50	23
MW-139	12/19/95	10.00	21
MW-139	12/19/95	12.50	19
SB-104	09/28/95	6.50	21
SB-104A	11/09/95	9.00	20
SB-104A	11/09/95	11.50	23
SB-104A	11/09/95	14.00	18
SB-108	09/28/95	6.50	37
SB-108	09/28/95	8.00	28

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Lower Yard sampling locations = 100 series. Upper Yard sampling locations = 200 series.

Table 6-18
Tar-like Material Analytical Results
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Units	Concentration
PAHs		
Naphthalene	mg/kg	8.3 J
Acenaphthylene	mg/kg	< 2.5
Acenaphthene	mg/kg	< 1.3
Fluorene	mg/kg	12
Phenanthrene	mg/kg	18
Anthracene	mg/kg	12
Fluoranthene	mg/kg	71
Pyrene	mg/kg	13
Benzo(a)anthracene	mg/kg	< 0.13
Chrysene	mg/kg	18
Benzo(b)fluoranthene	mg/kg	< 0.25
Benzo(k)fluoranthene	mg/kg	1.7
Benzo(a)pyrene	mg/kg	1.9
Dibenzo(a,h)anthracene	mg/kg	< 0.25
Benzo(g,h,i)perylene	mg/kg	16
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.13
TC Semivolatiles[a]		
Pyridine	mg/kg	< 110
Cresols (total)	mg/kg	< 32
1,4-Dichlorobenzene	mg/kg	< 26
Hexachloroethane	mg/kg	< 32
Nitrobenzene	mg/kg	< 26
Hexachlorobutadiene	mg/kg	< 36
2,4,6-Trichlorophenol	mg/kg	< 21
2,4,5-Trichlorophenol	mg/kg	< 48
2,4-Dinitrotoluene	mg/kg	< 27
Hexachlorobenzene	mg/kg	< 27
Pentachlorophenol	mg/kg	< 110

Table 6-18
Tar-like Material Analytical Results
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Units	Concentration
TC Metals		
Cadmium	mg/L	0.0019 BJ
Chromium	mg/L	0.0064 J
Lead	mg/L	0.22
TPH		
TPH (as diesel)	mg/kg	15,000
TPH (as motor oil)	mg/kg	22,000
TPH (as gasoline)	mg/kg	830
Other		
Btu content	Btu per pound	6,259

Notes: < = analyte was not detected at the method detection limit shown.

J = estimated quantity (value reported is between the MDL and 10x the MDL).

B = the analyte was also detected in an associated blank.

[a] The matrix did not product a leachate, therefore a medium level Method 8270 extraction was performed.

Table 6-19
Combustible Gas Indicator Measurements During Field Explorations
UNOCAL Edmonds Bulk Fuel Terminal

Location	Measurement Depth (ft bgs)	CGI Reading (% LEL) During Field Explorations[a] 9/13/95 - 10/13/95
Lower Yard Monitoring Well Borings		
MW-108	1	0
MW-112	1	4
MW-113	1	3
MW-114	1.5	0
MW-115	1	25
MW-116	1	5
MW-117	1	0
MW-118	1	60
	4.5	3
MW-119	1	0
	3.5	42
MW-123	2.5	0
MW-128	1	0
MW-132	1	0
	8.5	0
Lower Yard Soil Borings		
SB-103	1	0
SB-106	1	0
SB-111	2.5	0
SB-112	1	0
SB-122	1	0
SB-123	1	0
SB-124	1	0
SB-126	1	0
SB-127	1	0
SB-128	1	0

Table 6-19
Combustible Gas Indicator Measurements During Field Explorations
UNOCAL Edmonds Bulk Fuel Terminal

Location	Measurement Depth (ft bgs)	CGI Reading (% LEL) During Field Explorations[a] 9/13/95 - 10/13/95
Lower Yard Soil Borings (Continued)		
SB-136	1	0
SB-138	1	0
SB-143	1	0
SB-150	1	0
SB-154	1	0
SB-155	1	0
SB-157	1	0
SB-159	1	0
SB-161	1	0
SB-162	1	0
SB-163	1	0
SB-165	1	0
SB-166	1	0
SB-168	1	0
Lower Yard Test Pits		
TP-101	0.25	0
	2	0
TP-102	0.25	0
	0.75	0
	2.5	0
TP-103	1	0
	2.5	0
	4.5	0
	6	0
Upper Yard Monitoring Wells and Piezometers		
MW-204	5	0

Table 6-19
Combustible Gas Indicator Measurements During Field Explorations
UNOCAL Edmonds Bulk Fuel Terminal

Location	Measurement Depth (ft bgs)	CGI Reading (% LEL) During Field Explorations[a] 9/13/95 - 10/13/95
Upper Yard Soil Borings		
SB-213	0	0
	3.5	0
SB-225	1	0
	2.5	0
	7.5	0
	10	0
SB-228	1	0
	7.5	0
	12.5	0
SB-229	3	0
	7.5	0
	12.5	0
SB-230	2.5	0
	7.5	0
Upper Yard Test Trenches		
T-201	0.5	0
	2.75	0
T-202	0.25	0
	3.25	0

NOTE: ft bgs = feet below ground surface
CGI = combustible gas indicator
% LEL = % of the lower explosive limit of methane
[a] Measured at top of auger while drilling in the vadose zone or in test pit during excavation.

Table 6-20
Combustible Gas Indicator Measurements at Wellheads
UNOCAL Edmonds Bulk Fuel Terminal

Well	Stable CGI Reading (% LEL) 1/18/96 - 1/24/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96
Lower Yard Monitoring Wells		
LM-1	210	10
LM-2	6	0
LM-3	8	1
MW-E	15	50
MW-W	66	80
MW-1	4	0
MW-2	755	85
MW-3	2	0
MW-5	210	7
MW-6	< 19	0
MW-7	43	0
MW-8	< 2	7
MW-10	75	285
MW-11	57	5
MW-13	19	0
MW-15	210	415
MW-17	< 19	0
MW-19	265	190
MW-20	< 2	31
MW-21	79	285
MW-22	< 2	205
MW-25	19	2
MW-26	< 2	265
MW-27	< 2	0
MW-28 (BNRR)	< 2	0
MW-101	< 2	0
MW-102	1,040	4

Table 6-20
Combustible Gas Indicator Measurements at Wellheads
UNOCAL Edmonds Bulk Fuel Terminal

Well	Stable CGI Reading (% LEL) 1/18/96 - 1/24/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96
Lower Yard Monitoring Wells (Continued)		
MW-103	11	1
MW-104	< 2	2
MW-105	< 2	0
MW-106	< 2	0
MW-107	< 2	0
MW-108	< 2	0
MW-109	< 2	0
MW-110	19	66
MW-111	< 2	0
MW-112	< 19	75
MW-113	565	360
MW-114	455	90
MW-115	115	67
MW-116	19	65
MW-117	470	77
MW-118	415	190
MW-119	38	11
MW-123	790	65
MW-124	19	75
MW-125	< 19	54
MW-126	115	15
MW-127	< 19	70
MW-128	940	85
MW-129	38	80
MW-130	1,060	67
MW-131	375	75
MW-132	1,130	95
MW-133	< 2	75

Table 6-20
Combustible Gas Indicator Measurements at Wellheads
UNOCAL Edmonds Bulk Fuel Terminal

Well	Stable CGI Reading (% LEL) 1/18/96 - 1/24/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96
Lower Yard Monitoring Wells (Continued)		
MW-134	< 2	0
MW-135	< 2	0
MW-136	94	15
MW-137	< 2	0
MW-138	< 2	0
MW-139	8	0
Upper Yard Monitoring Wells and Piezometers		
HA-5	0	0
HA-12	0	0
MW-5U	0	0
MW-10U	0	0
MW-13U	0	0
MW-203	0	0
MW-204	0	0
P-201s	0	0
P-202s	0	0
P-203s	0	0

NOTE: CGI = combustible gas indicator
% LEL = % of the lower explosive limit of methane

Table 6-21
Combustible Gas Indicator Measurements in Lower Yard Catch Basins and Buildings
UNOCAL Edmonds Bulk Fuel Terminal

Well	Maximum CGI Reading (% LEL) 6/7/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96[a]
Catch Basins		
L1	---	0
L2	---	0
L3	---	0
L4	---	0
L5	---	0
L6	---	0
L7	---	0
L8	---	0
L9	---	0
L10	---	0
L11	---	0
L12	---	0
L13	---	0
L14	---	0
L15	---	0
L16	---	0
L17	---	0
L18	---	0
L19	---	0
L20	---	0
L21	---	0
L22	---	0
L23	---	0
L24	---	0
L25	---	0
L26	---	0
L27	---	0

Table 6-21
Combustible Gas Indicator Measurements in Lower Yard Catch Basins and Buildings
UNOCAL Edmonds Bulk Fuel Terminal

Well	Maximum CGI Reading (% LEL) 6/7/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96[a]
Catch Basins (Continued)		
L28	---	0
L29	---	0
L30	---	0
L31	---	0
L32	---	0
L33	---	0
L34	---	0
L35	---	0
L36	---	0
L37	---	0
L38	---	0
L39	---	0
L40	---	0
L41	---	0
L42	---	0
L43	---	0
Buildings		
Building C - Room 1	0	0
Room 2	0	0
Room 3	0	0
Room 4	0	0
Room 5	0	0
Room 6	0	0
Room 7	0	0
Room 8	0	0
Room 9	0	0
Room 10	0	0
Room 11	0	0

Table 6-21
Combustible Gas Indicator Measurements in Lower Yard Catch Basins and Buildings
UNOCAL Edmonds Bulk Fuel Terminal

Well	Maximum CGI Reading (% LEL) 6/7/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96[a]
Building A - Room 1	0	0
Room 2	0	0
Room 3	0	0
Room 4	0	0
Room 5	0	0
Room 6	0	0
Room 7	0	0
Room 8	0	0
Room 9	0	0
Room 10	0	0
Room 11	0	0
Building B - Room 1	0	0
Room 2	0	0
Room 3	0	0
Room 4	0	0
Room 5	0	0
Room 6	0	0
Room 7	0	0
Garage - Room 1	0	0
Room 2	0	0
Room 3	0.02	0.02
Room 4	0	0
Room 5	0	0
Room 6	0	0
Room 7	0	0
Room 8	0	0

Table 6-21
Combustible Gas Indicator Measurements in Lower Yard Catch Basins and Buildings
UNOCAL Edmonds Bulk Fuel Terminal

Well	Maximum CGI Reading (% LEL) 6/7/96	Stable CGI Reading (% LEL) 6/7/96 - 6/11/96[a]
Stor. Bldg. - Room 1	0	0
Room 2	0	0

NOTE: CGI = combustible gas indicator

% LEL = % of the lower explosive limit of methane

[a] Catch basin measurements taken as low as possible in the catch basin

Table 6-22
Combustible Gas and Oxygen Measurements, October 22, 1996
UNOCAL Edmonds Bulk Fuel Terminal

Location	Stable Oxygen Reading (%)	Stable CGI Reading (% LEL)
Lower Yard Monitoring Wells		
MW-118	3	375
MW-119	12	130
MW-123	10	660
MW-126	2	<38
Catch Basins		
L30	21	0
L31	21	0
L32	21	0
L36	21	0

NOTE: CGI = combistible gas indicator.
% LEL = percent of the lower explosive limit of methane.

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round One Samples											
Cadmium (dissolved)	36	4	11	0.0011	0.0017	0.00061	0.0011	0.0011	0.0011	NA	M (0.0017)
Chromium (dissolved)	36	19	53	0.0024	0.012	0.0018	0.0025	0.0024	0.0024	Lognormal	M (0.012)
Lead (dissolved)	36	5	14	0.0011	0.0027	0.00048	0.00085	0.00085	0.00085	NA	M (0.0027)
Mercury (dissolved)	36	1	3	0.00021	--	0.000087	0.00017	0.00017	0.00017	NA	M
Zinc (dissolved)	36	34	94	0.0026	0.12	0.0107	0.0059	0.0024	0.0024	neither	M (0.12)
Cadmium (total)	36	2	6	0.0013	0.0022	0.00058	0.0011	0.0011	0.0011	NA	M (0.0022)
Chromium (total)	36	25	69	0.0028	0.099	0.0085	0.0045	0.0024	0.0024	Lognormal	0.06
Lead (total)	36	22	61	0.0008	0.012	0.00124	0.0013	0.00077	0.00085	Lognormal	M (0.012)
Mercury (total)	36	1	3	0.00015	--	0.000087	0.00017	0.00017	0.00017	NA	M
Zinc (total)	36	32	89	0.0024	0.15	0.0214	0.0075	0.0024	0.0024	Lognormal	0.04
Round Two Samples											
Cadmium (dissolved)	32	9	28	0.0012	0.003	0.0007	0.0011	0.0011	0.0011	NA	M (0.0030)
Chromium (dissolved)	32	9	28	0.0023	0.011	0.0015	0.0024	0.0024	0.0024	NA	M (0.011)
Lead (dissolved)	32	8	25	0.0008	0.0058	0.0005	0.00085	0.00077	0.00085	NA	M (0.0058)
Mercury (dissolved)	32	1	3	0.00018	--	0.000088	0.00017	0.00017	0.00017	NA	M
Zinc (dissolved)	32	22	69	0.0019	0.22	0.0128	0.0035	0.0024	0.0024	neither	M (0.22)
Cadmium (total)	32	3	9	0.0017	0.0022	0.0006	0.0011	0.0011	0.0011	NA	M (0.0022)
Chromium (total)	32	15	47	0.0021	0.022	0.0018	0.0024	0.0024	0.0024	NA	M (0.022)
Lead (total)	32	14	44	0.0009	0.045	0.00199	0.00085	0.00077	0.0015	NA	M (0.045)
Mercury (total)	32	1	3	0.0009	--	0.00011	0.00017	0.00017	0.000017	NA	M (0.0009)
Zinc (total)	32	24	75	0.0025	0.32	0.0233	0.005	0.0024	0.0024	neither	M (0.32)
Round Three Samples											
Cadmium (dissolved)	31	2	6	0.001	0.0011	0.0006	0.0011	0.0011	0.0011	NA	M (0.0011)
Chromium (dissolved)	31	6	19	0.0025	0.0058	0.0015	0.0024	0.0024	0.0024	NA	M (0.0058)
Lead (dissolved)	31	7	23	0.0016	0.0035	0.0006	0.0009	0.0008	0.0043	NA	M (0.0035)
Mercury (dissolved)	31	1	3	0.00024	--	0.0001	0.0002	0.00017	0.0002	NA	M

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round Three Samples (Continued)											
Zinc (dissolved)	31	29	94	0.0027	0.063	0.0062	0.0067	0.0024	0.0024	neither	M (0.063)
Cadmium (total)	31	1	3	0.00063	--	0.00055	0.0011	0.0011	0.0011	NA	M
Chromium (total)	31	13	42	0.0024	0.023	0.0018	0.0024	0.0024	0.0024	NA	M (0.023)
Lead (total)	31	11	35	0.0011	0.055	0.0027	0.0009	0.0008	0.0043	NA	M (0.055)
Mercury (total)	31	2	6	0.00024	0.00035	0.0001	0.0002	0.00017	0.0002	NA	M
Zinc (total)	31	25	81	0.0029	0.41	0.0182	0.0069	0.0024	0.0024	neither	M (0.410)
Round Four Samples											
Antimony (dissolved)	30	23	77	0.0006	0.0033	0.0018	0.0016	0.00082	0.0016	Lognormal	0.00197
Arsenic (dissolved)	30	20	67	0.0007	0.0425	0.0069	0.0022	0.0007	0.0007	Lognormal	0.0163
Cadmium (dissolved)	30	7	23	0.0008	0.0034	0.0017	0.0011	0.0011	0.0011	NA	M (0.0034)
Chromium (dissolved)	30	17	57	0.0018	0.01	0.0041	0.003	0.0024	0.0024	Lognormal	0.0038
Copper (dissolved)	30	7	23	0.0006	0.014	0.0031	0.0005	0.00041	0.0011	NA	M (0.014)
Lead (dissolved)	30	6	20	0.0006	0.0011	0.0008	0.0008	0.00077	0.00085	NA	M (0.0011)
Mercury (dissolved)	30	1	3	0.00017	--	--	0.00013	0.00013	0.00013	NA	NA
Zinc (dissolved)	30	12	40	0.0018	0.027	0.0094	0.0024	0.0024	0.0024	NA	M (0.027)
Antimony (total)	30	5	17	0.0008	0.001	0.0009	0.00082	0.00082	0.0009	NA	M (0.0010)
Arsenic (total)	30	22	73	0.001	0.051	0.0074	0.0036	0.0007	0.0014	Lognormal	0.019
Cadmium (total)	30	6	20	0.0011	0.0027	0.0019	0.0011	0.0011	0.0011	NA	M (0.0027)
Chromium (total)	30	23	77	0.0028	0.021	0.0075	0.006	0.0024	0.0024	Lognormal	0.0088
Copper (total)	30	26	87	0.0008	0.017	0.0041	0.0022	0.00041	0.0016	Lognormal	0.0076
Lead (total)	30	12	40	0.001	0.034	0.005	0.00085	0.00077	0.0042	NA	M (0.034)
Mercury (total)	30	1	3	0.00023	--	--	0.00013	0.00013	0.00013	NA	NA
Zinc (total)	30	20	67	0.0027	0.18	0.02	0.01	0.0024	0.0024	Lognormal	0.031
Round One Samples											
TPH-D	36	24	67	0.3	43	3.89	1.35	0.24	0.34	Lognormal	M (43)
TPH-O	36	16	44	0.78	25	2.04	0.795	0.58	1	NA	M (25)

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round One Samples (Continued)											
TPH-G	36	19	53	0.1	8.6	1.15	0.21	0.1	2	Lognormal	M (8.6)
Benzene	36	16	44	0.00066	1.5	0.138	0.0006	0.0005	0.01	NA	M (1.5)
Toluene	36	14	39	0.00084	0.18	0.012	0.00067	0.0005	0.01	NA	M (0.180)
Ethylbenzene	36	16	44	0.0007	0.29	0.032	0.0006	0.0005	0.01	NA	M (0.290)
Total Xylenes	36	19	53	0.00054	1.65	0.088	0.0012	0.0005	0.01	Lognormal	1.02
Round Two Samples											
TPH-D	32	25	78	0.31	16	3.48	1.9	0.24	0.31	Lognormal	M (16)
TPH-O	32	16	50	0.82	4.7	1.44	0.888	0.71	0.94	Normal	M (4.7)
TPH-G	32	15	47	0.16	7.5	1.39	0.1	0.1	0.1	NA	M (7.5)
Benzene	32	15	47	0.00071	3.8	0.263	0.0005	0.0005	0.0005	NA	M (3.8)
Toluene	32	12	38	0.00058	0.11	0.008	0.0005	0.0005	0.0005	NA	M (0.110)
Ethylbenzene	32	14	44	0.0011	0.26	0.041	0.0005	0.0005	0.0005	NA	M (0.260)
Total Xylenes	32	15	47	0.0007	1.2	0.11	0.0005	0.0005	0.0005	NA	M (1.2)
Round Three Samples											
TPH-D	31	21	68	0.38	30	2.56	0.89	0.24	0.3	Lognormal	11.2
TPH-O	31	9	29	0.685	13	1.05	0.75	0.71	0.9	NA	M (13)
TPH-G	31	17	55	0.1	8.5	0.564	0.28	0.1	0.5	Lognormal	M (8.5)
Benzene	31	15	48	0.00064	3.8	0.179	0.0009	0.0005	0.01	NA	M (3.8)
Toluene	31	13	42	0.0022	0.13	0.014	0.0005	0.0005	0.0025	NA	M (0.130)
Ethylbenzene	31	16	52	0.00077	0.52	0.051	0.0016	0.0005	0.0025	Lognormal	0.82
Total Xylenes	31	15	48	0.0025	1.9	0.16	0.0025	0.0005	0.0025	NA	M (1.90)
Round Four Samples											
TPH-D	30	17	57	0.55	9.4	6.5	2.1	0.24	1.2	Lognormal	M (9.4)
TPH-O	30	5	17	0.6	3.4	1.8	0.76	0.71	0.88	NA	M (3.4)
TPH-G	30	16	53	0.15	5	1.2	0.45	0.1	2	Lognormal	M (5.0)
Benzene	30	14	47	0.0007	2.3	0.33	0.0005	0.0005	0.025	NA	M (2.3)

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round Four Samples (Continued)											
Toluene	30	14	47	0.0005	0.07	0.014	0.0005	0.0005	0.01	NA	M (0.070)
Ethylbenzene	30	11	37	0.0006	0.32	0.081	0.0005	0.0005	0.01	NA	M (0.32)
Total Xylenes	30	14	47	0.0016	0.83	0.11	0.0005	0.0005	0.01	NA	M (0.83)
Round One Samples											
Acenaphthene	36	2	6	0.095	0.215	0.037	0.061	0.059	0.3	NA	M (0.215)
Acenaphthylene	36	17	47	0.21	7.5	1.13	0.145	0.12	0.15	NA	M (7.5)
Anthracene	36	10	28	0.014	1.1	0.047	0.0066	0.0059	0.03	NA	M (1.1)
Benzo(a)anthracene	36	4	11	0.012	12	0.337	0.0061	0.0059	0.03	NA	M (12)
Benzo(a)pyrene	36	2	6	0.0069	0.011	0.0069	0.0062	0.0059	0.24	NA	M (0.011)
Benzo(b)fluoranthene	36	0	0	--	--	--	0.012	0.012	0.48	NA	NA
Benzo(g,h,i)perylene	36	10	28	0.016	15	0.426	0.013	0.012	0.06	NA	M (15)
Benzo(k)fluoranthene	36	1	3	0.012	--	--	0.0061	0.0059	0.24	NA	NA
Chrysene	36	12	33	0.019	0.35	0.032	0.0073	0.0059	0.25	NA	M (0.350)
Dibenzo(a,h)anthracene	36	0	0	--	--	--	0.012	0.012	0.48	NA	NA
Fluoranthene	36	7	19	0.095	2.1	0.118	0.026	0.024	2.4	NA	M (2.1)
Fluorene	36	19	53	0.028	2.2	0.285	0.042	0.012	0.015	Lognormal	0.71
Indeno(1,2,3-cd)pyrene	36	1	3	0.0078	--	--	0.0062	0.0059	0.24	NA	NA
Naphthalene	36	15	42	0.14	45	4.95	0.066	0.059	0.075	NA	M (45)
Phenanthrene	36	12	33	0.0062	7	0.32	0.0066	0.0059	0.03	NA	M (7.0)
Pyrene	36	13	36	0.0096	0.28	0.021	0.0066	0.0059	0.24	NA	M (0.280)
Round Two Samples											
Acenaphthene	32	5	16	0.12	1.2	0.127	0.066	0.059	0.64	NA	M (1.2)
Acenaphthylene	32	16	50	0.18	16	2.02	0.265	0.12	0.64	Normal	1.98
Anthracene	32	7	22	0.018	0.35	0.025	0.0066	0.0059	0.13	NA	M (0.350)
Benzo(a)anthracene	32	0	0	--	--	--	0.0063	0.0059	0.064	NA	NA
Benzo(a)pyrene	32	4	13	0.0088	1.1	0.039	0.0063	0.0059	0.064	NA	M (1.1)

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round Two Samples (Continued)											
Benzo(b)fluoranthene	32	0	0	--	--	--	0.013	0.01	0.13	NA	NA
Benzo(g,h,i)perylene	32	9	28	0.013	0.13	0.016	0.013	0.012	0.12	NA	M (0.130)
Benzo(k)fluoranthene	32	0	0	--	--	--	0.0063	0.0059	0.064	NA	NA
Chrysene	32	8	25	0.007	13	0.417	0.0068	0.0059	0.13	NA	M (13)
Dibenzo(a,h)anthracene	32	1	3	0.038	--	--	0.013	0.01	0.13	NA	NA
Fluoranthene	32	10	31	0.052	18	0.902	0.027	0.024	9.5	NA	M (18)
Fluorene	32	15	47	0.038	3.2	0.428	0.026	0.012	0.13	NA	M (3.2)
Indeno(1,2,3-cd)pyrene	32	1	3	0.026	--	--	0.0063	0.0059	0.064	NA	NA
Naphthalene	32	15	47	0.21	42	5.13	0.141	0.059	0.32	NA	M (42)
Phenanthrene	32	16	50	0.0085	4.6	0.405	0.014	0.0059	0.06	Lognormal	M (4.6)
Pyrene	32	17	53	0.0083	4	0.146	0.0099	0.0059	0.13	Lognormal	M (4.0)
Round Three Samples											
Acenaphthene	31	2	23	0.075	2.6	0.152	0.066	0.062	0.11	NA	M (2.6)
Acenaphthylene	31	16	52	0.17	15	2.43	0.22	0.12	0.22	Normal	M (15)
Anthracene	31	7	23	0.0295	0.45	0.031	0.0066	0.0061	0.011	NA	M (0.450)
Benzo(a)anthracene	31	0	0	--	--	--	0.0064	0.006	0.063	NA	NA
Benzo(a)pyrene	31	3	10	0.011	0.95	0.035	0.0066	0.006	0.063	NA	M (0.950)
Benzo(b)fluoranthene	31	0	0	--	--	--	0.013	0.012	0.13	NA	NA
Benzo(g,h,i)perylene	31	8	26	0.018	0.043	0.011	0.014	0.012	0.13	NA	M (0.043)
Benzo(k)fluoranthene	31	1	3	0.0086	--	--	0.0064	0.006	0.063	NA	NA
Chrysene	31	10	32	0.0071	11	0.378	0.0067	0.006	0.031	NA	M (11)
Dibenzo(a,h)anthracene	31	1	3	0.16	--	--	0.013	0.012	0.13	NA	NA
Fluoranthene	31	6	19	0.126	14	0.55	0.026	0.024	1.3	NA	M (14)
Fluorene	31	14	45	0.041	3.5	0.352	0.016	0.012	0.06	NA	M (3.5)
Indeno(1,2,3-cd)pyrene	31	1	3	0.017	--	--	0.0064	0.006	0.063	NA	NA

Table 6-23
Summary Statistics - Groundwater Samples
UNOCAL Edmonds Bulk Fuel Terminal

Compound	Number Analyzed	Number Detected	Percent Detect	Minimum Detected (mg/L)	Maximum Detected (mg/L)	Average (mg/L)	Median (mg/L)	Minimum Detection Limit (mg/L)	Maximum Detection Limit (mg/L)	Distribution	UCL 95 (mg/L)
Round Three Samples (Continued)											
Naphthalene	31	16	52	0.065	42	4.77	0.18	0.062	0.31	Lognormal	M (42)
Phenanthrene	31	12	39	0.0075	2.1	0.191	0.0067	0.0061	0.0078	NA	M (2.1)
Pyrene	31	13	42	0.0063	0.19	0.018	0.0078	0.006	0.09	NA	M (0.190)
Round Four Samples											
Acenaphthene	30	5	17	0.069	0.8	0.36	0.062	0.059	0.3	NA	M (0.800)
Acenaphthylene	30	10	33	0.27	9.4	3.2	0.12	0.12	1.2	NA	M (9.4)
Anthracene	30	6	20	0.018	0.18	0.1	0.006	0.0059	0.06	NA	M (0.180)
Benzo(a)anthracene	30	1	3	0.023	--	--	0.006	0.0059	0.0067	NA	NA
Benzo(a)pyrene	30	0	0	--	--	--	0.006	0.0059	0.0067	NA	NA
Benzo(b)fluoranthene	30	0	0	--	--	--	0.012	0.012	0.013	NA	NA
Benzo(g,h,i)perylene	30	5	17	0.015	0.048	0.031	0.012	0.012	0.013	NA	M (0.048)
Benzo(k)fluoranthene	30	0	0	--	--	--	0.006	0.0059	0.0067	NA	NA
Chrysene	30	8	27	0.016	0.26	0.09	0.0062	0.0059	0.06	NA	M (0.260)
Dibenzo(a,h)anthracene	30	0	0	--	--	--	0.012	0.012	0.013	NA	NA
Fluoranthene	30	6	20	0.035	6.2	1.6	0.013	0.024	3.5	NA	M (6.2)
Fluorene	30	13	43	0.018	4.2	0.99	0.013	0.012	0.12	NA	M (4.2)
Indeno(1,2,3-cd)pyrene	30	1	3	0.018	--	--	0.006	0.0059	0.0067	NA	NA
Naphthalene	30	14	47	0.085	62	11	0.066	0.059	0.6	NA	M (62)
Phenanthrene	30	12	40	0.018	2.4	0.66	0.0063	0.0059	0.06	NA	M (2.4)
Pyrene	30	12	40	0.007	0.37	0.093	0.0083	0.0059	0.15	NA	M (0.37)

NOTE: NA= not available

M indicates default to maximum value, maximum vlaue listed in parentheses.

Table 6-24

TPH and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
LM-2	11/29/95	6.7	4.2	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
LM-2	02/23/96	5.9	4.7	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
LM-2	05/16/96	2.9	1.9	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
LM-2	08/16/96	0.93	0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
LM-3	11/28/95	2.9	1.4	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-101	11/30/95	0.70	<0.72	4.0 J	0.65	0.14	0.045 J	0.34
MW-101	02/23/96	1.0	<0.79	4.4 J	0.20	0.22	0.044 J	0.92
MW-101	05/16/96	1.1	<0.90	3.1 J	0.15	0.15	0.0081 J	0.68
MW-101	08/15/96	0.79	<0.78	1.3	0.11	0.054	0.0031 J	0.055
MW-104	11/30/95	1.3	<0.77	8.3 J	0.056 J	0.28	0.18 B	1.6
MW-104	02/22/96	0.58	<0.75	7.4 J	0.014 J	0.26	0.045 J	1.2
MW-104	05/14/96	0.59	<0.71	7.4 J	<0.010	0.52	0.024 J	1.7
MW-104	08/14/96	0.55	<0.78	5.0 J	0.030 J	0.32	0.031 J	0.83
MW-105	12/27/95	0.68	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-105	02/21/96	0.51	0.89	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-105	05/14/96	1.0	1.1	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-105	08/14/96	0.62	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-106	12/27/95	1.6	1.3	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-106	02/21/96	0.53 E	<0.71 E	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-106	05/14/96	1.7	1.3	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-106	08/14/96	1.7	1.0	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-107	12/27/95	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-107	02/21/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-107	05/14/96	<0.25	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-107	08/14/96	<0.24	<0.72	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-108	11/28/95	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-108	02/23/96	0.39	1.1	<0.10	<0.00050	<0.00050	<0.00050	<0.00050

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 24

TPH and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
MW-108	05/16/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-108	08/16/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-109	11/28/95	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-109	02/23/96	0.36	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-109	05/16/96	0.71	<0.83	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-109	08/16/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-112	11/30/95	2.8	1.5	0.36 J	0.025	0.0018 J	<0.00050	0.0012 J
MW-112	02/22/96	3.9	2.3	0.37 J	0.048	0.0026 J	<0.00050	0.00070 J
MW-112	05/16/96	2.2	1.1	0.29 J	0.071	0.0039 J	<0.00050	0.0025 J
MW-112	08/15/96	4.7	2.4	0.43 J	0.070	0.0016 J	0.00069 J	0.0026 J
MW-115	11/30/95	43	25	0.27 J	0.00067 J	0.0011 J	0.00084 J	0.0046 J
MW-117	11/30/95	4.7	1.4	1.1	0.0078	0.0038 J	0.0013 J	0.0067
MW-117	02/22/96	5.2	1.0	1.0	0.016	0.0013 J	<0.00050	0.0053
MW-117	05/16/96	8.6	2.8	1.4	0.015 E	0.0029 J	<0.00050	0.0093 E
MW-117	08/15/96	8.9	3.2	1.3	0.023 E	0.0013 J	0.00080 J	0.010 E
MW-119	11/30/95	0.84	0.78	0.28 J	0.021	0.0044 J	0.0010 J	0.0070
MW-119	02/22/96	4.0	5.2	0.29 J	0.040	0.016	0.00054 J	0.013
MW-119	05/15/96	1.1	0.80	0.27 J	0.024	0.020	0.0030 J	0.024
MW-119	08/15/96	0.97	<0.88	0.29 J	0.0086	<0.00050	0.00070 J	0.0089
MW-120	11/29/95	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-120	02/21/96	<0.26	<0.79	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-120	05/14/96	0.47	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-120	08/14/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-121	11/30/95	<0.26	<0.79	<0.10	<0.00050	<0.00050	0.0010 J	0.0010 J
MW-121	02/23/96	<0.27	<0.81	<0.10	0.00071 J	<0.00050	0.0029 J	0.0028 J
MW-121	05/16/96	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-121	08/15/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

See cover sheet for data qualifier definitions.

Table 6-24

TPH and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
MW-122	11/28/95	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-122	02/23/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-122	05/15/96	<0.26	<0.77	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-122	08/16/96	<0.30	<0.91	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-123	11/30/95	2.8	1.2	2.0 J	0.85	0.060 J	0.025 J	0.065 J
MW-123	02/21/96	3.5	4.2	2.4 J	0.66	0.049 J	0.016 J	0.077
MW-123	05/14/96	2.5	<0.71	2.4	1.2	0.056	0.029	0.11
MW-123	08/15/96	4.3	<0.77	1.7	0.75	0.025	0.019	0.076
MW-124	11/29/95	6.3	1.3	3.5	0.087 E	0.10 E	0.0082 BE	0.026 E
MW-125	11/29/95	6.2	4.6	0.80 J	0.060	0.0032 J	0.010 B	0.017
MW-125	02/21/96	4.6	1.4	3.5 J	3.8	0.20	0.016 J	0.039 J
MW-125	05/14/96	3.7	0.89	3.6	3.8	0.30	0.018	0.061
MW-125	08/14/96	4.3	2.1	2.6 J	2.2	0.20	0.014 J	0.026 J
MW-126	11/30/95	0.30	<0.71	0.32 J	<0.00050	<0.00050	<0.00050	<0.00050
MW-126	02/22/96	2.0	<0.77	2.7	<0.00050	0.010 E	<0.00050	0.0029 J
MW-126	05/15/96	0.89	<0.75	0.91 J	<0.00050	0.0016 J	<0.00050	<0.00050
MW-126	08/15/96	0.61	<0.77	0.16 J	<0.00050	<0.00050	<0.00050	<0.00050
MW-127	11/29/95	1.1	<0.71	<2.0	<0.010	<0.010	<0.010	<0.010
MW-127	02/21/96	3.1	1.1	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-127	05/14/96	3.0	<0.71	<0.10 E	<0.00050 E	<0.00050 E	<0.00050 E	<0.00050 E
MW-127	08/14/96	2.4	<0.71	<0.10	0.00072 J	<0.00050	<0.00050	<0.00050
MW-128	11/30/95	1.4	<0.71	3.3 J	1.4	0.13	<0.010	0.055 J
MW-128	02/21/96	2.1	0.82	3.3 J	2.8	0.22	0.011 J	0.12
MW-129	11/28/95	3.3	1.4	<0.10	<0.00050	<0.00050	<0.00050	0.0013 J
MW-131	11/28/95	1.4	<0.73	0.51 J	1.2	0.0030 J	0.018 J	0.012 J
MW-131	02/23/96	1.9	0.95	0.90 J	0.50	0.0011 J	0.0075	0.0072
MW-131	05/15/96	1.4	<0.75	0.90 J	0.070 E	0.00077 J	0.0038 J	0.0056 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 4

TPH and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
MW-131	08/15/96	1.2	<0.80	0.33 J	0.42	<0.00050	0.0015 J	0.0027 J
MW-132	11/30/95	2.4	<0.78	6.8	0.0025 J	0.055	<0.0025	0.012 J
MW-132	02/23/96	16	2.6	7.5	0.0016 J	0.045	0.00086 J	0.0084
MW-133	11/29/95	4.6	1.8	0.60 J	0.053	0.013	0.0038 J	0.022
MW-133	02/22/96	13	3.7	0.43 J	0.042	0.0065	0.0032 J	0.013
MW-133	05/16/96	4.9	1.0	0.67 J	0.067	0.015	0.0067	0.026
MW-133	08/15/96	3.6	<0.71	0.73 J	0.044	0.012	0.0046 J	0.020
MW-134	11/30/95	<0.27	<0.80	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-134	02/22/96	<0.31	<0.94	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-134	05/15/96	<0.25	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-134	08/13/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-135	11/29/95	2.5 E	2.1 E	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-135	02/22/96	1.9	1.7	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-135	05/16/96	1.9	1.7	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-135	08/16/96	1.1	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-136	11/29/95	5.7 E	4.7 E	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
MW-136	02/22/96	7.3	4.6	0.16 J	<0.00050	<0.00050	<0.00050	<0.00050
MW-136	05/15/96	4.5	1.4	<0.50	<0.0025	<0.0025	<0.0025	<0.0025
MW-136	08/16/96	2.6	<0.82	<0.10	<0.00050	<0.00050	0.00052 J	<0.00050
MW-137	12/27/95	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-137	02/21/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-137	05/14/96	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-137	08/14/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-138	12/28/95	<0.24	<0.72	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-138	02/21/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-138	05/14/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-138	08/14/96	<0.25	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 24

TPH and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
MW-139	12/28/95	1.6	<0.71	0.15 J	<0.00050	<0.00050	<0.00050	<0.00050
MW-139	03/07/96	0.98	<0.75	<0.100	<0.00050	<0.00050	<0.00050	<0.00050
MW-139	05/16/96	1.4	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-139	08/15/96	2.1	<0.71	0.20 J	<0.00050	<0.00050	<0.00050	<0.00050
MW-20	11/30/95	10	2.5	9.3 J	2.7	0.47	0.019 J	0.29
MW-22	11/29/95	1.3	0.89	0.10 J	0.00066 J	<0.00050	<0.00050	0.00054 J
MW-22	02/21/96	0.45	<0.71	<0.10	0.00090 J	<0.00050	<0.00050	<0.00050
MW-22	05/14/96	0.44	<0.74	0.10 J	0.00093 J	<0.00050	<0.00050	<0.00050
MW-22	08/14/96	0.90	<0.71	0.18 J	0.0014 J	<0.00050	<0.00050	0.0016 J
MW-28	12/04/95	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-28	02/21/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-28	05/14/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-28	08/14/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-7	11/30/95	15	1.6	6.2 J	0.13	0.21	0.12 B	0.94
MW-7	02/23/96	15	1.7	6.4 J	0.073 J	0.20	0.11	0.95
MW-7	05/15/96	6.7	<0.74	8.5 J	0.14	0.42	0.13	1.9
MW-7	08/15/96	5.5	<0.71	4.2 J	0.80	0.26	0.070	0.32
MW-8	11/30/95	20	12	2.8 J	0.37	0.12	0.0084 J	0.13
MW-8	02/21/96	7.9	3.7	4.0	0.18	0.056	0.0040 J	0.022
MW-8	05/14/96	30	13	3.2	0.011	0.049	0.0022 J	0.021

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-25

TPH and BTEX in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
HA-5	05/15/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-10U	05/13/96	0.61	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-11U	05/13/96	<0.26	<0.78	0.72 J	0.0049 J	0.018	0.065	0.13
MW-13U	11/29/95	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-13U	02/22/96	0.31	<0.77	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-13U	05/13/96	<0.25	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-13U	08/13/96	<0.27	<0.81	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-201	11/28/95	<0.34	<1.0	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-201	02/26/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-201	05/15/96	<0.25	<0.74	0.33 J	0.0011 J	0.0073	0.024	0.066
MW-201	08/16/96	<0.24	<0.71	0.41 J	0.0016 J	0.0078	0.025	0.066
MW-202	11/28/95	<0.32	<0.96	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-202	02/22/96	<0.27	<0.81	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-202	05/13/96	<0.30	<0.89	0.76 J	0.0056	0.019	0.077	0.15
MW-202	08/13/96	<0.26	<0.78	0.47 J	0.0017 J	0.0090	0.028	0.073
MW-203	11/29/95	<0.26	<0.78	0.11 J	<0.00050	0.00070 J	0.0021 J	0.0036 J
MW-203	02/22/96	0.72	<0.83	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-203	05/16/96	<0.25	<0.74	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-203	08/13/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-204	11/29/95	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-204	02/23/96	8.6	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-204	05/13/96	<0.26	<0.77	0.26 J	0.00064 J	0.0058	0.022	0.054
MW-204	08/13/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-7U	11/29/95	<0.24	<0.73	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-7U	02/26/96	<0.27	<0.80	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
MW-7U	05/13/96	0.38	<0.74	0.78 J	0.0092	0.019	0.096	0.15
MW-7U	08/13/96	<0.24 E	<0.71 E	0.15 J	<0.00050	0.00057 J	0.0023 J	0.0057

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table _-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
LM-2	11/29/95	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
LM-2	02/23/96	<0.060 E	<0.12 E	<0.0060 E	<0.0060 E	<0.0060 E	<0.012 E	<0.012 E	<0.0060 E
LM-2	05/16/96	<0.064	<0.13	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.0064
LM-2	08/16/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
LM-3	11/28/95	<0.065	<0.13	<0.0065	0.019 J	<0.0065	<0.013	<0.013	<0.0065
MW-101	11/30/95	<0.059	7.5 J	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-101	02/23/96	<0.064	4.4	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.0064
MW-101	05/16/96	<0.080	9.8	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-101	08/15/96	0.14 J	1.5	<0.0065	<0.0065	<0.0065	<0.013	<0.013	<0.0065
MW-104	11/30/95	<0.066	1.5	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-104	02/22/96	0.24 J	1.8	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-104	05/14/96	0.21 J	7.0	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-104	08/14/96	<0.30	4.0	0.022 J	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-105	12/27/95	<0.060	<1.2	<0.0060	<0.0060	<0.0060	<0.012	0.020 J	<0.0060
MW-105	02/21/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	0.019 J	<0.0061
MW-105	05/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-105	08/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-106	12/27/95	<0.059	<1.2	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-106	02/21/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-106	05/14/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-106	08/14/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
MW-107	12/27/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-107	02/21/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-107	05/14/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-107	08/14/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-108	11/28/95	<0.064	<0.13	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.0064
MW-108	02/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 6-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
LM-2	11/29/95	0.019 J	<0.012	<0.025	<0.012	<0.0062	<0.062	<0.0062	0.034 J
LM-2	02/23/96	<0.0060 E	<0.012 E	<0.024 E	<0.012 E	<0.0060 E	<0.060 E	<0.0060 E	0.015 J
LM-2	05/16/96	<0.0064	<0.013	<0.026	<0.013	<0.0064	<0.064	<0.0064	0.016 J
LM-2	08/16/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.012 J
LM-3	11/28/95	0.068	<0.013	0.23 J	0.14	<0.0065	<0.065	0.030 J	<0.0065
MW-101	11/30/95	<0.0059	<0.012	<0.024	0.057 J	<0.0059	45	0.0062 J	<0.0059
MW-101	02/23/96	<0.0064	<0.013	<0.026	<0.013	<0.0064	38	0.019 J	<0.0064
MW-101	05/16/96	<0.0066	<0.013	<0.027	<0.060	<0.0066	33	<0.0066	0.017 J
MW-101	08/15/96	<0.0065	<0.013	<0.026	<0.013	<0.0065	9.3	0.042 J	0.012 J
MW-104	11/30/95	0.029 J	<0.013	<0.027	0.16	<0.0066	44	0.075	<0.0066
MW-104	02/22/96	0.0070 J	<0.013	<0.025	0.13	<0.0063	24	0.031 J	0.0085 J
MW-104	05/14/96	0.0071 J	<0.012	<0.024	0.17	<0.0061	42	0.073	0.0063 J
MW-104	08/14/96	0.020 J	<0.012	<0.024	0.34	<0.0059	56	0.40	<0.010
MW-105	12/27/95	0.0090 J	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.084
MW-105	02/21/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.015 J
MW-105	05/14/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.015 J
MW-105	08/14/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-106	12/27/95	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-106	02/21/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.0097 J
MW-106	05/14/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-106	08/14/96	<0.0062	<0.012	<0.025	<0.012	<0.0062	<0.062	<0.0062	<0.0062
MW-107	12/27/95	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.010 J
MW-107	02/21/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	0.011 J	<0.0059
MW-107	05/14/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-107	08/14/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.010 J
MW-108	11/28/95	<0.0064	<0.013	<0.026	<0.013	<0.0064	<0.064	<0.0064	<0.0064
MW-108	02/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.011 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

See cover sheet for data qualifier definitions.

Table 6-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
MW-108	05/16/96	<0.071 E	<0.14 E	<0.0071 E	<0.0071 E	<0.0071 E	<0.014 E	<0.014 E	<0.0071 E
MW-108	08/16/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-109	11/28/95	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-109	02/23/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-109	05/16/96	<0.067 E	<0.13 E	<0.0067 E	<0.0067 E	<0.0067 E	<0.013 E	<0.013 E	<0.0067 E
MW-109	08/16/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-112	11/30/95	0.095 J	0.21 J	<0.0066	0.016 J	<0.0066	<0.013	<0.013	<0.0066
MW-112	02/22/96	0.12 J	1.1 J	0.022 J	<0.0067	<0.0067	<0.013	0.066 J	<0.0067
MW-112	05/16/96	<0.064	0.41 J	<0.0064	<0.0064	<0.0064	<0.013	0.035 J	<0.0064
MW-112	08/16/96	<0.067	1.4	<0.0067	<0.0067	<0.0067	<0.013	0.015 J	<0.0067
MW-115	11/30/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.025 J	<0.0059
MW-117	11/30/95	<0.060	1.8	0.18	<0.0060	0.0069 J	<0.012	0.016 J	<0.0060
MW-117	02/22/96	<0.11	5.3	0.28	<0.011	0.041 J	<0.023	0.073 J	<0.011
MW-117	05/16/96	<0.063	2.5	0.076	<0.0063	0.011 J	<0.013	0.043 J	0.0086 J
MW-117	08/15/96	<0.060	0.85 J	0.17	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-119	11/30/95	<0.061	1.4	0.016 J	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-119	02/22/96	<0.063	1.8	0.020 J	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-119	05/15/96	<0.063	1.8	0.024 J	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-119	08/15/96	<0.064	0.27 J	0.018 J	<0.0064	<0.0064	<0.013	0.028 J	<0.0064
MW-120	11/29/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-120	02/21/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-120	05/14/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-120	08/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-121	11/30/95	<0.065	<0.13	<0.0065	<0.0065	<0.0065	<0.013	<0.013	<0.0065
MW-121	02/23/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-121	05/16/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
MW-121	08/15/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 6-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
MW-108	05/16/96	<0.0071 E	<0.014 E	<0.028 E	<0.014 E	<0.0071 E	<0.071 E	<0.0071 E	0.013 J
MW-108	08/16/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-109	11/28/95	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-109	02/23/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-109	05/16/96	<0.0067 E	<0.013 E	<0.027 E	<0.013 E	<0.0067 E	<0.067 E	<0.0067 E	<0.0067 E
MW-109	08/16/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-112	11/30/95	<0.0066	<0.013	0.10 J	0.061 J	<0.0066	<0.066	<0.0066	<0.0066
MW-112	02/22/96	0.094	<0.013	0.23 J	0.44	<0.0067	0.45 J	0.039 J	<0.0067
MW-112	05/16/96	0.016 J	<0.013	<0.026	0.041 J	<0.0064	0.18 J	<0.0064	<0.015
MW-112	08/15/96	0.047 J	<0.013	0.084 J	0.32	<0.0067	0.20 J	0.089	<0.0067
MW-115	11/30/95	<0.25	<0.012	2.1	0.37	<0.0059	<0.059	0.20	<0.0059
MW-117	11/30/95	0.35	<0.012	<0.12	1.5	<0.0060	1.3	0.98	<0.0060
MW-117	02/22/96	<0.011	<0.023	<0.045	1.6	<0.011	1.7	0.58	<0.011
MW-117	05/16/96	0.14	<0.013	0.73	0.15	<0.0063	0.065 J	0.14	0.19
MW-117	08/15/96	0.31	<0.012	2.9	1.2	<0.0060	0.41 J	0.82	0.40
MW-119	11/30/95	0.038 J	<0.012	0.15 J	0.20	<0.0061	0.19 J	0.12	<0.0061
MW-119	02/22/96	0.060 J	<0.013	0.27	0.28	<0.0063	0.26 J	0.14	<0.0063
MW-119	05/15/96	0.053 J	<0.013	<0.025	0.34	<0.0063	0.72	0.089	<0.0063
MW-119	08/15/96	0.14	<0.013	0.29	0.34	<0.0064	<0.064	0.14	0.091
MW-120	11/29/95	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-120	02/21/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	<0.066	<0.0066	<0.0066
MW-120	05/14/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-120	08/14/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-121	11/30/95	<0.0065	<0.013	<0.026	<0.013	<0.0065	<0.065	<0.0065	<0.0065
MW-121	02/23/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	<0.066	<0.0066	0.013 J
MW-121	05/16/96	<0.0062	<0.012	<0.025	<0.012	<0.0062	<0.062	<0.0062	<0.0062
MW-121	08/15/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060

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See cover sheet for data qualifier definitions.

Table C-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
MW-122	11/28/95	<0.091	<0.18	<0.0091	<0.0091	<0.0091	<0.018	<0.018	<0.0091
MW-122	02/23/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-122	05/15/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-122	08/16/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-123	11/30/95	<0.059	2.9	0.071	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-123	02/21/96	<0.15	3.2	<0.0060	<0.0060	<0.0060	<0.012	<0.018	<0.0060
MW-123	05/14/96	0.075 J	5.5	0.077	<0.0060	<0.0060	<0.012	0.024 J	<0.0060
MW-123	08/15/96	0.49 J	3.6 E	0.11 E	<0.0065 E	<0.0065 E	<0.013 E	0.067 J	<0.0065 E
MW-124	11/29/95	<0.061	2.7	0.12	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-125	11/29/95	<0.059	2.2	0.014 J	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-125	02/21/96	<0.060	5.9	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-125	05/14/96	0.45 J	11 E	<0.0061 E	<0.0061 E	<0.0061 E	<0.012 E	<0.012 E	<0.0061 E
MW-125	08/14/96	0.67 E	4.2 E	<0.0060 E	<0.0060 E	<0.0060 E	<0.012 E	<0.012 E	<0.0060 E
MW-126	11/30/95	<0.059	0.31 J	<0.0059	<0.0059	<0.0059	<0.012	0.058 J	<0.0059
MW-126	02/22/96	1.2	3.8	0.14	<0.0063	<0.0063	<0.013	<0.063	<0.0063
MW-126	05/15/96	0.97	9.5	0.12	<0.0061	<0.0061	<0.012	<0.061	<0.0061
MW-126	08/15/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	0.045 J	<0.0062
MW-127	11/29/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.033 J	<0.0059
MW-127	02/21/96	<0.064	<0.64	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.0064
MW-127	05/14/96	<0.11	<0.22	<0.011	<0.011	<0.011	<0.022	0.037 J	<0.011
MW-127	08/14/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-128	11/30/95	0.24 J	3.8	<0.0060	<0.0060	<0.0060	<0.012	0.041 J	<0.0060
MW-128	02/21/96	<0.60	16	<0.060	<0.006	<0.006	<0.01	<0.12	<0.006
MW-129	11/28/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.082 J	<0.0059
MW-131	11/28/95	<0.059	3.9	<0.0059	<0.0059	<0.0059	<0.012	0.025 J	<0.0059
MW-131	02/23/96	<0.059	5.1	<0.0059	<0.0059	<0.0059	<0.012	0.013 J	<0.0059
MW-131	05/15/96	<0.063	15	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063

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See cover sheet for data qualifier definitions.

Table 6–26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
MW-122	11/28/95	<0.0091	<0.018	<0.036	<0.018	<0.0091	<0.091	<0.0091	<0.0091
MW-122	02/23/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-122	05/15/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-122	08/16/96	<0.0066	<0.013	<0.027	<0.013	<0.0066	<0.066	<0.0066	<0.0066
MW-123	11/30/95	<0.0059	<0.012	<0.024	0.81	<0.0059	6.7	<0.0059	<0.0059
MW-123	02/21/96	<0.020	<0.012	0.79	1.3	<0.0060	9.7	0.62	0.086
MW-123	05/14/96	<0.0060	<0.012	<0.024	1.2	<0.0060	5.2	0.76	<0.0060
MW-123	08/15/96	0.28 E	<0.013 E	6.2 E	3.0 E	0.018 J	12 E	3.0 E	0.37 E
MW-124	11/29/95	<0.031	<0.012	<0.024	0.36	<0.0061	10	<0.0061	<0.0061
MW-125	11/29/95	0.032 J	<0.012	0.095 J	0.14	<0.0059	0.31 J	0.032 J	0.046 J
MW-125	02/21/96	<0.0060	<0.012	<0.024	0.43	<0.0060	10	0.080	0.015 J
MW-125	05/14/96	0.015 J	<0.012 E	<0.025 E	1.1 E	<0.0061 E	15 E	0.13 E	0.013 J
MW-125	08/14/96	0.018 J	<0.012 E	<0.024 E	1.3 E	<0.0060 E	4.2 E	0.34 E	0.012 J
MW-126	11/30/95	<0.0059	<0.012	<0.024	0.028 J	<0.0059	<0.059	<0.0059	0.023 J
MW-126	02/22/96	<0.0063	<0.013	1.5	3.2	<0.0063	3.7	1.9	<0.0063
MW-126	05/15/96	<0.031	<0.012	0.67	1.6	<0.031	<0.31	<0.0061	<0.0061
MW-126	08/15/96	<0.0062	<0.012	0.035 J	<0.012	<0.0062	<0.062	0.018 J	0.078
MW-127	11/29/95	0.033 J	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.075
MW-127	02/21/96	0.020 J	<0.013	0.052 J	0.038 J	<0.0064	<0.32	0.0085 J	0.058 J
MW-127	05/14/96	0.049 J	<0.022	0.16 J	0.069 J	<0.011	<0.11	0.051 J	0.13
MW-127	08/14/96	0.020 J	<0.012	<0.050	0.034 J	<0.0060	<0.060	<0.0060	0.063
MW-128	11/30/95	0.023 J	<0.012	<0.024	0.29	<0.0060	2.1	<0.0060	<0.0060
MW-128	02/21/96	<0.060	<0.01	0.38 J	0.64	<0.006	15	0.39	0.13 J
MW-129	11/28/95	<0.030	<0.012	0.22 J	0.20 J	<0.030	<0.059	<0.0059	0.28
MW-131	11/28/95	<0.0059	<0.012	<0.024	0.18	<0.0059	0.14 J	<0.0059	0.090
MW-131	02/23/96	<0.0059	<0.012	<0.024	0.26	<0.0059	0.21 J	<0.0059	0.063
MW-131	05/15/96	<0.0063	<0.013	<0.025	0.25 J	<0.0063	0.38 J	<0.0063	0.031 J

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Table 4-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
MW-131	08/15/96	<0.064	5.5	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.0064
MW-132	11/30/95	<0.067	4.9	<0.0067	<0.0067	<0.0067	<0.013	0.033 J	<0.0067
MW-132	02/23/96	<0.64 E	9.1 E	<0.064 E	<0.064 E	<0.064 E	<0.13 E	0.13 E	<0.064 E
MW-133	11/29/95	<0.059	0.72 J	0.11	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-133	02/22/96	<0.069	0.56 J	0.12	<0.0069	<0.0069	<0.014	0.074 J	<0.0069
MW-133	05/16/96	0.11 J	1.6	0.10	<0.0062	<0.0062	<0.012	0.026 J	<0.0062
MW-133	08/15/96	0.069 J	<0.12	0.15	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-134	11/30/95	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-134	02/22/96	<0.072	<0.14	<0.0072	<0.0072	<0.0072	<0.014	0.027 J	<0.0072
MW-134	05/15/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	0.019 J	<0.0063
MW-134	08/13/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-135	11/29/95	<0.064 E	<0.13 E	0.014 J	0.012 J	<0.0064 E	<0.013 E	<0.013 E	<0.0064 E
MW-135	02/22/96	<0.063 E	<0.13 E	<0.0063 E	<0.0063 E	<0.0063 E	<0.013 E	<0.013 E	<0.0063 E
MW-135	05/16/96	<0.074 E	<0.15 E	<0.0074 E	<0.0074 E	<0.0074 E	<0.015 E	<0.015 E	<0.0074 E
MW-135	08/16/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
MW-136	11/29/95	<0.060 E	<0.12 E	0.026 J	<0.0060 E	<0.0060 E	<0.012	<0.012 E	<0.0060 E
MW-136	02/22/96	<0.061 E	<0.12 E	0.035 J	<0.0061 E	0.0088 J	<0.012	0.020 J	<0.0061 E
MW-136	05/15/96	<0.070	<0.14	<0.0070	<0.0070	<0.0070	<0.014	<0.014	<0.0070
MW-136	08/16/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-137	12/27/95	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.020 J	<0.0059
MW-137	02/21/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.037 J	<0.0059
MW-137	05/14/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	0.032 J	<0.0061
MW-137	08/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-138	12/28/95	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-138	02/21/96	<0.061	<0.12	<0.0061	<0.0061	0.024 J	<0.012	0.053 J	<0.0061
MW-138	05/14/96	<0.066	<0.13	<0.0066	0.0082 J	0.029 J	0.016 J	0.089 J	0.0066 J
MW-138	08/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	0.027 J	<0.0059

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Table 6-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
MW-131	08/15/96	<0.0064	<0.013	<0.026	0.35	<0.0064	0.83	<0.0064	0.026 J
MW-132	11/30/95	<0.0067	<0.013	<0.027	<0.013	<0.0067	1.0	<0.0067	0.030 J
MW-132	02/23/96	<0.064 E	<0.13 E	<9.5 E	<0.13 E	<0.064 E	9.0 E	4.6 E	0.26 J
MW-133	11/29/95	0.033 J	<0.012	<0.024	1.4	<0.0059	5.5	1.0	<0.0059
MW-133	02/22/96	0.060 J	<0.014	2.2	1.4	<0.0069	1.9	1.2	0.15
MW-133	05/16/96	<0.030	<0.012	<1.4	1.5	<0.0062	2.2	1.1	<0.090
MW-133	08/15/96	<0.0059	<0.012	<1.70	2.2	<0.0059	3.5	1.5	<0.15
MW-134	11/30/95	<0.0066	<0.013	<0.027	<0.013	<0.0066	<0.066	<0.0066	<0.0066
MW-134	02/22/96	<0.0072	<0.014	<0.029	<0.014	<0.0072	<0.072	<0.0072	<0.0072
MW-134	05/15/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-134	08/13/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-135	11/29/95	0.068 E	<0.013 E	<0.026 E	0.13 E	<0.0064 E	<0.064 E	0.17 E	<0.0064 E
MW-135	02/22/96	0.023 J	<0.013 E	<0.025 E	0.085 J	<0.0063 E	<0.063 E	0.089 J	<0.0063 E
MW-135	05/16/96	0.057 J	<0.015 E	0.32 E	0.13 J	<0.0074 E	<0.074 E	0.14 E	0.050 J
MW-135	08/16/96	<0.0062	<0.012	<0.025	0.018 J	<0.0062	<0.062	<0.0062	<0.0062
MW-136	11/29/95	0.025 J	<0.012 E	0.29 E	0.14 E	<0.0060 E	2.1 E	0.16 E	0.028 J
MW-136	02/22/96	0.047 J	<0.012 E	0.42 E	0.26 E	<0.0061 E	5.0 E	0.27 E	0.065 E
MW-136	05/15/96	<0.015	<0.014	<0.20	0.16	<0.0070	3.5	0.17	<0.035
MW-136	08/16/96	0.038 J	<0.013	0.32	0.13	<0.0066	2.0	0.16	0.048 J
MW-137	12/27/95	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.032 J
MW-137	02/21/96	<0.0059	<0.012	<0.024	0.019 J	0.0059 J	<0.059	<0.0059	0.055 J
MW-137	05/14/96	<0.0061	<0.012	<0.025	0.020 J	0.0061 J	<0.061	<0.0061	0.031 J
MW-137	08/14/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	0.013 J
MW-138	12/28/95	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	0.013 J	0.031 J
MW-138	02/21/96	0.0080 J	<0.012	<0.024	<0.012	0.016 J	<0.061	0.0093 J	0.045 J
MW-138	05/14/96	0.013 J	<0.013	<0.026	<0.013	0.029 J	<0.066	0.0082 J	0.030 J
MW-138	08/14/96	<0.0059	<0.012	<0.024	<0.012	0.0078 J	<0.059	<0.0059	0.011 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
MW-139	12/28/95	<0.060	0.59 J	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-139	03/07/96	<0.060	0.18 J	<0.012	<0.006	<0.006	<0.012	<0.012	<0.006
MW-139	05/16/96	<0.069	<0.14	<0.0069	<0.0069	<0.0069	<0.014	<0.014	<0.0069
MW-139	08/15/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-20	11/30/95	1.9 E	8.9 E	1.0 E	<0.012 E	<0.012 E	<0.024 E	<0.024 E	0.15 E
MW-22	11/29/95	<0.30	0.98 J	<0.030	<0.030	<0.030	<0.060	<0.060	<0.030
MW-22	02/21/96	<0.061	0.35 J	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-22	05/14/96	<0.078	1.0 J	<0.0078	<0.0078	<0.0078	<0.016	<0.016	<0.0078
MW-22	08/14/96	<0.060	0.91 J	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-28	12/04/95	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-28	02/21/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-28	05/14/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-28	08/14/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-7	11/30/95	<0.060	3.0	<0.0060	<0.0060	<0.0060	<0.012	<0.012	0.012 J
MW-7	02/23/96	0.13 J	3.4	<0.13	<0.0064	<0.0064	<0.013	<0.013	<0.0064
MW-7	05/15/96	2.6 E	9.0 E	0.13 J	<0.063 E	<0.063 E	<0.13 E	<0.13 E	<0.063 E
MW-7	08/15/96	0.50 J	9.4 J	0.15 J	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-8	11/30/95	<0.12 E	3.3 E	1.1 E	12 E	<0.24 E	<0.48 E	15 E	<0.24 E
MW-8	02/21/96	1.2 E	2.7 J	0.35 J	<0.061 E	1.1 E	<0.12 E	<0.12 E	<0.061 E
MW-8	05/14/96	0.52 J	1.7 E	0.45 E	<0.0063 E	0.95 E	<0.013 E	<0.013 E	<0.063 E

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table - 26

PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
MW-139	12/28/95	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.020 J
MW-139	03/07/96	<0.006	<0.012	<0.024	<0.012	<0.006	<0.060	<0.060	0.038 J
MW-139	05/16/96	<0.0069	<0.014	<0.028	<0.014	<0.0069	<0.069	<0.0069	0.017 J
MW-139	08/15/96	<0.0059	<0.012	<0.024	0.019 J	<0.0059	<0.059	0.019 J	0.043 J
MW-20	11/30/95	<0.012 E	<0.024 E	<0.47 E	8.2 E	<0.012 E	120 E	13 E	<0.012 E
MW-22	11/29/95	<0.030	<0.060	<0.12	<0.012	<0.030	0.24 J	<0.030	<0.030
MW-22	02/21/96	<0.0061	<0.012	<0.05	<0.012	<0.0061	<0.061	<0.0061	<0.0061
MW-22	05/14/96	0.016 J	<0.016	<0.031	<0.016	<0.0078	<0.078	<0.0078	<0.0078
MW-22	08/14/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	0.085 J	<0.0060	<0.0060
MW-28	12/04/95	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	<0.0061
MW-28	02/21/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
MW-28	05/14/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	<0.066	<0.0066	<0.0066
MW-28	08/14/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-7	11/30/95	0.25	<0.012	<0.024	1.9	<0.0060	43	1.7	<0.0060
MW-7	02/23/96	<0.13	<0.013	1.1 J	1.8	<0.0064	32	1.1	<0.13
MW-7	05/15/96	0.088 J	<0.13 E	<0.25 E	3.5 E	<0.063 E	38 E	2.1 E	<0.063 E
MW-7	08/15/96	<0.060	<0.012	<3.5	4.2	<0.0060	62	2.4	<0.10
MW-8	11/30/95	<0.24 E	<0.48 E	<2.4 E	2.2 E	<0.24 E	16 J	7.0 E	<0.24 E
MW-8	02/21/96	13 E	0.038 J	18 E	1.8 E	<0.061 E	9.4 E	2.0 E	4.0 E
MW-8	05/14/96	11 E	0.16 E	14 E	0.98 E	<0.0063 E	0.30 J	1.2 E	<0.0063 E

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-27

PAHs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
HA-5	05/15/96	<0.069	<0.14	<0.0069	<0.0069	<0.0069	<0.014	<0.014	<0.0069
MW-10U	05/13/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-11U	05/13/96	<0.061	0.63 J	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-13U	11/29/95	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-13U	02/22/96	<0.068	<0.14	<0.0068	<0.0068	<0.0068	<0.014	<0.014	<0.0068
MW-13U	05/13/96	<0.063	<0.13	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0063
MW-13U	08/13/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
MW-201	11/28/95	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-201	02/26/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-201	05/15/96	<0.068	<0.14	<0.0068	<0.0068	<0.0068	<0.014	<0.014	<0.0068
MW-201	08/16/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-202	11/28/95	<0.071	<0.14	<0.0071	<0.0071	<0.0071	<0.014	<0.014	<0.0071
MW-202	02/22/96	<0.069	<0.14	<0.0069	<0.0069	<0.0069	<0.014	<0.014	<0.0069
MW-202	05/13/96	<0.066	0.63 J	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-202	08/13/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-203	11/29/95	<0.061	<0.12	<0.0061	<0.0061	0.011 J	<0.012	0.028 J	<0.0061
MW-203	02/22/96	<0.070	<0.14	<0.0070	<0.0070	0.012 J	<0.014	0.066 J	<0.0070
MW-203	05/16/96	<0.062	<0.12	<0.0062	<0.0062	0.013 J	<0.012	0.041 J	<0.0062
MW-203	08/13/96	<0.062	<0.12	<0.0062	<0.0062	<0.0062	<0.012	<0.012	<0.0062
MW-204	11/29/95	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
MW-204	02/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	0.014 J	<0.0060
MW-204	05/13/96	<0.066	<0.13	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-204	08/13/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
MW-7U	11/29/95	<0.067	<0.13	<0.0067	<0.0067	<0.0067	<0.013	<0.013	<0.0067
MW-7U	02/26/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
MW-7U	05/13/96	<0.066	0.29 J	<0.0066	<0.0066	<0.0066	<0.013	<0.013	<0.0066
MW-7U	08/13/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

PAHs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
HA-5	05/15/96	<0.0069	<0.014	<0.028	<0.014	<0.0069	<0.069	<0.0069	<0.0069
MW-10U	05/13/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-11U	05/13/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	3.9	<0.0061	<0.0061
MW-13U	11/29/95	<0.0066	<0.013	<0.026	<0.013	<0.0066	<0.066	<0.0066	<0.0066
MW-13U	02/22/96	<0.0068	<0.014	<0.027	<0.014	<0.0068	<0.068	<0.0068	<0.0068
MW-13U	05/13/96	<0.0063	<0.013	<0.025	<0.013	<0.0063	<0.063	<0.0063	<0.0063
MW-13U	08/13/96	<0.0062	<0.012	<0.025	<0.012	<0.0062	<0.062	<0.0062	<0.0062
MW-201	11/28/95	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
MW-201	02/26/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-201	05/15/96	<0.0068	<0.014	<0.027	<0.014	<0.0068	1.4	<0.0068	<0.0068
MW-201	08/16/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	2.5	<0.0059	<0.0059
MW-202	11/28/95	<0.0071	<0.014	<0.029	<0.014	<0.0071	<0.071	<0.0071	0.031 J
MW-202	02/22/96	<0.0069	<0.014	<0.028	<0.014	<0.0069	<0.069	<0.0069	0.010 J
MW-202	05/13/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	3.6	<0.0066	0.0068 J
MW-202	08/13/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	0.27 J	<0.0060	<0.0060
MW-203	11/29/95	<0.0061	<0.012	<0.024	<0.012	0.0078 J	<0.061	<0.0061	0.033 J
MW-203	02/22/96	<0.0070	<0.014	<0.028	<0.014	0.026 J	<0.070	<0.0070	0.018 J
MW-203	05/16/96	<0.0062	<0.012	<0.025	<0.012	0.017 J	<0.062	0.0075 J	0.019 J
MW-203	08/13/96	<0.0062	<0.012	<0.025	<0.012	<0.0062	<0.062	<0.0062	0.0069 J
MW-204	11/29/95	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.0096 J
MW-204	02/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.0083 J
MW-204	05/13/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	0.58 J	<0.0066	<0.0066
MW-204	08/13/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
MW-7U	11/29/95	<0.0067	<0.013	<0.027	<0.013	<0.0067	<0.067	<0.0067	<0.0067
MW-7U	02/26/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	<0.0061
MW-7U	05/13/96	<0.0066	<0.013	<0.026	<0.013	<0.0066	2.0	<0.0066	<0.0066
MW-7U	08/13/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	1.5	<0.0060	<0.0060

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table [illegible]

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
LM-2	11/29/95	---	---	---	---	0.0022 J	<0.0011	0.0029 J	<0.0024
LM-2	02/23/96	---	---	---	---	0.0017 J	0.0030 J	0.0037 J	<0.0024
LM-2	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
LM-2	08/16/96	<0.00082	0.00082 J	<0.00070	<0.00070	<0.0011	<0.0011	<0.0024	<0.0024
LM-3	11/28/95	---	---	---	---	<0.0011	<0.0011	0.0041 J	0.0025 J
MW-101	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-101	02/23/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-101	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-101	08/15/96	<0.00082 E	<0.00082	0.0022 J	0.0019 J	<0.0011	<0.0011	<0.0024 E	<0.0024
MW-104	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-104	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-104	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-104	08/14/96	<0.00090	0.0016 J	<0.00070 E	0.0011 J	<0.0011	<0.0011	0.0031 J	0.0043 J
MW-105	12/27/95	---	---	---	---	<0.0011	<0.0011	0.014 J	0.0035 J
MW-105	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-105	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-105	08/14/96	0.00098 J	0.0027 J	0.0045	0.0033 J	<0.0011	<0.0011	0.0070 J	0.0061 J
MW-106	12/27/95	---	---	---	---	<0.0011	<0.0011	0.0048 J	0.0031 J
MW-106	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-106	05/14/96	---	---	---	---	<0.0011	<0.0011	0.0028 J	<0.0024
MW-106	08/14/96	0.00097 J	0.0012 J	<0.00070	<0.00070	0.0015 J	<0.0011	0.0053 J	0.0033 J
MW-107	12/27/95	---	---	---	---	<0.0011	<0.0011	0.023 J	0.0085 J
MW-107	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-107	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-107	08/14/96	<0.00090	0.0027 J	0.0025 J	0.0023 J	<0.0011	<0.0011	0.0063 J	<0.0024
MW-108	11/28/95	---	---	---	---	<0.0011	<0.0011	0.0062 J	0.0028 J
MW-108	02/23/96	---	---	---	---	<0.0011	0.0012 J	<0.0024	0.0044 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 4-28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
LM-2	11/29/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	0.13	0.12 B
LM-2	02/23/96	---	---	0.0033 J	0.0021 J	<0.00017	<0.00017	0.25	0.22
LM-2	05/16/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	0.063	0.057
LM-2	08/16/96	0.0020 J	0.00097 J	<0.00085	0.0010 J	<0.00013	<0.00013	<0.0024	<0.0024
LM-3	11/28/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	0.096	0.086 B
MW-101	11/30/95	---	---	0.0016 J	<0.00085	<0.00017 E	<0.00017 E	<0.0024	0.0031 J
MW-101	02/23/96	---	---	<0.00085	<0.00077	<0.00017	<0.00017	0.0032 J	<0.0024
MW-101	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	<0.0024	0.0048 J
MW-101	08/15/96	0.0015 J	<0.00054	<0.00077	<0.00077	<0.00013	<0.00013	<0.0024 E	<0.0024
MW-104	11/30/95	---	---	0.0024 J	0.0029 J	<0.00017 E	<0.00017 E	0.0035 J	0.0042 J
MW-104	02/22/96	---	---	0.0015 J	0.0013 J	<0.00017	<0.00017	<0.0024	<0.0024
MW-104	05/14/96	---	---	0.0015 J	0.0016 J	<0.00020	<0.00020	<0.0024	0.0072 J
MW-104	08/14/96	<0.00041	<0.00041	<0.00085	0.00099 J	<0.00013	<0.00013	0.0040 J	<0.0024
MW-105	12/27/95	---	---	0.0033 J	<0.00085	<0.00017	<0.00017	0.020 J	0.0048 J
MW-105	02/21/96	---	---	0.0038 J	<0.00077	<0.00017	<0.00017	0.0035 J	0.0054 J
MW-105	05/14/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0030 J	0.0080 J
MW-105	08/14/96	0.011 E	0.0089	<0.00085	<0.00085	<0.00013	<0.00013	0.0089 J	<0.0024
MW-106	12/27/95	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.40	0.38 B
MW-106	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	0.36	0.33 E
MW-106	05/14/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.76	0.75
MW-106	08/14/96	0.0082 BE	0.0047	<0.00085	<0.00085	<0.00013	<0.00013	1.2	1.1
MW-107	12/27/95	---	---	0.0035 J	<0.00085	<0.00017	<0.00017	0.030	0.0097 J
MW-107	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	0.0067 J	0.0073 J
MW-107	05/14/96	---	---	0.0010 J	<0.00085	<0.00020	<0.00020	0.0032 J	0.0041 J
MW-107	08/14/96	0.0071 BE	0.00064 J	0.00088 J	<0.00085	<0.00013	<0.00013	0.0097 J	0.014 J
MW-108	11/28/95	---	---	0.0018 J	<0.00085	<0.00017	<0.00017	0.013 J	0.0083 J
MW-108	02/23/96	---	---	0.0012 J	<0.00077	0.00085	<0.00017	0.010 J	0.0031 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
MW-108	05/16/96	---	---	---	---	<0.0011	<0.0011	0.011 J	<0.0024
MW-108	08/16/96	0.00095 J	0.0020 J	0.0027 J	0.0010 J	<0.0011	<0.0011	<0.0024	0.0029 J
MW-109	11/28/95	---	---	---	---	<0.0011	0.0015 J	<0.0024	<0.0024
MW-109	02/23/96	---	---	---	---	<0.0011	0.0014 J	0.0027 J	<0.0024
MW-109	05/16/96	---	---	---	---	<0.0011	<0.0011	0.0024 J	0.0028 J
MW-109	08/16/96	<0.00082	0.0013 J	<0.00070	<0.00070	<0.0011	<0.0011	<0.0024	<0.0024
MW-112	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-112	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-112	05/16/96	---	---	---	---	<0.0011	<0.0011	0.0025 J	0.0025 J
MW-112	08/15/96	<0.00082 E	0.0011 J	0.0035 J	<0.00070	<0.0011	<0.0011	0.0033 J	<0.0024
MW-115	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	0.0024 J
MW-117	11/30/95	---	---	---	---	<0.0011	<0.0011	0.0028 J	0.0041 J
MW-117	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-117	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	0.0037 J
MW-117	08/15/96	<0.00082 E	0.0013 J	0.0016 J	<0.00070	<0.0011	<0.0011	0.0093 J	<0.0024
MW-119	11/30/95	---	---	---	---	<0.0011	<0.0011	0.0038 J	0.0035 J
MW-119	02/22/96	---	---	---	---	<0.0011	<0.0011	0.0029 J	0.0034 J
MW-119	05/15/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-119	08/15/96	<0.00082 E	0.0025 J	0.0093	0.012	<0.0011	0.0012 J	0.0072 J	0.0051 J
MW-120	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0032 J	<0.0024
MW-120	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-120	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-120	08/14/96	<0.00082	<0.00090	0.0018 J	0.0017 J	<0.0011	<0.0011	0.0031 J	0.0025 J
MW-121	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-121	02/23/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-121	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-121	08/15/96	<0.00082 E	0.0012 J	<0.00070	<0.00070	<0.0011	<0.0011	<0.0024 E	<0.0024

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 2B

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
MW-108	05/16/96	---	---	<0.0043	<0.00085	<0.00020	<0.00020	0.022 J	0.013 J
MW-108	08/16/96	0.0048 J	0.0011 J	0.0017 J	<0.00085	<0.00013	<0.00013	0.012 J	0.0071 J
MW-109	11/28/95	---	---	0.00077 J	<0.00085	<0.00017	<0.00017	0.064	0.080 B
MW-109	02/23/96	---	---	0.00090 J	0.0010 J	<0.00017	<0.00017	0.060	0.051
MW-109	05/16/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	<0.0024	0.0033 J
MW-109	08/16/96	0.0045 J	<0.00054	<0.00085	<0.00085	<0.00013	<0.00013	0.0089 J	<0.0024
MW-112	11/30/95	---	---	<0.00085	<0.00085	<0.00017 E	<0.00017 E	<0.0024	0.0043 J
MW-112	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.0026 J	<0.0024
MW-112	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0064 J	0.0070 J
MW-112	08/15/96	<0.00054	<0.00054	<0.00077	<0.00077	<0.00013	<0.00013	<0.0024 E	<0.0024
MW-115	11/30/95	---	---	<0.00085	<0.00085	<0.00017 E	<0.00017 E	0.0062 J	0.0097 J
MW-117	11/30/95	---	---	<0.00085	<0.00085	<0.00017 E	<0.00017 E	0.0032 J	0.0045 J
MW-117	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	<0.0024	0.0032 J
MW-117	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0079 J	0.0067 J
MW-117	08/15/96	0.0037 J	0.00062 J	0.0041 J	<0.00077	<0.00013	<0.00013	0.016 J	<0.0024
MW-119	11/30/95	---	---	0.0011 J	<0.00085	<0.00017 E	<0.00017 E	0.0049 J	0.0053 J
MW-119	02/22/96	---	---	0.0011 J	<0.00085	<0.00017	<0.00017	<0.0024	<0.0024
MW-119	05/15/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	0.0027 J	0.0026 J
MW-119	08/15/96	0.0074 B	<0.00054	0.0022 J	0.00077 J	<0.00013	<0.00013	0.0040 J	<0.0024
MW-120	11/29/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	0.0053 J	<0.0024
MW-120	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	<0.0024	0.0024 J
MW-120	05/14/96	---	---	0.0011 J	<0.00085	0.00035 J	<0.00017	<0.0024	0.0031 J
MW-120	08/14/96	<0.00041	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	<0.0024	<0.0024
MW-121	11/30/95	---	---	<0.00085	<0.00085	<0.00017 E	<0.00017 E	<0.0024	0.0040 J
MW-121	02/23/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	<0.0024	<0.0024
MW-121	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0053 J	0.0070 J
MW-121	08/15/96	0.0010 J	<0.00054	<0.00077	<0.00077	<0.00013	<0.00013	<0.0024 E	0.0089 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 2B

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
MW-122	11/28/95	---	---	---	---	<0.0011	<0.0011	0.0089 J	0.0063 J
MW-122	02/23/96	---	---	---	---	<0.0011	0.0016 J	0.0041 J	0.0058 J
MW-122	05/15/96	---	---	---	---	<0.0011	<0.0011	0.0063 J	0.0053 J
MW-122	08/16/96	<0.00082	<0.00082	0.015	0.015	<0.0011	<0.0011	0.0046 J	0.0075 J
MW-123	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	0.0033 J
MW-123	02/21/96	---	---	---	---	<0.0011	<0.0011	0.0027 J	0.0049 J
MW-123	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-123	08/15/96	0.00089 J	0.0023 J	0.0024 J	0.0033 J	0.0011 J	0.0012 J	<0.0024 E	0.0075 J
MW-124	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0057 J	0.0088 J
MW-125	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0048 J	0.0052 J
MW-125	02/21/96	---	---	---	---	<0.0011	<0.0011	0.0071 J	0.0064 J
MW-125	05/14/96	---	---	---	---	<0.0011	<0.0011	0.011 J	<0.0024
MW-125	08/14/96	0.00083 J	0.0027 J	0.050 E	0.037	0.0021 J	<0.0011	0.016 J	0.0025 J
MW-126	11/30/95	---	---	---	---	<0.0011	<0.0011	0.037	<0.0024
MW-126	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-126	05/15/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-126	08/15/96	<0.00082 E	0.0030 J	0.020	0.019	0.0023 J	0.0015 J	0.019 J	0.0052 J
MW-127	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0061 J	0.0088 J
MW-127	02/21/96	---	---	---	---	<0.0011	0.0013 J	0.0095 J	0.011 J
MW-127	05/14/96	---	---	---	---	<0.0011	<0.0011	0.011 J	0.0058 J
MW-127	08/14/96	0.00082 J	0.0021 J	0.0027 J	0.0013 J	<0.0011	<0.0011	0.012 J	0.010 J
MW-128	11/30/95	---	---	---	---	<0.0011	<0.0011	0.0061 J	0.0060 J
MW-128	02/21/96	---	---	---	---	<0.0011	<0.0011	0.0029 J	0.0054 J
MW-129	11/28/95	---	---	---	---	<0.0011	<0.0011	0.0080 J	0.012 J
MW-131	11/28/95	---	---	---	---	<0.0011	<0.0011	0.0033 J	<0.0024
MW-131	02/23/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-131	05/15/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024

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See cover sheet for data qualifier definitions.

Table 28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
MW-122	11/28/95	---	---	0.0014 J	0.0012 J	0.00022 J	0.00021 J	0.0059 J	0.0042 J
MW-122	02/23/96	---	---	<0.00085	<0.00077	<0.00017	0.00018 J	0.0048 J	<0.0024
MW-122	05/15/96	---	---	<0.00077	0.0016 J	0.00024 J	0.00024 J	0.0035 J	0.0028 J
MW-122	08/16/96	0.015	0.014	<0.00085	<0.00085	0.00019 J	0.00019 J	<0.0024	<0.0024
MW-123	11/30/95	---	---	0.0025 J	0.0023 J	<0.00017 E	<0.00017 E	0.014 J	0.011 J
MW-123	02/21/96	---	---	0.0014 J	0.0016 J	<0.00017	<0.00017	0.0036 J	0.0042 J
MW-123	05/14/96	---	---	0.0026 J	0.0017 J	<0.00017	<0.00017	<0.0024	<0.0024
MW-123	08/15/96	0.00067 J	<0.00054	0.0011 J	0.0012 J	<0.00013	<0.00013	<0.0024 E	<0.0024
MW-124	11/29/95	---	---	0.00094 J	<0.00085	<0.00017	<0.00017	0.0074 J	0.0098 J
MW-125	11/29/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	0.0038 J	0.0078 J
MW-125	02/21/96	---	---	0.0035 J	0.0034 J	<0.00017	<0.00017	0.0061 J	0.0049 J
MW-125	05/14/96	---	---	0.0098	0.0035 J	<0.00020	<0.00020	0.0040 J	0.0027 J
MW-125	08/14/96	0.0070 B	<0.00041	0.0044 J	0.0013 J	<0.00013	<0.00013	0.010 J	0.0058 J
MW-126	11/30/95	---	---	0.011 E	<0.00085	<0.00017 E	<0.00017 E	0.056	0.0056 J
MW-126	02/22/96	---	---	0.0027 J	0.0018 J	<0.00017	<0.00017	0.0054 J	<0.0024
MW-126	05/15/96	---	---	0.0023 J	0.0032 J	<0.00020	<0.00020	0.0069 J	0.0077 J
MW-126	08/15/96	0.017	0.00074 J	0.0061 J	<0.00077	<0.00013	<0.00013	0.026 E	<0.0024
MW-127	11/29/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	0.0052 J	0.0045 J
MW-127	02/21/96	---	---	<0.0015	<0.00077	<0.00017	<0.00017	0.0064 J	0.0071 J
MW-127	05/14/96	---	---	0.0028 J	<0.00085	<0.00017	<0.00017	0.015 J	0.0039 J
MW-127	08/14/96	0.0011 J	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	0.0028 J	<0.0024
MW-128	11/30/95	---	---	<0.00085	<0.00085	<0.00017 E	<0.00017 E	0.0063 J	0.0057 J
MW-128	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	0.0054 J	0.0049 J
MW-129	11/28/95	---	---	0.0015 J	0.0011 J	<0.00017	<0.00017	0.022 J	0.015 J
MW-131	11/28/95	---	---	0.0018 J	<0.00085	<0.00017	<0.00017	0.0098 J	0.0079 J
MW-131	02/23/96	---	---	<0.00085	<0.00077	<0.00017	<0.00017	0.0046 J	0.0037 J
MW-131	05/15/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	0.0045 J	0.0053 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
MW-131	08/15/96	<0.00082 E	0.0026 J	0.0038 J	0.0064 J	<0.0011	<0.0011	<0.0024 E	0.0028 J
MW-132	11/30/95	---	---	---	---	<0.0011	0.0011 J	<0.0024	<0.0024
MW-132	02/23/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-133	11/29/95	---	---	---	---	<0.0011	<0.0011	0.044	0.0071 J
MW-133	02/22/96	---	---	---	---	0.0022 J	<0.0011	0.0040 J	0.0024 J
MW-133	05/16/96	---	---	---	---	<0.0011	<0.0011	0.0063 J	0.0057 J
MW-133	08/15/96	<0.00082 E	<0.0016	0.0060 J	0.0076	0.0018 J	0.0027 J	0.0050 J	0.0087 J
MW-134	11/30/95	---	---	---	---	<0.0011	<0.0011	0.0062 J	<0.0024
MW-134	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-134	05/15/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-134	08/13/96	<0.00090	<0.00090	<0.00070	<0.00070	<0.0011	<0.0011	0.0060 J	<0.0024
MW-135	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0032 J	<0.0024
MW-135	02/22/96	---	---	---	---	<0.0011	<0.0011	0.0070 J	<0.0024
MW-135	05/16/96	---	---	---	---	<0.0011	<0.0011	0.0036 J	<0.0024
MW-135	08/16/96	<0.00082	0.0011 J	0.0029 J	0.0025 J	<0.0011	<0.0011	<0.0024	<0.0024
MW-136	11/29/95	---	---	---	---	0.0013 J	0.0017 J	0.0065 J	0.0056 J
MW-136	02/22/96	---	---	---	---	0.0020 J	0.0013 J	0.017 J	0.0034 J
MW-136	05/15/96	---	---	---	---	<0.0011	<0.0011	0.022 J	<0.0024
MW-136	08/16/96	<0.00082	0.0027 J	0.0034 J	0.0016 J	0.0027 J	0.0034 J	0.0087 J	<0.0024
MW-137	12/27/95	---	---	---	---	<0.0011	<0.0011	0.0041 J	<0.0024
MW-137	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-137	05/14/96	---	---	---	---	<0.0011	<0.0011	0.0039 J	<0.0024
MW-137	08/14/96	<0.00090	<0.00090	0.0017 J	0.0012 J	<0.0011	<0.0011	0.0045 J	<0.0024
MW-138	12/28/95	---	---	---	---	<0.0011	<0.0011	0.0040 J	<0.0024
MW-138	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-138	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-138	08/14/96	<0.00090	<0.00090	0.0015 J	<0.00070	<0.0011	<0.0011	<0.0024	<0.0024

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
MW-131	08/15/96	0.00098 J	<0.00054	<0.00077	<0.00077	<0.00013	<0.00013	0.0043 J	<0.0024
MW-132	11/30/95	---	---	<0.00085 E	<0.00085	<0.00017 E	<0.00017 E	0.0065 J	0.0035 J
MW-132	02/23/96	---	---	<0.00085	<0.00077	<0.00017	<0.00017	0.0027 J	<0.0024
MW-133	11/29/95	---	---	0.0070 J	<0.00085	<0.00017	<0.00017	0.062	0.016 J
MW-133	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.0051 J	0.012 J
MW-133	05/16/96	---	---	<0.0043	<0.0043	<0.00020	<0.00020	0.013 J	0.0070 J
MW-133	08/15/96	0.0018 J	<0.00054	<0.00077	<0.00077	<0.00013	<0.00013	0.0039 J	<0.0024
MW-134	11/30/95	---	---	0.0018 J	<0.00085	<0.00017 E	<0.00017 E	0.015 J	0.0062 J
MW-134	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	<0.0024	<0.0024
MW-134	05/15/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	0.0060 J	0.0041 J
MW-134	08/13/96	0.0012 J	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	0.0034 J	<0.0024
MW-135	11/29/95	---	---	0.00096 J	<0.00085	<0.00017	<0.00017	0.0077 J	0.0046 J
MW-135	02/22/96	---	---	0.0016 J	<0.00085	<0.00017	<0.00017	<0.0024	<0.0024
MW-135	05/16/96	---	---	<0.00077	<0.00077	<0.00020	<0.00020	0.0093 J	0.0039 J
MW-135	08/16/96	0.00077 J	<0.00054	<0.00085	<0.00085	<0.00013	<0.00013	<0.0024	0.0031 J
MW-136	11/29/95	---	---	0.0060 J	<0.00085	<0.00017	<0.00017	0.032	0.0086 J
MW-136	02/22/96	---	---	0.045	<0.00085	<0.00017	<0.00017	0.32 E	0.081 E
MW-136	05/15/96	---	---	0.055	<0.00077	<0.00020	<0.00020	0.41	0.063
MW-136	08/16/96	0.0090 B	<0.00054	0.034	<0.00085	<0.00013	<0.00013	0.18	0.0079 J
MW-137	12/27/95	---	---	0.00093 J	<0.00085	<0.00017	<0.00017	0.0087 J	0.0058 J
MW-137	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	0.0037 J	0.0037 J
MW-137	05/14/96	---	---	0.00095 J	<0.00085	<0.00020	<0.00020	0.0043 J	<0.0024
MW-137	08/14/96	0.0013 J	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	0.0031 J	0.0031 J
MW-138	12/28/95	---	---	0.00096 J	<0.00085	<0.00017	<0.00017	0.024	0.019 J
MW-138	02/21/96	---	---	0.0012 J	0.0017 J	<0.00017	<0.00017	0.0061 J	0.0067 J
MW-138	05/14/96	---	---	0.0014 J	<0.00085	<0.00020	<0.00020	0.0073 J	0.0054 J
MW-138	08/14/96	0.00097 J	0.00070 J	<0.00085	<0.00085	<0.00013	<0.00013	0.21	0.21

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
MW-139	12/28/95	---	---	---	---	<0.0011	<0.0011	0.0055 J	0.0025 J
MW-139	03/07/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-139	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-139	08/15/96	<0.00082 E	<0.00082	0.0024 J	0.0017 J	<0.0011	<0.0011	0.0031 J	0.0025 J
MW-20	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-22	11/29/95	---	---	---	---	<0.0011	<0.0011	0.0048 J	0.0028 J
MW-22	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-22	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-22	08/14/96	<0.00082	0.0030 J	0.0090 E	0.0074	0.0015 J	<0.0011	0.0036 J	<0.0024
MW-28	12/04/95	---	---	---	---	<0.0011	<0.0011	0.0025 J	0.0030 J
MW-28	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-28	05/14/96	---	---	---	---	<0.0011	<0.0011	0.0039 J	<0.0024
MW-28	08/14/96	<0.00090	0.0026 J	<0.00070	<0.00070	<0.0011	<0.0011	0.0056 J	0.0029 J
MW-7	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-7	02/23/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-7	05/15/96	---	---	---	---	<0.0011	<0.0011	0.0099 J	<0.0024
MW-7	08/15/96	<0.00082 E	0.0028 J	0.0070 J	0.0060 J	<0.0011	<0.0011	0.0028 J	0.0030 J
MW-8	11/30/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-8	02/21/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-8	05/14/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 3-28

Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
MW-139	12/28/95	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.0070 J	0.0043 J
MW-139	03/07/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	0.011 J	0.0079 J
MW-139	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.014 J	0.010 J
MW-139	08/15/96	0.0018 J	<0.0011	<0.00077	<0.00077	<0.00013	<0.00013	0.030 E	0.027
MW-20	11/30/95	---	---	<0.00085	0.00093 J	<0.00017 E	<0.00017 E	<0.0024	0.0042 J
MW-22	11/29/95	---	---	<0.00077	<0.00085	<0.00017	<0.00017	<0.0024	0.0055 J
MW-22	02/21/96	---	---	<0.00077	<0.00085	<0.00017	<0.00017	<0.0024	0.0037 J
MW-22	05/14/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	<0.0024	0.0034 J
MW-22	08/14/96	0.0019 J	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	<0.0024	<0.0024
MW-28	12/04/95	---	---	0.00077 E	<0.00085	<0.00017	<0.00017	0.0047 J	<0.0024
MW-28	02/21/96	---	---	<0.00077	<0.00077	<0.00017	<0.00017	<0.0024	0.0043 J
MW-28	05/14/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0041 J	0.0041 J
MW-28	08/14/96	0.0035 J	0.00048 J	<0.00085	<0.00085	<0.00013	<0.00013	0.0024 J	0.0040 J
MW-7	11/30/95	---	---	0.0021 J	<0.00085	<0.00017 E	<0.00017 E	0.0024 J	0.0026 J
MW-7	02/23/96	---	---	0.0023 J	0.00079 J	<0.00017	<0.00017	0.0067 J	0.0024 J
MW-7	05/15/96	---	---	0.0069 J	0.0018 J	<0.00020	<0.00020	0.016 J	0.0030 J
MW-7	08/15/96	0.0025 J	<0.00054	0.0026 J	0.0011 J	<0.00013	<0.00013	<0.0024 E	<0.0024
MW-8	11/30/95	---	---	0.0016 J	0.0016 J	<0.00017 E	<0.00017 E	0.0044 J	0.0064 J
MW-8	02/21/96	---	---	0.0068 J	0.0058 J	<0.00017	<0.00017	0.0049 J	0.0062 J
MW-8	05/14/96	---	---	0.0057 J	<0.00085	<0.00020	<0.00020	0.0055 J	0.0067 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 29

Total and Dissolved Metals in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Antimony (mg/l)	Dissolved Antimony (mg/l)	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)
HA-5	05/15/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-10U	05/13/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-11U	05/13/96	---	---	---	---	<0.0011	<0.0011	0.0024 J	<0.0024
MW-13U	11/29/95	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-13U	02/22/96	---	---	---	---	<0.0011	0.0017 J	0.0025 J	<0.0024
MW-13U	05/13/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-13U	08/13/96	<0.00090	0.0021 J	<0.00070	<0.00070	<0.0011	<0.0011	0.0057 J	<0.0024
MW-201	11/28/95	---	---	---	---	<0.0011	<0.0011	0.021 J	<0.0024
MW-201	02/26/96	---	---	---	---	<0.0011	0.0012 J	0.0086 J	<0.0024
MW-201	05/15/96	---	---	---	---	<0.0011	<0.0011	0.028	<0.0024
MW-201	08/16/96	0.00094 J	0.00082 J	0.0056 J	0.0016 J	<0.0011	<0.0011	0.021 J	0.0061 J
MW-202	11/28/95	---	---	---	---	<0.0011	<0.0011	0.061	0.0029 J
MW-202	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-202	05/13/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-202	08/13/96	<0.00090	0.0022 J	<0.00070	<0.00070	<0.0011	<0.0011	0.0081 J	<0.0024
MW-203	11/29/95	---	---	---	---	<0.0011	<0.0011	0.013 J	<0.0024
MW-203	02/22/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-203	05/16/96	---	---	---	---	<0.0011	<0.0011	<0.0024	<0.0024
MW-203	08/13/96	<0.00090	0.0015 J	<0.00070	<0.00070	<0.0011	<0.0011	0.0063 J	<0.0024
MW-204	11/29/95	---	---	---	---	<0.0011	0.0014 J	0.011 J	0.0028 J
MW-204	02/23/96	---	---	---	---	<0.0011	<0.0011	0.022 J	<0.0024
MW-204	05/13/96	---	---	---	---	<0.0011	<0.0011	0.0060 J	<0.0024
MW-204	08/13/96	<0.00090	<0.00090	0.00095 J	<0.00070	<0.0011	<0.0011	0.0049 J	<0.0024
MW-7U	11/29/95	---	---	---	---	<0.0011	<0.0011	0.099	0.0036 J
MW-7U	02/26/96	---	---	---	---	<0.0011	<0.0011	0.0052 J	<0.0024
MW-7U	05/13/96	---	---	---	---	<0.0011	<0.0011	0.0074 J	<0.0024
MW-7U	08/13/96	<0.00090	<0.00090	0.0082	0.0065 J	<0.0011	<0.0011	0.014 J	0.0038 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

See cover sheet for data qualifier definitions.

Table 9

Total and Dissolved Metals in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Copper (mg/l)	Dissolved Copper (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)	Zinc (mg/l)	Dissolved Zinc (mg/l)
HA-5	05/15/96	---	---	0.0027 J	<0.00077	<0.00020	<0.00020	0.010 J	<0.0024
MW-10U	05/13/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0099 J	0.0051 J
MW-11U	05/13/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0065 J	0.0028 J
MW-13U	11/29/95	---	---	<0.00077 E	<0.00085	<0.00017 E	<0.00017 E	0.0042 J	0.0046 J
MW-13U	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.0025 J	0.0032 J
MW-13U	05/13/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0029 J	0.0089 J
MW-13U	08/13/96	0.0039 J	<0.00041	0.0010 J	<0.00085	<0.00013	<0.00013	0.0057 J	<0.0024
MW-201	11/28/95	---	---	0.0044 J	<0.00085	<0.00017	<0.00017	0.024	<0.0024
MW-201	02/26/96	---	---	<0.00085	<0.00077	<0.00017	<0.00017	0.0062 J	0.0026 J
MW-201	05/15/96	---	---	0.0039 J	0.0011 J	<0.00020	<0.00020	0.028	<0.0024
MW-201	08/16/96	0.0075 B	0.0013 J	0.0017 J	<0.00085	<0.00013	<0.00013	0.015 J	0.0057 J
MW-202	11/28/95	---	---	0.012	<0.00085	<0.00017	<0.00017	0.15	0.019 J
MW-202	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.0063 J	0.0057 J
MW-202	05/13/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.010 J	0.010 J
MW-202	08/13/96	0.0030 J	0.0022 J	0.00098 J	<0.00085	<0.00013	<0.00013	0.027	0.026
MW-203	11/29/95	---	---	0.0021 J	<0.00085	<0.00017	<0.00017	0.037	0.025 B
MW-203	02/22/96	---	---	<0.00085	<0.00085	<0.00017	<0.00017	0.020 J	0.013 J
MW-203	05/16/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.019 J	0.015 J
MW-203	08/13/96	<0.00041 E	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	0.012 J	0.012 J
MW-204	11/29/95	---	---	0.0018 J	<0.00085	<0.00017	<0.00017	0.021 J	0.014 J
MW-204	02/23/96	---	---	0.0057 J	<0.00077	<0.00017	<0.00017	0.058	0.011 J
MW-204	05/13/96	---	---	<0.00085	<0.00085	<0.00020	<0.00020	0.0077 J	0.0057 J
MW-204	08/13/96	0.00083 J	<0.00041	<0.00085	<0.00085	<0.00013	<0.00013	0.013 J	0.0028 J
MW-7U	11/29/95	---	---	0.0049 J	<0.00085	<0.00017	<0.00017	0.061	0.0076 J
MW-7U	02/26/96	---	---	0.00096 J	<0.00077	<0.00017	<0.00017	0.0093 J	0.0037 J
MW-7U	05/13/96	---	---	0.0024 J	<0.00085	<0.00020	<0.00020	0.013 J	0.0068 J
MW-7U	08/13/96	0.0057 BE	<0.00041	0.0011 J	<0.00085	<0.00013	<0.00013	0.015 J	0.0082 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-30

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-104	MW-104	MW-104	MW-104
	DATE	11/30/95	02/22/96	05/14/96	08/14/96
Chloromethane		<0.5	<0.5	<1.0	<12
Bromomethane		<2.2	<2.2	<1.0	<22
Vinyl chloride		<0.5	<0.5	<2.0	<23
Chloroethane		<0.6	<0.6	<1.0	<34
Methylene chloride		<0.9	<0.9	4	<35
Acetone		<3	<3	<15	<52
Carbon disulfide		<1	<1	<5.0	<14
1,1-Dichloroethene		<0.3	<0.3	<1.0	<14
1,1-Dichloroethane		<0.2	<0.2	<1.0	<22
cis-1,2-Dichloroethene		<0.3	<0.3	<1.0	<23
trans-1,2-Dichloroethene		<0.3	<0.3	<1.0	<24
Chloroform		<0.1	<0.1	<1.0	<14
1,2-Dichloroethane		<0.2	<0.2	<1.0	<10
2-Butanone		<2	<2	<1.0	<49
1,1,1-Trichloroethane		<0.2	<0.2	<1.0	<10
Carbon tetrachloride		<0.3	<0.3	<1.0	<14
Vinyl acetate		<3	<3	<2.0	<43
Bromodichloromethane		<0.2	<0.2	<1.0	<19
1,2-Dichloropropane		<0.3	<0.3	<1.0	<21
cis-1,3-Dichloropropene		<0.2	<0.2	<1.0	<10
Trichloroethene		<0.4	<0.4	<1.0	<10
Dibromochloromethane		<0.2	<0.2	<1.0	<10
1,1,2-Trichloroethane		<0.1	<0.1	<1.0	<16
Benzene		<3	14	15	33 J
trans-1,3-Dichloropropene		<0.2	<0.2	<1.0	<10
Bromoform		<0.3	<0.3	<1.0	<14
2-Hexanone		<1	<1	<5.0	<34
4-Methyl-2-pentanone		<1	<1	<5.0	<36
Tetrachloroethene		<0.4	<0.4	<1.0	<17
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<1.0	<39
Toluene		170	55	37	40 J
Chlorobenzene		<0.7	<0.7	<1.0	<10
Ethylbenzene		300	250	370	510

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6–30

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-104	MW-104	MW-104	MW-104
	DATE	11/30/95	02/22/96	05/14/96	08/14/96
Styrene		<0.4	<0.4	<1.0	<10
m & p Xylenes		1300	890	1000	1300
1,2-Dibromoethane (EDB)		<0.3	<0.3	<2.0	<20
o-Xylene		340	230	310	86

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See cover sheet for data qualifier definitions.

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-117	MW-123	MW-123	MW-123
	DATE	05/16/96	11/30/95	02/21/96	05/14/96
Chloromethane		<1.0	<0.5	<0.5	<1.0
Bromomethane		<1.0	<2.2	<2.2	<1.0
Vinyl chloride		<2.0	<0.5	<0.5	<2.0
Chloroethane		<1.0	<0.6	<0.6	<1.0
Methylene chloride		0.8 J	<0.9	<0.9	<2.0
Acetone		<15	<3	<3	<15
Carbon disulfide		<5.0	<1	<1	<5.0
1,1-Dichloroethene		<1.0	<0.3	<0.3	<1.0
1,1-Dichloroethane		<1.0	<0.2	<0.2	<1.0
cis-1,2-Dichloroethene		<1.0	<0.3	<0.3	<1.0
trans-1,2-Dichloroethene		<1.0	<0.3	<0.3	<1.0
Chloroform		<1.0	<0.1	<0.1	<1.0
1,2-Dichloroethane		<1.0	<0.2	<0.2	<1.0
2-Butanone		<1.0	<2	<2	<1.0
,1,1-Trichloroethane		<1.0	<0.2	<0.2	<1.0
Carbon tetrachloride		<1.0	<0.3	<0.3	<1.0
Vinyl acetate		<2.0	<3	<3	<2.0
Bromodichloromethane		<1.0	<0.2	<0.2	<1.0
1,2-Dichloropropane		<1.0	<0.3	<0.3	<1.0
cis-1,3-Dichloropropene		<1.0	<0.2	<0.2	<1.0
Trichloroethene		<1.0	<0.4	<0.4	<1.0
Dibromochloromethane		<1.0	<0.2	<0.2	<1.0
1,1,2-Trichloroethane		<1.0	<0.1	<0.1	<1.0
Benzene		<1.0	1100	480	810
trans-1,3-Dichloropropene		<1.0	<0.2	<0.2	<1.0
Bromoform		<1.0	<0.3	<0.3	<1.0
2-Hexanone		<5.0	<1	<1	<5.0
4-Methyl-2-pentanone		<5.0	<1	<1	<5.0
Tetrachloroethene		<1.0	<0.4	<0.4	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<0.3	<0.3	<1.0
Toluene		<1.0	32	13	23
Chlorobenzene		<1.0	<0.7	<0.7	<1.0
Ethylbenzene		<1.0	72	3	44

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 6–30

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-117	MW-123	MW-123	MW-123
	DATE	05/16/96	11/30/95	02/21/96	05/14/96
Styrene		<1.0	<0.4	<0.4	<1.0
m & p Xylenes		<1.0	82	40	71
1,2-Dibromoethane (EDB)		<2.0	<0.3	<0.3	<2.0
o-Xylene		<1.0	17	13	15

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- ≙ Not analyzed

See cover sheet for data qualifier definitions.

Table 6-30

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-123	MW-127	MW-127	MW-127
	DATE	08/15/96	11/29/95	02/21/96	05/14/96
Chloromethane		<6.0	<0.5	<0.5	<1.0
Bromomethane		<11	<2.2	<2.2	<1.0
Vinyl chloride		<12	<0.5	<0.5	<2.0
Chloroethane		<17	<0.6	<0.6	<1.0
Methylene chloride		<18	<0.9	<0.9	4
Acetone		<26	<3	<3	<15
Carbon disulfide		<7.0	<1	<1	<5.0
1,1-Dichloroethene		<7.0	<0.3	<0.3	<1.0
1,1-Dichloroethane		<11	<0.2	<0.2	<1.0
cis-1,2-Dichloroethene		<12	<0.3	<0.3	<1.0
trans-1,2-Dichloroethene		<12	<0.3	<0.3	<1.0
Chloroform		<7.0	<0.1	<0.1	<1.0
1,2-Dichloroethane		<5.0	<0.2	<0.2	<1.0
2-Butanone		<25	<2	<2	<1.0
1,1,1-Trichloroethane		<5.0	<0.2	<0.2	<1.0
Carbon tetrachloride		<7.0	<0.3	<0.3	<1.0
Vinyl acetate		<22	<3	<3	<2.0
Bromodichloromethane		<9.5	<0.2	<0.2	<1.0
1,2-Dichloropropane		<11	<0.3	<0.3	<1.0
cis-1,3-Dichloropropene		<5.0	<0.2	<0.2	<1.0
Trichloroethene		<5.0	<0.4	<0.4	<1.0
Dibromochloromethane		<5.0	<0.2	<0.2	<1.0
1,1,2-Trichloroethane		<8.0	<0.1	<0.1	<1.0
Benzene		850	<0.3	<0.3	0.7 J
trans-1,3-Dichloropropene		<5.0	<0.2	<0.2	<1.0
Bromoform		<7.0	<0.3	<0.3	<1.0
2-Hexanone		<17	<1	<1	<5.0
4-Methyl-2-pentanone		<18	<1	<1	<5.0
Tetrachloroethene		<8.5	<0.4	<0.4	<1.0
1,1,2,2-Tetrachloroethane		<20	<0.3	<0.3	<1.0
Toluene		26	<0.4	<0.4	<1.0
Chlorobenzene		<5.0	<0.7	<0.7	<1.0
Ethylbenzene		35	<0.4	<0.4	<1.0

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See cover sheet for data qualifier definitions.

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l) SITE	MW-123	MW-127	MW-127	MW-127
DATE	08/15/96	11/29/95	02/21/96	05/14/96
Styrene	<5.0	<0.4	<0.4	<1.0
m & p Xylenes	88	<0.7	<0.7	<1.0
1,2-Dibromoethane (EDB)	<10	<0.3	<0.3	<2.0
o-Xylene	17 J	<0.3	<0.3	<1.0

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See cover sheet for data qualifier definitions.

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-127	MW-22	MW-22	MW-22
	DATE	08/14/96	11/29/95	02/21/96	05/14/96
Chloromethane		<1.2	<0.5	<0.5 E	<1.0
Bromomethane		<2.2	<2.2	<2.2 E	<1.0
Vinyl chloride		<2.3	<0.5	<0.5 E	<2.0
Chloroethane		<3.4	<0.6	<0.6 E	<1.0
Methylene chloride		<3.5	<0.9	<0.9 E	4
Acetone		<5.2	<3	<3 E	<15
Carbon disulfide		<1.4	<1	<1 E	<5.0
1,1-Dichloroethene		<1.4	<0.3	<0.3 E	<1.0
1,1-Dichloroethane		<2.2	<0.2	<0.2 E	<1.0
cis-1,2-Dichloroethene		<2.3	<0.3	<0.3 E	<1.0
trans-1,2-Dichloroethene		<2.4	<0.3	<0.3 E	<1.0
Chloroform		<1.4	<0.1	<0.1 E	<1.0
1,2-Dichloroethane		<1.0	<0.2	<0.2 E	<1.0
2-Butanone		<4.9	<2	<2 E	<1.0
1,1,1-Trichloroethane		<1.0	<0.2	<0.2 E	<1.0
Carbon tetrachloride		<1.4	<0.3	<0.3 E	<1.0
Vinyl acetate		<4.3	<3	<3 E	<2.0
Bromodichloromethane		<1.9	<0.2	<0.2 E	<1.0
1,2-Dichloropropane		<2.1	<0.3	<0.3 E	<1.0
cis-1,3-Dichloropropene		<1.0	<0.2	<0.2 E	<1.0
Trichloroethene		<1.0	<0.4	<0.4 E	<1.0
Dibromochloromethane		<1.0	<0.2	<0.2 E	<1.0
1,1,2-Trichloroethane		<1.6	<0.1	<0.1 E	<1.0
Benzene		<1.0	<0.3	1 E	0.5 J
trans-1,3-Dichloropropene		<1.0	<0.2	<0.2 E	<1.0
Bromoform		<1.4	<0.3	<0.3 E	<1.0
2-Hexanone		<3.4	<1	<1 E	<5.0
4-Methyl-2-pentanone		<3.6	<1	<1 E	<5.0
Tetrachloroethene		<1.7	<0.4	<0.4 E	<1.0
1,1,2,2-Tetrachloroethane		<3.9	<0.3	<0.3 E	<1.0
Toluene		<1.0	<0.4	<0.4 E	<1.0
Chlorobenzene		<1.0	<0.7	<0.7 E	<1.0
Ethylbenzene		<1.0	<0.4	<0.4 E	<1.0

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See cover sheet for data qualifier definitions.

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-127	MW-22	MW-22	MW-22
	DATE	08/14/96	11/29/95	02/21/96	05/14/96
Styrene		<1.0	<0.4	<0.4 E	<1.0
m & p Xylenes		<1.8	<0.7	<0.7 E	0.8 J
1,2-Dibromoethane (EDB)		<2.0	<0.3	<0.3 E	<2.0
o-Xylene		<1.0	<0.3	<0.3 E	<1.0

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See cover sheet for data qualifier definitions.

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-22
	DATE	08/14/96
Chloromethane		<1.2
Bromomethane		<2.2
Vinyl chloride		<2.3
Chloroethane		<3.4
Methylene chloride		<3.5
Acetone		<5.2
Carbon disulfide		<1.4
1,1-Dichloroethene		<1.4
1,1-Dichloroethane		<2.2
cis-1,2-Dichloroethene		<2.3
trans-1,2-Dichloroethene		<2.4
Chloroform		<1.4
1,2-Dichloroethane		<1.0
2-Butanone		<4.9
,1,1-Trichloroethane		<1.0
Carbon tetrachloride		<1.4
Vinyl acetate		<4.3
Bromodichloromethane		<1.9
1,2-Dichloropropane		<2.1
cis-1,3-Dichloropropene		<1.0
Trichloroethene		<1.0
Dibromochloromethane		<1.0
1,1,2-Trichloroethane		<1.6
Benzene		<1.0
trans-1,3-Dichloropropene		<1.0
Bromoform		<1.4
2-Hexanone		<3.4
4-Methyl-2-pentanone		<3.6
Tetrachloroethene		<1.7
1,1,2,2-Tetrachloroethane		<3.9
Toluene		<1.0
Chlorobenzene		<1.0
Ethylbenzene		<1.0

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See cover sheet for data qualifier definitions.

Table 6-30

VOCs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-22
	DATE	08/14/96
Styrene		<1.0
m & p Xylenes		<1.8
1,2-Dibromoethane (EDB)		<2.0
o-Xylene		<1.0

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See cover sheet for data qualifier definitions.

Table 6-31

VOCs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-13U	MW-13U	MW-13U	MW-13U
	DATE	11/30/95	02/22/96	05/13/96	08/13/96
Chloromethane		<0.5	<0.5	<1.0	<1.2
Bromomethane		<2.2	<2.2	<1.0	<2.2
Vinyl chloride		<0.5	<0.5	<2.0	<2.3
Chloroethane		<0.6	<0.6	<1.0	<3.4
Methylene chloride		<0.9	<0.9	1 JB	<3.5
Acetone		<3	<3	<15	<5.2
Carbon disulfide		<1	<1	<5.0	<1.4
1,1-Dichloroethene		<0.3	<0.3	<1.0	<1.4
1,1-Dichloroethane		<0.2	<0.2	<1.0	<2.2
cis-1,2-Dichloroethene		<0.3	<0.3	<1.0	<2.3
trans-1,2-Dichloroethene		<0.3	<0.3	<1.0	<2.4
Chloroform		<0.1	<0.1	<1.0	<1.4
1,2-Dichloroethane		<0.2	<0.2	<1.0	<1.0
2-Butanone		<2	<2	<1.0	<4.9
,1,1-Trichloroethane		<0.2	<0.2	<1.0	<1.0
Carbon tetrachloride		<0.3	<0.3	<1.0	<1.4
Vinyl acetate		<3	<3	<2.0	<4.3
Bromodichloromethane		<0.2	<0.2	<1.0	<1.9
1,2-Dichloropropane		<0.3	<0.3	<1.0	<2.1
cis-1,3-Dichloropropene		<0.2	<0.2	<1.0	<1.0
Trichloroethene		<0.4	<0.4	<1.0	<1.0
Dibromochloromethane		<0.2	<0.2	<1.0	<1.0
1,1,2-Trichloroethane		<0.1	<0.1	<1.0	<1.6
Benzene		<0.3	<0.3	<1.0	<1.0
trans-1,3-Dichloropropene		<0.2	<0.2	<1.0	<1.0
Bromoform		<0.3	<0.3	<1.0	<1.4
2-Hexanone		<1	<1	<5.0	<3.4
4-Methyl-2-pentanone		<1	<1	<5.0	<3.6
Tetrachloroethene		<0.4	<0.4	<1.0	<1.7
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<1.0	<3.9
Toluene		<0.4	<0.4	<1.0	<1.0
Chlorobenzene		<0.7	<0.7	<1.0	<1.0
Ethylbenzene		<0.4	<0.4	<1.0	<1.0

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See cover sheet for data qualifier definitions.

Table 6–31

VOCs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	MW-13U	MW-13U	MW-13U	MW-13U
	DATE	11/30/95	02/22/96	05/13/96	08/13/96
Styrene		<0.4	<0.4	<1.0	<1.0
m & p Xylenes		<0.7	<0.7	<1.0	<1.8
1,2-Dibromoethane (EDB)		<0.3	<0.3	<2.0	<2.0
o-Xylene		<0.3	<0.3	<1.0	<1.0

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See cover sheet for data qualifier definitions.

Table 6–32

TDS and TSS in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Dissolved Solids (TDS) (mg/l)	Total Suspended Solids (TSS) (mg/l)
LM-2	11/29/95	14000	15
LM-2	02/23/96	10000	36
LM-2	05/16/96	18000	26
LM-2	08/16/96	12000 E	16
LM-3	11/28/95	1900	20
MW-101	11/30/95	3200	26 B
MW-101	02/23/96	560	14
MW-101	05/16/96	1100	11
MW-101	08/15/96	12000	<10
MW-104	11/30/95	140	<10 B
MW-104	02/22/96	75	<10
MW-104	05/14/96	98	<10
MW-104	08/14/96	130	160
MW-105	12/27/95	170	74
MW-105	02/21/96	150	<10
MW-105	05/14/96	160	<10
MW-105	08/14/96	190	<10
MW-106	12/27/95	170	14
MW-106	02/21/96	170	10
MW-106	05/14/96	210	<10
MW-106	08/14/96	300	11
MW-107	12/27/95	460	120
MW-107	02/21/96	210	<10
MW-107	05/14/96	100	<10
MW-107	08/14/96	300	14
MW-108	11/28/95	13000	76
MW-108	02/23/96	6400	62
MW-108	05/16/96	8800	280
MW-108	08/16/96	13000 E	190
MW-109	11/28/95	9300	28
MW-109	02/23/96	5000	87
MW-109	05/16/96	9100	27
MW-109	08/16/96	12000 E	46
MW-112	11/30/95	400	26 B

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See cover sheet for data qualifier definitions.

Table 6–32

TDS and TSS in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Dissolved Solids (TDS) (mg/l)	Total Suspended Solids (TSS) (mg/l)
MW-112	02/22/96	330	<10
MW-112	05/16/96	600	<10
MW-112	08/15/96	560 E	<10 E
MW-115	11/30/95	480	24 B
MW-117	11/30/95	550	14 B
MW-117	02/22/96	450	23
MW-117	05/16/96	640	45
MW-117	08/15/96	590 E	100 E
MW-119	11/30/95	500	100 B
MW-119	02/22/96	420	48
MW-119	05/15/96	490	59
MW-119	08/15/96	570	180
MW-120	11/29/95	1000	<10
MW-120	02/21/96	990	<10
MW-120	05/14/96	940	<10
MW-120	08/14/96	920	<10
MW-121	11/30/95	350	19 B
MW-121	02/23/96	320	<10
MW-121	05/16/96	410	<10
MW-121	08/15/96	360	<10
MW-122	11/28/95	910	14
MW-122	02/23/96	860	<10
MW-122	05/15/96	880	<10
MW-122	08/16/96	890 E	<10
MW-123	11/30/95	5200	<10 B
MW-123	02/21/96	720	40
MW-123	05/14/96	750	66
MW-123	08/15/96	700	64
MW-124	11/29/95	510	12
MW-125	11/29/95	710	120
MW-125	02/21/96	640	91
MW-125	05/14/96	600	140
MW-125	08/14/96	570	200
MW-126	11/30/95	200	200 B

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See cover sheet for data qualifier definitions.

TDS and TSS in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Dissolved Solids (TDS) (mg/l)	Total Suspended Solids (TSS) (mg/l)
MW-126	02/22/96	270	85
MW-126	05/15/96	240	92
MW-126	08/15/96	280	110
MW-127	11/29/95	970	91
MW-127	02/21/96	910	48
MW-127	05/14/96	1100	110
MW-127	08/14/96	920	10
MW-128	11/30/95	510	11 B
MW-128	02/21/96	500	630
MW-129	11/28/95	2500	14
MW-131	11/28/95	580	26
MW-131	02/23/96	680	57
MW-131	05/15/96	610	30
MW-131	08/15/96	580 E	49 E
MW-132	11/30/95	280	58 B
MW-132	02/23/96	210	<10
MW-133	11/29/95	990	180
MW-133	02/22/96	840	140
MW-133	05/16/96	1200	190
MW-133	08/15/96	1100 E	200 E
MW-134	11/30/95	150	63 B
MW-134	02/22/96	90	<10
MW-134	05/15/96	170	<10
MW-134	08/13/96	180	13
MW-135	11/29/95	990	41
MW-135	02/22/96	650	73
MW-135	05/16/96	750	37
MW-135	08/16/96	1700 E	61
MW-136	11/29/95	1800	190
MW-136	02/22/96	1800	510
MW-136	05/15/96	2000	690
MW-136	08/16/96	2100 E	140
MW-137	12/27/95	190	<10
MW-137	02/21/96	180	33

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See cover sheet for data qualifier definitions.

Table 6–32

TDS and TSS in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Dissolved Solids (TDS) (mg/l)	Total Suspended Solids (TSS) (mg/l)
MW-137	05/14/96	710	12
MW-137	08/14/96	3000 E	<10
MW-138	12/28/95	5900	150
MW-138	02/21/96	570	<10
MW-138	05/14/96	290	<10
MW-138	08/14/96	10000 E	<10
MW-139	12/28/95	1900	<10
MW-139	03/07/96	1900	<10
MW-139	05/16/96	1600	11
MW-139	08/15/96	8100 E	20 E
MW-20	11/30/95	3300	17 B
MW-22	11/29/95	160	27
MW-22	02/21/96	210	13
MW-22	05/14/96	260	90
MW-22	08/14/96	290	71
MW-28	12/04/95	190	<10
MW-28	02/21/96	260	<10
MW-28	05/14/96	160	56
MW-28	08/14/96	190 E	37
MW-7	11/30/95	170	50 B
MW-7	02/23/96	91	<10
MW-7	05/15/96	140	48
MW-7	08/15/96	190	130
MW-8	11/30/95	50	49 B
MW-8	02/21/96	55	20
MW-8	05/14/96	130	11

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See cover sheet for data qualifier definitions.

Table 6-33

TDS and TSS in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Dissolved Solids (TDS) (mg/l)	Total Suspended Solids (TSS) (mg/l)
HA-5	05/15/96	100	31
MW-10U	05/13/96	220	<10
MW-11U	05/13/96	220	19
MW-13U	11/29/95	100	<10
MW-13U	02/22/96	160	<10
MW-13U	05/13/96	280	<10
MW-13U	08/13/96	270	37
MW-201	11/28/95	320	210
MW-201	02/26/96	280	<10
MW-201	05/15/96	290	160
MW-201	08/16/96	280 E	89
MW-202	11/28/95	340	2100
MW-202	02/22/96	240	<10
MW-202	05/13/96	330	<10
MW-202	08/13/96	350	11
MW-203	11/29/95	98	25
MW-203	02/22/96	130	10
MW-203	05/16/96	190	<10
MW-203	08/13/96	200	<10
MW-204	11/29/95	140	16
MW-204	02/23/96	280	48
MW-204	05/13/96	190	<10
MW-204	08/13/96	210 E	<10
MW-7U	11/29/95	280	250
MW-7U	02/26/96	340	61
MW-7U	05/13/96	390	310
MW-7U	08/13/96	390	86

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 4

Remedial Parameters in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Hardness (as CaCO3) (mg/l)	Ammonia (as N) (mg/l)	Nitrate/ Nitrite Nitrogen (mg/l)	Dissolved Iron (mg/l)	Orthophosphate as Phosphorus (mg/l)
MW-107	02/21/96	67	0.96	1.9	0.058 J	<0.050
MW-128	02/21/96	140	6.8	0.15	14	0.060
MW-132	02/23/96	170	1.2	<0.05	7.5	0.30

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
Lower Yard Monitoring Wells							
LM-2	11/29/95	4.55	2,090	13.5	6.23	2.00	Colorless, clear, slight musty odor
	2/23/96	3.95	3,750	9.8	2.44	2.60	Pale amber, clear, no noticeable odor
	5/16/96	4.75	2,400	13.0	3.10	1.60	Colorless, clear, no noticeable odor
	8/16/96	6.02	18,800	15.0	1.92	0.68	Colorless, clear, strong organic/sulfur-like odor
LM-3	11/28/95	4.64	3,010	14.6	3.24	2.50	Colorless, clear, musty odor
MW-7	11/30/95	6.20	201	12.4	9.00	1.93	Slightly green tint, clear, hydrocarbon-like odor
	2/23/96	6.52	114	8.0	12.4	2.00	Colorless, clear, no noticeable odor
	5/15/96	6.76	169	13.0	7.71	0.70	Colorless, clear, strong hydrocarbon-like odor
	8/15/96	6.96	325	18.5	43.2	1.62	Light grey, slightly turbid, organic odor
MW-8	11/30/95	6.01	150	12.9	—	1.51	Cloudy, strong hydrocarbon-like odor, bacterial growth at water surface
	2/21/96	6.16	129	8.1	4.77	2.10	Pale yellow, clear, slight hydrocarbon-like odor
	5/14/96	5.93	180	14.0	1.51	0.80	Colorless, clear, hydrocarbon-like odor
MW-20	11/30/95	6.27	4,310	14.0	—	0.95	Possible product
MW-22	11/29/95	6.94	349	15.5	4.01	4.11	Colorless, clear, mild hydrocarbon-like odor
	2/21/96	6.80	314	11.0	14.5	0.95	Colorless, slightly turbid, no noticeable odor
	5/14/96	6.53	452	13.5	1.71	0.60	Colorless, clear, slight hydrocarbon-like odor
	8/14/96	7.21	460	17.0	14.6	0.73	Colorless, clear
MW-28 (BNRR)	12/4/95	5.96	180	12.0	5.10	3.38	Colorless, clear, no noticeable odor
	2/21/96	5.84	359	8.0	1.33	5.87	Colorless, clear, no noticeable odor
	5/14/96	6.16	253	12.0	8.04	5.00	
	8/14/96	7.02	294	15.0	5.35	1.32	Light yellow, clear, no noticeable odor
MW-101	11/30/95	6.84	5,260	14.3	1.69	2.60	Water turns black when exposed to air
	2/23/96	6.77	1,030	9.5	8.65	2.21	Suspended iron slime, hydrocarbon-like odor
	5/16/96	6.50	1,700	14.0	2.50	1.10	Colorless, clear, hydrocarbon-like odor
	8/15/96	6.40	17,200	19.0	1.41	0.35	Grey, slightly turbid, sulfur-like odor
MW-103	11/30/95	6.49	673	14.5	3.74	0.52	Yellow, clear, H2S-like odor. Product in casing, no sample submitted
MW-104	11/30/95	4.55	256	13.5	0.81	3.40	Colorless, clear, slight hydrocarbon-like odor

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
	2/22/96	6.80	112	9.9	1.97	2.20	
	5/14/96	6.23	173	14.0	1.34	1.40	Colorless, clear, hydrocarbon-like odor
	8/14/96	7.70	199	17.0	1.54	0.81	Colorless, clear, organic odor
MW-105	12/27/95	6.23	154	10.0	110	3.60	Dark brown, turbid, no noticeable odor
	2/21/96	6.07	137	8.5	21.1	4.22	Colorless, clear, no noticeable odor
	5/14/96	6.31	205	11.5	8.22	3.00	Colorless, clear, no noticeable odor
	8/14/96	7.24	246	14.0	7.79	0.49	Yellow, clear, no noticeable odor
MW-106	12/27/95	5.81	140	11.0	46.2	2.26	Dark brown, turbid, no noticeable odor
	2/21/96	5.67	275	8.5	1.41	1.88	Colorless, clear, no noticeable odor
	5/14/96	5.15	228	13.0	3.43	5.00	Colorless, clear, no noticeable odor
	8/14/96	7.17	374	14.0	1.95	1.32	
MW-107	12/27/95	6.47	380	11.0	280	2.25	Dark gray, turbid, musty odor
	2/21/96	6.03	298	10.0	4.30	1.28	Colorless, clear, no noticeable odor
	5/14/96	5.96	172	13.0	3.13	3.20	Colorless, clear, no noticeable odor
	8/14/96	7.25	454	15.0	6.84	0.68	Colorless, clear, no noticeable odor
MW-108	11/28/95	6.19	2,130	13.4	18.6	2.30	Amber, clear, slightly musty odor
	2/23/96	6.42	1,450	10.4	28.3	1.60	Brown, very turbid, uncharacteristic odor
	5/16/96	6.24	13,100	12.5	19.1	0.83	Orange, turbid, suspended solids
	8/16/96	6.18	21,900	13.0	59.0	0.38	Black, turbid, organic odor
MW-109	11/28/95	4.46	1,380	13.1	1.04	4.00	Colorless, clear, no noticeable odor
	2/23/96	5.60	1,380	9.8	21.5	2.80	
	5/16/96	6.42	14,400	12.5	13.8	0.20	Gray/black, turbid, sulfur-like odor
	8/16/96	6.31	18,300	14.0	31.0	0.78	Yellow, suspended solids, strong organic odor
MW-111	5/16/96	7.81	89	13.0	11.8	NM	Colorless, clear, no noticeable odor
	8/15/96	6.38	104	18.5	7.55	2.62	
MW-112	11/30/95	7.30	603	13.7	3.80	3.20	Colorless, clear, slight hydrocarbon-like odor
	2/22/96	6.55	531	9.5	2.49	0.41	Yellow, clear, organic odor
	5/16/96	6.34	859	13.0	4.04	0.80	Colorless, clear, strong hydrocarbon-like odor

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
	8/ /96	6.43	799	17.0	3.38	0.39	Yellow, clear, organic odor
MW-115	11/30/95	6.50	803	13.9	1.89	2.40	Colorless, clear, slight hydrocarbon-like odor
MW-117	11/30/95	6.95	974	14.0	1.44	2.40	Colorless, clear, slight hydrocarbon-like odor
	2/22/96	6.46	696	9.5	3.79	0.49	Yellow, clear, organic odor
	5/16/96	6.39	1,040	13.0	4.02	1.20	Colorless, clear
	8/15/96	6.39	998	16.5	14.9	0.83	Yellow, clear, organic odor
MW-119	11/30/95	6.21	800	12.8	—	1.59	Amber, slightly cloudy, hydrocarbon-like odor
	2/22/96	6.58	479	8.2	10.9	1.80	Colorless, clear, slight hydrocarbon-like odor
	5/15/96	6.66	735	15.0	4.93	1.20	Light yellow, clear, hydrocarbon-like odor
	8/15/96	6.75	805	20.0	15.3	2.55	Yellow, cloudy, slight hydrocarbon-like odor
MW-120	11/29/95	6.87	1,970	12.2	—	1.48	Colorless, clear, no noticeable odor
	2/21/96	7.15	1,520	10.0	8.19	1.88	Colorless, clear, no noticeable odor
	5/21/96	7.24	1,560	14.0	6.79	0.40	
	8/14/96	7.57	1,610	14.5	2.61	0.49	Colorless, clear, no noticeable odor
MW-121	11/30/95	7.13	526	14.5	5.51	0.38	Colorless, clear, sulfur-like odor
	2/23/96	7.03	605	12.5	3.68	2.51	Colorless, clear, odor
	5/16/96	7.16	594	14.0	1.15	0.60	Colorless, clear, strong, product-like odor
	8/15/96	7.04	673	17.0	2.26	0.59	Colorless, clear, sulfur-like odor
MW-122	11/28/95	7.64	944	11.8	27.0	1.28	Yellow, clear, no noticeable odor
	2/23/96	7.59	1,120	10.8	3.52	2.40	Amber, clear, no noticeable odor
	5/15/96	7.12	1,410	12.5	5.50	1.10	Yellow, clear, no noticeable odor
	8/16/96	7.52	1,530	12.0	4.57	0.08	Orange, clear, no noticeable odor
MW-123	11/30/95	6.50	1,160	14.9	—	0.94	Slightly yellow, clear to slightly silty, slight hydrocarbon-like odor
	2/21/96	6.95	1,100	11.0	7.10	0.97	Yellowish, clear, hydrocarbon-like odor
	5/14/96	6.55	1,120	14.0	2.53	0.70	Yellowish, clear, hydrocarbon-like odor
	8/15/96	6.28	1,190	12.5	2.49	0.47	Yellow, effervesces, hydrocarbon-like odor
MW-124	11/29/95	5.92	610	12.8	24.0	0.98	Slightly yellow, cloudy, slight hydrocarbon-like odor
MW-125	11/29/95	6.38	920	14.0	24.0	0.83	Yellow, clear, no noticeable odor

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
	2/21/96	6.28	888	8.0	14.2	1.52	Colorless, clear, hydrocarbon-like odor
	5/14/96	6.53	934	13.0	29.2	1.00	Yellow, clear, slight hydrocarbon-like odor
	8/14/96	6.39	973	18.0	9.99	0.27	Yellow, clear, organic odor
MW-126	11/30/95	6.27	360	13.3	270	2.78	Brown, cloudy, no noticeable odor
	2/22/96	6.86	347	9.3	35.8	1.80	Pale yellow, clear, slight hydrocarbon-like odor
	5/15/96	6.85	364	14.0	33.6	0.70	Yellow, clear/cloudy, slight hydrocarbon-like odor
	8/15/96	7.00	404	18.5	17.2	0.68	Tan, turbid, no noticeable odor
MW-127	11/29/95	6.95	1,420	12.3	40	1.32	Yellow, clear, hydrocarbon-like odor
	2/21/96	6.96	788	10.2	8.57	2.50	Pale yellow, clear, no noticeable odor
	5/14/96	6.81	1,430	11.5	7.21	0.70	Yellow, clear, no noticeable/slight odor
	8/14/96	7.28	1,420	14.0	7.61	0.23	Yellow, organic odor
MW-128	11/30/95	6.46	710	15.3	0.00	0.75	Slightly yellow, clear, slight hydrocarbon-like odor
	2/21/96	6.48	643	11.9	16.5	2.90	Light tan, slightly cloudy, no noticeable odor
MW-129	11/28/95	6.81	902	12.6	—	0.43	Yellow, clear, no noticeable odor
MW-131	11/28/95	6.57	1,210	13.7	7.90	0.44	Light yellow, clear, slight hydrocarbon-like odor
	2/23/96	6.62	992	9.5	6.98	3.37	Colorless, slightly turbid, iron suspension, slight hydrocarbon-like odor
	5/15/96	6.65	1,040	13.0	11.2	0.60	
	8/15/96	6.41	989	16.5	14.4	0.58	Colorless/yellow, clear, organic odor
MW-132	11/30/95	6.50	360	14.0	24.8	0.58	Colorless, clear, sulfur-like odor
	2/23/96	6.66	338	9.5	23.2	2.24	Colorless, clear, strong product-like odor
MW-133	11/29/95	6.28	1,360	14.1	—	0.54	Brown, turbid, hydrocarbon-like odor
MW-133 cont.	2/22/96	6.41	1,670	9.5	43.1	0.94	Tan, very turbid, no noticeable odor
	5/16/96	6.45	1,930	14.0	28.8	0.50	Yellow, cloudy, strong, hydrocarbon-like odor
	8/15/96	6.25	1,700	17.5	2.06	1.40	Brown, turbid, organic odor
MW-134	11/30/95	6.36	200	13.0	140	4.25	Brown/tan, turbid, no noticeable odor
	2/22/96	6.27	212	11.0	12.8	5.60	Colorless, clear, no noticeable odor
	5/15/96	6.63	209	11.0	4.37	5.80	Colorless, clear, no noticeable odor
	8/13/96	7.32	219	13.0	14.1	5.30	Colorless, clear, no noticeable odor

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-135	11/29/95	6.49	1,380	13.2	22.0	2.80	Colorless, clear
	2/22/96	6.72	352	8.7	9.53	3.00	Colorless, clear, no noticeable odor
	5/16/96	6.41	1,130	12.0	19.0	1.07	Colorless, clear/iron suspension, no noticeable odor
	8/16/96	6.45	2,560	13.0	5.68	1.15	Yellow, clear, no noticeable odor
MW-136	11/29/95	6.50	3,120	12.8	25.3	2.70	Amber, clear, slight hydrocarbon-like odor
	2/22/96	6.65	528	8.4	49.8	2.50	Clear, odorless
	5/15/96	6.58	2,740	11.0	35.4	1.15	Gray, turbid, hydrocarbon-like odor
	8/16/96	6.41	3,200	13.0	81.7	0.48	Yellow, turbid
MW-137	12/27/95	6.28	256	11.0	40.4	1.10	Colorless, clear, no noticeable odor
	2/21/96	6.32	351	8.1	9.16	7.40	Colorless, clear, no noticeable odor
	5/14/96	6.56	1,450	13.0	10.5	4.10	Colorless, clear, no noticeable odor
	8/14/96	6.80	5,050	16.5	7.30	0.60	Colorless/yellow, suspended solids, no noticeable odor
MW-138	12/27/95	6.27	9,190	11.5	20.8	1.60	Colorless, clear, no noticeable odor
	2/21/96	6.29	727	9.5	6.76	4.80	
	5/14/96	6.34	524	13.0	9.28	4.20	
	8/14/96	6.04	14,600	17.0	2.16	1.63	Colorless, clear, no noticeable odor
MW-139	12/27/95	6.42	3,340	13.0	7.47	0.80	Yellow/colorless, clear, organic odor
	5/16/96	6.34	2,970	12.5	4.36	1.10	Colorless, slightly turbid, hydrocarbon-like odor
	8/15/96	6.05	13,600	15.0	3.25	0.35	Yellow, clear, no noticeable odor
Upper Yard Monitoring Wells							
HA-5	5/15/96	5.96	101	12.0	21.6	4.60	Colorless, clear, no noticeable odor
MW-5U	5/13/96	6.57	281	14.0	30.2	0.65	Dry after 1.75 gal, slow recharge. No sample collected.
MW-7U	11/28/95	6.85	499	14.0	43.2	0.45	Gray, slightly turbid, no noticeable odor
	2/21/96	6.91	572	13.0	11.8	0.98	Blue/gray, turbid, no noticeable odor
	5/13/96	7.04	622	17.0	34.4	0.75	Gray, turbid
	8/13/96	7.05	669	15.0	41.2	0.38	Blue/gray, turbid, no noticeable odor
MW-10U	5/13/96	6.46	261	13.0	13.8	1.40	Rusty/clear
MW-11U	5/13/96	6.83	288	14.5	30.2	0.60	Colorless, clear, no noticeable odor

Table 6-35
Groundwater Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-13U	11/29/95	6.41	265	14.0	19.5	2.80	Colorless, clear, no noticeable odor
	2/22/96	6.47	295	13.5	5.32	3.35	Colorless, clear, no noticeable odor
	5/13/96	6.57	398	15.0	1.05	4.40	Colorless, clear, no noticeable odor
	8/13/96	6.69	408	15.5	58.9	4.22	Rusty yellow, turbid, no noticeable odor
MW-201	11/28/95	7.04	411	13.0	510	4.24	Tan, turbid, no noticeable odor
	2/21/96	7.09	422	13.0	14.4	2.93	Brown, slightly turbid, no noticeable odor
	5/15/96	6.80	400	12.0	94.5	3.60	Brown, turbid, no noticeable odor
	8/16/96	7.15	442	15.0	82.5	2.46	Tan, turbid, no noticeable odor
MW-202	11/28/95	6.40	530	14.0	170	1.60	Light tan, turbid, no noticeable odor
	2/22/96	6.33	466	13.0	25.8	1.25	Colorless, slightly turbid, no noticeable odor
	5/13/96	6.51	520	14.5	17.8	0.70	Brown, turbid, no noticeable odor
	8/13/96	6.68	540	16.0	20.2	0.55	Light tan, slightly turbid, no noticeable odor
MW-203	11/28/95	6.77	380	15.0	71.7	2.51	Brown, clear, no noticeable odor
	2/22/96	6.22	189	11.0	3.95	1.03	Colorless, slightly clear, no noticeable odor
	5/16/96	6.85	235	13.0	5.66	4.00	Colorless, clear, no noticeable odor
	8/13/96	7.56	249	13.0	6.93	2.20	Colorless, clear, no noticeable odor
MW-204	11/29/95	6.43	336	13.0	98.2	1.67	Tan, turbid, no noticeable odor
	2/23/96	6.51	305	13.5	32.9	5.15	Tan, very turbid, no noticeable odor
	5/13/96	6.62	294	15.0	6.98	2.75	Colorless, clear, no noticeable odor
	8/13/96	7.72	301	15.0	3.01	2.33	Colorless, clear, no noticeable odor

NOTE: — = meter malfunctioned.
NM = not measured.

Table 6-36
Product Sample Analytical Results
UNOCAL Edmonds Bulk Fuel Terminal

Analyte	Units	Well (Sample Identification)				
		MW-5 (MW-5-1295)	MW-13 (MW-13-1295)	MW-113 (MW-113-1295)	MW-118 (MW-118-1295)	MW-130 (MW-130-1295)
TPH-G	mg/kg	410,000	13,000	650,000	570,000	940,000
TPH-D	mg/kg	590,000	3,100	400,000	440,000	290,000
TPH-O	mg/kg	140,000	1,000	49,000	50,000	55,000
Benzene	mg/kg	420 J	< 1.0	3,900	3,900	1,800 J
Toluene	mg/kg	150 J	6.4 J	2,500	460 J	930 J
Ethylbenzene	mg/kg	1,400	24	11,000	11,000	18,000
Total Xylenes	mg/kg	4,600	34	57,000	39,000	86,000
Specific Gravity[a]	unitless	0.9365	0.9561	0.8499	0.8468	0.8338
Viscosity[b]	centistokes	5.05	7.67	1.38	1.86	1.88
Lead	mg/kg	0.32	19	170	170	26
Acenaphthene	mg/kg	< 25	< 25	< 25	< 25	< 25
Acenaphthylene	mg/kg	< 50	< 50	350 J	320 J	500
Anthracene	mg/kg	< 2.5	21 J	18 J	20 J	11 J
Benzo(a)anthracene	mg/kg	20 J	< 2.5	21 J	16 J	15 J
Benzo(a)pyrene	mg/kg	< 2.5	< 2.5	5.7 J	< 2.5	< 2.5
Benzo(b)fluoranthene	mg/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzo(g,h,i)perylene	mg/kg	< 5.0	52	22 J	< 5.0	< 5.0
Benzo(k)fluoranthene	mg/kg	< 2.5	4.2 J	4.1 J	< 2.5	< 2.5
Chrysene	mg/kg	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Dibenzo(a,h)anthracene	mg/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Fluoranthene	mg/kg	< 10	< 10	< 10	< 10	< 10
Fluorene	mg/kg	160	100	190	210	150
Indeno(1,2,3-cd)pyrene	mg/kg	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Naphthalene	mg/kg	690	< 25	3,600	3,700	4,800
Phenanthrene	mg/kg	200	140	430	440	280
Pyrene	mg/kg	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5

NOTE: All samples collected on 12/5/95.

[a] Specific gravity by ASTM Method D-287.

[b] Viscosity by ASTM Method D-445.

Table 6–37

TPH and BTEX
in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	TPH (as diesel) (mg/l)	TPH (as motor oil) (mg/l)	TPH (as gasoline) (mg/l)	Benzene (mg/l)	Ethylbenzene (mg/l)	Toluene (mg/l)	Total Xylenes (mg/l)
STW-API-C-1	04/23/96	0.33	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
STW-L32-C-1	04/23/96	0.95	<0.71	0.61 J	0.0013 J	0.0017 J	0.034	0.13
STW-L32-G-1	04/23/96	0.49	<0.71	0.63 J	0.0017 J	0.0039 J	0.044	0.15
STW-U44-C-1	04/23/96	0.37	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
STW-U44-G-1	04/23/96	0.28	<0.81	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-1A	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-1B	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-1C	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-2A	04/23/96	<0.24	<0.72	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-2B	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-2C	04/23/96	<0.25	<0.75	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-3A	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-3B	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-3C	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-4A	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-4B	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-4C	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	<0.00050	<0.00050
SW-5A	04/23/96	0.71	<0.71	<0.10	<0.00050	<0.00050	0.0016 J	0.0073
SW-5B	04/23/96	0.79	<0.71	<0.10	<0.00050	<0.00050	0.0015 J	0.0070
SW-5C	04/23/96	0.79	<0.71	<0.10	<0.00050	<0.00050	0.0015 J	0.0071
SW-6A	04/23/96	0.32	<0.71	<0.10	<0.00050	<0.00050	0.0037 J	0.013
SW-6B	04/23/96	<0.24	<0.73	<0.10	<0.00050	<0.00050	0.0035 J	0.013
SW-6C	04/23/96	<0.24	<0.71	<0.10	<0.00050	<0.00050	0.0036 J	0.014

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 6–38

Oil and Grease
in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Oil & Grease (total) (mg/l)
STW-L32-G-1	04/23/96	<1.0
STW-U44-G-1	04/23/96	<1.0
SW-1A	04/23/96	<1.0
SW-1B	04/23/96	<1.0
SW-1C	04/23/96	<1.0
SW-2A	04/23/96	<1.0
SW-2B	04/23/96	<1.0
SW-2C	04/23/96	<1.0
SW-3A	04/23/96	<1.0
SW-3B	04/23/96	<1.0
SW-3C	04/23/96	<1.0
SW-4A	04/23/96	<1.0
SW-4B	04/23/96	<1.0
SW-4C	04/23/96	<1.0
SW-5A	04/23/96	<1.0
SW-5B	04/23/96	<1.0
SW-5C	04/23/96	<1.0
SW-6A	04/23/96	<1.0
SW-6B	04/23/96	<1.0
SW-6C	04/23/96	<1.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6–39

PAHs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Termonal

SITE	DATE	Acenaphthene (ug/l)	Acenaphthylene (ug/l)	Anthracene (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a)pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(g,h,i) perylene (ug/l)	Benzo(k) fluoranthene (ug/l)
STW-L32-C-1	04/23/96	<0.060	<0.12	<0.0060	<0.0060	0.015 J	<0.012	<0.012	<0.0060
STW-U44-C-1	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-1A	04/23/96	<0.060	<0.12	0.017 J	0.12	0.18	0.17	0.091 J	0.088
SW-1B	04/23/96	<0.060	<0.12	0.022 J	0.19	0.28	0.27	0.16	0.14
SW-1C	04/23/96	<0.060	<0.12	0.031 J	0.32	0.42	0.45	0.25	0.22
SW-2A	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-2B	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-2C	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-3A	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-3B	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-3C	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-4A	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-4B	04/23/96	<0.059	<0.12	<0.0059	<0.0059	<0.0059	<0.012	<0.012	<0.0059
SW-4C	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-5A	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-5B	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-5C	04/23/96	<0.061	<0.12	<0.0061	<0.0061	<0.0061	<0.012	<0.012	<0.0061
SW-6A	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-6B	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060
SW-6C	04/23/96	<0.060	<0.12	<0.0060	<0.0060	<0.0060	<0.012	<0.012	<0.0060

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See cover sheet for data qualifier definitions.

Table 6-39

PAHs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Termonal

SITE	DATE	Chrysene (ug/l)	Dibenzo(a,h) anthracene (ug/l)	Fluoranthene (ug/l)	Fluorene (ug/l)	Indeno (1,2,3-cd) pyrene (ug/l)	Naphthalene (ug/l)	Phenanthrene (ug/l)	Pyrene (ug/l)
STW-L32-C-1	04/23/96	0.099	<0.012	0.086 J	<0.012	<0.0060	<0.060	0.010 J	0.082
STW-U44-C-1	04/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
SW-1A	04/23/96	0.16	<0.012	0.47	<0.012	0.13	<0.060	0.19	0.34
SW-1B	04/23/96	0.25	<0.012	0.73	<0.012	0.22	<0.060	0.28	0.53
SW-1C	04/23/96	0.39	<0.012	1.1	0.014 J	0.32	<0.060	0.41	0.80
SW-2A	04/23/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	<0.0061
SW-2B	04/23/96	<0.0061	<0.012	<0.025	<0.012	<0.0061	<0.061	<0.0061	<0.0061
SW-2C	04/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
SW-3A	04/23/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.011 J
SW-3B	04/23/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	<0.0061
SW-3C	04/23/96	<0.0061	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	<0.0061
SW-4A	04/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
SW-4B	04/23/96	<0.0059	<0.012	<0.024	<0.012	<0.0059	<0.059	<0.0059	<0.0059
SW-4C	04/23/96	<0.0060	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	<0.0060
SW-5A	04/23/96	0.011 J	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.024 J
SW-5B	04/23/96	0.009 J	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.020 J
SW-5C	04/23/96	0.017 J	<0.012	<0.024	<0.012	<0.0061	<0.061	<0.0061	0.019 J
SW-6A	04/23/96	0.011 J	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.028 J
SW-6B	04/23/96	0.023 J	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.022 J
SW-6C	04/23/96	0.013 J	<0.012	<0.024	<0.012	<0.0060	<0.060	<0.0060	0.031 J

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See cover sheet for data qualifier definitions.

Table 6–40

Total and Dissolved Metals
in Storm Water and Surface Water
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Cadmium (mg/l)	Dissolved Cadmium (mg/l)	Chromium (mg/l)	Dissolved Chromium (mg/l)	Lead (mg/l)	Dissolved Lead (mg/l)	Mercury (mg/l)	Dissolved Mercury (mg/l)
STW-API-C-1	04/23/96	0.0011 J	<0.0011	0.0098 J	<0.0024	0.0055 J	0.0018 J	<0.00017	<0.00017
STW-L32-C-1	04/23/96	0.0012 J	<0.0011	0.015 J	0.0038 J	0.031 J	0.0057 J	<0.00017	<0.00017
STW-L32-G-1	04/23/96	<0.0011	<0.0011	0.0054 J	0.0033 J	0.015 J	0.015 J	<0.00017	<0.00017
STW-U44-C-1	04/23/96	<0.0011	<0.0011	0.0062 J	0.0024 J	0.0084 J	0.0014 J	<0.00017	<0.00017
STW-U44-G-1	04/23/96	<0.0011	<0.0011	0.0053 J	<0.0024	0.011 J	0.0016 J	<0.00017	<0.00017
SW-1A	04/23/96	<0.0011	<0.0011	0.0092 J	0.0035 J	0.012	<0.00085	<0.00017	<0.00017
SW-1B	04/23/96	<0.0011	<0.0011	0.0070 J	<0.0024	0.012	<0.00085	<0.00017	<0.00017
SW-1C	04/23/96	<0.0011	<0.0011	0.0088 J	<0.0024	0.011 J	<0.00085	<0.00017	<0.00017
SW-2A	04/23/96	<0.0011	<0.0011	0.0035 J	0.0029 J	0.0023 J	<0.00085	<0.00017	<0.00017
SW-2B	04/23/96	<0.0011	<0.0011	<0.0024	0.0027 J	0.0026 J	<0.00085	<0.00017	<0.00017
SW-2C	04/23/96	<0.0011	<0.0011	<0.0024	0.0037 J	<0.00085	0.0017 J	<0.00017	<0.00017
SW-3A	04/23/96	<0.0011	<0.0011	0.0043 J	<0.0024	0.0031 J	<0.00085	<0.00017	<0.00017
SW-3B	04/23/96	<0.0011	<0.0011	0.0043 J	<0.0024	0.0032 J	<0.00085	<0.00017	<0.00017
SW-3C	04/23/96	<0.0011	<0.0011	0.0048 J	<0.0024	0.0027 J	<0.00085	<0.00017	<0.00017
SW-4A	04/23/96	<0.0011	<0.0011	0.0027 J	<0.0024	0.0027 J	<0.00085	<0.00017	<0.00017
SW-4B	04/23/96	<0.0011	<0.0011	<0.0024	<0.0024	0.0025 J	<0.00085	<0.00017	<0.00017
SW-4C	04/23/96	<0.0011	<0.0011	0.0024 J	<0.0024	0.0031 J	<0.00085	<0.00017	<0.00017
SW-5A	04/23/96	<0.0011	<0.0011	0.0035 J	<0.0024	0.0034 J	0.0010 J	<0.00017	<0.00017
SW-5B	04/23/96	<0.0011	<0.0011	0.0055 J	<0.0024	0.0034 J	0.0011 J	<0.00017	<0.00017
SW-5C	04/23/96	<0.0011	<0.0011	0.0044 J	<0.0024	0.0038 J	0.0010 J	<0.00017	<0.00017
SW-6A	04/23/96	<0.0011	<0.0011	0.0044 J	0.0027 J	0.0087	0.0025 J	<0.00017	<0.00017
SW-6B	04/23/96	<0.0011	<0.0011	0.0074 J	<0.0024	0.0070 J	0.0015 J	<0.00017	<0.00017
SW-6C	04/23/96	<0.0011	<0.0011	0.0053 J	<0.0024	0.0070 J	0.00095 J	<0.00017	<0.00017

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See cover sheet for data qualifier definitions.

Table 6–40

Total and Dissolved Metals
in Storm Water and Surface Water
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Zinc (mg/l)	Dissolved Zinc (mg/l)
STW-API-C-1	04/23/96	0.094	0.029
STW-L32-C-1	04/23/96	0.41	0.20
STW-L32-G-1	04/23/96	0.27	0.24
STW-U44-C-1	04/23/96	0.11	0.064
STW-U44-G-1	04/23/96	0.15	0.067
SW-1A	04/23/96	0.059	0.015 J
SW-1B	04/23/96	0.058	0.0097 J
SW-1C	04/23/96	0.058	0.013 J
SW-2A	04/23/96	0.014 J	0.0073 J
SW-2B	04/23/96	0.018 J	0.0057 J
SW-2C	04/23/96	0.012 J	0.0057 J
SW-3A	04/23/96	0.022 J	0.0076 J
SW-3B	04/23/96	0.025	0.010 J
SW-3C	04/23/96	0.024	0.0091 J
SW-4A	04/23/96	0.019 J	0.010 J
SW-4B	04/23/96	0.021 J	0.0087 J
SW-4C	04/23/96	0.020 J	0.0097 J
SW-5A	04/23/96	0.043	0.034
SW-5B	04/23/96	0.047	0.034
SW-5C	04/23/96	0.088	0.030
SW-6A	04/23/96	0.075	0.046
SW-6B	04/23/96	0.081	0.034
SW-6C	04/23/96	0.073	0.041

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See cover sheet for data qualifier definitions.

Table 6–41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	STW-API-C-1	STW-L32-C-1	STW-L32-G-1	STW-U44-C-1
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Chloromethane		<0.5	<0.5	<0.5	<0.5
Bromomethane		<2.2	<2.2	<2.2	<2.2
Vinyl chloride		<0.5	<0.5	<0.5	<0.5
Chloroethane		<0.6	<0.6	<0.6	<0.6
Methylene chloride		<0.9	<0.9	<0.9	<0.9
Acetone		<3	<3	<3	<3
Carbon disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethane		<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
trans-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
Chloroform		<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		<0.2	<0.2	<0.2	<0.2
2-Butanone		<2	<2	<2	<2
,1,1-Trichloroethane		<0.2	<0.2	<0.2	<0.2
Carbon tetrachloride		<0.3	<0.3	<0.3	<0.3
Vinyl acetate		<3	<3	<3	<3
Bromodichloromethane		<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane		<0.3	<0.3	<0.3	<0.3
cis-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Trichloroethene		<0.4	<0.4	<0.4	<0.4
Dibromochloromethane		<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane		<0.1	<0.1	<0.1	<0.1
Benzene		<0.3	2 J	2 J	0.5 J
trans-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Bromoform		<0.3	<0.3	<0.3	<0.3
2-Hexanone		<1	<1	<1	<1
4-Methyl-2-pentanone		<1	<1	<1	<1
Tetrachloroethene		<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<0.3	<0.3
Toluene		<0.4	29	34	0.4 J
Chlorobenzene		<0.7	<0.7	<0.7	<0.7
Ethylbenzene		<0.4	2 J	4	<0.4

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See cover sheet for data qualifier definitions.

Table 6-41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	STW-API-C-1	STW-L32-C-1	STW-L32-G-1	STW-U44-C-1
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Styrene		<0.4	<0.4	<0.4	<0.4
m & p Xylenes		<0.7	64	69	1 J
1,2-Dibromoethane (EDB)		<0.3	<0.3	<0.3	<0.3
o-Xylene		<0.3	44	45	0.7 J

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See cover sheet for data qualifier definitions.

Table 6-41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	STW-U44-G-1	SW-1A	SW-1B	SW-1C
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Chloromethane		<0.5	<0.5	<0.5	<0.5
Bromomethane		<2.2	<2.2	<2.2	<2.2
Vinyl chloride		<0.5	<0.5	<0.5	<0.5
Chloroethane		<0.6	<0.6	<0.6	<0.6
Methylene chloride		<0.9	1 J	1 J	1 J
Acetone		<3	<3	<3	<3
Carbon disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethane		<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
trans-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
Chloroform		<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		<0.2	<0.2	<0.2	<0.2
2-Butanone		<2	<2	<2	<2
,1,1-Trichloroethane		<0.2	<0.2	<0.2	<0.2
Carbon tetrachloride		<0.3	<0.3	<0.3	<0.3
Vinyl acetate		<3	<3	<3	<3
Bromodichloromethane		<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane		<0.3	<0.3	<0.3	<0.3
cis-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Trichloroethene		<0.4	<0.4	<0.4	<0.4
Dibromochloromethane		<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane		<0.1	<0.1	<0.1	<0.1
Benzene		<0.3	<0.3	<0.3	<0.3
trans-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Bromoform		<0.3	<0.3	<0.3	<0.3
2-Hexanone		<1	<1	<1	<1
4-Methyl-2-pentanone		<1	<1	<1	<1
Tetrachloroethene		<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<0.3	<0.3
Toluene		<0.4	<0.4	<0.4	<0.4
Chlorobenzene		<0.7	<0.7	<0.7	<0.7
Ethylbenzene		<0.4	<0.4	<0.4	<0.4

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6–41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	STW-U44-G-1	SW-1A	SW-1B	SW-1C
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Styrene		<0.4	<0.4	<0.4	<0.4
m & p Xylenes		<0.7	<0.7	<0.7	<0.7
1,2-Dibromoethane (EDB)		<0.3	<0.3	<0.3	<0.3
o-Xylene		<0.3	<0.3	<0.3	<0.3

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See cover sheet for data qualifier definitions.

Table 6-41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-2A	SW-2B	SW-2C	SW-3A
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Chloromethane		<0.5	<0.5	<0.5	<0.5
Bromomethane		<2.2	<2.2	<2.2	<2.2
Vinyl chloride		<0.5	<0.5	<0.5	<0.5
Chloroethane		<0.6	<0.6	<0.6	<0.6
Methylene chloride		2 J	1 J	2 J	<0.9
Acetone		<3	<3	<3	<3
Carbon disulfide		<1	<1	<1	<1
1,1-Dichloroethene		<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethane		<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
trans-1,2-Dichloroethene		<0.3	<0.3	<0.3	<0.3
Chloroform		<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		<0.2	<0.2	<0.2	<0.2
2-Butanone		<2	<2	<2	<2
,1,1-Trichloroethane		<0.2	<0.2	<0.2	<0.2
Carbon tetrachloride		<0.3	<0.3	<0.3	<0.3
Vinyl acetate		<3	<3	<3	<3
Bromodichloromethane		<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane		<0.3	<0.3	<0.3	<0.3
cis-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Trichloroethene		<0.4	<0.4	<0.4	<0.4
Dibromochloromethane		<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane		<0.1	<0.1	<0.1	<0.1
Benzene		<0.3	<0.3	<0.3	<0.3
trans-1,3-Dichloropropene		<0.2	<0.2	<0.2	<0.2
Bromoform		<0.3	<0.3	<0.3	<0.3
2-Hexanone		<1	<1	<1	<1
4-Methyl-2-pentanone		<1	<1	<1	<1
Tetrachloroethene		<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<0.3	<0.3
Toluene		<0.4	<0.4	<0.4	0.5 J
Chlorobenzene		<0.7	<0.7	<0.7	<0.7
Ethylbenzene		<0.4	<0.4	<0.4	<0.4

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6–41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-2A	SW-2B	SW-2C	SW-3A
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Styrene		<0.4	<0.4	<0.4	<0.4
m & p Xylenes		<0.7	<0.7	<0.7	0.8 J
1,2-Dibromoethane (EDB)		<0.3	<0.3	<0.3	<0.3
o-Xylene		<0.3	<0.3	<0.3	0.4 J

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See cover sheet for data qualifier definitions.

Table 6-41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l) SITE / DATE	SW-3B 04/23/96	SW-3C 04/23/96	SW-4A 04/23/96	SW-4B 04/23/96
Chloromethane	<0.8 E	<0.5	<0.5	<0.5
Bromomethane	<3.7 E	<2.2	<2.2	<2.2
Vinyl chloride	<0.8 E	<0.5	<0.5	<0.5
Chloroethane	<1.0 E	<0.6	<0.6	<0.6
Methylene chloride	<1.5 E	1 JB	1 JB	<0.9
Acetone	<5 E	<3	<3	<3
Carbon disulfide	<2 E	<1	<1	<1
1,1-Dichloroethene	<0.5 E	<0.3	<0.3	<0.3
1,1-Dichloroethane	<0.3 E	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	<0.5 E	<0.3	<0.3	<0.3
trans-1,2-Dichloroethene	<0.5 E	<0.3	<0.3	<0.3
Chloroform	<0.2 E	<0.1	<0.1	<0.1
1,2-Dichloroethane	<0.3 E	<0.2	<0.2	<0.2
2-Butanone	<3 E	<2	<2	<2
,1,1-Trichloroethane	<0.3 E	<0.2	<0.2	<0.2
Carbon tetrachloride	<0.5 E	<0.3	<0.3	<0.3
Vinyl acetate	<5 E	<3	<3	<3
Bromodichloromethane	<0.3 E	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.5 E	<0.3	<0.3	<0.3
cis-1,3-Dichloropropene	<0.3 E	<0.2	<0.2	<0.2
Trichloroethene	<0.7 E	<0.4	<0.4	<0.4
Dibromochloromethane	<0.3 E	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2 E	<0.1	<0.1	<0.1
Benzene	<0.5 E	<0.3	<0.3	<0.3
trans-1,3-Dichloropropene	<0.3 E	<0.2	<0.2	<0.2
Bromoform	<0.5 E	<0.3	<0.3	<0.3
2-Hexanone	<2 E	<1	<1	<1
4-Methyl-2-pentanone	<2 E	<1	<1	<1
Tetrachloroethene	<0.7 E	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	<0.5 E	<0.3	<0.3	<0.3
Toluene	<0.7 E	0.5 J	0.5 J	0.5 J
Chlorobenzene	<1.2 E	<0.7	<0.7	<0.7
Ethylbenzene	<0.7 E	<0.4	<0.4	<0.4

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

See cover sheet for data qualifier definitions.

Table 6–41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-3B	SW-3C	SW-4A	SW-4B
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Styrene		<0.7 E	<0.4	<0.4	<0.4
m & p Xylenes		<1.2 E	1 J	1 J	1 J
1,2-Dibromoethane (EDB)		<0.5 E	<0.3	<0.3	<0.3
o-Xylene		0.5 J	0.6 J	0.5 J	0.5 J

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See cover sheet for data qualifier definitions.

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l) SITE / DATE	SW-4C 04/23/96	SW-5A 04/23/96	SW-5B 04/23/96	SW-5C 04/23/96
Chloromethane	<0.5	<0.5	<0.5	<0.5
Bromomethane	<2.2	<2.2	<2.2	<2.2
Vinyl chloride	<0.5	<0.5	<0.5	<0.5
Chloroethane	<0.6	<0.6	<0.6	<0.6
Methylene chloride	<0.9	<0.9	<0.9	<0.9
Acetone	<3	<3	<3	<3
Carbon disulfide	<1	<1	<1	<1
1,1-Dichloroethene	<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethane	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	<0.3	<0.3	<0.3	<0.3
trans-1,2-Dichloroethene	<0.3	<0.3	<0.3	<0.3
Chloroform	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2
2-Butanone	<2	<2	<2	<2
1,1,1-Trichloroethane	<0.2	<0.2	<0.2	<0.2
Carbon tetrachloride	<0.3	<0.3	<0.3	<0.3
Vinyl acetate	<3	<3	<3	<3
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.3	<0.3	<0.3	<0.3
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2
Trichloroethene	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.1	<0.1	<0.1	<0.1
Benzene	<0.3	0.4 J	0.5 J	0.5 J
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2
Bromoform	<0.3	<0.3	<0.3	<0.3
2-Hexanone	<1	<1	<1	<1
4-Methyl-2-pentanone	<1	<1	<1	<1
Tetrachloroethene	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	<0.3	<0.3	<0.3	<0.3
Toluene	0.6 J	2	2 J	2 J
Chlorobenzene	<0.7	<0.7	<0.7	<0.7
Ethylbenzene	<0.4	<0.4	<0.4	<0.4

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-4C	SW-5A	SW-5B	SW-5C
	DATE	04/23/96	04/23/96	04/23/96	04/23/96
Styrene		<0.4	<0.4	<0.4	<0.4
m & p Xylenes		1 J	4	4 J	4 J
1,2-Dibromoethane (EDB)		<0.3	<0.3	<0.3	<0.3
o-Xylene		0.5 J	3	3	3

Values represent total concentrations unless noted < = Not detected at indicated reporting limit — = Not analyzed

See cover sheet for data qualifier definitions.

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-6A	SW-6B	SW-6C
	DATE	04/23/96	04/23/96	04/23/96
Chloromethane		<0.5	1 J	<0.5
Bromomethane		<2.2	<2.2	<2.2
Vinyl chloride		<0.5	<0.5	<0.5
Chloroethane		<0.6	<0.6	<0.6
Methylene chloride		<0.9	<0.9	<0.9
Acetone		<3	<3	<3
Carbon disulfide		<1	<1	<1
1,1-Dichloroethene		<0.3	<0.3	<0.3
1,1-Dichloroethane		<0.2	<0.2	<0.2
cis-1,2-Dichloroethene		<0.3	<0.3	<0.3
trans-1,2-Dichloroethene		<0.3	<0.3	<0.3
Chloroform		<0.1	0.2 J	<0.1
1,2-Dichloroethane		<0.2	<0.2	<0.2
2-Butanone		<2	<2	<2
1,1-Trichloroethane		<0.2	<0.2	<0.2
Carbon tetrachloride		<0.3	<0.3	<0.3
Vinyl acetate		<3	<3	<3
Bromodichloromethane		<0.2	<0.2	<0.2
1,2-Dichloropropane		<0.3	<0.3	<0.3
cis-1,3-Dichloropropene		<0.2	<0.2	<0.2
Trichloroethene		<0.4	<0.4	<0.4
Dibromochloromethane		<0.2	<0.2	<0.2
1,1,2-Trichloroethane		<0.1	<0.1	<0.1
Benzene		0.7 J	0.7 J	0.7 J
trans-1,3-Dichloropropene		<0.2	<0.2	<0.2
Bromoform		<0.3	<0.3	<0.3
2-Hexanone		<1	<1	<1
4-Methyl-2-pentanone		<1	<1	<1
Tetrachloroethene		<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane		<0.3	<0.3	<0.3
Toluene		4	4	4
Chlorobenzene		<0.7	<0.7	<0.7
Ethylbenzene		<0.4	0.4 J	0.4 J

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6-41

VOCs in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

CONSTITUENT (Units in ug/l)	SITE	SW-6A	SW-6B	SW-6C
	DATE	04/23/96	04/23/96	04/23/96
Styrene		<0.4	<0.4	<0.4
m & p Xylenes		7	7	7
1,2-Dibromoethane (EDB)		<0.3	<0.3	<0.3
o-Xylene		5	5	5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

See cover sheet for data qualifier definitions.

Table 6–42

TSS in Surface Water and Storm Water
UNOCAL Edmonds Bulk Fuel Terminal

SITE	DATE	Total Suspended Solids (TSS) (mg/l)
STW-API-C-1	04/23/96	44
STW-L32-C-1	04/23/96	110
STW-U44-C-1	04/23/96	69
SW-1A	04/23/96	140
SW-1B	04/23/96	130
SW-1C	04/23/96	99
SW-2A	04/23/96	<10
SW-2B	04/23/96	<10
SW-2C	04/23/96	11
SW-3A	04/23/96	<10
SW-3B	04/23/96	13
SW-3C	04/23/96	14
SW-4A	04/23/96	17
SW-4B	04/23/96	20
SW-4C	04/23/96	17
SW-5A	04/23/96	20
SW-5B	04/23/96	18
SW-5C	04/23/96	22
SW-6A	04/23/96	42
SW-6B	04/23/96	46
SW-6C	04/23/96	45

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See cover sheet for data qualifier definitions.

Table 6-43
Surface Water Sampling Field Parameters
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Comments
SW-1	4/23/96	5.69	158	11.5	Brown, cloudy, no noticeable odor
SW-2	4/23/96	6.49	99	12.0	Yellow, turbid, no noticeable odor
SW-3	4/23/96	7.16	133	12.0	Yellow, clear, no noticeable odor
SW-4	4/23/96	7.85	140	12.0	Tan, cloudy, no noticeable odor
SW-5	4/23/96	6.99	4,520	12.0	Yellow, clear, no noticeable odor
SW-6	4/23/96	7.68	159	13.0	Tan, cloudy, no noticeable odor

Table 6-44
Catch Basin Sediment Sample Results
UNOCAL Edmonds Bulk Fuel Terminal

Analyte	Units	Sampling Location						
		CB-L6	CB-L26	CB-L32	CB-U11	CB-U19	CB-U31	CB-U46
TPH and BTEX								
TPH-D	mg/kg	330	150	430	4300	99	29000	330
TPH-O	mg/kg	990	170	880	4000	310	18000	1000
TPH-G	mg/kg	10 J	< 3.0	12 J	210	< 3.1	910	9.5 J
Benzene	mg/kg	< 0.013	< 0.011	0.021 J	< 0.014	0.012 J	2.6 E	0.016 J
Ethylbenzene	mg/kg	< 0.013	< 0.011	0.038 J	0.11 J	< 0.012	2.9 E	< 0.012
Toluene	mg/kg	< 0.013	< 0.011	0.053 J	0.019 J	< 0.012	0.59 JE	0.013 J
Total Xylenes	mg/kg	0.013 J	< 0.011	0.18	0.16	< 0.012	7.1 E	< 0.012
PAHs								
Acenaphthene	mg/kg	< 11	< 9.6	< 11	< 12 E	< 9.8	320 JE	< 10
Acenaphthylene	mg/kg	< 22	< 19	< 22	< 24 E	< 20	< 480 E	< 20
Anthracene	mg/kg	11	< 0.96	10 J	59 E	< 0.98	1700 E	2.9 J
Benzo(a)anthracene	mg/kg	45	< 0.96	44	220 E	< 0.98	< 24 E	5.2 J
Benzo(a)pyrene	mg/kg	110	2.9 J	42	130 E	8.0 J	250 E	16
Benzo(b)fluoranthene	mg/kg	66	< 1.9	4.3 J	< 2.4 E	< 2.0	< 48 E	5.4 J
Benzo(g,h,i)perylene	mg/kg	48	37	97	290 E	23	< 48 E	48
Benzo(k)fluoranthene	mg/kg	41	< 0.96	27	60 E	< 0.98	220 JE	< 1.0
Chrysene	mg/kg	94	4.9 J	140	1000 E	13	2400 E	66
Dibenzo(a,h)anthracene	mg/kg	< 2.2	< 1.9	< 2.2	< 2.4 E	< 2.0	< 48 E	< 2.0
Fluoranthene	mg/kg	< 180	7.5 J	< 440	1300 E	8.1 J	< 30000 E	120
Fluorene	mg/kg	12 J	< 1.9	24	87 E	< 2.0	5900 E	5.5 J
Indeno(1,2,3-cd)pyrene	mg/kg	40	9.0 J	11	40 E	2.5 J	< 24 E	11
Naphthalene	mg/kg	< 11	< 9.6	30 J	< 12 E	< 9.8	4400 E	< 10
Phenanthrene	mg/kg	63	< 0.96	85	210 E	< 0.98	10000 E	32
Pyrene	mg/kg	130	< 0.96	< 110	< 6.0 E	13	2800 E	70

Table 6-44
Catch Basin Sediment Sample Results
UNOCAL Edmonds Bulk Fuel Terminal

Total metals								
Arcenic	mg/kg	5.5	37	86	170	140	8.4	45
Cadmium	mg/kg	0.41 J	0.39 J	1.1	2.3	0.92	0.25 J	0.70
Chromium	mg/kg	22	3.9	30	71	18	39	27
Lead	mg/kg	30	13	88	360	100	310	81
Mercury	mg/kg	< 0.12	< 0.095	< 0.12	4.6	< 0.11	< 0.14	< 0.11
TC Metals								
Arsenic	mg/L	< 0.018	< 0.018	0.021 J	0.045 J	< 0.018	< 0.018	< 0.018
Cadmium	mg/L	0.0093 J	< 0.0010	0.0015 J	0.0050 J	0.0023 J	0.0085 J	0.0013 J
Chromium	mg/L	< 0.0031	< 0.0031	0.0071 JB	0.0081 JB	< 0.0031	< 0.0031	< 0.0031
Lead	mg/L	0.024 J	0.035 J	0.39	0.061 J	0.019 J	0.55	0.0091 J
Mercury	mg/L	< 0.00019	< 0.00019	< 0.00019	< 0.00019	< 0.00019	< 0.00019	< 0.00019
See attached sheet for data qualifier definitions								

Table 6-45
Amphipod Bioassay Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample	Mortality (percent)						Number Reburied					
Number	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Average	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Reburial
US-01	0	10	0	15	5	6	20	18	20	17	19	100%
US-02	10	5	0	5	0	4	18	19	20	19	20	100%
US-03	10	10	15	15	50	20	18	18	17	17	10	100%
US-04	25	5	0	5	5	8	15	19	20	19	19	100%
US-05	45	60	25	55	45	46	11	8	15	9	11	100%
US-06	15	0	5	5	15	8	17	20	19	19	13	96%
US-07	15	0	10	5	5	7	17	20	18	19	19	100%
US-08	5	5	5	5	10	6	19	19	19	19	18	100%
US-09	20	40	10	20	20	22	15	12	18	16	16	99%
US-10	0	15	25	20	10	14	20	17	15	16	18	100%
US-11	0	5	5	15	0	5	20	19	19	17	20	100%
US-12	20	10	15	10	40	19	16	18	17	17	12	99%
US-13	0	30	15	25	20	18	20	14	17	15	16	100%
US-14	15	15	10	10	0	10	17	17	18	18	20	100%
US-15	5	10	0	0	5	4	19	18	20	19	19	99%
NISQ	5	0	5	10	0	4	19	22	19	18	20	100%
CARR	10	5	0	0	0	3	18	19	20	20	20	100%
Control 1	0	0	5	5	0	2	23	20	19	19	20	100%
Control 2	0	0	5	5	0	2	23	20	19	19	20	100%

Table 6-46
Bivalve Larvae Bioassay Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Percent Normal Development					
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Average
US-01	98	98	99	99	97	98
US-02	93	83	97	98	95	93
US-03	81	98	96	81	94	90
US-04	96	94	97	99	99	97
US-05	95	96	96	94	96	95
US-06	92	94	94	97	95	94
US-07	96	97	98	99	95	97
US-08	97	98	92	95	92	95
US-09	96	97	97	96	97	97
US-10	95	97	97	96	85	94
US-11	92	95	92	94	93	93
US-12	91	95	97	98	96	95
US-13	94	96	94	96	96	95
US-14	98	98	99	97	98	98
US-15	97	100	99	99	98	99
NISQ	98	89	61	44	86	76
CARR	98	97	99	99	99	98
Control 1	95	98	98	94	97	96
Control 2	98	97	99	95	99	98
Control 3	95	96	98	97	97	97

Table 6-46
Bivalve Larvae Bioassay Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Percent Survival					
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Average
US-01	60	69	76	73	64	68
US-02	79	53	83	60	81	71
US-03	14	77	76	71	60	60
US-04	57	94	92	71	81	79
US-05	48	70	69	65	68	64
US-06	87	90	61	85	83	81
US-07	63	64	76	86	74	73
US-08	65	59	63	50	49	57
US-09	57	64	72	73	56	64
US-10	63	77	83	79	67	74
US-11	74	90	82	96	74	83
US-12	62	91	62	88	54	71
US-13	66	57	92	55	65	67
US-14	78	73	91	88	53	77
US-15	39	57	42	34	55	45
NISQ	63	56	33	27	44	45
CARR	60	78	60	95	80	75
Control 1	64	66	78	59	55	64
Control 2	79	80	72	54	67	70
Control 3	93	97	90	100	95	95

Table 6-46
Bivalve Larvae Bioassay Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Percent Normal Survivors					
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Average
US-01	59	68	75	72	62	67
US-02	73	44	81	59	77	67
US-03	11	75	73	58	56	55
US-04	55	88	89	70	80	77
US-05	46	67	66	61	65	61
US-06	80	85	57	82	79	77
US-07	60	62	74	85	70	70
US-08	63	58	58	48	45	54
US-09	55	62	70	70	54	62
US-10	60	75	81	76	57	70
US-11	68	86	75	90	69	78
US-12	56	86	60	86	52	68
US-13	62	55	86	53	62	64
US-14	76	72	90	85	52	75
US-15	38	57	42	34	54	45
NISQ	62	50	20	12	38	36
CARR	59	76	59	94	79	73
Control 1	61	65	76	55	53	62
Control 2	77	78	71	51	66	69
Control 3	88	93	88	97	92	92

Table 6-47
Juvenile Polychaete Bioassay Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Number Survived						Measured Final Biomass (mg)						Average Biomass per Individual (mg)
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Average Survival	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Sample Average	
US-01	4	5	4	4	5	88%	52.82	71.65	34.99	64.50	42.37	53.27	2.42
US-02	5	5	5	5	5	100%	42.59	36.67	29.26	42.45	36.91	37.58	1.50
US-03	5	5	5	4	5	96%	33.79	28.67	29.62	38.92	43.70	34.94	1.46
US-04	5	5	3	4	4	84%	35.05	37.65	35.48	55.14	21.55	36.97	1.76
US-05	4	3	5	5	4	84%	38.02	21.10	39.56	35.15	40.38	34.84	1.66
US-06	5	5	5	5	5	100%	30.76	41.21	49.48	29.83	27.95	35.85	1.43
US-07	5	5	5	5	4	96%	33.69	35.51	24.82	36.69	40.19	34.18	1.42
US-08	5	5	4	6	5	96%	32.25	32.14	33.25	41.14	61.01	39.96	1.60
US-09	4	3	3	3	3	64%	22.28	9.91	19.30	20.27	15.57	17.47	1.09
US-10	3	*	3	3	4	65%	27.58	*	27.91	33.23	27.61	29.08	2.24
US-11	5	5	4	5	5	96%	44.47	36.65	27.67	35.07	35.99	35.97	1.50
US-12	4	5	5	3	5	88%	42.55	36.14	43.21	28.51	42.09	38.50	1.75
US-13	4	5	4	5	5	92%	22.19	27.86	21.11	37.74	29.09	27.60	1.20
US-14	5	5	5	5	5	100%	14.52	43.40	49.22	34.92	27.65	33.94	1.36
US-15	5	5	5	5	5	100%	38.52	44.48	49.62	35.67	37.47	41.15	1.65
NISQ	5	5	5	5	5	100%	42.27	43.43	34.14	43.34	55.46	43.73	1.75
CARR	5	5	5	5	5	100%	50.35	30.75	28.23	44.66	46.86	40.17	1.61
Control	5	5	5	4	5	96%	19.22	43.12	25.65	20.63	23.59	26.44	1.10
Control	5	5	5	4	5	96%	26.94	37.11	12.06	40.18	17.86	26.83	1.12

NOTE: * = sample count lost.
Extra organism for US-08 not counted in percent survival calculation.

Table 6-48
Grain Size and Total Organic Carbon Results
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Total Organic Carbon (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
US-01	0.779	45.3	51.3	1.9	1.4
US-02	0.971	2.0	76.0	15.5	6.5
US-03	3.506	0.0	57.6	21.1	21.3
US-04	1.273	11.3	81.9	4.1	2.7
US-05	1.777	0.9	69.3	20.8	8.9
US-06	2.537	2.2	55.1	29.5	13.3
US-07	1.580	7.7	76.2	11.5	4.6
US-08	2.737	0.7	18.0	59.1	22.2
US-09	8.175	5.2	40.5	34.4	19.9
US-10	7.379	3.2	30.0	39.8	27.0
US-11	6.347	0.4	37.8	43.3	18.5
US-12	6.734	0.7	31.2	46.4	21.6
US-13	9.427	1.4	28.9	43.8	25.9
US-20	9.968	1.6	28.5	45.3	24.6
US-14	7.036	6.6	9.0	63.1	21.3
US-15	0.730	0.0	92.8	5.3	1.9
NISQ	1.045	0.1	75.6	20.4	3.9
CARR	0.550	0.0	43.5	50.6	5.8

Table 6-49
Ammonia in Sediments (as NH3)
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Initial Concentration (mg/L)			Final Concentration (mg/L)		
	Amphipod	Polychaete	Bivalve	Amphipod	Polychaete	Bivalve
US-01	0.61	< 0.17	0.19	< 0.17	< 0.17	< 0.17
US-02	0.23	0.26	< 0.17	< 0.17	< 0.17	< 0.17
US-03	0.55	0.56	0.27	0.62	< 0.17	0.24
US-04	0.31	0.23	< 0.17	< 0.17	< 0.17	< 0.17
US-05	0.21	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
US-06	0.44	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
US-07	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
US-08	0.60	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
US-09	1.71	0.49	0.19	1.27	< 0.17	< 0.17
US-10	1.35	1.38	0.31	0.97	0.24	< 0.17
US-11	1.15	1.01	0.23	0.31	< 0.17	< 0.17
US-12	0.36	0.22	< 0.17	0.26	< 0.17	< 0.17
US-13	3.05	0.81	0.20	0.43	< 0.17	< 0.17
US-14	3.16	1.49	0.20	0.87	< 0.17	< 0.17
US-15	0.24	0.30	< 0.17	< 0.17	< 0.17	< 0.17
NISQ	0.83	0.53	0.19	< 0.17	1.14	< 0.17
CARR	4.56	2.15	0.37	1.11	< 0.17	0.32

Table 7-1
Amphipod Bioassay Evaluation
Upland Sediments Investigation
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Mortality (percent)						SMS SQS		SMS CSL	
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	Mean Mortality > Reference	Mean Mortality > 25 Percent	Mean Mortality > Reference	Mean Mortality > Reference+30
US-01	0	10	0	15	5	6	Pass	Pass	Pass	Pass
US-02	10	5	0	5	0	4	Pass	Pass	Pass	Pass
US-03	10	10	15	15	50	20	Fail	Pass	Fail	Pass
US-04	25	5	0	5	5	8	Pass	Pass	Pass	Pass
US-05	45	60	25	55	45	46	Fail	Fail	Fail	Fail
US-06	15	0	5	5	15	8	Pass	Pass	Pass	Pass
US-07	15	0	10	5	5	7	Pass	Pass	Pass	Pass
US-08	5	5	5	5	10	6	Pass	Pass	Pass	Pass
US-09	20	40	10	20	20	22	Fail	Pass	Fail	Pass
US-10	0	15	25	20	10	14	Pass	Pass	Pass	Pass
US-11	0	5	5	15	0	5	Pass	Pass	Pass	Pass
US-12	20	10	15	10	40	19	Fail	Pass	Fail	Pass
US-13	0	30	15	25	20	18	Fail	Pass	Fail	Pass
US-14	15	15	10	10	0	10	Pass	Pass	Pass	Pass
US-15	5	10	0	0	5	4	Pass	Pass	Pass	Pass
NISQ	5	0	5	10	0	4	Pass	Pass	Pass	Pass
CARR	10	5	0	0	0	3	Pass	Pass	Pass	Pass
Control 1	0	0	5	5	0	2	Pass	Pass	Pass	Pass
Control 2	0	0	5	5	0	2	Pass	Pass	Pass	Pass

NOTE: Sample number NISQ was used as the reference sediment for statistical evaluation.

SMS Sediment Quality Standards (SQS) (WAC 173-204-320(3)): test sediment has a higher (statistically significant, $p < 0.05$) mean mortality than reference sediment (Mean Mortality > Reference) and greater than 25 percent mean mortality (Mean Mortality > 25 Percent).

SMS Cleanup Screening Levels (CSL) (WAC 173-204-520(3)): test sediment has a higher (statistically significant, $p < 0.05$) mean mortality than reference sediment (Mean Mortality > Reference) and mean mortality greater than reference plus 30 percent (Mortality > Reference+30).

Table 7-2
Bivalve Larvae Bioassay Evaluation
Upland Sediments Investigation
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Percent Normal Survivors						SMS SQS		SMS CSL	
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	Significantly Lower Survival	Survival < 85 % Reference	Significantly Lower Survival	Survival < 70 % Reference
US-01	59	68	75	72	62	67.2	Pass	Pass	Pass	Pass
US-02	73	44	81	59	77	66.7	Pass	Pass	Pass	Pass
US-03	11	75	73	58	56	54.7	Pass	Fail	Pass	Pass
US-04	55	88	89	70	80	76.6	Pass	Pass	Pass	Pass
US-05	46	67	66	61	65	61.1	Pass	Fail	Pass	Pass
US-06	80	85	57	82	79	76.7	Pass	Pass	Pass	Pass
US-07	60	62	74	85	70	70.5	Pass	Pass	Pass	Pass
US-08	63	58	58	48	45	54.3	Fail	Fail	Fail	Pass
US-09	55	62	70	70	54	62.2	Pass	Fail	Pass	Pass
US-10	60	75	81	76	57	69.6	Pass	Pass	Pass	Pass
US-11	68	86	75	90	69	77.6	Pass	Pass	Pass	Pass
US-12	56	86	60	86	52	68.2	Pass	Pass	Pass	Pass
US-13	62	55	86	53	62	63.7	Pass	Pass	Pass	Pass
US-14	76	72	90	85	52	75.1	Pass	Pass	Pass	Pass
US-15	38	57	42	34	54	44.8	Fail	Fail	Fail	Fail
NISQ	62	50	20	12	38	36.3	Fail	Fail	Fail	Fail
CARR	59	76	59	94	79	73.4	Pass	Pass	Pass	Pass
Control 1	61	65	76	55	53	62.1	Pass	Fail	Pass	Pass
Control 2	77	78	71	51	66	68.8	Pass	Pass	Pass	Pass
Control 3	88	93	88	97	92	91.8	Pass	Pass	Pass	Pass

NOTE: Sample number CARR used as the reference sample for statistical evaluation.

SMS Sediment Quality Standards (SQS) (WAC 173-204-315 (3)): mean survivorship of normal larvae that is less (statistically significant, t-test, $p < 0.05$) (Significantly Lower Survival) than the reference sediment and mean normal survivorship is less than 85 percent of the mean normal survivorship of the reference sediment (Survival < 85% Reference).

SMS Cleanup Screening Level (CSL) (WAC 173-204-520(3)): mean survivorship of normal larvae that is less (statistically significant, t-test, $p < 0.05$) (Significantly Lower Survival) than the referencesediment and mean normal survivorship is less than 85 percent of the mean normal survivorship of the reference sediment (Survival < 85% Reference).

Table 7-3
Juvenile Polychaete Bioassay Evaluation
Upland Sediments Investigation
UNOCAL Edmonds Bulk Fuel Terminal

Sample Number	Mean Survival	Measured Final Biomass (mg)					Mean Growth Rate (mg/individual/day)						SMS SQS		SMS CSL	
		Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	Growth Rate Statistically Different	Growth Rate < 70 % Reference	Growth Rate Statistically Lower	Growth Rate < 50 % Reference
US-01	88%	52.82	71.65	34.99	64.50	42.37	0.660	0.717	0.437	0.806	0.424	0.609	Pass	Pass	Pass	Pass
US-02	100%	42.59	36.67	29.26	42.45	36.91	0.426	0.367	0.293	0.425	0.369	0.376	Pass	Pass	Pass	Pass
US-03	96%	33.79	28.67	29.62	38.92	43.70	0.338	0.287	0.296	0.487	0.437	0.369	Pass	Pass	Pass	Pass
US-04	84%	35.05	37.65	35.48	55.14	21.55	0.351	0.377	0.591	0.689	0.269	0.455	Pass	Pass	Pass	Pass
US-05	84%	38.02	21.10	39.56	35.15	40.38	0.475	0.352	0.396	0.352	0.505	0.416	Pass	Pass	Pass	Pass
US-06	100%	30.76	41.21	49.48	29.83	27.95	0.308	0.412	0.495	0.298	0.280	0.358	Pass	Pass	Pass	Pass
US-07	96%	33.69	35.51	24.82	36.69	40.19	0.337	0.355	0.248	0.367	0.502	0.362	Pass	Pass	Pass	Pass
US-08	96%	32.25	32.14	33.25	41.14	61.01	0.323	0.321	0.416	0.343	0.610	0.402	Pass	Pass	Pass	Pass
US-09	64%	22.28	9.91	19.30	20.27	15.57	0.279	0.165	0.322	0.338	0.260	0.273	Fail	Fail	Fail	Pass
US-10	65%	27.58	*	27.91	33.23	27.61	0.460	*	0.465	0.554	0.345	0.456	Pass	Pass	Pass	Pass
US-11	96%	44.47	36.65	27.67	35.07	35.99	0.445	0.367	0.346	0.351	0.360	0.374	Pass	Pass	Pass	Pass
US-12	88%	42.55	36.14	43.21	28.51	42.09	0.532	0.361	0.432	0.475	0.421	0.444	Pass	Pass	Pass	Pass
US-13	92%	22.19	27.86	21.11	37.74	29.09	0.277	0.279	0.264	0.377	0.291	0.298	Fail	Fail	Fail	Pass
US-14	100%	14.52	43.40	49.22	34.92	27.65	0.145	0.434	0.492	0.349	0.277	0.339	Pass	Pass	Pass	Pass
US-15	100%	38.52	44.48	49.62	35.67	37.47	0.385	0.445	0.496	0.357	0.375	0.412	Pass	Pass	Pass	Pass
NISQ	100%	42.27	43.43	34.14	43.34	55.46	0.423	0.434	0.341	0.433	0.555	0.437	Pass	Pass	Pass	Pass
CARR	100%	50.35	30.75	28.23	44.66	46.86	0.504	0.308	0.282	0.447	0.469	0.402	Pass	Pass	Pass	Pass
Control	96%	19.22	43.12	25.65	20.63	23.59	0.192	0.431	0.257	0.258	0.236	0.275	Pass	Pass	Pass	Pass
Control	96%	26.94	37.11	12.06	40.18	17.86	0.269	0.371	0.121	0.502	0.179	0.288	Pass	Pass	Pass	Pass

NOTE: Sample number NISQ used as the reference sample for statistical evaluation. * indicates count was lost, sample replicate not included in calculations.

SMS Sediment Quality Standards (SQS) (WAC 173-204-315 (3)): mean individual growth rate is statistically different (t-test, $p \leq 0.05$) from the reference sediment mean individidual growth rate (Growth Rate Statistically Different) and the mean individual growth rate is less than 70 percent of the reference sediment mean individual growth rate (Growth Rate < 70% Reference).

SMS Cleanup Screening Level (CSL) (WAC 173-204-520 (3)): mean individual growth rate is statistically different (t-test, $p \leq 0.05$) from the reference sediment mean individidual growth rate Growth Rate Statistically Different) and the mean individual growth rate is less than 50 percent of the reference sediment mean individual growth rate (Growth Rate < 50% Reference).