Table 5-1
TPH and BTEX in Soil
Admiral Way Borings
UNOCAL Edmonds Terminal

SITE	DATE	DEPTH	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
SB-1	08/23/01	3.5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
SB-1	08/23/01	6	2190 J	<275	366 J	<0.120 J	0.348 J	<0.200 J	1.05 J
SB-2	08/23/01	6	88.4	84.5	<5.00	<0.0300	<0.0500	<0.0500	<0.100
SB-3	08/24/01	7	15.1	43.8	<5.00	<0.0300	<0.0500	<0.0500	<0.100
SB-4	08/23/01	3.5	<10.0 J	<25.0 J	<5.00 J	<0.0300 J	<0.0500 J	<0.0500 J	<0.100 J
SB-4	08/23/01	6	2010	1190	<5.00	<0.0300	<0.0500	<0.0500	<0.100
SB-5	08/24/01	7	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
SB-6	08/24/01	5	82.3 J	159 J	<5.00 J	<0.0300 J	<0.0500 J	<0.0500 J	<0.100 J
SB-7	08/24/01	5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-2
PAHs in Soil
Admiral Way Borings
UNOCAL Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE	SB-1	SB-1	SB-2	SB-3	SB-4	SB-4	SB-5	SB-6	SB-7
		DATE	8/23/01	8/23/01	8/23/01	8/24/01	8/23/01	8/23/01	8/24/01	8/24/01	8/24/01
		DEPTH (ft)	3.5	6	6	7	3.5	6	7	5	5
1-Methylnaphthalene			<0.200	1.68	<0.200	<0.200	<0.100 J	<0.200	<0.100	<0.200	<0.100
2-Methylnaphthalene			<0.200	1.13	<0.200	<0.200	<0.100 J	<0.200	<0.100	<0.200	<0.100
Acenaphthene			<0.0200	0.352	0.0238	<0.0100	<0.0100 J	0.154	<0.0100	<0.0200	<0.0100
Acenaphthylene			<0.0200	<0.0200	<0.0200	<0.0100	<0.0100 J	<0.0200	<0.0100	<0.0200	<0.0100
Anthracene			<0.0200	<0.0200	0.0409	<0.0100	0.011 J	0.373	<0.0100	<0.0200	<0.0100
Benzo(a)anthracene			<0.0200	0.0978	0.0426	<0.0100	0.0378 J	0.721	<0.0100	0.0406	<0.0100
Benzo(a)pyrene			<0.0200	0.0349	0.0358	<0.0100	0.0549 J	0.305	<0.0100	0.0469	<0.0100
Benzo(b)fluoranthene			<0.0200	0.0559	0.0613	<0.0100	0.057 J	0.315	<0.0100	0.0734	<0.0100
Benzo(ghi)perylene			<0.0200	<0.0200	0.0375	<0.0100	0.0364 J	0.194	<0.0100	0.0687	<0.0100
Benzo(k)fluoranthene			<0.0200	<0.0200	<0.0200	<0.0100	0.0124 J	0.048	<0.0100	<0.0200	<0.0100
Chrysene			<0.0200	0.0992	0.0562	<0.0100	0.0343 J	0.803	<0.0100	0.0625	<0.0100
Dibenzo(a,h)anthracene			<0.0200	<0.0200	<0.0200	<0.0100	0.022 J	<0.0200	<0.0100	0.0593	<0.0100
Fluoranthene			<0.0200	0.299	0.177	<0.0100	0.0735 J	1.16	<0.0100	0.0765	<0.0100
Fluorene			<0.0200	0.939	0.0324	<0.0100	<0.0100 J	0.374	<0.0100	<0.0200	<0.0100
Indeno(1,2,3-cd)pyrene			<0.0200	0.0559	0.08	<0.0100	0.059 J	0.166	<0.0100	0.106	<0.0100
Naphthalene			0.0307	0.0796	0.0272	<0.0100	<0.0100 J	<0.0200	<0.0100	<0.0200	<0.0100
Phenanthrene			<0.0200	1.07	0.0851	<0.0100	0.0391 J	1.42	<0.0100	0.0234	<0.0100
Pyrene			<0.0200	0.314	0.155	<0.0100	0.0851 J	1.41	<0.0100	0.0718	<0.0100

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-3
TPH and BTEX in Soil at Excavation Limit
UNOCAL Edmonds Terminal

SITE	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
EX-A-1	09/27/01	4.5	25.1	35.5	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-A-2	09/27/01	4.5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-A-3	09/27/01	4.5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-A-4	09/27/01	4.5	116	218	9.41	0.343	<0.0500	<0.0500	0.431
EX-A-5	09/27/01	4.5	1320	1040	363 J	0.0681	0.551	<0.0500	1.44
EX-A-6	09/27/01	4.5	2830	1790	2060	1.36 J	17.1	<1.00	126
EX-A-7A	10/16/01	4.5	1770	<275	1460	1.32	11.4	<1.00	31.4
EX-A-8A	10/16/01	4.5	985	<125	918	3.13	12.8	1.11	69.8
EX-A-9	09/27/01	4.5	56.6	30.1	13.2	0.109	<0.0500	<0.0500	0.256
EX-A-9A	10/16/01	4.5	<10.0	<25.0	19.4	0.141	0.0641	<0.0500	0.129
EX-A-10	09/27/01	4.5	172	63.8	129	1.31	0.365	0.0596 J	0.566
EX-B-1	09/27/01	5	1570 J	<125 J	1950 J	<0.300	3.35	<0.500	7.79
EX-B-2	09/27/01	5	153	<25.0	112 J	<0.0300	<0.0500	<0.0500	0.23 J
EX-B-3	09/27/01	5	174	<25.0	66.6 J	<0.0300	<0.0500	<0.0500	<0.100
EX-B-4	09/27/01	5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-B-5	09/27/01	5	692	<25.0	2020 J	<0.600	1.1	<1.00	2.46 J
EX-B-6	09/27/01	5	848	47	1560 J	<0.150	1.34	<0.250	7.05 J
EX-B-7	09/27/01	5	96.9	41.1	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-B-8	09/27/01	5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
EX-B-9	09/27/01	5	1850	<275	146 J	<0.0300	0.286	<0.0500	1.48
EX-C-1	09/18/01	4	35100	10900	147 J	<0.0600	0.169	<0.100	1.01 J
EX-C-2	09/18/01	4	30000	8520	257 J	0.0721	0.612	0.806	4.96

Table 5-3
TPH and BTEX in Soil at Excavation Limit
UNOCAL Edmonds Terminal

SITE	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
EX-C-3	09/18/01	4	53.1	16.1	11 J	<0.0300	<0.0500	<0.0500	<0.100
EX-C-4	09/18/01	4	16300	<5020	139 J	<0.0300	0.133	0.081	0.982
EX-D-1	09/26/01	3.5	2940	851	76.1 J	0.352	0.565	<0.0500	0.534
EX-D-2	09/26/01	3.5	766 J	198 J	11 J	<0.0300	<0.0500	<0.0500	<0.100
EX-D-3	09/26/01	3.5	4390	1390	64.3 J	<0.0300	0.0518	0.056	0.138
EX-D-4	09/26/01	3.5	68.3 J	<25.0 J	7.11	<0.0300	0.0973	0.24	0.488
EX-D-5	09/26/01	3.5	254	214	8.93 J	<0.0300	<0.0500	<0.0500	<0.100
EX-D-6	09/26/01	3.5	712	291	104 J	<0.0300	0.219 J	<0.0500	0.95

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-4
PAHs in Soil at Excavation Limit
UNOCAL Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE:	EX-A-1	EX-A-2	EX-A-3	EX-A-4	EX-A-5	EX-A-6	EX-A-7A	EX-A-8A	EX-A-9
		DATE:	9/27/01	9/27/01	9/27/01	9/27/01	9/27/01	9/27/01	10/16/01	10/16/01	9/27/01
		DEPTH (ft):	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
1-Methylnaphthalene			0.0051 J	0.014 J	0.0052 J	0.0072 J	0.34	5.7	6.1	7.2	0.025
2-Methylnaphthalene			<0.00080	0.0037 J	<0.00080	0.004 J	0.43	8.1	12	12	0.044
Acenaphthene			<0.0014	<0.0014 J	<0.0014	<0.0014	0.072	0.21	0.23	0.19	0.0044 J
Acenaphthylene			<0.00080	<0.00080 J	<0.00080	<0.00080	<0.0040	0.11	<0.016	0.079 J	<0.00080
Anthracene			<0.0016	<0.0016 J	<0.0016	<0.0016	0.14	<0.0080	<0.032	<0.016	0.015
Benzo(a)anthracene			<0.0011	<0.0011 J	<0.0011	0.0032 J	0.098	0.12	<0.022	<0.011	0.018
Benzo(a)pyrene			<0.0011	<0.0011 J	<0.0011	0.0064 J	0.057	<0.0055	<0.022	<0.011	0.0088 J
Benzo(b)fluoranthene			<0.0012	<0.0012 J	<0.0012	<0.0012	<0.0060	<0.0060	<0.024	<0.012	0.0061 J
Benzo(ghi)perylene			<0.00080	<0.00080 J	<0.00080	0.0072 J	0.03 J	0.057	<0.016	<0.0080	0.0044 J
Benzo(k)fluoranthene			<0.0016	<0.0016 J	<0.0016	<0.0016	<0.0080	<0.0080	<0.032	<0.016	<0.0016
Chrysene			<0.0016	<0.0016 J	<0.0016	<0.0016	0.16	0.24	<0.032 J	<0.016 J	0.032
Dibenzo(a,h)anthracene			<0.0014	<0.0014 J	<0.0014	<0.0014	<0.0070	<0.0070	<0.028	<0.014	<0.0014
Fluoranthene			<0.0010	<0.0010 J	<0.0010	0.0032 J	0.057	0.14	0.065 J	0.044 J	0.012
Fluorene			<0.0011	<0.0011 J	<0.0011	<0.0011	0.22	0.71	1	0.66	0.02
Indeno(1,2,3-cd)pyrene			<0.0019	<0.0019 J	<0.0019	0.004 J	<0.0095	<0.0095	<0.038 J	<0.019 J	<0.0019
Naphthalene			<0.0014	<0.0014 J	<0.0014	<0.0014	<0.0070	4.2	5	6	<0.0014
Phenanthrene			<0.0012	<0.0012 J	<0.0012	0.0024 J	0.6	1.1	1.4	1.4	0.061
Pyrene			<0.00010	<0.00010 J	<0.00010	0.0064 J	0.35	0.44	0.16 J	0.15	0.057

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-4
PAHs in Soil at Excavation Limit
UNOCAL Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE: DATE: DEPTH (ft):	EX-A-9A 10/16/01 4.5	EX-A-10 9/27/01 4.5	EX-B-1 9/27/01 5	EX-B-2 9/27/01 5	EX-B-3 9/27/01 5	EX-B-4 9/27/01 5	EX-B-5 9/27/01 5	EX-B-6 9/27/01 5	EX-B-7 9/27/01 5	EX-B-8 9/27/01 5
1-Methylnaphthalene			0.078	1.1	17	0.095	0.017	<0.0011	0.043	1.3	0.0064 J	<0.0011
2-Methylnaphthalene			0.087	1.8	10	0.015	<0.00080	<0.00080	0.039	0.55	0.0021 J	<0.00080
Acenaphthene			<0.0014	0.036	<0.035	0.013	<0.0014	<0.0014	<0.0014	0.036	<0.0014	<0.0014
Acenaphthylene			<0.00080	0.022	<0.020	0.011	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Anthracene			<0.0016	0.018 J	0.13 J	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0035 J	<0.0016
Benzo(a)anthracene			<0.0011	0.022	<0.028	<0.0011	<0.0011	<0.0011	<0.0011	0.0036 J	<0.0011	<0.0011
Benzo(a)pyrene			<0.0011	0.022	<0.028	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	0.0021 J	<0.0011
Benzo(b)fluoranthene			<0.0012	0.024	<0.030	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Benzo(ghi)perylene			<0.00080	0.014 J	<0.020	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	0.0042 J	<0.00080
Benzo(k)fluoranthene			<0.0016	<0.0032	<0.040	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Chrysene			<0.0016 J	0.036	<0.040	<0.0016	<0.0016	<0.0016	<0.0016	0.0073 J	<0.0016 J	<0.0016
Dibenzo(a,h)anthracene			<0.0014	<0.0028	<0.035	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
Fluoranthene			<0.0010	0.038	<0.025	<0.0010	<0.0010	<0.0010	<0.0010	0.0051 J	<0.0010	<0.0010
Fluorene			<0.0011	0.097	1.3	0.052	0.014	<0.0011	0.018	0.081	<0.0011	<0.0011
Indeno(1,2,3-cd)pyrene			<0.0019 J	0.01 J	<0.048	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019 J	<0.0019
Naphthalene			0.011	0.38	<0.035	<0.0014	<0.0014	<0.0014	0.12	0.089	<0.0014	<0.0014
Phenanthrene			0.0044 J	0.12	1.9	0.056	0.025	<0.0012	<0.0012	0.091	<0.0012	<0.0012
Pyrene			0.0044 J	0.089	0.11 J	<0.00010	0.0036 J	<0.00010	<0.00010	0.012	<0.00010	<0.00010

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-4
PAHs in Soil at Excavation Limit
UNOCAL Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE:	EX-B-9	EX-C-1	EX-C-2	EX-C-3	EX-C-4	EX-D-1	EX-D-2	EX-D-3	EX-D-4	EX-D-5
		DATE:	9/27/01	9/18/01	9/18/01	9/18/01	9/18/01	9/26/01	9/26/01	9/26/01	9/26/01	9/26/01
		DEPTH (ft):	5	4	4	4	4	3.5	3.5	3.5	3.5	3.5
1-Methylnaphthalene			1.6	1.7 J	25	0.15	21	0.93	0.02	1.4	0.016	0.065
2-Methylnaphthalene			1.6	2.4	39	0.17	30	0.48	0.016 J	1.2	0.016	0.052
Acenaphthene			0.051	<0.035	<0.035	<0.0028	<0.035	0.08	0.012 J	0.16 J	<0.0014	0.018
Acenaphthylene			0.023 J	<0.020	<0.020	<0.0016	<0.020	<0.0016	<0.0016	<0.020	<0.00080	0.047
Anthracene			<0.0080	<0.040	<0.040	<0.0032	<0.040	<0.0032	0.051	0.22 J	<0.0016	<0.0016
Benzo(a)anthracene			<0.0055	0.24 J	<0.028	<0.0022	<0.028	0.08	0.038	0.13 J	<0.0011	0.034
Benzo(a)pyrene			<0.0055	<0.028	<0.028	<0.0022	<0.028	0.052	0.02	<0.028	0.003 J	0.025
Benzo(b)fluoranthene			<0.0060	<0.030	<0.030	<0.0024	<0.030	<0.0024	<0.0024	<0.030	<0.0012	<0.0012
Benzo(ghi)perylene			<0.0040	0.12 J	0.45	<0.0016	<0.020	0.043	0.013 J	<0.020	<0.00080	0.025
Benzo(k)fluoranthene			<0.0080	<0.040	<0.040	<0.0032	<0.040	<0.0032	<0.0032	<0.040	<0.0016	<0.0016
Chrysene			<0.0080	1.3 J	<0.040	<0.0032	<0.040	0.26	0.084	0.37	0.003 J	0.1
Dibenzo(a,h)anthracene			<0.0070	<0.035	<0.035	<0.0028	<0.035	<0.0028	<0.0028	<0.035	<0.0014	<0.0014
Fluoranthene			<0.0050	<0.025	<0.025	<0.0020	<0.025	<0.0020	0.046	0.16 J	<0.0010	<0.0010
Fluorene			0.17	<0.028	6.9	0.1	8.1	0.4 J	0.064 J	0.68 J	0.0022 J	0.071 J
Indeno(1,2,3-cd)pyrene			<0.0095	<0.048	<0.048	<0.0038	<0.048	<0.0038	<0.0038	<0.048	<0.0019	0.02
Naphthalene			0.35	0.89	8.3	<0.0028	<0.035	0.21	<0.0028	0.11 J	<0.0014	0.018
Phenanthrene			0.31	1.4	15	0.42	25	0.61	0.22	2.1	0.0067 J	0.23
Pyrene			0.035 J	1.5	3	0.047	<0.0025	0.56	0.13	0.57	0.0067 J	0.11

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
— = Not analyzed.
J = Estimated result.

Table 5-4
PAHs in Soil at Excavation Limit
UNOCAL Edmonds Terminal

CONSTITUENT (Units in mg/kg)	SITE: DATE: DEPTH (ft):	EX-D-6 9/26/01 3.5
1-Methylnaphthalene		2.5
2-Methylnaphthalene		3
Acenaphthene		0.21 J
Acenaphthylene		0.097 J
Anthracene		0.54
Benzo(a)anthracene		0.19 J
Benzo(a)pyrene		0.078 J
Benzo(b)fluoranthene		<0.030
Benzo(ghi)perylene		<0.020
Benzo(k)fluoranthene		<0.040
Chrysene		0.37
Dibenzo(a,h)anthracene		<0.035
Fluoranthene		0.25
Fluorene		0.82 J
Indeno(1,2,3-cd)pyrene		<0.048
Naphthalene		0.47
Phenanthrene		2.3
Pyrene		0.72

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-5
Test Pit Observations- Southwest Lower Yard
UNOCAL Edmonds Terminal

Test Pit No.	Excavation Date	Excavation Depth (feet bgs)	OBSERVATIONS					
			9/24/01	9/25/01	9/26/01	9/27/01	10/1/01	10/2/01
TP-4	09/24/01	9	clean - no odor or staining	--	no product	no product	no product	no product
TP-5	09/24/01	9	slight petro odor 4-8' bgs	--	minor sheen	sheen	sheen	sheen
TP-6	09/24/01	8	strong petro odor from 1' bgs	--	sheen	sheen	sheen	sheen
TP-7	09/24/01	10	strong petro odor starting at 1' bgs	--	no product	no product	no product	no product
TP-8	09/24/01	9	strong petro odor starting at 2' bgs	--	no product	no product	no product	no product
TP-9	09/24/01	8	strong petro odor starting at 2' bgs	--	no product	sheen	sheen	film
TP-10	09/24/01	8	minor product seeping in with water at 7.5' bgs	--	minor product	film	film	film
TP-11	09/24/01	8	no petro odor	--	minor product	film	film	film
TP-12	09/25/01	7.5	--	strong petro odor	product	film	film	film
TP-13	09/25/01	9	--	slight petro odor	minor product	film	film	film
TP-14	09/25/01	8	--	slight petro odor	no product	film	film	film
TP-15	09/25/01	8	--	moderate petro odor	minor product	film	film	film
TP-16	09/25/01	8.5	--	moderate petro odor	no product	film	film	film
TP-17	09/25/01	9.5	--	strong petro odor	--	--	--	--
TP-17b	09/25/01	8.5	--	strong petro odor	no product	sheen	sheen	sheen
TP-18	09/25/01	9	--	strong petro odor	minor product	film	film	film
TP-19	09/25/01	10	--	strong petro odor	minor product	film	film	film
TP-20	09/26/01	10	--	--	no groundwater	film	film	film

NOTES:
bgs = below ground surface

Table 5-6
TPH and BTEX in Soil
Southwest Lower Yard Test Pits
UNOCAL Edmonds Terminal

SITE ID	DATE	DEPTH	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
TP-4	09/25/01	4.5	<10.0	<25.0	<5.00	<0.0300	<0.0500	<0.0500	<0.100
TP-5	09/25/01	4.5	84.2	<25.0	105 J	<0.0300	0.093	<0.0500	0.644
TP-6	09/25/01	4.5	811	101	561 J	<0.120	4.13	<0.200	3.11
TP-7	09/25/01	4.5	121	<25.0	153 J	<0.0600	0.589	<0.100	0.817
TP-8	09/25/01	4.5	271	<25.0	611 J	0.27 J	2.7	<0.200	3.6
TP-9	09/25/01	5	441	32.4	1180 J	0.212 J	4.76	<0.200	7.95
TP-10	09/25/01	5	3130	<275	2180 J	<0.600	15.3	<1.00	15.1
TP-11	09/25/01	5	403	81	54.9 J	<0.0300	0.0805	<0.0500	0.122
TP-12	09/25/01	5	3050	<525	698 J	<0.300	3.12 J	<0.500	3.21 J
TP-13	09/25/01	5	10500	<525	2180 J	<0.300	5.51	<0.500	9.81
TP-14	09/25/01	5	8280	<275	399 J	0.0446 J	0.942	0.0965 J	2.67
TP-15	09/25/01	5	3560	295	703 J	<0.300	0.584	<0.500	2.89
TP-16	09/25/01	5.8	7530	<275	1400 J	<0.600	1.88	<1.00	6.66
TP-17A	09/25/01	5.8	2380	<275	1280 J	<0.300	1.65	<0.500	6.05
TP-18	09/25/01	5.8	13600	1240	1590	0.734 J	2.28 J	<1.00	5.27 J
TP-19	09/25/01	5.8	12300	1130	687	<0.300	0.557 J	<0.500	2.36 J
TP-20	09/26/01	5.8	5030	<1020	51.6 J	<0.0300	<0.0500	<0.0500	<0.100

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-7
PAHs in Soil
Southwest Lower Yard Test Pits
Unocal Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE:	TP-4	TP-5	TP-6	TP-7	TP-8	TP-9	TP-10
		DATE:	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01
		DEPTH:	4.5	4.5	4.5	4.5	4.5	5	5
1-Methylnaphthalene			<0.0011	0.32	3.3	0.88	3.2	3.4	14
2-Methylnapthalene			0.003	0.037	5	1.4	5.5	6.4	22
Acenaphthene			<0.0014	0.046	<0.014	0.045	<0.014	<0.014	<0.070
Acenaphthylene			<0.00080	0.0085	<0.0080	0.013	<0.0080	<0.0080	<0.040
Anthracene			<0.0016	0.058	<0.016	0.037	0.14	0.03	<0.080
Benzo(a)anthracene			<0.0011	0.0062	<0.011	0.017	0.078	0.037	0.14
Benzo(a)pyrene			<0.0011	<0.0011	<0.011	0.0067	0.039	<0.011	<0.055
Benzo(b)fluoranthene			<0.0012	<0.0012	<0.012	0.016	0.055	0.03	<0.060
Benzo(ghi)perylene			<0.00080	<0.00080	<0.0080	0.003	<0.0080	<0.0080	<0.040
Benzo(k)fluoranthene			<0.0016	<0.0016	<0.016	0.003	0.031	<0.016	<0.080
Chrysene			<0.0016	0.007	<0.016	0.019	0.078	0.03	0.14
Dibenzo(a,h)anthracene			<0.0014	<0.0014	<0.014	<0.0014	<0.014	<0.014	<0.070
Fluoranthene			<0.0010	0.012	<0.010	0.082	0.3	0.1	0.31
Fluorene			<0.0011	0.078	0.3	0.15	0.36	0.11	1.2
Indeno(1,2,3-cd)pyrene			<0.0019	<0.0019	<0.019	0.003	0.031	<0.019	<0.095
Naphthalene			<0.0014	0.014	1.1	0.2	3.9	2.6	11
Phenanthrene			<0.0012	0.24	0.54	0.27	0.77	0.19	2.3
Pyrene			<0.00010	0.026	0.059	0.065	0.23	0.097	0.45

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-7
PAHs in Soil
Southwest Lower Yard Test Pits
Unocal Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE:	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16	TP-17A
		DATE:	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01	9/25/01
		DEPTH:	5	5	5	5	5	5.8	5.8
1-Methylnaphthalene			0.82	27	40	12	3.1	19	20
2-Methylnapthalene			1.4	40	63	18	1.3	24	30
Acenaphthene			0.21	<0.070	<0.14	<0.035	0.26	<0.070	<0.070
Acenaphthylene			0.11	<0.040	<0.080	<0.020	0.19	<0.040	<0.040
Anthracene			0.2	1.2	0.81	<0.040	0.095	<0.080	<0.080
Benzo(a)anthracene			0.13	0.26	0.37	<0.028	0.066	<0.055	<0.055
Benzo(a)pyrene			0.085	<0.055	<0.11	<0.028	0.051	<0.055	<0.055
Benzo(b)fluoranthene			0.2	<0.060	<0.12	<0.030	0.11	<0.060	<0.060
Benzo(ghi)perylene			0.12	<0.040	<0.080	<0.020	0.029	<0.040	<0.040
Benzo(k)fluoranthene			0.032	<0.080	<0.16	<0.040	0.022	<0.080	<0.080
Chrysene			0.13	0.3	0.37	<0.040	0.12	<0.080	<0.080
Dibenzo(a,h)anthracene			0.02	<0.070	<0.14	<0.035	<0.014	<0.070	<0.070
Fluoranthene			0.45	1	1.4	<0.025	0.23	0.48	<0.050
Fluorene			0.34	3.1 J	5.8	5.6	0.97	2.5	1.7
Indeno(1,2,3-cd)pyrene			0.12	<0.095	<0.19	<0.048	0.037	<0.095	<0.095
Naphthalene			0.3	7.8	13	3.8	0.13	<0.070	<0.070
Phenanthrene			0.81	6.3	10	7.9	0.88	3.7	2.3
Pyrene			0.37	1.1	1.4	0.53	0.29	0.48	0.16

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-7
PAHs in Soil
Southwest Lower Yard Test Pits
Unocal Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE: TP-18 DATE: 9/25/01 DEPTH: 5.8	TP-19 9/25/01 5.8	TP-20 9/26/01 5.8
1-Methylnaphthalene		60	41	<0.011
2-Methylnapthalene		110	46	<0.0080
Acenaphthene		1.5	1.4	0.31
Acenaphthylene		0.6	0.8	<0.0080
Anthracene		1.1	<0.080	0.25
Benzo(a)anthracene		0.82	0.29	0.62
Benzo(a)pyrene		<0.11	0.15	0.54
Benzo(b)fluoranthene		<0.12	<0.060	<0.012
Benzo(ghi)perylene		<0.080	<0.040	0.19
Benzo(k)fluoranthene		<0.16	<0.080	<0.016
Chrysene		1.1	0.51	0.84
Dibenzo(a,h)anthracene		<0.14	<0.070	0.15
Fluoranthene		0.52	0.55	0.25
Fluorene		5.8 J	5.6 J	0.54 J
Indeno(1,2,3-cd)pyrene		<0.19	<0.095	0.078
Naphthalene		0.75	0.62	<0.014
Phenanthrene		13	8.3	<0.012
Pyrene		1.9	0.84	2.7

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.

Table 5-8
TPH and BTEX in Soil, Lower Yard Well Borings
UNOCAL Edmonds Terminal

SAMPLE ID	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
MW-134X	01/22/02	15.5	<25.0	<100	<5.00	<0.00800	<0.00600	<0.0140	<0.0200
MW-134X	01/22/02	32.5	<25.0	<100	<5.00	<0.00800	<0.00600	<0.0140	<0.0200
MW-143	01/24/02	2.5	47.1	<100	<5.00	<0.00800	<0.00600	<0.0140	<0.0200
MW-143	01/24/02	4	212	196	<5.00	<0.00800	<0.00600	<0.0140	0.0203 J
MW-144	01/23/02	2.5	<25.0	<100	<5.00	<0.00800	0.00689 J	<0.0140	<0.0200
MW-144	01/23/02	5	5740	222	3590	0.532 J	1.68 J	<0.700	8.38
MW-145	02/11/02	1	<25.0	<100	<5.00	<0.00800	<0.00600	0.0154 J	0.0241 J
MW-145	02/11/02	2.5	<25.0	<100	<5.00	<0.00800	<0.00600	<0.0140	<0.0200
MW-145	02/11/02	4	<25.0	<100	<5.00	<0.00800	<0.00600	<0.0140	0.031 J

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-9
PAHs in Soil, Lower Yard Well Borings
UNOCAL Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE:	MW-134X	MW-134X	MW-143	MW-143	MW-144	MW-144	MW-145	MW-145	MW-145
		DATE:	1/22/2002	1/22/2002	1/24/2002	1/24/2002	1/23/2002	1/23/2002	2/11/2002	2/11/2002	2/11/2002
		DEPTH (ft):	15.5	32.5	2.5	4	2.5	5	1	2.5	4
1-Methylnaphthalene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	7.65 D	<0.0170	<0.0170	<0.0170
2-Methylnaphthalene			0.0181	0.0202	<0.0170	<0.0170	0.0207	6.01 D	<0.0170	<0.0170	<0.0170
Acenaphthene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Acenaphthylene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0288	0.0293	<0.0170
Anthracene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0296	0.0323	<0.0170
Benzo(a)anthracene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Benzo(a)pyrene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0251	0.0255	<0.0170
Benzo(b)fluoranthene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0466	0.0458	<0.0170
Benzo(ghi)perylene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0836	0.0706	<0.0170
Benzo(k)fluoranthene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Chrysene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Dibenzo(a,h)anthracene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Fluoranthene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.034	0.0263	<0.0170
Fluorene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Indeno(1,2,3-cd)pyrene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	0.0643	0.0616	<0.0170
Naphthalene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Phenanthrene			<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170	<0.0170
Pyrene			<0.0170	<0.0170	<0.0170	0.127	<0.0170	0.155	0.0296	0.0255	<0.0170

Values represent total concentration unless noted.
< = Not detected at indicated reporting limit.
--- = Not analyzed.
J = Estimated result.
D = Sample diluted due to high analyte concentrations.

Table 5-10
TPH-GRO and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - GRO (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
LM-2	06/27/01	<0.05	<0.500	<0.500	<0.500	<1.00
LM-2	12/03/01	<0.05	<0.500	<0.500	<0.500	<1.00
LM-2	03/01/02	<0.25	<0.500	<0.500	<0.500	<1.00
LM-3	12/03/01	<0.05	<0.500	<0.500	<0.500	1.14 J
MW-101	06/29/01	1.14	28.1	4.53	17.2	23.1
MW-101	11/29/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-101	02/27/02	0.426	8.96	9.11	14.9	52.1
MW-102	06/29/01	1.58	<0.500	<0.500	2.03	4.36
MW-104	06/29/01	1.39	2.32 J	5.99	89	8.6
MW-104	11/29/01	3.28 J	3.75 J	20.1 J	237J	587J
MW-104	02/27/02	1.63	3.7	6.83	148	177
MW-105	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-105	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-105	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-106	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-106	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-106	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-107	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-107	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-107	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-108	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-108	12/03/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-108	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-109	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-109	12/03/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-109	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-112	06/26/01	0.215	0.977	<0.500	2.2	11.8
MW-119	06/26/01	0.208	10.3	0.754	<0.500	2.19
MW-120	06/26/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-121	06/26/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-122	06/26/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-125	06/26/01	5.68	1840	<25.0	101	<50.0

Table 5-10
TPH-GRO and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - GRO (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-126	06/26/01	0.0606	<0.500	<0.500	<0.500	<1.00
MW-127	06/26/01	0.0566	2.87	<0.500	<0.500	<1.00
MW-131	06/26/01	0.388 J	8.39 J	0.847 J	<0.500	2.4 J
MW-134	06/26/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-134X	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-134X	05/29/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-135	06/29/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-135	12/03/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-135	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-136	06/29/01	0.105	<0.500	<0.500	<0.500	<1.00
MW-136	12/03/01	0.0662	<0.500	<0.500	<0.500	<1.00
MW-136	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-137	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-137	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-137	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-138	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-138	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-138	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-139	06/27/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-139	11/29/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-139	02/26/02	<0.25	<0.500	<0.500	<0.500	1.93
MW-140	05/28/02	4.10	496	3.82	214	18.2
MW-141	02/27/02	0.273	5.77	<0.500	1.66	5.27 J
MW-141	05/29/02	0.71 J	9.75	<0.500	3.54	8.88
MW-142	02/27/02	0.559	2.13	<0.500	11.4	8.82
MW-142	05/29/02	1.56	58.1	<2.50	134	35.2
MW-143	02/27/02	<0.25	<0.500	<0.500	<0.500	<1.00
MW-143	05/29/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-144	05/29/02	0.649 J	4.12	<0.500	<0.500	3.45
MW-145	05/29/02	1.91 J	16.7 J	0.993 J	21.7 J	25.4 J
MW-146	05/28/02	17.60	3770	96.2	1770	188
MW-17	06/29/01	0.228	<0.500	<0.500	<0.500	<1.00

Table 5-10
TPH-GRO and BTEX in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - GRO (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-20	06/29/01	2.66	589	5.61	58.8	7.16
MW-20R	02/26/02	5.18	1900	6.89	325	13.2
MW-22	06/26/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-25	06/29/01	1.01	<0.500	<0.500	0.617	8.01
MW-26	06/29/01	0.783	3.3	1.28	<0.500	27.7
MW-27	06/29/01	0.0955	<0.500	<0.500	<0.500	<1.00
MW-28	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-28	11/30/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-28	05/28/02	<0.05	<0.500	<0.500	<0.500	<1.00
MW-7	06/26/01	4.01J	105J	6.72J	379J	393J
MW-8	06/26/01	2.73	687	<10.0	30.6	<20.0

< = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated value.

Table 5-11
TPH-DRO and TPH-HO in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (Lube Oil Range) (mg/L)
LM-2	06/27/01	6.93	1.61
LM-2	12/03/01	1.14 J	<0.500
LM-2	03/01/02	0.329 J	<0.500
LM-3	12/03/01	1.21 J	0.709
MW-101	06/29/01	<0.250	<0.500
MW-101	11/29/01	<0.250	<0.500
MW-101	02/27/02	<0.250	<0.500
MW-102	06/29/01	<0.250	<0.500
MW-104	06/29/01	<0.250	<0.500
MW-104	11/29/01	0.267 J	<0.500
MW-104	02/27/02	<0.250	<0.500
MW-105	06/28/01	<0.250	<0.500
MW-105	11/30/01	<0.250	<0.500
MW-105	05/28/02	<0.250	<0.500
MW-106	06/28/01	0.257	<0.500
MW-106	11/30/01	<0.250	<0.500
MW-106	05/28/02	<0.250	<0.500
MW-107	06/28/01	<0.250	<0.500
MW-107	11/30/01	<0.250	<0.500
MW-107	05/28/02	<0.250	<0.500
MW-108	06/28/01	<0.250	<0.500
MW-108	12/03/01	<0.250	<0.500
MW-108	02/28/02	<0.250	<0.500
MW-109	06/28/01	<0.250	<0.500
MW-109	12/03/01	<0.250	<0.500
MW-109	02/28/02	<0.250	<0.500
MW-112	06/26/01	<0.250	<0.500
MW-119	06/26/01	<0.250	<0.500
MW-120	06/26/01	<0.250	<0.500
MW-121	06/26/01	<0.250	<0.500
MW-122	06/26/01	<0.250	<0.500

Table 5-11
TPH-DRO and TPH-HO in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (Lube Oil Range) (mg/L)
MW-125	06/26/01	0.443	<0.500
MW-126	06/26/01	<0.250	<0.500
MW-127	06/26/01	0.34	<0.500
MW-131	06/26/01	<0.250	<0.500
MW-134	06/26/01	<0.250	<0.500
MW-134X	02/28/02	<0.250	<0.500
MW-134X	05/29/02	0.311	2.00
MW-135	06/29/01	<0.250	<0.500
MW-135	12/03/01	<0.250	<0.500
MW-135	02/28/02	<0.250	<0.500
MW-136	06/29/01	<0.330	<0.660
MW-136	12/03/01	1.04	<0.500
MW-136	02/28/02	0.715 J	<0.500
MW-137	06/28/01	<0.250	<0.500
MW-137	11/30/01	<0.250	<0.500
MW-137	05/28/02	<0.250	<0.500
MW-138	06/28/01	<0.250	<0.500
MW-138	11/30/01	<0.250	<0.500
MW-138	05/28/02	<0.250	<0.500
MW-139	06/27/01	1.11	<0.500
MW-139	11/29/01	<0.250	<0.500
MW-139	02/26/02	0.483	<0.500
MW-140	05/28/02	0.499	<0.500
MW-141	02/27/02	<0.250	<0.500
MW-141	05/29/02	<0.250	<0.500
MW-142	02/27/02	0.393	<0.500
MW-142	05/29/02	0.343	<0.500
MW-143	02/27/02	<0.250	<0.500
MW-143	05/29/02	<0.250	<0.500
MW-144	05/29/02	<0.250	<0.500
MW-145	05/29/02	<0.250	<0.500

Table 5-11
TPH-DRO and TPH-HO in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (Lube Oil Range) (mg/L)
MW-146	05/28/02	0.893	<0.500
MW-17	06/29/01	21.8	<5.50
MW-20	06/29/01	0.294	<0.500
MW-20R	02/26/02	0.42	<0.500
MW-22	06/26/01	<0.250	<0.500
MW-25	06/29/01	2.69	<0.500
MW-26	06/29/01	0.269	<0.500
MW-27	06/29/01	<0.250	<0.500
MW-28	06/28/01	<0.250	<0.500
MW-28	11/30/01	<0.250	<0.500
MW-28	05/28/02	<0.250	<0.500
MW-7	06/26/01	0.648	<0.500
MW-8	06/26/01	2.5	1.31

< = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated value.

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	1-Methyl-naphthalene (ug/L)	2-Methyl-naphthalene (ug/L)	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)
LM-2	06/27/01	<0.360	<0.480	<0.537	<0.654	<0.563	<0.420	<0.585	<0.649	<0.482
LM-2	12/03/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
LM-2	03/01/02	<0.100	<0.100	<0.100 J	<0.100	<0.500	<0.100	<0.0500 J	<0.0500	<0.500
LM-3	12/03/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
MW-101	06/29/01	2.47	0.796	0.122	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-101	11/29/01	<0.036	<0.048	<0.061	<0.048	<0.034	<0.061	<0.024	<0.048	<0.031
MW-101	02/27/02	0.892	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-102	06/29/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-104	06/29/01	1.9	0.613	0.0593 J	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-104	11/29/01	10 J	11 J	<0.30 J	<0.24 J	<0.17 J	<0.30 J	<0.12 J	<0.24 J	<0.16 J
MW-104	02/27/02	0.331	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-105	06/28/01	<0.0720	<0.0960	<0.107	<0.131	<0.113	<0.0840	<0.117	<0.130	<0.0964
MW-105	11/30/01	<0.036	<0.048	<0.061	<0.048	0.65	<0.061	<0.024	<0.048	<0.031
MW-105	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-106	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-106	11/30/01	<0.036	<0.048	<0.061	<0.048	0.65	<0.061	<0.024	<0.048	<0.031
MW-106	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-107	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-107	11/30/01	<0.036	<0.048	<0.061	<0.048	0.68	<0.061	0.22	<0.048	<0.031
MW-107	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	0.011	<0.0100 J	<0.0500	<0.100
MW-108	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-108	12/03/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
MW-108	02/28/02	<0.100	<0.100	<0.100 J	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-109	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-109	12/03/01	<0.036	<0.048	<0.061	<0.048	<0.034	<0.061	<0.024	<0.048	<0.031
MW-109	02/28/02	<0.200	<0.200	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-112	06/26/01	0.119	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-119	06/26/01	1.1	0.531	0.19	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-120	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-121	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-122	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-125	06/26/01	35.6	56.3	0.419 J	<0.327	<0.282	<0.210	<0.292	<0.324	<0.241

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	1-Methyl-naphthalene (ug/L)	2-Methyl-naphthalene (ug/L)	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)
MW-126	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-127	06/26/01	0.353	0.157 J	<0.107	<0.131	<0.113	<0.0840	<0.117	<0.130	<0.0964
MW-131	06/26/01	4.27	1.09	0.144	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-134	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-134X	02/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-134X	05/29/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-135	06/29/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-135	12/03/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
MW-135	02/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-136	06/29/01	1.04	1.22	0.068 J	<0.0741	<0.0638	<0.0476	<0.0663	<0.0735	<0.0546
MW-136	12/03/01	1.4	1.5	<0.061	<0.048	<0.034	<0.061	<0.024	<0.048	<0.031
MW-136	02/28/02	1.64	1.41	<0.500	<0.500	<0.500	<0.0500	<0.0200	<0.0100	<0.100
MW-137	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	0.0627 J	<0.0420	<0.0585	<0.0649	<0.0482
MW-137	11/30/01	<0.036	<0.048	<0.061	<0.048	0.69	<0.061	<0.024	<0.048	<0.031
MW-137	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-138	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	0.143	<0.0420	<0.0585	<0.0649	<0.0482
MW-138	11/30/01	<0.036	<0.048	<0.061	<0.048	0.79	<0.061	<0.024	<0.048	<0.031
MW-138	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-139	06/27/01	0.0764 J	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-139	11/29/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
MW-139	02/26/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-140	05/28/02	48.2	42.3	<1.00	<1.00	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-141	02/27/02	<0.500	<0.100	<0.100	<0.100	<0.500	<0.0100	<0.0100	<0.0100	<0.100
MW-141	05/29/02	<0.500	<0.500	<0.500	<0.500	<0.500	<0.0100	<0.0100 J	<0.0100	<0.100
MW-142	02/27/02	2.78	<0.100	0.246	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-142	05/29/02	16.1	7.44	0.582	<0.500	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-143	02/27/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-143	05/29/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-144	05/29/02	1.46	<0.100	0.285	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-145	05/29/02	2.47	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-146	05/28/02	39.7	38 J	1.43	<1.00	<1.00	<0.0200	<0.0100 J	<0.0100	<0.100
MW-20	06/29/01	0.041 J	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	1-Methyl-naphthalene (ug/L)	2-Methyl-naphthalene (ug/L)	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)
MW-20R	02/26/02	14.3	0.298	0.199	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100
MW-22	06/26/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-28	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-28	11/30/01	<0.036	<0.048	<0.061	<0.048	0.63	<0.061	<0.024	<0.048	<0.031
MW-28	05/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100 J	<0.0100	<0.100
MW-7	06/26/01	75.7	94.2	1.17	<0.654	<0.563	<0.420	<0.585	<0.649	<0.482
MW-8	06/26/01	11.1	4.17	<0.537	<0.654	<0.563	0.596 J	2.98	<0.649	<0.482

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

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Benzo(k) fluoranthene (ug/L)	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	06/27/01	<0.707	<0.537	<0.453	<0.537	<0.695	<0.386	<0.453	<0.420	<0.409
LM-2	12/03/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	<0.067 J
LM-2	03/01/02	<0.0500	<0.100	<0.0500	<0.500	<0.100	<0.0500	<0.100	<0.500	<1.00 J
LM-3	12/03/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	0.31 J
MW-101	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	4.39	<0.0420	<0.0409
MW-101	11/29/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-101	02/27/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	1.09	<0.100	<0.100
MW-102	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-104	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	0.119	<0.0386	6.49	<0.0420	<0.0409
MW-104	11/29/01	<0.28 J	<0.24 J	<0.16 J	<0.30 J	<0.17 J	<0.16 J	44J	<0.24 J	<0.34 J
MW-104	02/27/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	1.46	<0.100	<0.100
MW-105	06/28/01	<0.141	<0.107	<0.0906	<0.107	<0.139	<0.0772	<0.0906	<0.0840	<0.0818
MW-105	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-105	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-106	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-106	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-106	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-107	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-107	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	0.48	<0.034	<0.048	<0.067
MW-107	05/28/02	<0.0100	0.0118	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-108	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-108	12/03/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	<0.067 J
MW-108	02/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-109	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-109	12/03/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-109	02/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-112	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-119	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	0.36	<0.0386	<0.0453	0.0569 J	<0.0409
MW-120	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	0.274	<0.0420	<0.0409
MW-121	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-122	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-125	06/26/01	<0.354	<0.268	<0.226	<0.268	0.942	<0.193	4.71	0.524	<0.204

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Benzo(k) fluoranthene (ug/L)	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-126	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	0.218	<0.0386	<0.0453	<0.0420	<0.0409
MW-127	06/26/01	<0.141	<0.107	<0.0906	<0.107	<0.139	<0.0772	<0.0906	<0.0840	<0.0818
MW-131	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	0.557	<0.0386	0.413	0.124	<0.0409
MW-134	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-134X	02/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-134X	05/29/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-135	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-135	12/03/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	<0.067 J
MW-135	02/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-136	06/29/01	<0.0801	<0.0608	<0.0513	<0.0608	0.204	<0.0437	0.566	<0.0476	<0.0463
MW-136	12/03/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	0.61	<0.048	<0.067
MW-136	02/28/02	<0.0100	<0.0500	<0.0100	<0.500	<0.500	<0.0100	1.02	<0.500	<0.500
MW-137	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-137	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-137	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-138	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-138	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-138	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-139	06/27/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-139	11/29/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	<0.067 J
MW-139	02/26/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-140	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	2.19	<0.0100	11.9	1.26	<0.100 J
MW-141	02/27/02	<0.0100	<0.0100	<0.0100	<0.100	<0.500	<0.0100	<0.100	<0.500	<0.100
MW-141	05/29/02	<0.0100	<0.0100	<0.0100	<0.500	<0.500	<0.0100	<0.500	<0.500	<0.100 J
MW-142	02/27/02	<0.0100	0.0123	<0.0100	<0.100	0.487	<0.0100	<0.500	<0.100	<0.100
MW-142	05/29/02	<0.0100	<0.0200	<0.0100	<0.100	1.37	<0.0100	7.61	0.49	<0.100 J
MW-143	02/27/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-143	05/29/02	<0.0100	<0.0200	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100
MW-144	05/29/02	<0.0100	<0.0100	<0.0100	<0.100	0.431	<0.0100	<1.00	<0.100	<0.100 J
MW-145	05/29/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<1.00	<0.100	<0.100 J
MW-146	05/28/02	<0.0100	<0.0200	<0.0100	<1.00	2.25	<0.0100	220J	<1.00	<0.200 J
MW-20	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	0.0615 J

Table 5-12
PAHs in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Benzo(k) fluoranthene (ug/L)	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-20R	02/26/02	<0.0100	<0.0100	<0.0100	<0.100	0.281	<0.0100	<2.00	<0.100	<0.100
MW-22	06/26/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-28	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-28	11/30/01	<0.057	<0.049	<0.031	<0.060	<0.034	<0.031	<0.034	<0.048	<0.067
MW-28	05/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100 J
MW-7	06/26/01	<0.707	<0.537	<0.453	<0.537	3.32	<0.386	144	1.56	<0.409
MW-8	06/26/01	<0.707	0.993 J	<0.453	<0.537	0.993 J	<0.386	<0.453	<0.420	1.39

< = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated value.

Table 5-13
Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Arsenic (mg/L)	Dissolved Arsenic (mg/L)	Copper (mg/L)	Dissolved Copper (mg/L)	Lead (mg/L)	Dissolved Lead (mg/L)	Zinc (mg/L)	Dissolved Zinc (mg/L)
LM-2	06/27/01	0.0351	0.0235	0.0317	0.00588 J	0.0115	0.00178	0.0538	<0.0217
LM-2	12/03/01	0.0186	0.0177	0.00654	0.00138	0.00139	<0.0100	0.0164	<0.0100
LM-2	03/01/02	0.0156	0.013	0.00436	<0.000900	0.00104	<0.00200	<0.0200	<0.0200
LM-3	12/03/01	0.00318	0.00342	0.00317	0.00116	<0.00100	<0.0100	<0.0100	<0.0100
MW-101	06/29/01	0.000368 J	0.000324 J	0.000605 J	0.000417 J	0.000339 J	<0.000232	<0.00217	<0.00217
MW-101	11/29/01	<0.00100	<0.00100	<0.000900	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-101	02/27/02	<0.00170	<0.00170	0.00191	<0.000900	<0.00100	<0.00100	<0.0200	<0.0200
MW-102	06/29/01	0.00158	0.00225	0.000833 J	0.000518 J	0.000258 J	0.00024 J	<0.00217	<0.00217
MW-104	06/29/01	0.00133	<0.00182	0.000364 J	<0.00153	0.000322 J	<0.00232	<0.00217	<0.0217
MW-104	11/29/01	0.00229	0.00237	<0.000900	<0.000900	0.0015	0.00117	<0.0100	<0.0100
MW-104	02/27/02	<0.00170	<0.00170	0.000900	<0.000900	<0.00100	<0.00100	<0.0200	<0.0200
MW-105	06/28/01	0.00612	0.00408	0.0106	0.00913	0.000515 J	<0.000232	0.00246 J	<0.00217
MW-105	11/30/01	0.00858	0.00828	0.0124	0.011	<0.00100	<0.00100	<0.0100	<0.0100
MW-105	05/28/02	0.00454	0.00416	0.0121	0.011	<0.00100	<0.00100	<0.0100	<0.0100
MW-106	06/28/01	0.000759 J	0.000484 J	0.0076	0.00669	<0.000210	<0.000232	0.146	0.167
MW-106	11/30/01	<0.00100	<0.00100	0.0103	0.00866	<0.00100	<0.00100	0.0405	0.0358
MW-106	05/28/02	<0.00100	<0.00100	0.00868	0.00747	<0.00100	<0.00100	0.144	0.148
MW-107	06/28/01	0.000508 J	0.000236 J	0.00168	0.000592 J	<0.000210	<0.000232	0.00225 J	<0.00217
MW-107	11/30/01	0.00331	<0.00100	0.015	<0.000900	0.00297	<0.00100	0.0117	<0.0100
MW-107	05/28/02	0.00105	<0.00100	0.00251	0.00141	<0.00100	<0.00100	<0.0100	<0.0100
MW-108	06/28/01	0.00278	<0.00182	0.00958	0.00317 J	0.000399 J	<0.00232	0.0068 J	<0.0217
MW-108	12/03/01	0.00294	0.00425	0.00379	0.00176	<0.00100	<0.0100	0.0115	<0.0100
MW-108	02/28/02	0.00641	0.0069	0.00667	0.00253	0.00119	<0.00200	<0.0200	<0.0200
MW-109	06/28/01	0.00428	<0.00182	0.012	0.00245 J	0.000884 J	<0.00232	0.0276	<0.0217
MW-109	12/03/01	0.00327	0.00407	0.0027	0.00101	<0.00100	<0.0100	<0.0100	<0.0100
MW-109	02/28/02	0.00734	0.00585	0.0059	0.00111	<0.00100	<0.00100	<0.0200	<0.0200
MW-112	06/26/01	0.000943 J	0.00128	0.00132	0.000519 J	0.00778	<0.000210	0.00486 J	<0.00217
MW-119	06/26/01	0.0123	0.0174	0.000843 J	0.00057 J	<0.000210	<0.000210	0.00288 J	<0.00217
MW-121	06/26/01	<0.000130	0.000253 J	0.00911	0.000833 J	0.00051 J	<0.000210	0.00598 J	<0.00217
MW-122	06/26/01	0.0194	0.0225	0.0366	0.00923	0.00124	0.000959 J	0.00223 J	<0.00217
MW-125	06/26/01	0.035	0.0477	0.00121	0.000645 J	0.00251	0.00171	0.00594 J	<0.00217

Table 5-13
Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Arsenic (mg/L)	Dissolved Arsenic (mg/L)	Copper (mg/L)	Dissolved Copper (mg/L)	Lead (mg/L)	Dissolved Lead (mg/L)	Zinc (mg/L)	Dissolved Zinc (mg/L)
MW-126	06/26/01	0.0774 J	0.0515	0.00122	0.000715 J	0.000246 J	<0.000210	0.00285 J	<0.00217
MW-127	06/26/01	0.00252	0.0035	0.00134	0.000866 J	<0.000210	<0.000210	0.00312 J	<0.00217
MW-131	06/26/01	0.028	0.0388	0.00162	0.00103	<0.000210	<0.000210	0.00729 J	0.00252 J
MW-134	06/26/01	0.000186 J	0.000295 J	0.00112	0.000848 J	<0.000210	0.000213 J	<0.00217	<0.00217
MW-134X	02/28/02	<0.00170	<0.00170	<0.000900	<0.000900	<0.00100	<0.00100	<0.0200	<0.0200
MW-134X	05/29/02	<0.00100	<0.00100	0.00126	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-135	06/29/01	0.00459	0.00477	0.00116	0.00166	<0.000210	<0.000232	0.00483 J	<0.00217
MW-135	12/03/01	0.00281	0.00166	0.00353	0.00359	<0.00100	<0.00100	<0.0100	<0.0100
MW-135	02/28/02	0.0487	<0.00170	0.00506	0.00153	<0.00100	<0.00100	<0.0200	<0.0200
MW-136	06/29/01	0.00262	0.00298 J	0.00275	0.00333 J	0.00406	<0.00232	0.0325	<0.0217
MW-136	12/03/01	0.00265	0.00338	0.00168	0.0015	0.00131	<0.0100	<0.0100	<0.0100
MW-136	02/28/02	0.00466	0.00353	0.00595	0.00129	0.0125	<0.00100	0.186	<0.0200
MW-137	06/28/01	0.0218	0.000291 J	0.0311	0.00114	0.0132	<0.000232	0.0322	<0.00217
MW-137	11/30/01	<0.00100	<0.00100	0.00201	0.00226	<0.00100	<0.00100	<0.0100	<0.0100
MW-137	05/28/02	0.00147	<0.00100	0.00342	0.00189	<0.00100	<0.00100	<0.0100	<0.0100
MW-138	06/28/01	0.00116	0.00115	0.00164	0.0018	<0.000210	<0.000232	0.00481 J	0.00438 J
MW-138	11/30/01	<0.00100	<0.00100	0.00217	0.00202	<0.00100	<0.00100	0.0177	0.0133
MW-138	05/28/02	0.00119	<0.00100	0.00123	0.0015	<0.00100	<0.00100	0.0109	0.0128
MW-139	06/27/01	0.00145	0.000916 J	0.00583	0.0028	0.000751 J	<0.000233	0.0126	0.00905 J
MW-139	11/29/01	<0.00100	<0.00100	0.0114	0.00854	<0.00100	<0.00100	0.0137	0.0176
MW-139	02/26/02	0.00284	<0.00170	0.00764	0.00159 J	0.00154	<0.00100	<0.0200	<0.0200
MW-140	05/28/02	0.00406	0.00391	<0.000900	<0.000900	0.00861	0.00801	<0.0100	<0.0100
MW-141	05/29/02	0.0175	0.0173	0.00223	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-142	05/29/02	0.00296	0.00223	0.00325	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-143	05/29/02	0.024	0.0148	0.00552	<0.000900	0.00124	<0.00100	0.0107	<0.0100
MW-144	05/29/02	0.00109	<0.00100	<0.000900	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-145	05/29/02	0.00154	0.00107	0.00221	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-146	05/28/02	0.00636	0.00544	0.00236	<0.000900	0.00702	0.00511	<0.0100	<0.0100
MW-20	06/29/01	0.000597 J	0.00083 J	0.000939 J	0.000958 J	0.00101	0.000604 J	0.00482 J	0.00222 J
MW-20R	02/26/02	0.00264	0.00227	0.00158	<0.000900	<0.00100	<0.00100	<0.0200	<0.0200
MW-22	06/26/01	0.0136	0.0154	0.000283 J	0.000476 J	<0.000210	<0.000210	<0.00217	<0.00217
MW-28	06/28/01	0.000319 J	0.000348 J	0.000806 J	0.000747 J	<0.000210	0.000666 J	<0.00217	<0.00217

Table 5-13
Total and Dissolved Metals in Groundwater
Lower Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Arsenic (mg/L)	Dissolved Arsenic (mg/L)	Copper (mg/L)	Dissolved Copper (mg/L)	Lead (mg/L)	Dissolved Lead (mg/L)	Zinc (mg/L)	Dissolved Zinc (mg/L)
MW-28	11/30/01	<0.00100	<0.00100	<0.000900	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-28	05/28/02	<0.00100	<0.00100	0.00099	0.00109	<0.00100	<0.00100	<0.0100	<0.0100
MW-7	06/26/01	0.00682	0.00774	0.000745 J	0.000345 J	0.00395	0.00307	0.00422 J	<0.00217
MW-8	06/26/01	0.00885	0.00829	0.00438	0.000592 J	0.00303	0.000331 J	0.0204	0.004 J

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

Table 5-14
Volatile Petroleum Hydrocarbons in Groundwater
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C5-C6 (mg/L)	Aliphatic C6-C8 (mg/L)	Aliphatic C8-C10 (mg/L)	Aliphatic C10-C12 (mg/L)
LM-2	02/13/98	<0.05	<0.05	<0.05	<0.05
LM-3	12/03/01	<0.05	<0.05	<0.05	<0.05
LM-3	03/01/02	<0.05 P	<0.05 P	<0.05 P	<0.05 P
LM-3	08/30/02	<0.05 JP	<0.05 JP	<0.05 JP	<0.5 RP
MW-101	02/13/98	<0.5	<0.5	<0.5	<0.5
MW-102	03/02/01	<0.05	<0.05	0.224	0.604
MW-102R	02/28/02	<0.5 P	<0.5 P	<0.5 P	0.724 DJP
MW-102R	08/29/02	<0.50 P	<0.50 P	<0.50 P	1.52 DJP
MW-103	02/12/98	<0.05	<0.05	<0.05	<0.05
MW-104	02/19/98	0.0645	0.099	0.0529	0.127
MW-124	03/28/01	0.02 P	0.17 P	0.098 P	---
MW-124	11/29/01	<0.05 P	<0.05 P	<0.05 P	0.163 P
MW-124	02/26/02	<0.1 JP	<0.1 JP	<0.1 JP	<0.1 JP
MW-124	08/27/02	<0.05 JP	<0.05 JP	<0.05 JP	<0.05 RP
MW-136	03/02/01	<0.05	<0.05	<0.05	<0.05
MW-136	12/03/01	<0.05	<0.05	<0.05	<0.05
MW-136	02/28/02	<0.05	<0.05	<0.05	<0.05
MW-139	02/13/98	<0.05	<0.05	<0.05	<0.05
MW-140	02/27/02	0.0674 P	0.345 P	<0.05 P	0.124 P
MW-140	05/28/02	<0.5	0.679 D	<0.5	0.722 D
MW-140	08/27/02	<2.5 RP	<2.5 RP	<2.5 JP	<2.5 JP
MW-141	02/27/02	<0.05	<0.05	<0.05	<0.05
MW-141	05/29/02	<0.05	<0.05	<0.05	0.164
MW-141	08/29/02	<0.05	<0.05	<0.05	0.227 J
MW-142	02/27/02	<0.05	<0.05	<0.05	<0.05
MW-142	05/29/02	<0.25	<0.25	<0.25	0.267 D
MW-142	08/29/02	0.063 J	0.15 J	<0.05	0.187 J
MW-19	03/28/01	0.93 J	2.6 J	11 J	---
MW-20	03/02/01	<0.50	<0.50	<0.50	<0.5
MW-20R	02/26/02	<2.5	<2.5	<2.5	<2.5
MW-20R	08/27/02	<0.50 R	0.58 DR	<0.50 R	<0.5 J
MW-W	03/28/01	<0.015 P	0.026 P	0.036 P	---

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. NR = Not reported.
J = Estimated value. D = Sample diluted due to high analyte concentrations. P = Product in well. R= Rejected value.

Table 5-14
Volatile Petroleum Hydrocarbons in Groundwater
UNOCAL Edmonds Terminal

SITE	Aromatic C8-C10 (mg/L)	Aromatic C10-C12 (mg/L)	Aromatic C12-C13 (mg/L)	Total Volatile Petroleum Hydrocarbons (mg/L)	N-Hexane (mg/L)
LM-2	<0.05	<0.05	<0.05	---	---
LM-3	<0.05	<0.05	<0.05	<0.05	<0.002
LM-3	<0.05 P	<0.05 P	<0.05 P	<0.05 P	<0.050 P
LM-3	<0.05 JP	<0.5 RP	0.241 JP	0.241 JP	<0.002 P
MW-101	0.854	<0.5	<0.5	---	---
MW-102	<0.05	0.139	1.2	1.26	---
MW-102R	2.88 DP	3.15 DJP	1.25 DJP	8.01 DJP	<0.500 P
MW-102R	4.3 DJP	2.97 DJP	0.864 DJP	9.62 DJP	<20.0 P
MW-103	<0.05	<0.05	<0.05	---	---
MW-104	0.28	0.172	<0.05	---	---
MW-124	0.13 JP	---	---	NR	---
MW-124	<0.05 P	0.245 P	0.294 P	0.702 P	<0.002 P
MW-124	0.145 DJP	0.333 DJP	0.369 DJP	0.847 DJP	<0.050 P
MW-124	<0.05 JP	0.0628 JP	0.119 RP	0.22 RP	<0.002 P
MW-136	<0.05	<0.05	<0.05	<0.05	---
MW-136	<0.05	<0.05	0.0551	0.0551	<0.002
MW-136	<0.05	<0.05	<0.05	<0.05	<0.050
MW-139	<0.05	<0.05	<0.05	NR	---
MW-140	0.2 P	0.406 P	0.31 P	1.45 P	<0.050 P
MW-140	0.658 D	0.744 D	<0.5	2.8 D	<0.020
MW-140	<2.5 RP	<2.5 RP	<2.5 JP	<2.5 JP	0.0263 DP
MW-141	0.0642	0.0822	0.0589	0.205	<0.050
MW-141	0.172	0.188	0.125	0.65	<0.002
MW-141	0.56 J	0.425 J	0.179 J	1.38 J	<0.002
MW-142	0.0916	0.151	0.129	0.372	<0.050
MW-142	0.363 D	0.342 D	<0.25	0.972 D	<0.008
MW-142	0.25 J	0.353 J	0.218 J	1.22 J	<0.002
MW-19	5.4 J	---	---	NR	---
MW-20	<0.50	<0.5	<0.5	<0.5	---
MW-20R	<2.5	<2.5	<2.5	<2.5	<0.050
MW-20R	<0.50 J	<0.5 J	<0.5 J	0.583 DR	<0.020
MW-W	0.028 JP	---	---	NR	---

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. NR = Not reported.
J = Estimated value. D = Sample diluted due to high analyte concentrations. P = Product in well. R= Rejected value. NR = Not reported.

Table 5-15
Extractable Petroleum Hydrocarbons in Groundwater
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C8-C10 (mg/L)	Aliphatic C10-C12 (mg/L)	Aliphatic C12-C16 (mg/L)	Aliphatic C16-C21 (mg/L)	Aliphatic C21-C34 (mg/L)
LM-2	02/13/98	<0.05	<0.05	<0.05	<0.05	0.0508
LM-3	12/03/01	<0.05	<0.05	0.121	0.397	0.378
LM-3	03/01/02	<0.05 P	<0.05 P	<0.05 P	<0.05 P	0.0796 P
LM-3	08/30/02	<0.10 P	0.29 DP	5.9 DP	15 DP	13 DP
MW-101	02/13/98	<0.05	<0.05	<0.05	<0.05	<0.05
MW-102	03/02/01	<0.200	<0.200	<0.200	<0.200	<0.200 J
MW-102R	02/28/02	90.9 P	149 P	83.4 P	2.22 P	0.473 P
MW-102R	08/29/02	130 DJP	160 DJP	53 DJP	1.7 DJP	0.58 DJP
MW-103	02/12/98	<0.05	0.143	0.844	1.56	1.76
MW-104	02/19/98	<0.05	<0.05	<0.05	<0.05	<0.05
MW-124	03/28/01	0.34 P	1.2 P	4.4 P	3.8 P	1.7 P
MW-124	11/29/01	<0.05 P	0.0604 P	0.235 P	0.244 P	0.139 P
MW-124	02/26/02	0.147 P	0.643 P	3.86 P	3.34 P	1.6 P
MW-124	08/27/02	<0.10 P	<0.10 P	<0.10 P	<0.10 P	<0.10 P
MW-136	03/02/01	<0.200	<0.200	<0.200	<0.200	<0.200
MW-136	12/03/01	<0.05	<0.05	<0.05	<0.05	<0.05
MW-136	02/28/02	<0.05	0.063	<0.05	<0.05	0.0613
MW-139	02/13/98	<0.05	<0.05	<0.05	<0.05	<0.05
MW-140	02/27/02	<0.05 P	<0.05 P	0.081 P	0.0597 P	0.0808 P
MW-140	05/28/02	0.124	0.0806	<0.05	<0.05	<0.05
MW-140	08/27/02	0.35 P	0.22 P	0.10 P	<0.10 P	0.11 P
MW-141	02/27/02	<0.05	<0.05	<0.05	<0.05	0.0776
MW-141	05/29/02	<0.05	<0.05	<0.05	<0.05	<0.05
MW-141	08/29/02	0.062	<0.050	<0.050	0.052	0.17 U
MW-142	02/27/02	<0.05	<0.05	<0.05	<0.05	0.0645
MW-142	05/29/02	0.109	0.0908	<0.05	<0.05	<0.05
MW-142	08/29/02	<0.050	<0.050	<0.050	0.051	0.088 U
MW-19	03/28/01	0.27	0.51	1.2	1	0.26
MW-20	03/02/01	<0.10	<0.10	<0.10	<0.10	<0.10
MW-20R	02/26/02	<0.05	<0.05	<0.05	<0.05	0.0833
MW-20R	08/27/02	<0.10	<0.10	<0.10	<0.10	<0.10
MW-W	03/28/01	<0.053 JP	0.34 JP	3.5 JP	7.1 JP	2.7 JP

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. — = Not analyzed. NR = Not reported.
J = Estimated value. D = Sample diluted due to high analyte concentrations. P = Product in well. R= Rejected value.

Table 5-15
Extractable Petroleum Hydrocarbons in Groundwater
UNOCAL Edmonds Terminal

SITE	Aromatic C10-C12 (mg/L)	Aromatic C12-C16 (mg/L)	Aromatic C16-C21 (mg/L)	Aromatic C21-C34 (mg/L)	Total Extractable Hydrocarbons (mg/L)
LM-2	<0.05	<0.05	<0.05	<0.05	0.0508
LM-3	<0.05	0.102	0.178	0.215	1.39
LM-3	<0.05 P	<0.05 P	<0.05 P	0.0548 P	0.134 P
LM-3	<0.10 P	0.58 DP	8.6 DP	8.4 DP	52 DP
MW-101	0.163	0.0572	<0.05	<0.05	0.22
MW-102	0.375	<0.200	<0.200	<0.200	<0.200
MW-102R	13.8P	11.7 P	0.877 P	0.38 P	353 P
MW-102R	32 DJP	27 DJP	3.0 DJP	<0.40 JP	410 DJP
MW-103	<0.05	0.136	1.04	0.7	6.18
MW-104	<0.05	<0.05	<0.05	<0.05	<0.05
MW-124	0.5 P	1.6 P	3.2 P	1.2 P	NR
MW-124	0.259 P	0.616 P	0.388 P	0.202 P	2.14 P
MW-124	0.332 P	1.84 P	2.53 P	1.84 P	16.1 P
MW-124	<0.10 P	0.18 P	0.16 P	<0.10 P	0.34 P
MW-136	<0.200	<0.200	<0.200	<0.200	<0.200
MW-136	<0.05	0.0651	0.0548	0.077	0.197
MW-136	<0.05	<0.05	<0.05	<0.05	0.124
MW-139	<0.05	<0.05	<0.05	<0.05	<0.05
MW-140	0.197 P	0.168 P	<0.05 P	0.06 P	0.637 P
MW-140	0.474	0.392	<0.05	<0.05	1.07
MW-140	0.43 P	0.46 P	0.15 P	<0.10 P	1.8 P
MW-141	<0.05	<0.05	<0.05	0.059	0.137
MW-141	0.106	0.07	<0.05	<0.05	0.176
MW-141	0.30	0.17	<0.050	<0.050	0.84
MW-142	0.065	0.0618	<0.05	<0.05	0.191
MW-142	0.169	0.216	<0.05	<0.05	0.584
MW-142	0.32	0.23	0.055	<0.050	0.75
MW-19	2.1	0.87	0.74	0.19	NR
MW-20	0.19	<0.10	<0.10	<0.10	NR
MW-20R	0.284	0.0856	<0.05	0.0653	0.518
MW-20R	0.19	<0.10	<0.10	<0.10	0.19
MW-W	<0.053 JP	0.53 JP	3.7 JP	1.7 JP	NR

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. NR = Not reported.
J = Estimated value. D = Sample diluted due to high analyte concentrations. P = Product in well. R= Rejected value.

Table 5-16
TPH-GRO and BTEX in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - GRO (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-11U	06/28/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-13U	06/27/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-201	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-202	06/28/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-203	06/27/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-204	06/29/01	<0.08	<0.500	<0.500	<0.500	<1.00
MW-7U	06/28/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-7U	11/29/01	<0.05	<0.500	<0.500	<0.500	<1.00
MW-7U	02/28/02	<0.25	<0.500	<0.500	<0.500	<1.00

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

Table 5-17
TPH-DRO and TPH-HO in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (Lube Oil Range) (mg/L)
MW-11U	06/28/01	<0.250	<0.500
MW-13U	06/27/01	<0.250	<0.500
MW-201	06/28/01	<0.250	<0.500
MW-202	06/28/01	<0.250	<0.500
MW-203	06/27/01	<0.250	<0.500
MW-204	06/29/01	<0.302	<0.603
MW-7U	06/28/01	<0.250	<0.500
MW-7U	11/29/01	<0.250	<0.500
MW-7U	02/28/02	<0.250	<0.500

< = Not detected at indicated reporting limit. --- = Not analyzed.

Table 5-18
PAHs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	1-Methyl-naphthalene (ug/L)	2-Methyl-naphthalene (ug/L)	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)
MW-11U	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-13U	06/27/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-201	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-202	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-203	06/27/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-204	06/29/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-7U	06/28/01	<0.0360	<0.0480	<0.0537	<0.0654	<0.0563	<0.0420	<0.0585	<0.0649	<0.0482
MW-7U	11/29/01	<0.036 J	<0.048 J	<0.061 J	<0.048 J	<0.034 J	<0.061 J	<0.024 J	<0.048 J	<0.031 J
MW-7U	02/28/02	<0.100	<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100	<0.100

< = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated value.

Table 5-18
PAHs in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Benzo(k) fluoranthene (ug/L)	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-11U	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-13U	06/27/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-201	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-202	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-203	06/27/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-204	06/29/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-7U	06/28/01	<0.0707	<0.0537	<0.0453	<0.0537	<0.0695	<0.0386	<0.0453	<0.0420	<0.0409
MW-7U	11/29/01	<0.057 J	<0.049 J	<0.031 J	<0.060 J	<0.034 J	<0.031 J	<0.034 J	<0.048 J	<0.067 J
MW-7U	02/28/02	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100

< = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated value.

Table 5-19
Total and Dissolved Metals in Groundwater
Upper Yard Monitoring Wells
UNOCAL Edmonds Terminal

SITE	DATE	Arsenic (mg/L)	Dissolved Arsenic (mg/L)	Copper (mg/L)	Dissolved Copper (mg/L)	Lead (mg/L)	Dissolved Lead (mg/L)	Zinc (mg/L)	Dissolved Zinc (mg/L)
MW-11U	06/28/01	0.00058	0.00063	0.0012	0.000844	<0.000210	<0.000233	0.0043	<0.00217
MW-13U	06/27/01	0.00125	0.000436	0.00352	0.00109	0.000581	<0.000233	0.00624	<0.00217
MW-201	06/28/01	0.00252	0.00289	0.00139	0.0011	<0.000210	<0.000232	0.00269	0.00272
MW-202	06/28/01	0.000636	0.000653	0.00126	0.00126	<0.000210	<0.000232	0.00428	0.00255
MW-203	06/27/01	0.000225	0.000233	0.000503	0.000769	<0.000210	<0.000233	0.00548	<0.00217
MW-204	06/29/01	0.0119	0.000819	0.0579	0.00376	0.0132	0.00109	0.0675	0.00787
MW-7U	06/28/01	0.0247	0.0111	0.134	0.00454	0.0215	0.000712	0.143	0.00285
MW-7U	11/29/01	0.00718	0.00688	0.00285	<0.000900	<0.00100	<0.00100	<0.0100	<0.0100
MW-7U	02/28/02	0.0194	0.00646	0.198	<0.000900	0.0322	<0.00100	0.224	<0.0200

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

Table 5-20
Groundwater Conventional Parameters, June 2001
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	TDS (mg/L)	Hardness (mg eq $CaCO_3$/L)	Ammonia-Nitrogen (mg/L as N)	Nitrate-Nitrogen (mg/L as N)	Sulfide (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
Lower Yard Monitoring Wells										
LM-2	06/27/01	1,100	50.9	1.77	<0.004	<20.0	65.7	9.20	13.9	182
MW-7	06/26/01	200	--	--	--	--	12.4	--	--	--
MW-8	06/26/01	170	--	--	--	--	22.9	--	--	--
MW-20	06/29/01	1,900	338	1.94	<0.1	<20.0	9.58	62.6	36.5	550 D
MW-22	06/26/01	270	--	--	--	--	35.8	--	--	--
MW-28	06/28/01	140	38.5	0.0229 J	2.74	<20.0	0.184	7.11	7.88	23.6
MW-101	06/29/01	580	86.5	0.164	<0.1	<20.0	1.10	14.6	7.66	1.79
MW-102	06/29/01	310	38.3	0.198	<0.1	<20.0	2.88	5.97	4.25	91.8
MW-104	06/29/01	140	71.7	0.226	0.204	<20.0	3.25	12.7	2.11	9.32
MW-105	06/28/01	160	44.1	<0.100	3.39	<20.0	1.04	6.01	2.64	17.1
MW-106	06/28/01	120	28.5	<0.100	1.11	<20.0	0.725	4.36	2.68	10.9
MW-107	06/28/01	120	42.6	0.0499 J	2.79	<20.0	1.07	7.79	5.32	11.1
MW-108	06/28/01	4,300	644	3.97	<0.1	<20.0	28.4	125	68.7	1,280 D
MW-109	06/28/01	3,300	585	4.65	<0.1	<20.0	25.2	115	67.6	1,250 D
MW-112	06/26/01	450	--	--	--	--	0.877	--	--	--
MW-119	06/26/01	390	--	--	--	--	25.9	--	--	--
MW-120	06/26/01	280	--	--	--	--	0.621	--	--	--
MW-121	06/26/01	300	--	--	--	--	0.0909 J	--	--	--
MW-122	06/26/01	720	--	--	--	--	1.84	--	--	--
MW-125	06/26/01	510	--	--	--	--	45.2	--	--	--
MW-126	06/26/01	240	--	--	--	--	17.6	--	--	--
MW-127	06/26/01	1,000	--	--	--	--	55.7	--	--	--
MW-131	06/26/01	890	--	--	--	--	26.2	--	--	--
MW-134	06/26/01	160	--	--	--	--	0.333	--	--	--

Table 5-20
Groundwater Conventional Parameters, June 2001
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	TDS (mg/L)	Hardness (mg eq $CaCO_3$/L)	Ammonia-Nitrogen (mg/L as N)	Nitrate-Nitrogen (mg/L as N)	Sulfide (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
MW-135	06/29/01	970	675	0.988	<0.1	<20.0	22.0	64.0	6.07	77.0
MW-136	06/29/01	2,000	974	18.0	<0.1	<20.0	105 D	88.6	39.5	271
MW-137	06/28/01	350	93.9	0.137	0.771	<20.0	145 D	13.7	9.19	94.4
MW-138	06/28/01	1,900	21.3	0.0404 J	4.34	<20.0	0.354	3.20	5.28	67.0
MW-139	06/27/01	2,700	277	1.75	<0.004	<20.0	5.15	53.4	31.6	494
Upper Yard Monitoring Wells										
MW-7U	06/28/01	400	--	--	--	--	70.7	--	--	--
MW-11U	06/28/01	190	--	--	--	--	3.56	--	--	--
MW-13U	06/27/01	220	--	--	--	--	1.62	--	--	--
MW-201	06/28/01	230	--	--	--	--	0.376	--	--	--
MW-202	06/28/01	280	--	--	--	--	0.0449 J	--	--	--
MW-203	06/27/01	130	--	--	--	--	0.0185 J	--	--	--
MW-204	06/29/01	190	--	--	--	--	26.3	--	--	--

NOTE: -- = not measured.
D = Analyte detected in the method blank.
J = Estimated value.

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
Lower Yard Monitoring Wells		
LM-2	11/13/96	39
	02/26/97	15
	08/11/97	28
	02/13/98	45
	08/27/98	4.0
	02/17/99	14
	02/22/00	16 J
	02/07/01	<4.0
	06/27/01	72
	12/03/01	56 J
	03/01/02	5
LM-3	02/22/00	11 J
	12/03/01	8
MW-101	11/07/96	10
	02/25/97	10
	08/11/97	23
	02/13/98	3.0 B
	08/31/98	1.0
	02/19/99	<5
	02/22/00	<5.0 J
	02/07/01	6
	06/29/01	<4.0
	11/29/01	6
	02/27/02	<5.0
MW-102	08/11/97	15
	02/12/98	13
	02/22/00	5.0 J
	02/07/01	4.0
	06/29/01	<4.0
MW-103	02/12/98	6.0
	02/22/00	17 J
MW-104	11/05/96	12
	02/26/97	4.0 B
	08/11/97	7.0
	02/19/98	4.0 B
	08/31/98	2.0
	02/18/99	<5
	02/22/00	<5.0 J
	02/07/01	<4.0
	06/29/01	<4.0
	11/29/01	10
	02/27/02	<5.0

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
MW-105	11/05/96	<10
	02/25/97	1.0 B
	08/12/97	20
	02/19/98	1.0 B
	02/23/00	<5.0 J
	02/07/01	<4.0
	06/28/01	4
	11/30/01	9
	05/28/02	6 J
MW-106	11/05/96	<10
	02/25/97	<1.0
	08/12/97	3.0
	02/19/98	2.0 B
	08/26/98	<1.0
	02/16/99	1.0 J
	02/23/00	6.0 J
	02/07/01	7
	06/28/01	<4.0
	11/30/01	<4.0
	05/28/02	7 J
MW-107	11/05/96	<10
	02/25/97	4.0 B
	08/12/97	8.0
	02/19/98	<1.0
	08/26/98	2.0
	02/16/99	6.0
	02/23/00	84 J
	02/07/01	12
	06/28/01	6
	11/30/01	3,200
	05/28/02	31 J
MW-108	11/13/96	98
	02/26/97	41
	08/13/97	110
	02/13/98	82
	08/27/98	14
	02/18/99	24
	02/23/00	11 J
	02/06/01	33
	06/28/01	17
	12/03/01	<4.0
	02/28/02	18

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
MW-109	11/13/96	23
	02/26/97	39
	08/13/97	28
	02/13/98	24
	08/27/98	3.0
	02/18/99	19
	02/23/00	51 J
	02/06/01	85
	06/28/01	92
	12/03/01	6
	02/28/02	16
MW-111	11/07/96	<10
MW-112	11/07/96	12
	06/26/01	10
MW-117	11/07/96	30
MW-119	11/06/96	97
	06/26/01	61
MW-120	11/06/96	<10
	06/26/01	5
MW-121	11/07/96	<10
	06/26/01	<4.0
MW-122	11/07/96	<10
	06/26/01	<4.0
MW-123	11/06/96	89
	02/26/97	45
	08/11/97	61
	02/12/98	68
MW-125	11/06/96	170
	02/26/97	68
	08/11/97	120
	02/12/98	87
	08/31/98	24
	02/17/99	80
	06/26/01	95
MW-126	11/06/96	49
	06/26/01	28
MW-127	06/26/01	10
MW-128	02/26/97	11
MW-131	11/06/96	51
	06/26/01	74
MW-133	11/07/96	290
MW-134	11/06/96	10
	06/26/01	<4.0

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
MW-134X	02/28/02	<5.0
	05/29/02	<4.0 J
MW-135	11/07/96	28
	02/25/97	15
	08/13/97	57
	02/19/98	10
	08/27/98	33
	02/18/99	7.0
	02/23/00	52 J
	02/06/01	23
	06/29/01	77
	12/03/01	7
	02/28/02	110
MW-136	11/07/96	280
	02/25/97	120
	08/13/97	280
	02/19/98	190
	08/27/98	160
	02/18/99	140
	02/23/00	120 J
	02/06/01	220
	06/29/01	770
	12/03/01	77
	02/28/02	190
MW-137	11/05/96	25
	02/25/97	3.0 B
	08/12/97	22
	02/19/98	1.0 B
	08/26/98	6.0
	02/17/99	1.0 J
	02/23/00	17 J
	02/07/01	210
	06/28/01	100
	11/30/01	<4.0
	05/28/02	53 J
MW-138	11/05/96	<10
	08/12/97	27
	02/19/98	<1.0
	08/26/98	6.0
	02/17/99	3.0 J
	02/23/00	8 J
	02/07/01	18

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
MW-138	06/28/01	<4.0
(con't)	11/30/01	4
	05/28/02	4 J
	11/07/96	25
	02/26/97	28
	08/11/97	33
	02/13/98	4.0 B
	08/27/98	14
	02/17/99	28
	02/22/00	<5.0 J
	02/07/01	22
	06/27/01	21
	11/29/01	<4.0
	02/26/02	6 J
MW-140	05/28/02	6 J
MW-141	02/27/02	<5.0
	05/29/02	8 J
MW-142	02/27/02	7
	05/29/02	17 J
MW-143	02/27/02	68
	05/29/02	64
MW-144	05/29/02	13 J
MW-145	05/29/02	5 J
MW-146	05/28/02	39 J
MW-20	02/26/97	4.0 B
	02/12/98	4.0 B
	08/31/98	1.0
	02/17/99	12
	02/22/00	9 J
	02/07/01	4
	06/29/01	6
MW-20R	02/26/02	<5.0
MW-22	11/06/96	53
	06/26/01	90
MW-28	11/05/96	<10
	02/25/97	7.0
	08/12/97	2.0
	02/19/98	<1.0
	08/26/98	3.0
	02/16/99	4.0 J
	02/23/00	<5.0 J
	02/07/01	<4.0

Table 5-21
TSS in Groundwater,
November 1996 - May 2002
UNOCAL Edmonds Terminal

Well Number	Date Sampled	TSS (mg/L)
MW-28	06/28/01	4
(con't)	11/30/01	<4.0
	05/28/02	13
MW-7	11/07/96	24
	06/26/01	45
MW-8	11/13/96	24
	06/26/01	68
Upper Yard Monitoring Wells		
MW-7U	11/08/96	19
	02/27/97	50
	08/13/97	22
	02/13/98	50
	08/31/98	100
	02/18/99	1,500
	02/06/01	810
	06/28/01	810
	11/29/01	44
	02/28/02	770
MW-11U	06/28/01	18
MW-13U	11/05/96	<10
	06/27/01	80
MW-201	11/08/96	66
	06/28/01	10
MW-202	11/08/96	23
	06/28/01	<4.0
MW-203	11/08/96	21
	06/27/01	<4.0
MW-204	11/08/96	59
	06/29/01	530

NOTE:
J = Estimated value.
B = The analyte was found in the associated method blank.

Table 5-22
Groundwater Field Parameters, February 2000 - May 2002
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	06/27/01	5.62	1,470	14.01	15.5	0.49	Amber, cloudy; no noticeable odor.
	12/03/01	7.63	3,340	11.69	5.1	1.08	Orange, clear; hydrogen sulfide-like odor.
	02/26/02	5.91	2,000	9.2	0	0.00	Very light yellow; slight hydrogen sulfide-like odor; very little floating material.
LM-3	02/22/00	6.05	NM	10	8.74	0.84	
	06/27/01	NM	NM	NM	NM	NM	No parameters collected; product present.
	12/03/01	7.69	3,240	12.36	10.0	1.28	Amber colored, clear; slight sheen; hydrocarbon-like odor.
	02/26/02	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-7	06/26/01	5.95	329	15.38	30.9	2.07	
MW-8	06/26/01	5.79	327	13.69	35.2	0.00	Tan, slightly cloudy; rainbow sheen; hydrocarbon-like odor.
MW-17	06/29/01	6.24	75	15.24	52.0	3.13	
MW-20	02/22/00	6.70	NM	11	1.36	3.88	
	02/07/01	6.98	NM	11.4	109	6.17	
	06/29/01	6.09	3,750	14.12	28.8	0.35	Colorless, clear; no noticeable odor.
MW-20R	02/26/02	6.68	1,940	10.0	39	0.00	Colorless, clear; no noticeable odor.
MW-22	06/26/01	5.99	538	13.35	6.5	0.07	Clear; no noticeable odor.
MW-25	06/29/01	5.91	347	16.50	34.5	0.01	Yellow, cloudy; hydrocarbon-like odor.
MW-26	06/29/01	5.82	860	15.07	39.6	0.00	Yellow, cloudy; biogrowth; hydrocarbon-like odor.
MW-27	06/29/01	5.95	395	14.51	34.6	0.00	Colorless, cloudy; hydrocarbon-like odor.
MW-28	02/23/00	7.01	NM	8	7.42	3.73	
	02/07/01	5.89	NM	9.0	2	9.19	
	06/28/01	5.41	229	14.54	5.8	3.92	Colorless, clear; no noticeable odor.
	11/30/01	6.13	151	11.75	1.2	8.35	Colorless, clear; no noticeable odor.
	05/28/02	6.45	193	11.9	14	NM	Clear with very few orange particulates.

Table 5-22
Groundwater Field Parameters, February 2000 - May 2002
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-101	02/22/00	6.54	NM	10	1.89	0.78	Colorless, clear; slight hydrocarbon-like odor.
	02/07/01	6.77	NM	10.7	12	10.36	Colorless, clear; hydrocarbon-like odor.
	06/29/01	5.99	987	14.94	10.6	0.00	Clear; hydrocarbon-like odor.
	11/29/01	6.41	88	12.24	4.4	6.79	Colorless, clear; no noticeable odor.
	02/26/02	6.26	222	9.7	< 1	0.00	Colorless, clear; no noticeable odor.
MW-102	02/22/00	6.44	NM	10	4.25	0.26	Colorless, clear; hydrocarbon-like odor.
	02/07/01	6.59	NM	9.9	15	8.92	Colorless, with some black particulate; strong hydrocarbon-like odor.
	06/29/01	6.02	357	15.16	11.3	0.00	
MW-102R	02/26/02	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-103	02/22/00	6.52	NM	11	37.7	0.47	
MW-104	02/22/00	6.33	NM	10	2.23	0.63	Colorless, clear; hydrocarbon-like odor.
	02/07/01	6.38	NM	11.3	110	6.81	
	06/29/01	6.32	248	14.96	29.4	0.45	Clear; hydrocarbon-like odor.
	11/29/01	7.06	221	12.89	2.9	1.45	Colorless, clear; no noticeable odor.
	02/26/02	6.20	143	10.1	0	0.00	Colorless, clear.
MW-105	02/23/00	6.28	NM	8	12.1	4.07	
	02/07/01	5.75	NM	9.4	0	9.55	
	06/28/01	5.43	214	12.63	17.3	1.79	Colorless, mostly clear; some biogrowth; no noticeable odor.
	11/30/01	6.34	188	11.25	3.0	8.97	
	05/28/02	6.52	181	11.0	13	NM	Clear with trace algae particulates; no noticeable odor.
MW-106	02/23/00	5.80	NM	11	9.56	3.68	
	02/07/01	5.19	NM	10.0	0	7.86	
	06/28/01	5.18	125	13.63	7.8	1.95	Colorless, clear; no noticeable odor.
	11/30/01	5.93	133	11.89	4.1	10.35	Yellowish, cloudy; no noticeable odor.
	05/28/02	6.07	129	12.1	18	NM	Few orange algae particulates.
MW-107	02/23/00	5.94	6	NM	138	4.98	Biogrowth in water.
	02/07/01	5.87	NM	10.3	808	9.82	Orange particulates.
	06/28/01	5.53	171	13.88	9.8	1.66	Colorless, clear; no noticeable odor.
	11/30/01	5.92	136	11.58	1.7	9.59	Colorless, clear; no noticeable odor.

Table 5-22
Groundwater Field Parameters, February 2000 - May 2002
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-107, *con't*	05/28/02	6.42	150	12.4	35	NM	Significant amount of biogrowth in bottom of well, clear above; no noticeable odor.
MW-108	02/23/00	6.44	NM	11	89.5	0.89	Yellow, with significant amount of orange biogrowth.
	02/06/01	6.27	NM	10.2	34	8.29	Slightly silty.
	06/28/01	5.78	7,940	12.06	135	8.63	
	12/03/01	7.38	3,700	11.64	8.1	0.93	Yellowish, clear; no noticeable odor.
	02/26/02	6.44	7,210	10.8	8.8	0.00	Light yellow, slightly turbid; slight hydrogen sulfide-like odor.
MW-109	02/23/00	6.74	NM	10	NM	11.52	Greenish yellow, with suspended solids; organic odor.
	02/05/01	6.30	NM	9.1	230	7.95	
	06/28/01	6.10	5,220	11.62	56.2	7.60	
	12/03/01	7.31	1,970	11.57	11.1	1.44	Yellowish, clear; hydrogen sulfide-like odor.
	02/26/02	6.39	2,770	9.8	25	0.97	Dark grey, abundant particulates; no noticeable odor.
MW-112	06/26/01	6.08	893	14.70	24.1	0.00	Yellowish, cloudy; no noticeable odor.
MW-117	06/26/01	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-119	06/26/01	6.02	709	16.41	12.9	3.56	Tan colored; no noticeable odor.
MW-120	06/26/01	6.37	525	12.97	64.6	6.27	Colorless, cloudy; fine suspended particulates.
MW-121	06/26/01	6.24	530	13.84	23.8	2.90	Colorless, cloudy; fine suspended particulates; no noticeable odor.
MW-122	06/26/01	6.80	1,350	11.44	28.6	5.40	Amber, clear; no noticeable odor.
MW-123	06/25/01	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-124	11/29/01	7.20	403	12.71	10.9	1.38	
	02/26/02	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-125	06/26/01	5.98	895	13.85	9.4	0.00	Light amber, clear; no noticeable odor.
MW-126	06/26/01	5.88	423	16.32	5.8	1.19	
MW-127	06/26/01	5.84	1,590	11.22	21.1	1.73	
MW-128	06/26/01	NM	NM	NM	NM	NM	No parameters collected; product present.
MW-131	06/26/01	6.18	1,600	14.34	20.4	0.36	Yellowish, clear; no noticeable odor.
MW-134	06/26/01	6.45	262	11.27	27.4	3.95	Colorless, clear; no noticeable odor.

Table 5-22
Groundwater Field Parameters, February 2000 - May 2002
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-134x	02/26/02	6.32	359	10.9	4	1.79	Colorless, clear; no noticeable odor.
	05/29/02	6.55	243	12.2	10	NM	Very clear; no noticeable odor.
MW-135	02/23/00	6.80	NM	10	253	2.24	Brown with abundant organic debris.
	02/06/01	6.37	NM	10.1	51	6.51	
	06/29/01	6.48	1,780	11.00	201	6.72	Amber, turbid; organic odor.
	12/03/01	7.52	866	11.47	36.1	0.97	Yellowish, clear; no noticeable odor.
	02/26/02	6.66	343	10.1	300	0.00	Light grey, slightly silty; somewhat slow recharge.
MW-136	02/23/00	6.52	NM	9	51	0.99	
	02/06/01	6.38	NM	9.6	133	7.32	
	06/29/01	5.82	3,360	12.48	124	7.94	
	12/03/01	7.77	2,870	11.12	6.2	0.95	Yellowish, clear.
	02/26/02	6.55	2,800	9.7	240	4.70	Dark to light grey.
MW-137	02/23/00	6.37	NM	9	10.5	4.80	
	02/07/01	6.29	NM	9.6	999	9.89	Orange particulates.
	06/28/01	5.70	663	13.06	169	3.54	Tannish-brown; large amount of suspended material.
	11/30/01	6.15	171	11.19	6.2	9.96	Colorless, clear; no noticeable odor.
	05/28/02	6.95	397	11.4	34	NM	Tint of orange fines; no noticeable odor.
MW-138	02/23/00	6.05	NM	10	18.7	3.49	
	02/07/01	6.47	NM	10.3	123	9.29	Orange particulates.
	06/28/01	5.93	447	13.80	25.0	4.97	
	11/30/01	6.17	393	13.11	4.8	5.77	Colorless, clear; no noticeable odor.
	05/28/02	6.40	253	11.6	8	NM	Very few orange particulates.
MW-139	02/22/00	5.87	NM	11	23.0	1.50	
	02/07/01	6.05	NM	11.5	106	6.20	Yellowish, with brown particulates.
	06/27/01	6.15	4,000	13.18	26.1	1.46	Yellowish, cloudy with orange particulates.
	11/29/01	6.48	854	12.90	3.7	5.18	
	02/26/02	6.36	923	11.2	34	3.29	Light grey, slightly silty; no noticeable odor.
MW-140	02/26/02	NM	NM	NM	NM	NM	No parameters collected; product present.
	05/28/02	7.02	446	13.4	1	NM	Clear; no noticeable odor.

Table 5-22
Groundwater Field Parameters, February 2000 - May 2002
UNOCAL Edmonds Bulk Fuel Terminal

Well Number	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Comments
MW-141	02/27/02	7.11	423	7.7	0.3	0.00	Colorless, clear; no noticeable odor.
	05/29/02	7.31	588	13.1	14	NM	Slightly turbid with whitish-grey fines.
MW-142	02/26/02	6.55	392	8.0	1.9	0.00	
	05/29/02	6.86	444	12.4	8.2	NM	Very clear; slight hydrocarbon-like odor.
MW-143	02/26/02	6.22	835	11.2	25.1	0.00	Very light brown, slightly silty; no noticeable odor.
	05/29/02	6.53	554	13.5	12	NM	
MW-144	05/29/02	6.76	348	12.7	7	NM	Clear; slight hydrocarbon-like odor.
MW-145	05/29/02	6.78	410	11.4	5	NM	Few orange algae particulates; clear; no noticeable odor.
MW-146	05/28/02	6.46	476	11.8	7.9	NM	Slight olive tint; hydrocarbon-like odor.
Upper Yard Monitoring Wells							
MW-7U	02/06/01	6.84	NM	15.1	999	4.87	Grey, cloudy; no noticeable odor.
	11/29/01	7.98	640	14.03	16.2	0.77	Grey, silty; no noticeable odor.
	02/26/02	6.85	873	14.8	>1,000	0.00	Colorless, clear; no noticeable odor.
	06/28/01	5.72	770	14.1	638	1.40	Cloudy with grey fines.
MW-11U	06/28/01	5.84	284	14.8	46.2	0.50	
MW-13U	06/27/01	5.68	357	13.31	89.9	4.57	Yellow-orange, cloudy; no noticeable odor.
MW-201	06/28/01	6.06	395	15.0	39	6.14	
MW-202	06/28/01	5.66	509	14.4	18.0	0.35	Clear; no noticeable odor.
MW-203	06/27/01	5.69	205	12.03	8.6	3.31	
MW-204	06/29/01	5.70	300	17.34	634.0	9.05	

Notes:

Wells sampled only on dates listed.

Groundwater field parameters are not listed for sampling dates prior to 2000. Information has been filed in off-site archives files.

Comments were recorded during well purging and sampling.

NM = Not measured.

Table 5-23
TPH and BTEX in Groundwater
Admiral Way Borings
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (mg/L)	TPH - GRO (ug/L)	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total xylenes (ug/L)	TSS (mg/L)
SB-1	08/23/01	1.65	<0.500	891	1.17	1.37 J	<0.500	6.25 J	180
SB-2	08/23/01	<0.250	<0.500	<50.0	<0.500	<0.500	<0.500	<1.00	120
SB-3	08/24/01	<0.250	<0.500	<50.0	<0.500	<0.500	<0.500	<1.00	220
SB-4	08/23/01	<0.250	<0.500	<50.0	<0.500	<0.500	<0.500	<1.00	3900 J
SB-5	08/24/01	<0.250	<0.500	<50.0	<0.500	<0.500	<0.500	<1.00	270
SB-6	08/24/01	0.326	<0.500	575	2.54	<0.500	0.669 J	1.29 J	240
SB-7	08/24/01	<0.250	<0.500	<50.0	<0.500	<0.500	<0.500	<1.00	---

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-24
TPH and BTEX in Groundwater
Southwest Lower Yard Test Pits
UNOCAL Edmonds Terminal

SITE	DATE	TPH - DRO (mg/L)	TPH - HO (mg/L)	TPH - GRO (ug/L)	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total xylenes (ug/L)	TSS (mg/L)
TP-4	10/02/01	<0.250	<0.500	<50	<0.50	<0.50	<0.50	<0.50	4
TP-5	10/02/01	<0.250	<0.500	<50	<0.50	<0.50	<0.50	<0.50	260
TP-6	10/02/01	<0.250	<0.500	490	33	3.7	0.53	2.2	66
TP-7	10/02/01	1.97	<0.500	8700	530	230	37	1100	730
TP-8	10/02/01	0.308	<0.500	4600	70	58	<2.5	42	510
TP-9	10/02/01	<0.250	<0.500	120	<0.50	<0.50	<0.50	0.58	100
TP-10	10/02/01	0.68	<0.500	340	<0.50	<0.50	<0.50	1.6	63
TP-11	10/02/01	1.01	<0.500	130	<0.50	<0.50	<0.50	3	33
TP-12	10/02/01	0.914	<0.500	2100	69	31	2.5	62	240
TP-13	10/02/01	0.482	<0.500	<50 J	<0.50 J	<0.50 J	<0.50 J	<0.50 J	420
TP-14	10/02/01	0.302	<0.500	170	<0.50	<0.50	<0.50	<0.50	120
TP-15	10/02/01	0.618	<0.500	210	<0.50	<0.50	<0.50	0.82	27
TP-16	10/02/01	0.46	<0.500	530	<0.50	2.6	2	<0.50	420
TP-17B	10/02/01	<0.250	<0.500	160	<0.50	<0.50	<0.50	<0.50	33
TP-18	10/02/01	2.61	<0.500	1100	<0.50	<0.50	<0.50	<0.50	29
TP-19	10/02/01	1.57 J	<0.500	50	<0.50	1	<0.50	<0.50	320
TP-20	10/02/01	0.664	<0.500	<50	<0.50	<0.50	<0.50	<0.50	9800

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-1	01/26/01	NP	5.32	NP	NP	MW-2	01/26/01	4.31	4.31	Film	Film
	02/26/01	NP	5.55	NP	NP		02/26/01	4.54	4.54	Film	Film
	03/28/01	NP	5.25	NP	NP		03/28/01	NP	4.48	NP	NP
	04/23/01	NP	5.49	NP	NP		04/23/01	NP	4.81	NP	NP
	05/30/01	NP	5.51	NP	NP		05/30/01	NP	4.71	NP	NP
	06/29/01	NP	5.53	NP	NP		06/29/01	4.74	4.75	0.01	Film
	07/25/01	NP	5.50	NP	NP		07/25/01	4.60	4.62	0.02	Film
	08/31/01	NP	5.83	NP	NP		08/31/01	NM[c]	NM[c]	NM[c]	NM[c]
	09/28/01	NP	5.71	NP	NP						
	10/26/01	NP	5.47	NP	NP						
	11/21/01	NP	5.01	NP	NP						
	12/24/01	NP	5.45	NP	NP						
	01/28/02	NP	5.33	NP	NP						
	05/20/02	NM	NM	NM	NM						
	02/21/03	NP	5.29	NP	NP						
MW-3	01/26/01	NP	4.22	NP	NP	MW-5	01/26/01	6.01	6.02	0.01	Film
	02/26/01	NP	4.41	NP	NP		02/26/01	6.31	6.33	0.02	Film
	03/28/01	NP	4.30	NP	NP		03/28/01	6.25	6.27	0.02	Film
	04/23/01	NP	4.58	NP	NP		04/23/01	6.65	6.66	0.01	Film
	05/30/01	NP	4.63	NP	NP		05/30/01	6.50	6.52	0.02	Film
	06/29/01	NP	4.64	NP	NP		06/29/01	6.55	6.57	0.02	Film
	07/25/01	NP	4.65	NP	NP		07/25/01	5.37	5.39	0.02	Film
	08/31/01	NP	5.00	NP	NP		08/31/01	NM[c]	NM[c]	NM[c]	NM[c]
	09/28/01	NP	5.02	NP	NP						
	10/26/01	NP	4.67	NP	NP						
	11/21/01	NP	3.89	NP	NP						
	12/24/01	NP	4.19	NP	NP						
	01/28/02	NP	4.02	NP	NP						
	05/20/02	NM	NM	NM	NM						
	02/21/03	NP	7.22	NP	NP						
MW-6	01/26/01	3.59	3.59	Film	Film	MW-7	01/26/01	NP	6.07	NP	NP
	02/26/01	NP	3.84	NP	NP		02/26/01	NP	6.38	NP	NP
	03/28/01	NP	3.98	NP	NP		03/28/01	NP	6.67	NP	NP
	04/23/01	NP	4.21	NP	NP		04/23/01	NP	6.85	NP	NP
	05/30/01	NP	4.42	NP	NP		05/30/01	NP	6.98	NP	NP
	06/29/01	NP	4.38	NP	NP		06/29/01	NP	6.81	NP	NP
	07/25/01	NP	4.48	NP	NP		07/25/01	NP	7.20	NP	NP
	08/31/01	NM[c]	NM[c]	NM[c]	NM[c]		08/31/01	NP	7.25	NP	NP
							09/28/01	NP	7.87	NP	NP
							10/26/01	NP	7.33	NP	NP
							11/21/01	NP	5.21	NP	NP
							12/24/01	NP	5.94	NP	NP
							01/28/02	NP	5.96	NP	NP
							05/20/02	NM	NM	NM	NM
							02/21/03	NP	6.46	NP	NP

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-8[b]	01/26/01	NP	7.35	NP	NP	MW-10	01/26/01	5.53	5.53	Film	Film
	02/26/01	NP	7.77	NP	NP		02/26/01	5.84	5.85	0.01	Film
	03/28/01	NP	7.80	NP	NP		03/28/01	6.00	6.01	0.01	Film
	04/23/01	NP	8.33	NP	NP		04/23/01	6.39	6.41	0.02	Film
	05/30/01	NP	7.86	NP	NP		05/30/01	6.29	6.29	Film	Film
	06/29/01	NP	8.08	NP	NP		06/29/01	6.30	6.31	0.01	Film
	07/25/01	NP	7.58	NP	NP		07/25/01	6.29	6.30	0.01	Film
	08/31/01	NP	8.92	NP	NP		08/31/01	6.63	6.67	0.04	Film
	09/28/01	NP	8.31	NP	NP		09/28/01	6.51	6.56	0.05	Film
	10/26/01	NP	8.34	NP	NP		10/26/01	NM[c]	NM[c]	NM[c]	NM[c]
	11/21/01	NP	6.28	NP	NP						
	12/24/01	NP	7.22	NP	NP						
	01/28/02	NP	7.11	NP	NP						
	05/20/02	NM	NM	NM	NM						
	02/21/03	NP	7.26	NP	NP						
MW-11	01/26/01	5.96	5.96	Film	Film	MW-13	01/26/01	6.77	6.78	0.01	Film
	02/26/01	6.19	6.20	0.01	Film		02/26/01	6.91	6.93	0.02	Film
	03/28/01	6.44	6.54	0.10	Film		03/28/01	7.37	7.38	0.01	Film
	04/23/01	6.56	6.74	0.18	0.01		04/23/01	7.49	7.51	0.02	Film
	05/30/01	6.41	6.50	0.09	Film		05/30/01	NP	7.28	NP	NP
	06/29/01	6.41	6.73	0.32	0.01		06/29/01	NP	7.26	NP	NP
	07/25/01	6.35	6.35	Film	Film		07/25/01	NP	7.26	NP	NP
	08/31/01	6.50	7.01	0.51	0.02		08/31/01	7.26	7.26	Film	Film
	09/28/01	NM[c]	NM[c]	NM[c]	NM[c]		09/28/01	7.56	7.56	Film	Film
							10/26/01	7.00	7.00	Film	Film
							11/21/01	6.00	6.00	Film	Film
							12/24/01	5.88	5.88	Film	Film
							01/28/02	6.23	6.23	Film	NM
							05/20/02	7.31	7.31	Film	Film
							02/21/03	NP	6.45	NP	NP
MW-15	01/26/01	NP	5.67	NP	NP	MW-17	01/26/01	NP	3.53	NP	NP
	02/26/01	NP	5.98	NP	NP		02/26/01	NP	3.68	NP	NP
	03/28/01	NP	6.04	NP	NP		03/28/01	NP	2.44	NP	NP
	04/23/01	NP	6.44	NP	NP		04/23/01	NP	4.02	NP	NP
	05/30/01	6.20	6.20	Film	Film		05/30/01	NP	4.27	NP	NP
	06/29/01	NP	6.29	NP	NP		06/29/01	NP	4.25	NP	NP
	07/25/01	NP	6.02	NP	NP		07/25/01	NP	4.38	NP	NP
	08/31/01	NM[c]	NM[c]	NM[c]	NM[c]		08/31/01	NP	4.62	NP	NP
							09/28/01	NP	4.94	NP	NP
							10/26/01	NP	4.90	NP	NP
							11/21/01	NP	3.53	NP	NP
							12/24/01	NP	3.28	NP	NP
							01/28/02	NP	2.85	NP	NP
							05/20/02	NP	3.51	NP	NP
							02/21/03	NP	2.09	NP	NP

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-19	01/26/01	6.09	6.18	0.09	0.01	MW-20[b]	01/26/01	NP	8.93	NP	NP
	02/26/01	6.40	6.41	0.01	Film		02/26/01	NP	9.24	NP	NP
	03/28/01	6.12	6.12	Film	Film		03/28/01	NP	9.33	NP	NP
	04/23/01	6.81	6.83	0.02	Film		04/23/01	NP	9.80	NP	NP
	05/30/01	NP	6.59	NP	NP		05/30/01	NP	9.40	NP	NP
	06/29/01	NP	6.62	NP	NP		06/29/01	NP	9.47	NP	NP
	07/25/01	6.48	6.48	Film	Film		07/25/01	NP	9.09	NP	NP
	08/31/01	NM[c]	NM[c]	NM	NM		08/31/01	NM[c]	NM[c]	NM	NM
MW-20R						MW-21	01/26/01	5.15	5.15	Film	Film
							02/26/01	5.46	5.46	Film	Film
							03/28/01	5.39	5.49	0.10	0.02
							04/23/01	5.75	6.01	0.26	0.04
							05/30/01	5.57	5.79	0.22	0.03
							06/29/01	5.60	5.80	0.20	0.03
							07/25/01	NM	NM	NM	NM
							08/31/01	NM[c]	NM[c]	NM	NM
	01/28/02	NM	NM	NM	NM						
	05/20/02	NP	6.64	NP	NP						
	02/21/03	NP	6.07	NP	NP						
MW-22[b]	01/26/01	NP	8.33	NP	NP	MW-25	01/26/01	NP	4.20	NP	NP
	02/26/01	NP	8.75	NP	NP		02/26/01	NP	4.23	NP	NP
	03/28/01	NP	9.09	NP	NP		03/28/01	NP	4.35	NP	NP
	04/23/01	NP	9.33	NP	NP		04/23/01	NP	4.51	NP	NP
	05/30/01	NP	8.88	NP	NP		05/30/01	NP	4.67	NP	NP
	06/29/01	NP	8.95	NP	NP		06/29/01	NP	4.70	NP	NP
	07/25/01	NP	8.65	NP	NP		07/25/01	NP	4.75	NP	NP
	08/31/01	NP	9.82	NP	NP		08/31/01	NP	5.08	NP	NP
	09/28/01	NP	9.32	NP	NP		09/28/01	NP	5.05	NP	NP
	10/26/01	NP	9.51	NP	NP		10/26/01	NP	5.12	NP	NP
	11/21/01	NP	7.46	NP	NP		11/21/01	NP	4.68	NP	NP
	12/24/01	NP	8.26	NP	NP		12/24/01	NP	4.18	NP	NP
	01/28/02	NP	8.32	NP	NM		01/28/02	NP	4.06	NP	NP
	05/20/02	NM	NM	NP	NP		05/20/02	NP	4.64	NP	NP
	02/21/03	NP	8.32	NP	NP		02/21/03	NP	4.13	NP	NP

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-26	01/26/01	NP	4.77	NP	NP	MW-27	01/26/01	NP	4.27	NP	NP
	02/26/01	NP	4.83	NP	NP		02/26/01	NP	4.45	NP	NP
	03/28/01	NP	4.85	NP	NP		03/28/01	NP	4.33	NP	NP
	04/23/01	NP	4.97	NP	NP		04/23/01	NP	4.61	NP	NP
	05/30/01	NP	5.07	NP	NP		05/30/01	NP	4.67	NP	NP
	06/29/01	NP	4.99	NP	NP		06/29/01	NP	4.66	NP	NP
	07/25/01	NP	5.16	NP	NP		07/25/01	NP	4.72	NP	NP
	08/31/01	NP	5.42	NP	NP		08/31/01	NP	5.04	NP	NP
	09/28/01	NP	5.36	NP	NP		09/28/01	NM	NM	NM	NM
	10/26/01	NP	5.52	NP	NP		10/26/01	NM	NM	NM	NM
	11/21/01	NP	5.22	NP	NP		11/21/01	NP	4.02	NP	NP
	12/24/01	NP	4.88	NP	NP		12/24/01	NP	4.27	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NP	4.57	NP	NP
	02/21/03	NM	NM	NM	NM		02/21/03	NM	NM	NM	NM
MW-28	01/26/01	NP	6.23	NP	NP	MW-101[b]	01/26/01	NP	8.90	NP	NP
	02/26/01	NP	6.51	NP	NP		02/26/01	NP	9.20	NP	NP
	03/28/01	NP	7.37	NP	NP		03/28/01	NP	8.98	NP	NP
	04/23/01	NP	7.72	NP	NP		04/23/01	NP	9.63	NP	NP
	05/30/01	NP	7.40	NP	NP		05/30/01	NP	9.38	NP	NP
	06/29/01	NP	7.35	NP	NP		06/29/01	NP	9.46	NP	NP
	07/25/01	NP	7.55	NP	NP		07/25/01	NP	9.20	NP	NP
	08/31/01	NP	8.51	NP	NP		08/31/01	NP	10.16	NP	NP
	09/28/01	NP	7.75	NP	NP		09/28/01	NP	9.79	NP	NP
	10/26/01	NP	7.79	NP	NP		10/26/01	NP	9.54	NP	NP
	11/21/01	NM	NM	NM	NM		11/21/01	NP	8.12	NP	NP
	12/24/01	NP	6.13	NP	NP		12/24/01	NP	8.77	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NP	8.73	NP	NP
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NM	NM	NM	NM		02/21/03	NP	8.91	NP	NP
MW-102[b]	01/26/01	NP	9.92	NP	NP	MW-102R					
	02/26/01	NP	10.20	NP	NP						
	03/28/01	NP	10.04	NP	NP						
	04/23/01	NP	10.59	NP	NP						
	05/30/01	NP	10.44	NP	NP						
	06/29/01	NP	10.48	NP	NP						
	07/25/01	NP	10.37	NP	NP						
	08/31/01	NM[c]	NM[c]	NM	NM						
							01/28/02	NP	7.44	NP	NP
							05/20/02	7.58	8.25	0.670	0.08
							02/21/03	6.54	7.72	1.18	0.14

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-103[b]	01/26/01	NP	7.19	NP	NP	MW-103R					
	02/26/01	NP	7.48	NP	NP						
	03/28/01	NP	7.63	NP	NP						
	04/23/01	NP	7.98	NP	NP						
	05/30/01	NP	7.66	NP	NP						
	06/29/01	NP	7.73	NP	NP						
	07/25/01	NP	7.40	NP	NP						
	08/31/01	NM[c]	NM[c]	NM	NM						
	09/28/01	NM[c]	NM[c]	NM	NM						
	10/26/01	NM[c]	NM[c]	NM	NM						
	11/21/01	NM[c]	NM[c]	NM	NM						
	12/24/01	NM[c]	NM[c]	NM	NM						
	01/28/02	NM	NM	NM	NM		01/28/02	NP	4.56	NP	NP
	05/20/02	NM	NM	NM	NM		05/20/02	NP	5.08	NP	NP
	02/21/03	NM	NM	NM	NM		02/21/03	NP	4.42	NP	NP
MW-104[b]	01/26/01	NP	8.07	NP	NP	MW-105	01/26/01	NP	8.37	NP	NP
	02/26/01	NP	8.32	NP	NP		02/26/01	NP	8.60	NP	NP
	03/28/01	NP	8.43	NP	NP		03/28/01	NP	9.04	NP	NP
	04/23/01	NP	8.99	NP	NP		04/23/01	NP	9.18	NP	NP
	05/30/01	NP	8.62	NP	NP		05/30/01	NP	8.80	NP	NP
	06/29/01	NP	8.84	NP	NP		06/29/01	NP	8.92	NP	NP
	07/25/01	NP	8.37	NP	NP		07/25/01	NP	8.82	NP	NP
	08/31/01	NP	9.50	NP	NP		08/31/01	NP	9.46	NP	NP
	09/28/01	NP	9.11	NP	NP		09/28/01	NP	9.07	NP	NP
	10/26/01	NP	8.89	NP	NP		10/26/01	NP	9.50	NP	NP
	11/21/01	NP	7.11	NP	NP		11/21/01	NM	NM	NM	NM
	12/24/01	NP	7.95	NP	NP		12/24/01	NP	8.21	NP	NP
	01/28/02	NP	7.83	NP	NP		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NP	8.10	NP	NP		02/21/03	NM	NM	NM	NM
MW-106[b]	01/26/01	NP	9.13	NP	NP	MW-107[b]	01/26/01	NP	8.51	NP	NP
	02/26/01	NP	9.40	NP	NP		02/26/01	NP	8.97	NP	NP
	03/28/01	NP	9.83	NP	NP		03/28/01	NP	9.28	NP	NP
	04/23/01	NP	9.96	NP	NP		04/23/01	NP	9.57	NP	NP
	05/30/01	NP	9.70	NP	NP		05/30/01	NP	9.07	NP	NP
	06/29/01	NP	9.74	NP	NP		06/29/01	NP	9.27	NP	NP
	07/25/01	NP	9.76	NP	NP		07/25/01	NP	8.85	NP	NP
	08/31/01	NP	10.15	NP	NP		08/31/01	NP	9.96	NP	NP
	09/28/01	NP	9.82	NP	NP		09/28/01	NP	9.32	NP	NP
	10/26/01	NP	10.15	NP	NP		10/26/01	NP	9.33	NP	NP
	11/21/01	NM	NM	NM	NM		11/21/01	NM	NM	NM	NM
	12/24/01	NP	9.24	NP	NP		12/24/01	NP	8.39	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NM	NM	NM	NM		02/21/03	NM	NM	NM	NM

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-110	01/26/01	5.35	6.28	0.93	0.06	MW-111	01/26/01	NP	6.36	NP	NP
	02/26/01	5.53	6.75	1.22	0.07		02/26/01	NP	6.70	NP	NP
	03/28/01	5.64	6.45	0.81	0.05		03/28/01	NP	6.75	NP	NP
	04/23/01	6.01	6.84	0.83	0.05		04/23/01	NP	7.16	NP	NP
	05/30/01	5.92	6.38	0.46	0.03		05/30/01	NP	6.93	NP	NP
	06/29/01	6.03	6.65	0.62	0.04		06/29/01	NP	7.00	NP	NP
	07/25/01	5.79	6.07	0.28	0.02		07/25/01	NP	6.75	NP	NP
	08/31/01	NM[c]	NM[c]	NM	NM		08/31/01	NP	7.61	NP	NP
							09/28/01	NM[d]	NM[d]	NM	NM
MW-112	01/26/01	NP	4.38	NP	NP	MW-112R					
	02/26/01	NP	4.58	NP	NP						
	03/28/01	NP	4.42	NP	NP						
	04/23/01	NP	4.75	NP	NP						
	05/30/01	NP	4.69	NP	NP						
	06/29/01	NP	4.74	NP	NP						
	07/25/01	NP	4.66	NP	NP						
	08/31/01	NM[c]	NM[c]	NM	NM						
							01/28/01	NP	3.73	NP	NP
							05/20/02	4.20	4.55	0.25	0.04
							02/21/03	NP	3.75	NP	NP
MW-113	01/26/01	4.54	4.54	Film	Film						
	02/26/01	4.77	4.77	Film	Film						
	03/28/01	4.66	4.69	0.03	Film						
	04/23/01	4.97	5.05	0.08	0.01						
	05/30/01	4.91	4.96	0.05	0.01						
	06/29/01	5.00	5.05	0.05	0.01						
	07/25/01	5.83	5.87	0.04	0.01						
	08/31/01	NM[c]	NM[c]	NM	NM						

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Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-114	01/26/01	4.92	4.93	0.01	Film	MW-115	01/26/01	5.11	5.11	Film	Film
	02/26/01	5.19	5.22	0.03	Film		02/26/01	5.39	5.42	0.03	Film
	03/28/01	5.11	5.14	0.03	Film		03/28/01	5.51	5.55	0.04	0.01
	04/23/01	5.45	5.56	0.11	0.02		04/23/01	5.84	6.05	0.21	0.03
	05/30/01	5.35	5.40	0.05	0.01		05/30/01	5.57	5.73	0.16	0.02
	06/29/01	5.40	5.45	0.05	0.01		06/29/01	5.63	5.80	0.17	0.03
	07/25/01	5.24	5.30	0.06	0.01		07/25/01	5.32	5.46	0.14	0.02
	08/31/01	NM[c]	NM[c]	NM	NM		08/31/01	NM[c]	NM[c]	NM	NM
MW-116	01/26/01	NP	4.04	NP	NP	MW-117	01/26/01	4.29	4.30	0.01	Film
	02/26/01	NP	4.28	NP	NP		02/26/01	4.53	4.53	Film	Film
	03/28/01	NP	4.25	NP	NP		03/28/01	4.43	4.43	Film	Film
	04/23/01	NP	4.56	NP	NP		04/23/01	4.78	4.80	0.02	Film
	05/30/01	NP	4.41	NP	NP		05/30/01	4.67	4.69	0.02	Film
	06/29/01	NP	4.35	NP	NP		06/29/01	4.81	4.90	0.09	0.01
	07/25/01	NP	4.39	NP	NP		07/25/01	4.59	4.62	0.03	Film
	08/31/01	NP	5.20	NP	NP		08/31/01	NM[c]	NM[c]	NM	NM
	09/28/01	NP	4.66	NP	NP						
	10/26/01	NP	4.19	NP	NP						
	11/21/01	NP	3.48	NP	NP						
	12/24/01	NP	3.87	NP	NP						
	01/28/02	NP	3.85	NP	NP						
	05/20/02	NP	4.50	NP	NP						
	02/21/03	NP	3.92	NP	NP						
MW-118	01/26/01	5.41	6.00	0.59	0.09	MW-119	01/26/01	NP	4.16	NP	NP
	02/26/01	5.69	6.59	0.90	0.14		02/26/01	NP	4.05	NP	NP
	03/28/01	5.60	6.53	0.93	0.14		03/28/01	NP	4.23	NP	NP
	04/23/01	5.95	6.91	0.96	0.14		04/23/01	NP	4.42	NP	NP
	05/30/01	5.80	6.65	0.85	0.13		05/30/01	NP	4.52	NP	NP
	06/29/01	5.83	6.61	0.78	0.12		06/29/01	NP	4.55	NP	NP
	07/25/01	5.72	6.30	0.58	0.09		07/25/01	NP	4.62	NP	NP
	08/31/01	NM[c]	NM[c]	NM	NM		08/31/01	NP	4.83	NP	NP
							09/28/01	NP	4.92	NP	NP
							10/26/01	NP	4.88	NP	NP
							11/21/01	NP	4.35	NP	NP
							12/24/01	NP	3.78	NP	NP
							01/28/02	NM	NM	NM	NM
							05/20/02	NM	NM	NM	NM
							02/21/03	NM	NM	NM	NM

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Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-123	01/26/01	5.94	5.96	0.02	Film	MW-124	01/26/01	6.10	6.16	0.06	Film
	02/26/01	6.31	6.33	0.02	Film		02/26/01	6.60	6.62	0.02	Film
	03/28/01	6.54	6.55	0.01	Film		03/28/01	6.40	6.42	0.02	Film
	04/23/01	6.82	6.86	0.04	0.01		04/23/01	7.44	7.45	0.02	Film
	05/30/01	6.44	6.46	0.02	Film		05/30/01	6.60	6.62	0.02	Film
	06/29/01	6.56	6.61	0.05	0.01		06/29/01	7.01	7.02	0.01	Film
	07/25/01	6.22	6.28	0.06	0.01		07/25/01	6.32	6.33	0.01	Film
	08/31/01	6.84	6.93	0.09	0.01		08/31/01	7.34	7.36	0.02	Film
	09/28/01	NM[c]	NM[c]	NM	NM		09/28/01	7.24	7.26	0.02	Film
							10/26/01	6.97	6.98	0.01	Film
							11/21/01	4.86	4.86	Film	Film
							12/24/01	5.43	5.43	Film	Film
							01/28/02	NP	8.69	NP	NP
							05/20/02	6.59	6.60	0.01	Film
							02/21/03	NP	5.60	NP	NP
MW-125	01/26/01	NP	5.61	NP	NP	MW-126	01/26/01	NP	4.48	NP	NP
	02/26/01	NP	5.88	NP	NP		02/26/01	NP	4.51	NP	NP
	03/28/01	NP	6.01	NP	NP		03/28/01	NP	4.65	NP	NP
	04/23/01	NP	6.19	NP	NP		04/23/01	NP	4.75	NP	NP
	05/30/01	NP	6.00	NP	NP		05/30/01	NP	4.91	NP	NP
	06/29/01	NP	6.09	NP	NP		06/29/01	NP	4.98	NP	NP
	07/25/01	NP	5.94	NP	NP		07/25/01	NP	5.04	NP	NP
	08/31/01	NP	6.53	NP	NP		08/31/01	NP	5.27	NP	NP
	09/28/01	NP	6.25	NP	NP		09/28/01	NP	5.31	NP	NP
	10/26/01	NP	6.58	NP	NP		10/26/01	NP	5.42	NP	NP
	11/21/01	NP	5.41	NP	NP		11/21/01	NP	4.99	NP	NP
	12/24/01	NP	5.13	NP	NP		12/24/01	NP	3.99	NP	NP
	01/28/02	NP	5.53	NP	NP		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NP	5.63	NP	NP		02/21/03	NM	NM	NM	NM
MW-127	01/26/01	NP	6.41	NP	NP	MW-128	01/26/01	6.22	6.22	Film	Film
	02/26/01	NP	6.52	NP	NP		02/26/01	6.58	6.59	0.01	Film
	03/28/01	NP	6.45	NP	NP		03/28/01	6.72	6.73	0.01	Film
	04/23/01	NP	6.80	NP	NP		04/23/01	7.06	7.08	0.02	Film
	05/30/01	NP	6.32	NP	NP		05/30/01	6.73	6.73	Film	Film
	06/29/01	NP	6.40	NP	NP		06/29/01	6.83	6.85	0.02	Film
	07/25/01	NP	6.26	NP	NP		07/25/01	6.48	6.52	0.04	0.01
	08/31/01	NP	7.18	NP	NP		08/31/01	NM[c]	NM[c]	NM	NM
	09/28/01	NP	6.71	NP	NP						
	10/26/01	NP	6.91	NP	NP						
	11/21/01	NP	7.70	NP	NP						
	12/24/01	NP	5.00	NP	NP						
	01/28/02	NP	5.68	NP	NP						
	05/20/02	NM	NM	NM	NM						
	02/21/03	NP	5.49	NP	NP						

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Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
MW-129[b]	01/26/01	7.62	7.62	Film	Film	MW-130	01/26/01	6.02	6.02	Film	Film
	02/26/01	7.69	7.71	0.02	Film		02/26/01	6.22	6.22	Film	Film
	03/28/01	7.55	7.57	0.02	Film		03/28/01	NP	5.98	NP	NP
	04/23/01	7.73	7.76	0.03	0.01		04/23/01	NP	6.22	NP	NP
	05/30/01	7.86	7.88	0.02	Film		05/30/01	NP	6.28	NP	NP
	06/29/01	7.75	7.82	0.07	0.01		06/29/01	6.29	6.32	0.03	0.01
	07/25/01	7.92	7.94	0.02	Film		07/25/01	6.26	6.29	0.03	0.01
	08/31/01	7.72	7.73	0.01	Film		08/31/01	NM	NM	NM	NM
	09/28/01	8.01	8.02	0.01	Film		09/28/01	NM	NM	NM	NM
	10/26/01	7.85	7.85	Film	Film		10/26/01	6.30	6.30	Film	Film
	11/21/01	NP	7.70	NP	NP		11/21/01	5.85	5.85	Film	Film
	12/24/01	NP	8.00	NP	NP		12/24/01	NP	6.11	NP	NP
	01/28/02	7.72	7.72	Film	Film		01/28/02	5.98	5.98	Film	Film
	05/20/02	8.01	8.05	0.04	0.01		05/20/02	NP	6.29	NP	NP
	02/21/03	7.60	7.63	0.03	0.01		02/21/03	NP	5.93	NP	NP
MW-131	01/26/01	NP	4.96	NP	NP	MW-132	01/26/01	6.14	6.42	0.28	0.02
	02/26/01	NP	5.11	NP	NP		02/26/01	6.39	6.62	0.23	0.01
	03/28/01	NP	4.94	NP	NP		03/28/01	6.39	6.49	0.10	0.01
	04/23/01	NP	5.07	NP	NP		04/23/01	6.78	6.91	0.13	0.01
	05/30/01	NP	5.15	NP	NP		05/30/01	6.71	6.78	0.07	Film
	06/29/01	NP	4.98	NP	NP		06/29/01	6.72	6.81	0.09	0.01
	07/25/01	NP	5.15	NP	NP		07/25/01	6.63	6.69	0.06	Film
	08/31/01	NP	5.26	NP	NP		08/31/01	NM[c]	NM[c]	NM	NM
	09/28/01	NP	5.15	NP	NP						
	10/26/01	NP	5.14	NP	NP						
	11/21/01	NP	4.45	NP	NP						
	12/24/01	NP	5.31	NP	NP						
	01/28/02	NP	4.93	NP	NP						
	05/20/02	NM	NM	NM	NM						
	02/21/03	NP	5.43	NP	NP						
MW-133	01/26/01	4.66	4.66	Film	Film	MW-134	01/26/01	NP	20.02	NP	NP
	02/26/01	4.79	4.81	0.02	Film		02/26/01	NP	21.15	NP	NP
	03/28/01	NP	4.83	NP	NP		03/28/01	NP	21.15	NP	NP
	04/23/01	5.02	5.03	0.01	Film		04/23/01	NP	21.31	NP	NP
	05/30/01	5.11	5.13	0.02	Film		05/30/01	NP	21.31	NP	NP
	06/29/01	5.20	5.22	0.02	Film		06/29/01	NP	21.32	NP	NP
	07/25/01	5.17	5.20	0.03	0.01		07/25/01	NP	21.24	NP	NP
	08/31/01	5.22	5.33	0.11	0.02		08/31/01	NP	21.67	NP	NP
	09/28/01	NM	NM	NM	NM		09/28/01	NP	21.34	NP	NP
	10/26/01	NM	NM	NM	NM		10/26/01	NP	21.76	NP	NP
	11/21/01	NM	NM	NM	NM		11/21/01	NP	21.69	NP	NP
	12/24/01	4.83	4.86	0.03	0.01		12/24/01	NP	21.74	NP	NP
	01/28/02	4.65	4.76	0.11	0.02		01/28/02	NM	NM	NM	NM
	05/20/02	4.87	5.23	0.36	0.06		05/20/02	NM	NM	NM	NM
	02/21/03	3.61	3.63	0.02	Film		02/21/03	NM	NM	NM	NM

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MW-136[b]	01/26/01	NP	7.66	NP	NP	MW-137[b]	01/26/01	NP	8.85	NP	NP
	02/26/01	NP	7.78	NP	NP		02/26/01	NP	9.45	NP	NP
	03/28/01	NP	7.57	NP	NP		03/28/01	NP	7.73	NP	NP
	04/23/01	NP	7.67	NP	NP		04/23/01	NP	10.26	NP	NP
	05/30/01	NP	7.44	NP	NP		05/30/01	NP	9.50	NP	NP
	06/29/01	NP	6.49	NP	NP		06/29/01	NP	9.86	NP	NP
	07/25/01	NP	7.56	NP	NP		07/25/01	NP	9.30	NP	NP
	08/31/01	NP	7.79	NP	NP		08/31/01	NP	10.67	NP	NP
	09/28/01	NM	NM	NM	NM		09/28/01	NP	9.65	NP	NP
	10/26/01	NM	NM	NM	NM		10/26/01	NP	9.28	NP	NP
	11/21/01	NP	7.81	NP	NP		11/21/01	NM	NM	NM	NM
	12/24/01	NP	7.99	NP	NP		12/24/01	NP	8.38	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NM	NM	NM	NM		02/21/03	NM	NM	NM	NM
MW-138[b]	01/26/01	NP	8.55	NP	NP	MW-139[b]	01/26/01	NP	6.16	NP	NP
	02/26/01	NP	9.15	NP	NP		02/26/01	NP	6.53	NP	NP
	03/28/01	NP	9.26	NP	NP		03/28/01	NP	6.77	NP	NP
	04/23/01	NP	9.73	NP	NP		04/23/01	NP	7.06	NP	NP
	05/30/01	NP	8.97	NP	NP		05/30/01	NP	6.71	NP	NP
	06/29/01	NP	9.00	NP	NP		06/29/01	NP	6.68	NP	NP
	07/25/01	NP	8.79	NP	NP		07/25/01	NP	6.47	NP	NP
	08/31/01	NP	10.19	NP	NP		08/31/01	NP	7.60	NP	NP
	09/28/01	NP	9.11	NP	NP		09/28/01	NP	8.83	NP	NP
	10/26/01	NP	9.02	NP	NP		10/26/01	NP	6.52	NP	NP
	11/21/01	NM	NM	NM	NM		11/21/01	NP	5.54	NP	NP
	12/24/01	NP	8.63	NP	NP		12/24/01	NP	6.05	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NM	NM	NM	NM
	05/20/02	NM	NM	NM	NM		05/20/02	NP	6.67	NP	NP
	02/21/03	NM	NM	NM	NM		02/21/03	NP	5.98	NP	NP
MW-140	01/28/02	NP	5.50	NM	NM	MW-141	01/28/02	NP	4.86	NP	NP
	02/27/02	5.46	5.48	0.02	Film		02/27/02	NP	5.13	NP	NP
	05/20/02	NP	6.34	NP	NP		05/20/02	NP	5.80	NP	NP
	05/28/02	6.45	6.45	Film	Film		05/29/02	NP	5.48	NP	NP
	02/21/03	NP	5.63	NP	NP		02/21/03	NP	4.91	NP	NP
MW-142	01/28/02	NP	3.62	NP	NP	MW-143	01/28/02	NP	3.81	NP	NP
	02/26/02	NP	3.76	NP	NP		05/20/02	NP	4.59	NP	NP
	05/20/02	NP	4.54	NP	NP		02/21/03	NP	4.00	NP	NP
	05/29/02	NP	4.35	NP	NP						
	02/21/03	NP	3.55	NP	NP						
MW-144	01/28/02	NP	3.37	NP	NP	MW-145					
	05/20/02	NP	4.14	NP	NP		05/20/02	NP	5.91	NP	NP
	02/21/03	NP	3.59	NP	NP		02/21/03	NP	5.09	NP	NP
MW-146											
	05/20/02	NP	6.14	NP	NP						
	02/21/03	NP	5.65	NP	NP						

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MW-301	01/26/01	NP	6.61	NP	NP	MW-E	01/26/01	NP	7.21	NP	NP
	02/26/01	NP	7.30	NP	NP		02/26/01	NP	7.37	NP	NP
	03/28/01	NP	7.46	NP	NP		03/28/01	NP	7.18	NP	NP
	04/23/01	NP	7.95	NP	NP		04/23/01	NP	7.40	NP	NP
	05/30/01	NP	7.05	NP	NP		05/30/01	NP	7.44	NP	NP
	06/29/01	NP	6.31	NP	NP		06/29/01	NP	7.42	NP	NP
	07/25/01	NP	6.86	NP	NP		07/25/01	NP	7.43	NP	NP
	08/31/01	NP	7.27	NP	NP		08/31/01	NP	7.71	NP	NP
	09/28/01	NP	7.33	NP	NP		09/28/01	NP	7.54	NP	NP
	10/26/01	NP	7.19	NP	NP		10/26/01	NP	7.56	NP	NP
	11/21/01	NP	5.66	NP	NP		11/21/01	NP	7.23	NP	NP
	12/24/01	NP	6.53	NP	NP		12/24/01	NP	7.60	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NP	7.12	NP	NP
	05/20/02	NP	7.03	NP	NP		05/20/02	NP	7.49	NP	NP
	02/21/03	NP	6.50	NP	NP		02/21/03	NP	7.40	NP	NP
MW-W	01/26/01	6.25	6.25	Film	Film	LM-1	01/26/01	4.92	4.92	Film	Film
	02/26/01	6.45	6.46	0.01	Film		02/26/01	5.24	5.25	0.01	Film
	03/28/01	6.43	6.44	0.01	Film		03/28/01	NP	5.34	NP	NP
	04/23/01	6.48	6.48	Film	Film		04/23/01	5.69	5.70	0.01	Film
	05/30/01	6.52	6.53	0.01	Film		05/30/01	5.42	5.45	0.03	Film
	06/29/01	6.50	6.52	0.02	Film		06/29/01	5.48	5.52	0.04	0.01
	07/25/01	7.53	7.55	0.02	Film		07/25/01	6.18	6.21	0.03	Film
	08/31/01	NM	NM	NM	NM		08/31/01	NM[c]	NM[c]	NM	NM
	09/28/01	NM	NM	NM	NM						
	10/26/01	NM	NM	NM	NM						
	11/21/01	NM	NM	NM	NM						
	12/24/01	NM	NM	NM	NM						
	01/28/02	NM	NM	NM	NM						
	05/20/02	6.49	6.51	0.02	Film						
	02/21/03	NP	6.10	NP	NP						
LM-2	01/26/01	NP	1.46	NP	NP	LM-3	01/26/01	NP	1.56	NP	NP
	02/26/01	NP	1.18	NP	NP		02/26/01	1.70	1.71	0.01	Film
	03/28/01	NP	1.51	NP	NP		03/28/01	2.11	2.13	0.02	Film
	04/23/01	NP	1.82	NP	NP		04/23/01	2.01	2.04	0.03	Film
	05/30/01	NP	1.56	NP	NP		05/30/01	2.03	2.06	0.03	Film
	06/29/01	NP	0.51	NP	NP		06/29/01	2.00	2.01	0.01	Film
	07/25/01	NP	1.64	NP	NP		07/25/01	1.88	1.90	0.02	Film
	08/31/01	NP	1.60	NP	NP		08/31/01	2.86	2.89	0.03	Film
	09/28/01	NP	1.56	NP	NP		09/28/01	2.12	2.13	0.01	Film
	10/26/01	NP	1.32	NP	NP		10/26/01	1.82	1.83	0.01	Film
	11/21/01	NP	1.41	NP	NP		11/21/01	1.10	1.10	Film	Film
	12/24/01	NP	2.98	NP	NP		12/24/01	NP	1.65	NP	NP
	01/28/02	NM	NM	NM	NM		01/28/02	NP	1.41	NP	NP
	05/20/02	NM	NM	NM	NM		05/20/02	NM	NM	NM	NM
	02/21/03	NM	NM	NM	NM		02/21/03	NP	1.35	NP	NP

Table 5-25
Product Levels Data
January 2001 through May 2002
Unocal Bulk Fuel Terminal
Edmonds, Washington

Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]	Well ID	Date	Depth to Product (feet)	Depth to Water (feet)	Apparent Product Thickness (feet)	Corrected Product Thickness (feet)[a]
RW-1	01/26/01	6.29	6.33	0.04	0.01	RW-2	01/26/01	NP	6.56	NP	NP
	02/26/01	6.58	6.65	0.07	0.01		02/26/01	NP	6.80	NP	NP
	03/28/01	6.32	6.33	0.01	Film		03/28/01	NP	6.57	NP	NP
	04/23/01	6.80	6.81	0.01	Film		04/23/01	NP	6.94	NP	NP
	05/30/01	6.65	6.66	0.01	Film		05/30/01	NP	6.87	NP	NP
	01/06/00	6.58	6.64	0.06	0.01		06/29/01	NP	6.95	NP	NP
	07/25/01	6.60	6.61	0.01	Film		07/25/01	NP	6.84	NP	NP
	08/31/01	6.75	6.82	0.07	0.01		08/31/01	NP	7.93	NP	NP
	09/28/01	NM[c]	NM[c]	NM	NM		09/28/01	NP	7.07	NP	NP
							10/26/01	NP	6.57	NP	NP
							11/21/01	NP	5.75	NP	NP
							12/24/01	NP	6.31	NP	NP
							01/28/02	NP	6.32	NP	NP
							05/20/02	NP	6.99	NP	NP
							02/21/03	NP	6.48	NP	NP

NOTES:

NP = Product was not detected in the well.

NM = Depths to groundwater and/or product were not measured because well was abandoned or was not accessible.

The specific gravities of the product plumes range from 0.8338 to 0.9561 (EMCON, 1998a).

[a] $t_g = t(1-S_g) - h_a$, where t_g is the actual free product thickness, t is the apparent product thickness, S_g is the specific gravity of the product, and ha is the distance between the groundwater table and the free product in the formation (Ballestero, Fiedler, and Kinner, 1994). The h_a was conservatively assumed to be zero.

[b] Well is completed above ground surface.

[c] Well abandoned.

[d] Well destroyed.

Table 5-26
TPH in Surface Water
UNOCAL Edmonds Terminal

SITE	DATE	TPH - GRO (ug/L)	TPH - DRO (ug/L)	TPH - HO (ug/L)
SW-1	09/25/01	<50	<260	<520
SW-2	09/25/01	<50	<250	<500
SW-3	09/25/01	<50	<250	<500
SW-4	09/25/01	<50	<250	<500
SW-5	09/25/01	<50	350 J	<520 J

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.

Table 5-27
Volatile Petroleum Hydrocarbons in Surface Water
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C5-C6 (ug/L)	Aliphatic C6-C8 (ug/L)	Aliphatic C8-C10 (ug/L)	Aliphatic C10-C12 (ug/L)	Aromatic C8-C10 (ug/L)	Aromatic C10-C12 (ug/L)	Aromatic C12-C13 (ug/L)	Methyl t-butyl ether (ug/L)	n-Hexane (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	m,p-Xylene (ug/L)	o-Xylene (ug/L)
SW-1	09/25/01	<50	<50	<50	<50	<50	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SW-2	09/25/01	<50	<50	<50	<50	<50	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SW-3	09/25/01	<50	<50	<50	<50	<50	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SW-4	09/25/01	<50	<50	<50	<50	<50	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SW-5	09/25/01	<50	<50	<50	<50	<50	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

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

Table 5-28
Extractable Petroleum Hydrocarbons in Surface Water
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C10-C12 (mg/L)	Aliphatic C12-C16 (mg/L)	Aliphatic C16-C18 (mg/L)	Aliphatic C18-C21 (mg/L)	Aliphatic C21-C28 (mg/L)	Aliphatic C28-C36 (mg/L)	Total Aliphatic (mg/L)	Aromatic C10-C12 (mg/L)	Aromatic C12-C16 (mg/L)	Aromatic C16-C18 (mg/L)	Aromatic C18-C21 (mg/L)	Aromatic C21-C28 (mg/L)	Aromatic C28-C36 (mg/L)	Total Aromatic (mg/L)
SW-1	09/25/01	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.070	<0.060	<0.080	<0.14	<0.090	NA
SW-2	09/25/01	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.070	<0.060	<0.080	<0.14	<0.090	NA
SW-3	09/25/01	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.070	<0.060	<0.080	<0.14	<0.090	NA
SW-4	09/25/01	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.070	<0.060	<0.080	<0.14	<0.090	NA
SW-5	09/25/01	<0.050	0.26 J	0.99 J	2.5 J	3.3 J	1.3 J	8.3 J	<0.050	0.084	0.44 J	1.2 J	1.4 J	0.46 J	3.6 J

Table 5-29
TDS and TSS in Surface Water
UNOCAL Edmonds Terminal

SITE	DATE	TDS (mg/L)	TSS (mg/L)
SW-1	09/25/01	175	<5
SW-2	09/25/01	170	6
SW-3	09/25/01	184	<5
SW-4	09/25/01	172	<5
SW-5	09/25/01	860	10 J

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

Table 5-30
Surface Water Field Parameters
UNOCAL Edmonds Terminal

Sampling Location	Date Sampled	pH	Specific Conductance (µS/cm)	Temperature (°C)	DO (mg/L)	Eh (mV)	Comments
SW-1	09/25/01	7.92	238	13.5	10.40	66	Colorless, clear, no noticeable odor
SW-2	09/25/01	6.82	258	14.2	11.06	71	Colorless, little particulate, no noticeable odor
SW-3	09/25/01	6.99	269	14.6	10.28	-125	Light brown, slightly silty, no noticeable odor
SW-4	09/25/01	7.30	271	14.3	9.05	79	Light brown, silty, no noticeable odor
SW-5	09/25/01	7.06	1,670	15.7	9.42	-6	Gray-brown, silty, slight hydrocarbon-like odor noted

NM = Not measured.

Table 5-31
TPH and BTEX in Detension Basin No. 1 Material
UNOCAL Edmonds Terminal

SAMPLE ID	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total xylenes (mg/kg)
BSS-112	11/27/02	0	342000 D	150000 D	65.6	0.0802 J	0.239	0.632	1.67
BSS-113	11/27/02	0	144000 D	73000 D	42.6	0.0235 J	0.114	0.0553 J	0.534
BSS-114	11/27/02	0	267000 D	131000 D	104 D	0.247 D	0.204 J	0.112 J	0.797 D

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result. D = Sample diluted due to high analyte concentrations.

Table 5-32
PAHs in Detention Basin No. 1 Material
Unocal Edmonds Terminal

CONSTITUENT	(Units in mg/kg)	SITE: DATE:	BSS-112 11/27/2002	BSS-113 11/27/2002	BSS-114 11/27/2002
1-Methylnaphthalene			8.37	18.2	9.48
2-Methylnapthalene			7.53	10.3	7.08
Acenaphthene			4.92	7.12	<0.456
Acenaphthylene			<0.849	1.12	<0.456
Anthracene			<0.849	<0.409	<0.456
Benzo(a)anthracene			1.87	2.29	1.49
Benzo(a)pyrene			<0.849	0.464	<0.456
Benzo(b)fluoranthene			<0.849	0.655	<0.456
Benzo(ghi)perylene			<0.849	<0.409	<0.456
Benzo(k)fluoranthene			<0.849	<0.409	<0.456
Chrysene			7.7	6.52	4.16
Dibenzo(a,h)anthracene			<0.849	<0.409	<0.456
Fluoranthene			4.07	3.93	2.46
Fluorene			7.87	10.4	6.38
Indeno(1,2,3-cd)pyrene			<0.849	<0.409	<0.456
Naphthalene			0.905	1.8	0.608
Phenanthrene			30	38	16.6
Pyrene			11.1	11.7	7.14

Values represent total concentration unless noted.
< = Not Detected at indicated reporting limit.

Table 5-33
Volatile Petroleum Hydrocarbons in Detention Basin No. 1 Material
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C5-C6 (mg/kg)	Aliphatic C6-C8 (mg/kg)	Aliphatic C8-C10 (mg/kg)	Aliphatic C10-C12 (mg/kg)
BSS-112	11/27/02	<21.2	<21.2	<21.2	<21.2
BSS-113	11/27/02	<10.5	<10.5	<10.5	12.7
BSS-114	11/27/02	<46.5	63.5 D	<46.5	71.6 D

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

D = Sample diluted due to high analyte concentrations.

Table 5-33
Volatile Petroleum Hydrocarbons in Detention Basin No. 1 Material
UNOCAL Edmonds Terminal

SITE	Aromatic C8-C10 (mg/kg)	Aromatic C10-C12 (mg/kg)	Aromatic C12-C13 (mg/kg)	Total Volatile Petroleum Hydrocarbons (mg/kg)
BSS-112	<21.2	49.3	148	198
BSS-113	<10.5	35.4	81.9	130
BSS-114	<46.5	154 D	317 D	606 D

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

D = Sample diluted due to high analyte concentrations.

Table 5-34
Extractable Petroleum Hydrocarbons in Detention Basin No. 1 Material
UNOCAL Edmonds Terminal

SITE	DATE	Aliphatic C8-C10 (mg/kg)	Aliphatic C10-C12 (mg/kg)	Aliphatic C12-C16 (mg/kg)	Aliphatic C16-C21 (mg/kg)	Aliphatic C21-C34 (mg/kg)
BSS-112	11/27/02	<424	<424	6060 D	19900 D	15900 D
BSS-113	11/27/02	<205	459 D	5380 D	16500 D	12600 D
BSS-114	11/27/02	<228	<228	2930 D	11200 D	8660 D

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

D = Sample diluted due to high analyte concentrations.

Table 5-34
Extractable Petroleum Hydrocarbons in Detention Basin No. 1 Material
UNOCAL Edmonds Terminal

SITE	Aromatic C10-C12 (mg/kg)	Aromatic C12-C16 (mg/kg)	Aromatic C16-C21 (mg/kg)	Aromatic C21-C34 (mg/kg)	Total Extractable Hydrocarbons (mg/kg)
BSS-112	<424	1250 D	10000 D	6530 D	60100 D
BSS-113	<205	2200 D	13900 D	9390 D	60400 D
BSS-114	<228	1490 D	11000 D	8040 D	43500 D

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

D = Sample diluted due to high analyte concentrations.

Table 6-1
TPH and BTEX in Soil
6 to 32.5 Foot Depth Interval
UNOCAL Edmonds Terminal

SAMPLE ID	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)
MW-105	12/19/95	7.5	<12	<47	<3.1
MW-105	12/19/95	10	<11	<46	<3.0
MW-105	12/19/95	12.5	<12	<49	<3.2
MW-106	12/18/95	7.5	<12	<49	<3.2
MW-106	12/18/95	10	<12	<47	3.5 J
MW-106	12/18/95	12.5	13	<48	<3.1
MW-107	12/18/95	7.5	<12	<48	<3.1
MW-107	12/18/95	12.5	<12	<48	<3.1
MW-108	09/26/95	7.5	<19	<75	<4.9
MW-110	09/20/95	12.5	2000	450	2700 E
MW-110	09/20/95	14	4500	1100	930
MW-112	09/19/95	8.5	590	430	<3.8
MW-115	09/19/95	7.5	140	160	<3.3
MW-115	09/19/95	10	14	<49	<3.2
MW-115	09/19/95	12.5	620	400	<3.3
MW-121	10/03/95	13	34	<49	79
MW-121	10/03/95	18.5	200	110	23 J
MW-122	09/25/95	7	<13	<50	<3.3
MW-122	09/26/95	10	<13	53	<3.3
MW-122	09/26/95	13	<12	<48	<3.1
MW-134X	01/22/02	15.5	<25.0	<100	<5.00
MW-134X	01/22/02	32.5	<25.0	<100	<5.00

Table 6-1
TPH and BTEX in Soil
6 to 32.5 Foot Depth Interval
UNOCAL Edmonds Terminal

SAMPLE ID	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)
MW-137	12/18/95	7.5	<14	<54	<3.5
MW-137	12/18/95	10	15	<54	<3.5
MW-137	12/18/95	12.5	<12	<49	<3.2
MW-138	12/19/95	7.5	<12	<49	<3.2
MW-138	12/19/95	10	<13	<51	<3.3
MW-138	12/19/95	12.5	<12	<49	<3.2
MW-139	12/19/95	7.5	<14	<54	<3.5
MW-139	12/19/95	10	<12	<48	<3.1
MW-139	12/19/95	12.5	33	120	<3.4
SB-104	09/28/95	6.5	450 E	51 E	3600
SB-104A	11/09/95	9	<12	<48	28 J
SB-104A	11/09/95	11.5	<12	<47	3.6 J
SB-104A	11/09/95	14	<12	<49	3.9 J
SB-108	09/28/95	6.5	27	<54	570
SB-108	09/28/95	8	<12	<49	<3.2
SB-141	10/05/95	9	<13 E	<53 E	<3.4
SB-145	09/26/95	7	<12	<47	<3.1
SB-151	09/27/95	6.5	39	86	<3.0
SB-180	10/31/95	7.5	1600	1600	35
SB-181	10/31/95	7.5	13000	5800	52
SB-201	09/29/95	7.5	<12	<49	3.9 J
SB-201	09/29/95	12.5	<11	<43	<2.8

Table 6-1
TPH and BTEX in Soil
6 to 32.5 Foot Depth Interval
UNOCAL Edmonds Terminal

SAMPLE ID	DATE	DEPTH (feet)	TPH - DRO (mg/kg)	TPH - HO (mg/kg)	TPH - GRO (mg/kg)
SB-202	10/02/95	7.5	<12	<49	6.1 J
SB-202	10/02/95	12.5	<10	<42	2.8 J
SB-203	10/02/95	7.5	<12	<49	<3.2
SB-203	10/02/95	12.5	<11	<44	<2.9
SB-204	09/29/95	7.5	<12	87	<3.2
SB-204	09/29/95	12.5	<11	<43	<2.8
SB-205	09/29/95	7.5	<11	<46	<3.0
SB-205	09/29/95	12.5	<11	<43	<2.8

Values represent total concentration unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed. J = Estimated result.