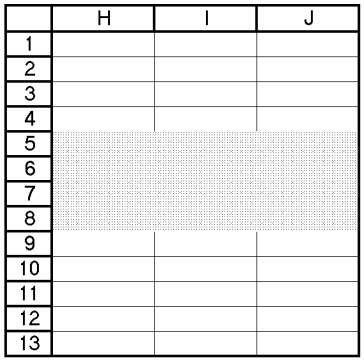
	A
1	BOLD DETECTS WHEN DATA IS STILL IN ROWS AS .CSV FILE
2	DATE FORMAT MM/DD/YY
3	REMOVE "00" FROM SITE NAMES BEFORE COPY
4	BEGINNING 2Q05, ALL WATER DATA IN DATABASE IS IN PPB.
5	
6	
7	
8	
9	MOVE PAHs TO BOTTOM BELOW D/F
10	FIELD PARAMETERS: pH, Temp, Cond, and DO only (delete redox, turbidity, ferrous iron)
11	USE LOOKUP TO DELETE UNNECESSARY COMPOUNDS; ADJUST ORDER OF COMPOUNDS EXISTING IN MULTIPLE METHODS (SEE LOOKUP TAB)
12	
13	

	B	C	D	E	F	G
1						
2						
3						
4						
5	CONVERT:	DIESEL, MOTOR OIL, AND GASOLINE FROM PPB TO PPM				
6		ALL METALS FROM PPB TO PPM				
7		TDS AND CHLORIDE SHOULD BE IN PPM				
8		LEAVE FIELD PARAMETER UNITS AS THEY ARE				
9						
10						
11						
12	TWO PAH COMPOUNDS NOT ANALYZED (2-Methlynaphthalene and Dibenzofuran) - ENTER NA FOR THESE					
13	Acenaphthylene and Anthracene - Only use PAH by 8270SIM, not 8270SVOC (delete these)					



	H	I	J
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
SECOND QUARTER SAMPLING EVENT, JUNE 2005
TIME OIL NORTHWEST TERMINAL

	A	B	C
1	CONVERT THESE FROM PPB TO PPM		
2			
3			
4			
5	"Shallow" Paramter	Database Parameter	
7	**CHLORINATED PHENOLS (µg/L)**	**PENTACHLOROPHENOL (µg/L)**	1
8	**EPA Method SW8040**	**EPA 8270SIM**	2
9	Pentachlorophenol	Pentachlorophenol (8270SIM)	3
10	2,4,6-Trichlorophenol		4
11	2,3,6-Trichlorophenol		5
12	2,4,5-Trichlorophenol		6
13	2,3,4-Trichlorophenol		7
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		8
15	2,3,4,5-Tetrachlorophenol		9
16			10
17	**SEMIVOLATILES (µg/L)**	**SEMIVOLATILES (µg/L)**	11
18	**EPA Method SW8270**	**EPA 8270C**	12
19	Phenol	Phenol	13
20	4-Methylphenol	3- & 4-Methylphenol	14
21	Isophorone	Isophorone	15
22	2,4-Dimethylphenol	2,4-Dimethylphenol	16
23	Benzoic Acid	Benzoic Acid	17
24	Naphthalene	Naphthalene (8270)	18
25	2-Methylnaphthalene	2-Methylnaphthalene (8270)	19
26	2,4,6-Trichlorophenol	2,4,6-Trichlorophenol	20
27	2,4,5-Trichlorophenol	2,4,5-Trichlorophenol	21
28	Acenaphthene	Acenaphthene (8270)	22
29	Dibenzofuran	Dibenzofuran (8270)	23
30	Fluorene	Fluorene (8270)	24
31	Pentachlorophenol	Pentachlorophenol (8270)	25
32	bis(2-Ethylhexyl)phthalate	Bis(2-ethylhexyl)phthalate	26
33			27
34	**VOLATILES (µg/L)**	**VOLATILES (µg/L)**	28
35	**EPA Method SW8260**	**EPA 8260B**	29
36	Acetone	Acetone	30
37	Carbon Disulfide	Carbon disulfide	31
38	2-Butanone	2-Butanone	32
39	Benzene	Benzene	33
40	Bromoform	Bromoform	34
41	Toluene	Toluene	35
42	Ethylbenzene	Ethylbenzene	36
43	Styrene	Styrene	37
44	m,p-Xylene	m,p-Xylene	38
45	o-Xylene	o-Xylene	39
46	1,3,5-Trimethylbenzene	1,3,5-Trimethylbenzene	40
47	1,2,4-Trimethylbenzene	1,2,4-Trimethylbenzene	41
48	Isopropylbenzene	Isopropylbenzene	42
49	n-Propylbenzene	n-Propylbenzene	43
50	tert-Butylbenzene	tert-Butylbenzene	44
51	sec-Butylbenzene	sec-Butylbenzene	45
52	4-Isopropyltoluene	4-Isopropyltoluene	46
53	n-Butylbenzene	n-Butylbenzene	47
54	Naphthalene	Naphthalene (8260)	48
55	Methyl tert-butyl ether	Methyl tert-butyl ether	49
56			50

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
SECOND QUARTER SAMPLING EVENT, JUNE 2005
TIME OIL NORTHWEST TERMINAL

	A	B	C
2			
3			
4			
5	"Shallow" Paramter	Database Parameter	
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**		51
58	**Method OR-DEQ**	**NWTPH-Dx (mg/L)**	52
59	TPH-Diesel	Diesel Range Hydrocarbons	53
60	TPH-D Motor Oil	Heavy Oil Range Hydrocarbons	54
61	TPH-Gasoline	Gasoline Range Hydrocarbons	55
62			56
63	**PRIORITY POLLUTANT**	**TOTAL METALS (mg/L)**	57
64	**METALS (mg/L)**	**EPA 6020**	58
65	Arsenic (7060)	Arsenic	59
66	Chromium (6010)	Chromium	60
67	Copper (6010)	Copper	61
68	Lead (7421)	Lead	62
69	Nickel (6010)	Nickel	63
70	Zinc (6010)	Zinc	64
71			65
72	**MAJOR IONS AND CONVENTIONALS**	**CONVENTIONALS (µg/L)**	66
73	Calcium (mg/L) (6010)		67
74	Magnesium (mg/L) (6010)		68
75	Potassium (mg/L) (6010)		69
76	Sodium (mg/L) (6010)		70
77	Alkalinity (mg/L CaCO3) (SM 2320)		71
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		72
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		73
80	Total Dissolved Solids (mg/L) (EPA 160.1)	Total Dissolved Solids (160.1)	74
81	Chloride (mg/L) (EPA 325.2)	Chloride (300.0)	75
82	N-Nitrate (mg-N/L) (Calculated)	N-Nitrate (300.0)	76
83	N-Nitrite (mg-N/L) (EPA 354.1)		77
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		78
85	Sulfate (mg/L) (EPA 375.2)	Sulfate (300.0)	79
86			80
87	**FIELD PARAMETERS**	**FIELD PARAMETERS**	81
88	pH (avg)	pH	82.00
89	Temperature (° C) (avg)	Temperature (deg C)	83.0
90	Conductivity (um/hos)	Conductivity (uS/cm)	84
91	Dissolved oxygen (mg/L) (avg)	Dissolved oxygen (mg/l)	85
92			86

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
SECOND QUARTER SAMPLING EVENT, JUNE 2005
TIME OIL NORTHWEST TERMINAL

	A	B	C
2			
3			
4			
5	"Shallow" Paramter	Database Parameter	
93	**DIOXINS AND FURANS (ng/L)**	**DIOXINS AND FURANS (ng/L)**	87
94	**Method 8290**	**EPA 1613B**	88
95	2,3,7,8-TCDF	2,3,7,8-TCDF	89
96	Total TCDF	Total TCDF	90
97	2,3,7,8-TCDD	2,3,7,8-TCDD	91
98	Total TCDD	Total TCDD	92
99	1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDF	93
100	2,3,4,7,8-PeCDF	2,3,4,7,8-PeCDF	94
101	Total PeCDF	Total PeCDF	95
102	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDD	96
103	Total PeCDD	Total PeCDD	97
104	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDF	98
105	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-HxCDF	99
106	2,3,4,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	100
107	1,2,3,7,8,9-HxCDF	1,2,3,7,8,9-HxCDF	101
108	Total HxCDF	Total HxCDF	102
109	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDD	103
110	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDD	104
111	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDD	105
112	Total HxCDD	Total HxCDD	106
113	1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDF	107
114	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8,9-HpCDF	108
115	Total HpCDF	Total HpCDF	109
116	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDD	110
117	Total HpCDD	Total HpCDD	111
118	OCDF	OCDF	112
119	OCDD	OCDD	113
120			114
121	**ETHANOL (mg/L)**		115
122			116

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
SECOND QUARTER SAMPLING EVENT, JUNE 2005
TIME OIL NORTHWEST TERMINAL

	A	B	C
2			
3			
4			
5	"Shallow" Paramter	Database Parameter	
123	**PAHs (µg/L)**	**PAHs (µg/L)**	117
124	**EPA Method SW8270 SIM**	**EPA 8270SIM**	118
125	Naphthalene	Naphthalene (8270SIM)	119
126	2-Methylnaphthalene	2-Methylnaphthalene	120
127	Acenaphthylene	Acenaphthylene (8270SIM)	121
128	Acenaphthene	Acenaphthene (8270SIM)	122
129	Fluorene	Fluorene (8270SIM)	123
130	Anthracene	Anthracene (8270SIM)	124
131	Dibenzofuran	Dibenzofuran	125

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3	**LOOKUP COMPOUNDS**										
4			Analytes by								
5			Mulitple methods								
6											
7											
8					Pentachlorophenol	3	SIM				
9	Pentachlorophenol	3	SIM		Pentachlorophenol	25	SVOC				
10		4			Naphthalene	18	SVOC				
11		5			Naphthalene	48	VOC				
12		6			Naphthalene	119	PAH				
13		7			2-Methylnaphthalene	19	SVOC				
14		8			2-Methylnaphthalene	120	PAH	(No Specialty PAH 2-Methylnaphthalene - NA)			
15		9			Acenaphthene	22	SVOC				
16		10			Acenaphthene	122	PAH				
17		11			Dibenzofuran	23	SVOC				
18		12			Dibenzofuran	125	PAH	(No Specialty PAH Dibenzofuran - NA)			
19	Phenol	13			Fluorene	24	SVOC				
20	3-,4-Methylphenol	14			Fluorene	123	PAH				
21	Isophorone	15									
22	2,4-Dimethylphenol	16			Use only PAH acenaphthylene - delete SVOC						
23	Benzoic Acid	17			Use only PAH anthracene - delete SVOC						
24	Naphthalene	18	SVOC								
25	2-Methylnaphthalene	19	SVOC								
26	2,4,6-Trichlorophenol	20									
27	2,4,5-Trichlorophenol	21									
28	Acenaphthene	22	SVOC								
29	Dibenzofuran	23	SVOC								
30	Fluorene	24	SVOC								
31	Pentachlorophenol	25	SVOC								
32	Bis(2-ethylhexyl)phthalate	26									
33		27									
34		28									
35		29									
36	Acetone	30									
37	Carbon disulfide	31									
38	2-Butanone	32									
39	Benzene	33									
40	Bromoform	34									
41	Toluene	35									
42	Ethylbenzene	36									
43	Styrene	37									
44	m,p-Xylene	38									
45	o-Xylene	39									
46	1,3,5-Trimethylbenzene	40									
47	1,2,4-Trimethylbenzene	41									
48	Isopropylbenzene	42									
49	n-Propylbenzene	43									
50	tert-Butylbenzene	44									
51	sec-Butylbenzene	45									
52	p-Isopropyltoluene	46									
53	n-Butylbenzene	47									
54	Naphthalene	48	VOC								
55	Methyl tert-butyl ether	49									
56		50									
57		51									
58		52									
59	Diesel Range Organics	53									
60	Heavy Oil Range Hydrocarbons	54									
61	Gasoline Range Hydrocarbons	55									
62		56									
63		57									
64		58									
65	Arsenic	59									
66	Chromium	60									
67	Copper	61									
68	Lead	62									

	A	B	C	D	E	F	G	H	I	J	K
69	Nickel	63									
70	Zinc	64									
71		65									
72		66									
73		67									
74		68									
75		69									
76		70									
77		71									
78		72									
79		73									
80	Total Dissolved Solids	74									
81	Chloride	75									
82		76									
83		77									
84		78									
85		79									
86		80									
87		81									
88	pH (avg)	82									
89	Temperature (° C) (avg)	83									
90	Conductivity (mS/cm) (avg)	84									
91	Dissolved oxygen (mg/L) (avg)	85									
92		86									
93	**DIOXINS AND FURANS (ng/L)**	87									
94	**Method 8290**	88									
95	2,3,7,8-TCDF	89									
96	Total TCDF	90									
97	2,3,7,8-TCDD	91									
98	Total TCDD	92									
99	1,2,3,7,8-PeCDF	93									
100	2,3,4,7,8-PeCDF	94									
101	Total PeCDF	95									
102	1,2,3,7,8-PeCDD	96									
103	Total PeCDD	97									
104	1,2,3,4,7,8-HxCDF	98									
105	1,2,3,6,7,8-HxCDF	99									
106	2,3,4,6,7,8-HxCDF	100									
107	1,2,3,7,8,9-HxCDF	101									
108	Total HxCDF	102									
109	1,2,3,4,7,8-HxCDD	103									
110	1,2,3,6,7,8-HxCDD	104									
111	1,2,3,7,8,9-HxCDD	105									
112	Total HxCDD	106									
113	1,2,3,4,6,7,8-HpCDF	107									
114	1,2,3,4,7,8,9-HpCDF	108									
115	Total HpCDF	109									
116	1,2,3,4,6,7,8-HpCDD	110									
117	Total HpCDD	111									
118	OCDF	112									
119	OCDD	113									
120		114									
121	**ETHANOL (mg/L)**	115									
122		116									
123	**PAHs (µg/L)**	117									
124	**EPA Method SW8270 SIM**	118									
125	Naphthalene	119	PAH								
126	2-Methylnaphthalene	120	PAH	(No Specialty 2-Methylnaphthalene - NA)							
127	Acenaphthylene	121	PAH	Use only this PAH acenaphthylene - delete SVOC							
128	Acenaphthene	122	PAH								
129	Fluorene	123	PAH								
130	Anthracene	124	PAH	Use only this PAH anthracene - delete SVOC							
131	Dibenzofuran	125	PAH	(No Specialty Dibenzofuran - NA)							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1	
4			S177D		T176N		U235H		V224R		W371K		Y336A		Z225M		Z960E		AH49B		AU36A		BC30D		9912050-01A		BH96T	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		**0.14**	J1
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	**3.1**	M	2.0	U	2.0	U	NA		**4.6**	
20	14	4-Methylphenol	**43**		1.0	U	1.0	U	**24**		**39**		**28**		**31**		**35**		**7.1**		1.0	U	**7.0**		NA		**57**	
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	NA		**7.7**	
23	17	Benzoic Acid	10	U	10	U	10	U	**10**		10	U	10	U	10	U	10	U	**27**		10	U	10	U	NA		10	U
24	18	Naphthalene	**16**		**12**		**18**		**16**		**20**	J2	**6.8**		**4.4**		**35**		**26**		1.0	U	**12**		NA		**51**	
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	**1.5**	J2	**1.1**		1.0	U	**6.4**		**3.8**		1.0	U	**2.1**		NA		**19**	
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
32	26	bis(2-Ethylhexyl)phthalate	2.9	U	**2.8**	J2	1.0	U	1.0	U	1.0	U	**2.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	**24**		5.0	U	**6.5**		5.0	U	**75**		5.0	U	5.0	U	36	U	230	U	25	U	25	U	NA		5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	45	U	5.0	U	5.0	U	NA		1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	**11**		**20**		5.0	U	**51**		**11**		230	U	25	U	25	U	NA		55	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	**250**		**440**		**190**		**160**		**2400**		**210**		**66**		**190**		NA		**4700**	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	45	U	5.0	U	5.0	U	NA		1.0	U
41	35	Toluene	**6.4**		1.0	U	1.0	U	**4.4**		**1400**		**450**		**190**		**4000**		**3700**		**920**		**290**		NA		**4700**	
42	36	Ethylbenzene	**5.4**		**5.5**		**1.1**		**1.2**		**11**		**19**		**11**		**140**		**220**		**160**		**32**		NA		**160**	
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	**4.2**		**7.0**		**3.8**		**93**		**130**		5.0	U	**5.0**	U	NA		**29**	
44	38	m,p-Xylene	**1.2**		**2.5**		**1.1**		**1.7**		**22**		**50**		**33**		**450**		**730**		**390**		**100**		NA		**1000**	
45	39	o-Xylene	**1.1**		**1.2**		1.0	U	1.0	U	**7.4**		**22**		**14**		**210**		**360**		**200**		**44**		NA		**490**	
46	40	1,3,5-Trimethylbenzene	**2.5**		**3.6**		**12**		**6.4**		**13**		**4.8**		**3.8**		**25**		45	U	**8.8**		**5.2**		NA		**46**	
47	41	1,2,4-Trimethylbenzene	**4.6**		**8.8**		**47**	J2	**36**		**110**		**30**		**19**		**140**		**88**		**44**		**24**		NA		**150**	
48	42	Isopropylbenzene	**7.7**		**9.5**		**34**	J2	**23**		**34**		**11**		**7.4**		**28**		45	U	**9.1**		**6.2**		NA		**28**	
49	43	n-Propylbenzene	**3.1**		**4.9**		**21**		**17**		**29**		**13**		**8.8**		**36**		45	U	**9.7**		**8.2**		NA		**40**	
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	45	U	5.0	U	5.0	U	NA		1.0	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	45	U	5.0	U	5.0	U	NA		**2.8**	
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	45	U	5.0	U	5.0	U	NA		**2.7**	
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	**1.0**		45	U	5.0	U	5.0	U	NA		**4.5**	
54	48	Naphthalene	**25**		**20**	J2	**52**	J2	**23**		**31**		**12**		**11**		**56**		230	U	25	U	25	U	NA		**82**	
55	49	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	50																											
57	51	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	52	**Method OR-DEQ**																										
59	53	**TPH-Diesel**	**0.68**		**0.75**		**1.1**		**1.2**		**1.2**		**0.51**		**1.0**		**9.5**		**2.0**		**0.37**		**0.46**		NA		**4.8**	
60	54	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	55	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	56																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2														Dup of B1										Dup of B1					
3		B1		B1		B1		B1		B1		B1		X		B1		B1		B1		B1		X		B1		B1	
4		BR55M		CB68E		CL03B		CT67H		DE68L		DM30L		DM30K		DW37B		ED23A		EM75J		ES04G		ES04A		EY88C		FF88O	
5		5/23/00		8/29/00		11/10/00		2/15/01		6/5/01		8/14/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		08/28/02		11/11/02		2/13/03	
6																													
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	**0.27**	J2	**0.43**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.65**		**1.0**		0.25	U	0.29	U	0.29	U	0.25	U	0.25	U
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	3.0	U	2.0	U	**2.6**		100	UJ	2.0	U	2.0	U	**6.2**		**15**		2.0	U	2.3	U	2.3	U	2.2	U	2	U
20	4-Methylphenol	**20**		**47**		**5.6**		**8.4**		**130**	J	**50**		**54**		**44**		**170**		**46**		1.2	U	**1.3**		1.1	U	**36**	
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	50	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.2	U	1.1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	150	UJ	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	**4.1**		**4.5**		3.3	U	6.7	U
23	Benzoic Acid	**160**		**73**		10	U	10	U	500	UJ	10	U	10	U	50	U	50	U	50	U	58	U	58	U	54	U	51	U
24	Naphthalene	**34**		**27**		**2.0**		**5.1**		50	UJ	**13**		**14**		1.0	U	**17**		**15**		**2.8**		**3.3**		1.1	U	1	U
25	2-Methylnaphthalene	**12**		**9.6**		1.0	U	1.0	U	50	UJ	**6.8**		**7.4**		1.0	U	**10**		**5.9**		1.2	U	**1.8**		1.1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	250	UJ	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5.8	U	5.4	U	5.1	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	250	UJ	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5.8	U	5.4	U	5.1	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	50	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.2	U	1.1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	50	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.2	U	1.1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	50	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.2	U	1.1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	250	UJ	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5.8	U	5.4	U	5.1	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	50	UJ	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.7	U	4.7	U	4.3	U	1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	**410**		5.0	U	**1200**		**1100**		**230**		**280**		37	U	**250**		**18**		25	U	25	U	5	U	**78**	
37	Carbon Disulfide	1.0	U	25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	1.0	U	3.0	U	5	U	5	U	1	U	1	U
38	2-Butanone	**6.1**		120	U	**28**		**260**		100	U	100	U	**160**		**13**		**54**		15	U	25	U	25	U	5	U	**8.2**	M
39	Benzene	**990**		**1100**		**160**		**610**		**560**		**180**	J	**230**	J	**120**		**1000**		**240**		**160**		**130**		**19**		**65**	
40	Bromoform	1.0	U	25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	1.0	U	3.0	U	5	U	5	U	1	U	1	U
41	Toluene	**1800**		**3600**		**1200**		**2000**		**3400**		**1400**	J	**1900**	J	**800**		**2800**		**520**		**210**		**210**		**61**		**100**	
42	Ethylbenzene	**110**		**300**		**100**		**160**		**220**		**130**		**150**		**86**		**170**		**97**		**88**		**74**		**22**		**51**	
43	Styrene	**8.3**	M	25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	**4.3**		3.0	U	5	U	5	U	1	U	1	U
44	m,p-Xylene	**340**		**990**		**320**		**590**		**830**		**450**		**530**		**350**		**290**		**270**		**230**		**210**		**71**		**130**	
45	o-Xylene	**180**		**420**		**160**		**240**		**370**		**210**		**250**		**180**		**210**		**150**		**120**		**100**		**26**		**75**	
46	1,3,5-Trimethylbenzene	**18**		**37**		**15**		**31**		**37**		**33**		**37**		**29**		**37**		**22**		**18**		**19**		**9.3**		**18**	
47	1,2,4-Trimethylbenzene	**72**		**160**		**61**		**100**		**160**		**110**		**130**		**100**		**94**		**73**		**54**		**56**		**30**		**57**	
48	Isopropylbenzene	**10**		25	U	**9.0**		30	U	20	U	20	U	20	U	**11**		**12**		**11**		**7**		**8.5**		**21**		**9.7**	
49	n-Propylbenzene	**17**		**31**		**15**		30	U	**33**		**22**		**24**		**19**		**15**		**16**		**12**		**13**		**26**		**15**	
50	tert-Butylbenzene	1.0	U	25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	1.0	U	3.0	U	5	U	5	U	1	U	1	U
51	sec-Butylbenzene	**1.4**		25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	1.0	U	3.0	U	5	U	5	U	**2.2**		1	U
52	4-Isopropyltoluene	**1.1**		25	U	1.0	U	30	U	20	U	20	U	20	U	1.0	U	**1.0**		3.0	U	5	U	5	U	1	U	**1.1**	
53	n-Butylbenzene	2.0	U	25	U	1.8	U	30	U	20	U	20	U	20	U	3.2	U	**4.0**	M	3.0	U	5	U	5	U	**2.2**		2.8	U
54	Naphthalene	**36**		120	U	**25**		150	U	100	U	100	U	100	U	**39**		**37**		**24**		25	U	25	U	**9.1**		**13**	
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	**0.44**		**1.4**		**0.37**		**2.1**		**47**		**8.7**	J	**6.9**	J	**0.94**		**12**		**1.3**		**0.64**		**0.9**		**0.84**		**6.8**	
60	**TPH-D Motor Oil**	0.50	U	0.50	U	0.50	U	0.50	U	5.0	U	5.0	U	5.0	U	0.5	U	0.50	U	0.50	U	0.5	U	0.5	U	0.5	U	0.5	U
61	**TPH-Gasoline**	**17**		**36**		**8.8**		**15**		**25**		**19**		**19**		**6.8**		**16**		**7.6**		**4.8**	J	**3.4**	J	**2.4**		**4.6**	
62																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
3		B1		B1		B1		B1		B1		B1		B1	B1
4		FL41H		FU50E		FY64D		0402099-01		0408019-02		0502102-04		P5H1000-11	P5K0699-02
5		5/7/03		8/29/03		10/20/03		2/19/04		8/03/04		2/23/05		08/23/05	11/15/05
7	**CHLORINATED PHENOLS (µg/L)**														
8	**EPA Method SW8040**														
9	Pentachlorophenol	0.25	U	0.5	U	0.52	U	**2.46**	J	0.5	U	0.483	U	0.476 U	0.495 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA	NA
16															
17	**SEMIVOLATILES (µg/L)**														
18	**EPA Method SW8270**														
19	Phenol	**3.1**	M	2	U	2.1	U	1.91	U	1.96	U	2	U	5.00 U	NA
20	4-Methylphenol	**28**		1	U	1	U	**12**		9.8	U	10	U	5.00 U	NA
21	Isophorone	1	U	1	U	1	U	0.956	U	0.98	U	1	U	5.00 U	NA
22	2,4-Dimethylphenol	3	U	3	U	**4.4**		2.87	U	2.94	U	3.01	U	10.0 U	NA
23	Benzoic Acid	50	U	50	U	10	U	19.1	U	19.6	U	20	U	50.0 U	NA
24	Naphthalene	**1.8**		**2.7**		**3.5**		**1.23**		0.98	U	1	U	5.00 U	NA
25	2-Methylnaphthalene	1	U	**1.4**		**3**		0.956	U	0.98	U	1	U	5.00 U	NA
26	2,4,6-Trichlorophenol	5	U	5	U	5.2	U	4.78	U	4.9	U	5.01	U	5.00 U	NA
27	2,4,5-Trichlorophenol	5	U	5	U	5.2	U	4.78	U	4.9	U	5.01	U	5.00 U	NA
28	Acenaphthene	1	U	1	U	1	U	0.956	U	0.98	U	1	U	5.00 U	NA
29	Dibenzofuran	1	U	1	U	1	U	0.956	U	0.98	U	1	U	5.00 U	NA
30	Fluorene	1	U	1	U	1	U	0.956	U	0.98	U	1	U	5.00 U	NA
31	Pentachlorophenol	5	U	5	U	5.2	U	4.78	U	4.9	U	5.01	U	5 UJ	NA
32	bis(2-Ethylhexyl)phthalate	1	U	1	U	**6.3**		0.956	U	0.98	U	1	U	10.0 U	NA
33															
34	**VOLATILES (µg/L)**														
35	**EPA Method SW8260**														
36	Acetone	**61**	M	**28**		5	U	50	U	50	U	50	U	25.0 U	NA
37	Carbon Disulfide	1	U	1	U	1	U	2	U	2	U	2	U	10.0 U	NA
38	2-Butanone	**8.1**	M	5	U	5	U	10	U	10	U	10	U	10.0 U	NA
39	Benzene	**82**		**20**		**5.6**		**36.9**		**1.71**	J	0.3	U	1.00 U	NA
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00 U	NA
41	Toluene	**100**		**22**		**2.1**		**9.07**		1	U	1	U	**1.35**	NA
42	Ethylbenzene	**130**	J	**80**		**31**		**55.2**		**27.5**	J	**3.59**		**1.80**	NA
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00 U	NA
44	m,p-Xylene	**110**	J	**99**		**40**		**25.2**		**20.8**	J	2	U	2.00 U	NA
45	o-Xylene	**86**	J	**35**		**9.2**		**15.2**		**2.6**	J	1	U	1.00 U	NA
46	1,3,5-Trimethylbenzene	**11**	J	**9.3**		**3.6**		**9.64**		**1.15**	J	1	U	1.00 U	NA
47	1,2,4-Trimethylbenzene	**30**	J	**28**		**12**		**26.6**		**3.13**	J	**2.58**		**3.01**	NA
48	Isopropylbenzene	**6.3**	J	**5.2**		**3.3**		**5.53**		**1.95**	J	**2.36**		**3.01**	NA
49	n-Propylbenzene	**7.6**	J	**7.3**		**4.5**		**8.05**		**2.57**	J	**4.97**		**4.61**	NA
50	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00 U	NA
51	sec-Butylbenzene	**1**	J	**1**		1	U	1	U	1	U	1	U	1.00 U	NA
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00 U	NA
53	n-Butylbenzene	**1.8**	J	**1.6**	M	1	U	1	U	1	U	1	U	5.00 U	NA
54	Naphthalene	**5.8**		**7.3**		5	U	**5.47**		**1.03**	J	**2.62**		**2.86**	NA
55	Methyl tert-butyl ether	NA		NA		NA		1	U	1	U	1	U	1.00 U	NA
56															
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**														
58	**Method OR-DEQ**														
59	**TPH-Diesel**	**2.4**		**1.6**		**2.7**		**2.26**		**0.978**		**9.29**		0.250 U	NA
60	**TPH-D Motor Oil**	0.5	U	0.5	U	0.5	U	0.477	U	0.503	U	1.09	U	0.500 U	NA
61	**TPH-Gasoline**	**4.8**		**3.0**		**1.2**		**2.6**		**0.652**		NA		**0.415**	NA
62															

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1	
4			S177D		T176N		U235H		V224R		W371K		Y336A		Z225M		Z960E		AH49B		AU36A		BC30D		9912050-01A		BH96T	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00	
63	57	**PRIORITY POLLUTANT**																										
64	58	**METALS (mg/L)**																										
65	59	Arsenic (7060)	**0.006**		**0.008**		0.05	U	0.05	U	**0.010**		**0.008**		**0.008**		**0.004**		**0.006**		**0.008**		**0.006**		NA		**0.006**	
66	60	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U
67	61	Copper (6010)	**0.009**		**0.009**		**0.004**		**0.006**		**0.002**		0.002	U	0.002	U	**0.078**		**0.043**		**0.008**		0.002	U	NA		**0.004**	
68	62	Lead (7421)	0.001	U	**0.001**		0.02	U	0.02	U	**0.003**		0.001	U	0.001	U	**0.002**		**0.002**		0.001	U	0.001	U	NA		0.001	U
69	63	Nickel (6010)	**0.02**		**0.01**		0.01	U	**0.02**		**0.02**		**0.02**		0.01	U	**0.04**		**0.03**		**0.03**		**0.01**		NA		**0.06**	
70	64	Zinc (6010)	0.004	U	**0.009**		**0.027**		**0.004**		**0.006**	J2	**0.011**		**0.005**		**0.017**	J	**0.006**		**0.009**		0.006	U	NA		**0.020**	
71	65																											
72	66	**MAJOR IONS AND CONVENTIONALS**																										
73	67	Calcium (mg/L) (6010)	**42.2**		**25.7**		**16.3**		**26.7**		NA		NA		NA		**16.5**		NA		NA		NA		NA		NA	
74	68	Magnesium (mg/L) (6010)	**16.3**		**9.41**		**6.93**		**9.05**		NA		NA		NA		**3.94**		NA		NA		NA		NA		NA	
75	69	Potassium (mg/L) (6010)	**4.2**		**3.3**		**3.2**		**3.4**		NA		NA		NA		**2.7**		NA		NA		NA		NA		NA	
76	70	Sodium (mg/L) (6010)	**8.65**		**7.49**		**7.88**		**7.63**		NA		NA		NA		**6.29**		NA		NA		NA		NA		NA	
77	71	Alkalinity (mg/L CaCO3) (SM 2320)	**190**		**140**	J2	**130**		**170**		NA		NA		NA		**43**		NA		NA		NA		NA		NA	
78	72	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA	
79	73	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**190**		**140**	J2	**130**		**170**		NA		NA		NA		**43**		NA		NA		NA		NA		NA	
80	74	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**200**	J2	**190**		**290**		**360**		**430**		**260**		**170**		**210**		**160**		**150**		NA		**250**	
81	75	Chloride (mg/L) (EPA 325.2)	**5.1**		**5.9**		**5.6**		**4.3**		**3.5**		**3.4**		**2.4**		**2.0**		**7.9**		**3.8**		**6.6**		NA		**3.8**	
82	76	N-Nitrate (mg-N/L) (Calculated)	**0.014**		0.010	U	**0.023**		**0.036**	J2	NA		NA		NA		0.010	U	NA		NA		NA		NA		NA	
83	77	N-Nitrite (mg-N/L) (EPA 354.1)	0.017	J	**0.053**	J2	**0.033**		0.010	UJ	NA		NA		NA		**0.015**		NA		NA		NA		NA		NA	
84	78	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	0.031		**0.032**	J2	**0.056**		**0.036**	J2	NA		NA		NA		**0.013**		NA		NA		NA		NA		NA	
85	79	Sulfate (mg/L) (EPA 375.2)	2.5	U	2.5	U	**5.3**		2.5	U	NA		NA		NA		**2.8**		NA		NA		NA		NA		NA	
86	80																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2														Dup of B1										Dup of B1					
3		B1		B1		B1		B1		B1		B1		X		B1		B1		B1		B1		X		B1		B1	
4		BR55M		CB68E		CL03B		CT67H		DE68L		DM30L		DM30K		DW37B		ED23A		EM75J		ES04G		ES04A		EY88C		FF88O	
5		5/23/00		8/29/00		11/10/00		2/15/01		6/5/01		8/14/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		08/28/02		11/11/02		2/13/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.004**		**0.007**		**0.007**		**0.007**		**0.010**		**0.009**		**0.009**		**0.007**		**0.006**		**0.006**		**0.004**	J	**0.006**	J	0.05	U	**0.012**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.03**		**0.017**	
67	Copper (6010)	**0.004**		0.002	U	**0.081**		0.002	U	0.002	U	0.002	U	0.002	U	**0.016**	J	**0.062**		**0.016**		**0.004**		0.002	U	**0.073**		**0.107**	
68	Lead (7421)	0.001	U	0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U	**0.008**		**0.004**		**0.003**		0.001	U	0.001	U	**0.03**		**0.028**	
69	Nickel (6010)	**0.03**		**0.01**		0.01	U	0.01	U	**0.12**		0.01	U	0.01	U	0.01	U	**0.08**		**0.07**		0.01	U	0.01	U	**0.05**		**0.04**	
70	Zinc (6010)	0.006	U	0.006	U	0.006	U	**0.006**		**0.054**		0.006	U	0.006	U	**0.015**	J	**0.033**		**0.016**		**0.007**		0.006	U	**0.119**		**0.085**	
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		NA		**23.9**		**88.1**		**15.2**		**16.4**		**19.2**	J	**35.7**		NA		NA		NA		NA		**17.3**	
74	Magnesium (mg/L) (6010)	NA		NA		NA		**9.46**		**40.8**		**6.11**		**6.64**		**7.26**	J	**15.7**		NA		NA		NA		NA		**8.66**	
75	Potassium (mg/L) (6010)	NA		NA		NA		**2.6**		**5.1**		**2.1**		**2.5**		**2.4**		**4.6**		NA		NA		NA		NA		**3.6**	
76	Sodium (mg/L) (6010)	NA		NA		NA		**8.18**		**13.3**		**6.43**		**6.89**		**7.22**		**12.3**		NA		NA		NA		NA		**7.8**	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		**160**		NA		NA		NA		NA		**140**		NA		NA		NA		NA		**70**	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		1.0	U	NA		NA		NA		NA		1.0	U	NA		NA		NA		NA		1	U
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		**160**		NA		NA		NA		NA		**140**		NA		NA		NA		NA		**70**	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**220**		**170**		**140**		**250**		**1400**		**140**		**130**		**150**		**430**		**330**		**140**		**140**		**150**		**170**	
81	Chloride (mg/L) (EPA 325.2)	**7.2**		**1.7**		**2.5**		**3.4**	J	**2.8**		**8.0**	J	**6.0**	J	**2.2**		**3.2**		**6.2**		**5.1**		**4**		**3**		**6.4**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.010	U	NA		NA		NA		NA		0.010	U	NA		NA		NA		NA		**0.029**	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		**0.012**	J	NA		NA		NA		NA		**0.021**		NA		NA		NA		NA		**0.03**	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		**0.015**		NA		NA		NA		NA		**0.020**	J	NA		NA		NA		NA		**0.059**	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		**2.8**		NA		NA		NA		NA		2.5	U	NA		NA		NA		NA		**5.7**	
86																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
1															
2															
3		B1		B1		B1		B1		B1		B1		B1	B1
4		FL41H		FU50E		FY64D		0402099-01		0408019-02		0502102-04		P5H1000-11	P5K0699-02
5		5/7/03		8/29/03		10/20/03		2/19/04		8/03/04		2/23/05		08/23/05	11/15/05
63	**PRIORITY POLLUTANT**														
64	**METALS (mg/L)**														
65	Arsenic (7060)	**0.007**		**0.007**		**0.007**		**0.003**		**0.00636**		**0.00444**		**0.00353**	NA
66	Chromium (6010)	**0.008**		0.005	U	**0.006**		0.005	U	0.005	U	**0.0088**		0.001 U	NA
67	Copper (6010)	**0.041**		**0.004**		**0.015**		**0.0117**		0.01	U	0.01	U	0.001 U	NA
68	Lead (7421)	**0.009**		0.001	U	**0.005**		**0.0007**		0.0001	U	**0.00117**		0.001 U	NA
69	Nickel (6010)	**0.03**		0.01	U	**0.01**		**0.0075**		0.005	U	0.005	U	**0.00236**	NA
70	Zinc (6010)	**0.037**	J	**0.007**		**0.018**		0.01	U	**0.0166**		0.01	U	0.01 U	NA
71															
72	**MAJOR IONS AND CONVENTIONALS**														
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA	NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA	NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA	NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**140**		**210**		**210**		**116**		**215**		**170**		**186**	NA
81	Chloride (mg/L) (EPA 325.2)	**2.9**		**2.4**		**3**		**3.31**		**3.63**		**4**		**2.92**	NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA	NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA	NA
86															

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1	
4			S177D		T176N		U235H		V224R		W371K		Y336A		Z225M		Z960E		AH49B		AU36A		BC30D		9912050-01A		BH96T	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00	
87	81	**FIELD PARAMETERS**																										
88	82	pH (avg)	6.59		6.61		6.64		6.41		5.64		5.28		5.37		5.11		5.36		6.18		5.93		NM		4.81	
89	83	Temperature (° C) (avg)	13.5		15.3		15.7		14.5		12.6		15.5		14.2		12.8		13.4		15.4		13.0		NM		12.3	
90	84	Conductivity (um/hos)	466		359		286		457		392		605		379		363		254		263		306		NM		335	
91	85	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		1.29		1.83		1.75		2.18		2.20		2.61		1.81		NM		2.15	
92	86																											
93	87	**DIOXINS AND FURANS (ng/L)**																										
94	88	**Method 8290**																										
95	89	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	90	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	91	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	92	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	93	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	94	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	95	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	96	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	97	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	98	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	99	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	100	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	101	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	102	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	103	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	104	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	105	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	106	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	107	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	108	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	109	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	110	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	111	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	112	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	113	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120	114																											
121	115	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**4200**	J2	**6300**	J2	**5100**	
122	116																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2														Dup of B1										Dup of B1					
3		B1		B1		B1		B1		B1		B1		X		B1		B1		B1		B1		X		B1		B1	
4		BR55M		CB68E		CL03B		CT67H		DE68L		DM30L		DM30K		DW37B		ED23A		EM75J		ES04G		ES04A		EY88C		FF88O	
5		5/23/00		8/29/00		11/10/00		2/15/01		6/5/01		8/14/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		08/28/02		11/11/02		2/13/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	6.02		6.13		4.89		5.53		4.70		6.43		6.49		6.14		4.97		6.50		6.50		6.50		6.8		6.34	
89	Temperature (° C) (avg)	14.9		17.7		13.4		13.1		14.0		15.1		15.2		13.0		13.1		16.4		16.7		16.8		15.8		14.2	
90	Conductivity (um/hos)	297		243		222		297		1883		259		248		270		501		718		432		413		268		274	
91	Dissolved oxygen (mg/L) (avg)	1.55		1.51		0.84		1.08		1.42		1.59		1.61		3.58		5.92		4.21		0.79		0.60		1.64		0	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121	**ETHANOL (mg/L)**	**16**		5.0	U	5.0	U	**5.0**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
1															
2															
3		B1		B1		B1		B1		B1		B1		B1	B1
4		FL41H		FU50E		FY64D		0402099-01		0408019-02		0502102-04		P5H1000-11	P5K0699-02
5		5/7/03		8/29/03		10/20/03		2/19/04		8/03/04		2/23/05		08/23/05	11/15/05
87	**FIELD PARAMETERS**														
88	pH (avg)	6.23		6.52		6.51		4.99		7.5		6.7		6.16	6.56
89	Temperature (° C) (avg)	14.4		16		15.9		14		15.8		15.2		15.7	15.4
90	Conductivity (um/hos)	170		285		285		97		361		195		199	230
91	Dissolved oxygen (mg/L) (avg)	2.54		1.73		1.48		1.77		NM		0.38		NM	2.93
92															
93	**DIOXINS AND FURANS (ng/L)**														
94	**Method 8290**														
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA	NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA	NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA	NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA	NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA	NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA	NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA	NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA	NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA	NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA	NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA	NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA	NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA	NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA	NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA	NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA	NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA	NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA	NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA	NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA	NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA	NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA	NA
120															
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA	NA
122															

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1		B1	
4			S177D		T176N		U235H		V224R		W371K		Y336A		Z225M		Z960E		AH49B		AU36A		BC30D		9912050-01A		BH96T	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00	
123	117	**PAHs (µg/L)**																										
124	118	**EPA Method SW8270 SIM**																										
125	119	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	120	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	121	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	122	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	123	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	124	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	125	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2														Dup of B1										Dup of B1					
3		B1		B1		B1		B1		B1		B1		X		B1		B1		B1		B1		X		B1		B1	
4		BR55M		CB68E		CL03B		CT67H		DE68L		DM30L		DM30K		DW37B		ED23A		EM75J		ES04G		ES04A		EY88C		FF88O	
5		5/23/00		8/29/00		11/10/00		2/15/01		6/5/01		8/14/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		08/28/02		11/11/02		2/13/03	
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
1															
2															
3		B1		B1		B1		B1		B1		B1		B1	B1
4		FL41H		FU50E		FY64D		0402099-01		0408019-02		0502102-04		P5H1000-11	P5K0699-02
5		5/7/03		8/29/03		10/20/03		2/19/04		8/03/04		2/23/05		08/23/05	11/15/05
123	**PAHs (µg/L)**														
124	**EPA Method SW8270 SIM**														
125	Naphthalene	NA		NA		NA		NA		NA		NA		**0.384**	NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA	NA
127	Acenaphthylene	NA		NA		NA		NA		0.98	U	NA		0.100 U	NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		0.100 U	NA
129	Fluorene	NA		NA		NA		NA		NA		NA		0.100 U	NA
130	Anthracene	NA		NA		NA		NA		0.98	U	NA		0.100 U	NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			D		D		D		D		D		D		D		D		D		D		D		D		D	
4			S177L		T176B		U235F		V208H		W391B		Y336D		Z225I		Z960I		AH76J		AU22D		BC27N		9912050-02A		BH96B	
5			4/2/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/18/99		5/19/99		9/20/99		12/8/99		12/8/1999 (d)		2/17/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	**0.25**		0.25	U	**0.45**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	UJ	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	NA		2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
21	15	Isophorone	**3.4**		**5.5**		**5.2**			R	1.0	U	1.0	U	1.0	U	**2.4**		1.0	U	1.0	U	1.0	U	NA		1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	UJ	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	NA		3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	UJ	10	U	10	U	10	U	10	U	10	U	10	U	10	U	NA		10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U		R	1.0	U	1.0	U	1.0	U	**3.1**		1.0	U	1.0	U	**3.2**		NA		1.0	U
25	19	2-Methylnaphthalene	1.2		1.0	U	1.0	U		R	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	UJ	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	UJ	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U		R	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U		R	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.4**		1.0	U	NA		1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.7**		NA		1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.9**		NA		1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.6**		NA		1.0	U
47	41	1,2,4-Trimethylbenzene	**2.2**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	1.0	U	**15**		NA		**1.0**	
48	42	Isopropylbenzene	**1.6**		**2.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.7**		1.0	U	1.0	U	**11**		NA		**2.5**	
49	43	n-Propylbenzene	**1.7**		**2.5**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**5.6**		NA		**1.1**	
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
51	45	sec-Butylbenzene	**1.6**		**2.1**		1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.5	U	NA		**2.0**	
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
53	47	n-Butylbenzene	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	**0.82**		**0.82**		**0.55**		0.25	U	**0.34**		**0.35**		0.25	U	**0.52**		0.25	U	0.25	U	**0.56**		NA		**0.40**	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		D		D		D		D		D		D		D		D		D		D		D		D		D		D	
4		BR55E		CB49D		CK77F		CT37F		DE68G		DM30M		DW37E		ED34G		EM85B		ER93P		EZ03C		FF76G		FL58K		FU45C	
5		5/22/00		8/28/00		11/7/00		2/12/01		6/4/01		8/14/01		11/28/01		2/28/02		6/26/02		08/27/02		11/12/02		2/12/03		5/8/03		8/28/03	
6																													
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	0.25	UJ	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.55**		**0.32**		**0.38**		0.33	U	0.25	U	0.26	U	0.25	U	**0.86**	J
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.6	U	2.2	U	2.1	U	2	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.9	U	3.3	U	3.1	U	3	U	3	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	50	U	50	U	50	U	66	U	54	U	52	U	50	U	50	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3**		1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6.6	U	5.4	U	5.2	U	5	U	5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6.6	U	5.4	U	5.2	U	5	U	5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.3	U	1.1	U	1	U	1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6.6	U	5.4	U	5.2	U	5	U	5	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**12**		4.0	U	4.0	U	5.3	U	4.3	U	1	U	**150**		1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	5.0	U	5.0	U	7.1	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U
39	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		**1.7**		1.0	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.0**		**1.9**		1.0	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**23**		**38**		**1.2**		1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**6.0**		**7.7**		1.0	U	**3**		1	U	1	U	1	U	**3.4**	
49	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.7**		**7.7**		1.0	U	**3.6**		1	U	1	U	1	U	**2.6**	
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**5.3**		1.0	U	**2.1**		1	U	1	U	1	U	**1.2**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.8**		1.0	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.5**		1.0	U	1	U	1	U	1	U	1	U	1	U
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	7.5	U	5.0	U	**8.2**		5.0	U	5	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	**0.26**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1										
2										
3		D		D		D		D		D
4		FY82H		0402105-03		0408036-01		0502102-05		P5H0853-07
5		10/23/03		2/20/04		8/05/04		2/23/05		08/19/05
6										
7	**CHLORINATED PHENOLS (µg/L)**									
8	**EPA Method SW8040**									
9	Pentachlorophenol	**0.61**		0.498	U	0.5	U	0.481	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA
16										
17	**SEMIVOLATILES (µg/L)**									
18	**EPA Method SW8270**									
19	Phenol	2	U	1.98	U	2	U	2.02	U	5.00 U
20	4-Methylphenol	1	U	9.91	U	10	U	10.1	U	5.00 U
21	Isophorone	1	U	0.991	U	1	U	1.01	U	5.00 U
22	2,4-Dimethylphenol	3	U	2.97	U	3	U	3.03	U	10.0 U
23	Benzoic Acid	10	U	19.8	U	20	U	20.2	U	50.0 U
24	Naphthalene	1	U	0.991	U	1	U	1.01	U	5.00 U
25	2-Methylnaphthalene	1	U	0.991	U	1	U	1.01	U	5.00 U
26	2,4,6-Trichlorophenol	5.1	U	4.96	U	5	U	5.05	U	5.00 U
27	2,4,5-Trichlorophenol	5.1	U	4.96	U	5	U	5.05	U	5.00 U
28	Acenaphthene	1	U	0.991	U	1	U	1.01	U	5.00 U
29	Dibenzofuran	1	U	0.991	U	1	U	1.01	U	5.00 U
30	Fluorene	1	U	0.991	U	1	U	1.01	U	5.00 U
31	Pentachlorophenol	5.1	U	4.96	U	5	U	5.05	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	1	U	0.991	U	1	U	1.01	U	10.0 U
33										
34	**VOLATILES (µg/L)**									
35	**EPA Method SW8260**									
36	Acetone	5	U	50	U	50	U	50	U	25.0 U
37	Carbon Disulfide	1	U	2	U	2	U	2	U	10.0 U
38	2-Butanone	5	U	10	U	10	U	10	U	10.0 U
39	Benzene	1	U	0.4	U	0.3	U	0.3	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1.00 U
44	m,p-Xylene	1	U	2	U	2	U	2	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	1	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1.00 U
48	Isopropylbenzene	**1.1**		1	U	**1.13**	J	1	U	2.00 U
49	n-Propylbenzene	1	U	1	U	**1.19**	J	1	U	**1.71**
50	tert-Butylbenzene	1	U	1	U	1	U	1	U	1.00 U
51	sec-Butylbenzene	1	U	1	U	1	U	1	U	1.00 U
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	2.00 U
53	n-Butylbenzene	1	U	1	U	1	U	1	U	5.00 U
54	Naphthalene	5	U	1	U	1	U	1	U	2.00 U
55	Methyl tert-butyl ether	NA		1	U	1	U	1	U	1.00 U
56										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**									
58	**Method OR-DEQ**									
59	**TPH-Diesel**	NA		NA		NA		NA		NA
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA
61	**TPH-Gasoline**	NA		NA		NA		NA		NA
62										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			D		D		D		D		D		D		D		D		D		D		D		D		D	
4			S177L		T176B		U235F		V208H		W391B		Y336D		Z225I		Z960I		AH76J		AU22D		BC27N		9912050-02A		BH96B	
5			4/2/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/18/99		5/19/99		9/20/99		12/8/99		12/8/1999 (d)		2/17/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.013**		**0.013**		0.05	U	0.05	U	**0.016**		**0.014**		**0.018**		**0.021**		**0.015**		**0.016**		**0.015**		NA		**0.019**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U
67	60	Copper (6010)	**0.003**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.004**		0.002	U	0.002	U	0.002	U	NA		0.002	U
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	**0.004**		0.001	U	0.001	U	0.001	U	NA		0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U
70	63	Zinc (6010)	0.004	U	0.004	U	0.004	U	0.004	U	**0.007**	J2	0.004	U	0.004	U	**0.020**	J	0.004	U	0.004	U	0.008	U	NA		0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**45.0**		**42.8**		**52.4**		**58.0**		NA		NA		NA		**49.1**		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**16.2**		**15.4**		**18.8**		**20.9**		NA		NA		NA		**16.9**		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**2.3**		**2.1**		**2.6**		**2.2**		NA		NA		NA		**2.7**		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**8.31**		**7.96**		**9.13**		**9.54**		NA		NA		NA		**9.67**		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**200**		**180**		**220**		**280**		NA		NA		NA		**210**		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**200**		**180**		**220**		**280**		NA		NA		NA		**210**		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**230**	J2	**240**		**300**		**240**		**240**		**230**		**250**		**260**		**280**		**190**		NA		**310**	
81	74	Chloride (mg/L) (EPA 325.2)	**11**		**2.0**		**2.4**		**2.4**		**3.2**		**1.4**		**2.1**		**2.8**		**2.0**		**2.8**		**2.8**		NA		**3.4**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	0.010	U	0.010	U	NA		NA		NA		**0.049**		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.022**	J	0.010	U	0.010	U	**0.011**		NA		NA		NA		**0.015**		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.03**		0.010	U	0.010	U	**0.014**		NA		NA		NA		**0.064**		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	2.5	U	2.5	U	**4.7**		2.5	U	NA		NA		NA		**5.8**		NA		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		D		D		D		D		D		D		D		D		D		D		D		D		D		D	
4		BR55E		CB49D		CK77F		CT37F		DE68G		DM30M		DW37E		ED34G		EM85B		ER93P		EZ03C		FF76G		FL58K		FU45C	
5		5/22/00		8/28/00		11/7/00		2/12/01		6/4/01		8/14/01		11/28/01		2/28/02		6/26/02		08/27/02		11/12/02		2/12/03		5/8/03		8/28/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.019**		**0.016**		**0.014**		**0.016**		**0.016**		**0.018**		**0.021**		**0.014**		**0.013**		**0.017**		0.05	U	**0.016**		**0.022**		**0.017**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	**0.003**		0.002	U	0.002	U	0.002	U	0.002	U
68	Lead (7421)	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.02	U	0.001	U	**0.002**		0.001	U
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.019**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		NA		**40.6**		**43.4**		**34.3**		**40.1**	J	**32.2**		NA		NA		NA		**75.2**		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		**13.8**		**14.9**		**12.0**		**14.0**	J	**11.3**		NA		NA		NA		**26.1**		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		**1.8**		**2.2**		**1.9**		**2.2**		**2.0**		NA		NA		NA		**3**		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		**7.40**		**7.64**		**6.73**		**7.77**		**7.57**		NA		NA		NA		**10.8**		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		**200**		NA		NA		NA		**140**		NA		NA		NA		**350**		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		**200**		NA		NA		NA		**140**		NA		NA		NA		**350**		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**290**		**230**		**220**		**240**		**240**		**180**		**220**		**200**		**260**		**320**		**320**		**360**		**350**		**290**	
81	Chloride (mg/L) (EPA 325.2)	**3.2**		**3.1**		**5.4**		**5.4**		**2.4**		**4.5**		**2.4**		**2.9**		**3.3**		**3**		**3.1**		**4.2**		**3.5**		**1.8**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.010	U	NA		NA		NA		**0.020**		NA		NA		NA		**0.19**		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		0.01	U	NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		0.010	UJ	NA		NA		NA		**0.020**		NA		NA		NA		**0.19**		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		**6.1**		NA		NA		NA		**12**		NA		NA		NA		**4**		NA		NA	
86																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1										
2										
3		D		D		D		D		D
4		FY82H		0402105-03		0408036-01		0502102-05		P5H0853-07
5		10/23/03		2/20/04		8/05/04		2/23/05		08/19/05
63	**PRIORITY POLLUTANT**									
64	**METALS (mg/L)**									
65	Arsenic (7060)	**0.018**		**0.021**		**0.0185**		**0.0188**		**0.0188**
66	Chromium (6010)	0.005	U	**0.0078**		**0.019**		**0.0097**		0.001 U
67	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	0.001 U
68	Lead (7421)	0.001	U	**0.0021**		0.0001	U	0.000146	U	0.001 U
69	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	**0.00152**
70	Zinc (6010)	0.006	U	0.01	U	0.01	U	0.01	U	0.01 U
71										
72	**MAJOR IONS AND CONVENTIONALS**									
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**260**		**291**		**308**		**244**		**307**
81	Chloride (mg/L) (EPA 325.2)	**2.4**		**3.69**		**3.52**		**3.83**		**3.37**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		0.100 U
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		**11.1**
86										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			D		D		D		D		D		D		D		D		D		D		D		D		D	
4			S177L		T176B		U235F		V208H		W391B		Y336D		Z225I		Z960I		AH76J		AU22D		BC27N		9912050-02A		BH96B	
5			4/2/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/18/99		5/19/99		9/20/99		12/8/99		12/8/1999 (d)		2/17/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.85		6.68		6.96		6.83		6.44		6.53		6.26		6.74		6.24		6.11		6.53		NM		6.69	
89	82	Temperature (° C) (avg)	13.4		14.6		14.7		14.3		14.9		15.1		13.5		12.8		13.1		15.3		13.5		NM		13.7	
90	83	Conductivity (um/hos)	391		409		366		487		424		481		415		472		422		414		319		NM		531	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		2.65		1.70		1.70		1.75		2.08		1.69		2.47		NM		5.09	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		10	U	NA	
122																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		D		D		D		D		D		D		D		D		D		D		D		D		D		D	
4		BR55E		CB49D		CK77F		CT37F		DE68G		DM30M		DW37E		ED34G		EM85B		ER93P		EZ03C		FF76G		FL58K		FU45C	
5		5/22/00		8/28/00		11/7/00		2/12/01		6/4/01		8/14/01		11/28/01		2/28/02		6/26/02		08/27/02		11/12/02		2/12/03		5/8/03		8/28/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	6.77		6.47		5.41		6.52		6.65		6.94		6.62		6.58		6.42		6.77		6.63		7.06		6.82		6.93	
89	Temperature (° C) (avg)	12.1		15.4		14.3		14.2		14.4		14.5		15.0		11.9		13.8		15.7		14.6		15.6		14.5		14.9	
90	Conductivity (um/hos)	446		357		300		331		344		331		334		260		452		442		532		707		495		410	
91	Dissolved oxygen (mg/L) (avg)	1.99		1.56		2.04		1.29		1.29		1.54		4.01		7.74		4.39		0.69		2.16		0		2.71		1.84	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1										
2										
3		D		D		D		D		D
4		FY82H		0402105-03		0408036-01		0502102-05		P5H0853-07
5		10/23/03		2/20/04		8/05/04		2/23/05		08/19/05
87	**FIELD PARAMETERS**									
88	pH (avg)	6.71		6.61		6.12		6.79		6.57
89	Temperature (° C) (avg)	15.0		13.1		14.9		15.2		16.2
90	Conductivity (um/hos)	382		441		630		210		377
91	Dissolved oxygen (mg/L) (avg)	1.66		2.36		2.21		0		NM
92										
93	**DIOXINS AND FURANS (ng/L)**									
94	**Method 8290**									
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA
120										
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA
122										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			D		D		D		D		D		D		D		D		D		D		D		D		D	
4			S177L		T176B		U235F		V208H		W391B		Y336D		Z225I		Z960I		AH76J		AU22D		BC27N		9912050-02A		BH96B	
5			4/2/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/18/99		5/19/99		9/20/99		12/8/99		12/8/1999 (d)		2/17/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		D		D		D		D		D		D		D		D		D		D		D		D		D		D	
4		BR55E		CB49D		CK77F		CT37F		DE68G		DM30M		DW37E		ED34G		EM85B		ER93P		EZ03C		FF76G		FL58K		FU45C	
5		5/22/00		8/28/00		11/7/00		2/12/01		6/4/01		8/14/01		11/28/01		2/28/02		6/26/02		08/27/02		11/12/02		2/12/03		5/8/03		8/28/03	
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1										
2										
3		D		D		D		D		D
4		FY82H		0402105-03		0408036-01		0502102-05		P5H0853-07
5		10/23/03		2/20/04		8/05/04		2/23/05		08/19/05
123	**PAHs (µg/L)**									
124	**EPA Method SW8270 SIM**									
125	Naphthalene	NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		1	U	NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA
130	Anthracene	NA		NA		1	U	NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			F	
4			Y314H	
5			8/18/98	
6				
7	1	**CHLORINATED PHENOLS (µg/L)**		
8	2	**EPA Method SW8040**		
9	3	Pentachlorophenol	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U
16	10			
17	11	**SEMIVOLATILES (µg/L)**		
18	12	**EPA Method SW8270**		
19	13	Phenol	2.0	U
20	14	4-Methylphenol	1.0	U
21	15	Isophorone	1.0	U
22	16	2,4-Dimethylphenol	3.0	U
23	17	Benzoic Acid	10	U
24	18	Naphthalene	1.0	U
25	19	2-Methylnaphthalene	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U
28	22	Acenaphthene	1.0	U
29	23	Dibenzofuran	1.0	U
30	24	Fluorene	1.0	U
31	25	Pentachlorophenol	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U
33	27			
34	28	**VOLATILES (µg/L)**		
35	29	**EPA Method SW8260**		
36	30	Acetone	5.0	U
37	31	Carbon Disulfide	1.0	U
38	32	2-Butanone	5.0	U
39	33	Benzene	1.0	U
40	34	Bromoform	1.0	U
41	35	Toluene	1.0	U
42	36	Ethylbenzene	1.0	U
43	37	Styrene	1.0	U
44	38	m,p-Xylene	1.0	U
45	39	o-Xylene	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U
48	42	Isopropylbenzene	1.0	U
49	43	n-Propylbenzene	1.0	U
50	44	tert-Butylbenzene	1.0	U
51	45	sec-Butylbenzene	1.0	UJ
52	46	4-Isopropyltoluene	1.0	U
53	47	n-Butylbenzene	1.0	U
54	48	Naphthalene	5.0	U
55	48.5	Methyl tert-butyl ether	NA	
56	49			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**		
58	51	**Method OR-DEQ**		
59	52	**TPH-Diesel**	0.25	U
60	53	**TPH-D Motor Oil**	NA	
61	54	**TPH-Gasoline**	NA	
62	55			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			F	
4			Y314H	
5			8/18/98	
63	56	**PRIORITY POLLUTANT**		
64	57	**METALS (mg/L)**		
65	58	Arsenic (7060)	**0.034**	
66	59	Chromium (6010)	**0.042**	
67	60	Copper (6010)	**0.016**	
68	61	Lead (7421)	**0.006**	
69	62	Nickel (6010)	**0.03**	
70	63	Zinc (6010)	**0.047**	
71	64			
72	65	**MAJOR IONS AND CONVENTIONALS**		
73	66	Calcium (mg/L) (6010)	NA	
74	67	Magnesium (mg/L) (6010)	NA	
75	68	Potassium (mg/L) (6010)	NA	
76	69	Sodium (mg/L) (6010)	NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**200**	
81	74	Chloride (mg/L) (EPA 325.2)	**1.1**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA	
86	79			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			F	
4			Y314H	
5			8/18/98	
87	80	**FIELD PARAMETERS**		
88	81	pH (avg)	6.37	
89	82	Temperature (° C) (avg)	14.2	
90	83	Conductivity (um/hos)	448	
91	84	Dissolved oxygen (mg/L) (avg)	2.30	
92	85			
93	86	**DIOXINS AND FURANS (ng/L)**		
94	87	**Method 8290**		
95	88	2,3,7,8-TCDF	NA	
96	89	Total TCDF	NA	
97	90	2,3,7,8-TCDD	NA	
98	91	Total TCDD	NA	
99	92	1,2,3,7,8-PeCDF	NA	
100	93	2,3,4,7,8-PeCDF	NA	
101	94	Total PeCDF	NA	
102	95	1,2,3,7,8-PeCDD	NA	
103	96	Total PeCDD	NA	
104	97	1,2,3,4,7,8-HxCDF	NA	
105	98	1,2,3,6,7,8-HxCDF	NA	
106	99	2,3,4,6,7,8-HxCDF	NA	
107	100	1,2,3,7,8,9-HxCDF	NA	
108	101	Total HxCDF	NA	
109	102	1,2,3,4,7,8-HxCDD	NA	
110	103	1,2,3,6,7,8-HxCDD	NA	
111	104	1,2,3,7,8,9-HxCDD	NA	
112	105	Total HxCDD	NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA	
115	108	Total HpCDF	NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA	
117	110	Total HpCDD	NA	
118	111	OCDF	NA	
119	112	OCDD	NA	
120				
121		**ETHANOL (mg/L)**	NA	
122				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			F	
4			Y314H	
5			8/18/98	
123		**PAHs (µg/L)**		
124		**EPA Method SW8270 SIM**		
125		Naphthalene	NA	
126		2-Methylnaphthalene	NA	
127		Acenaphthylene	NA	
128		Acenaphthene	NA	
129		Fluorene	NA	
130		Anthracene	NA	
131		Dibenzofuran	NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			H		H		H		H		H		H		H		H		H		H		H		H		H		H
4			S177B		T176D		U235V		V208C		W371F		Y314A		Z225V		Z960X		AH27D		AU22A		BB82E		BH75K		BR55N		CT37N
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/17/98		11/13/98		2/16/99		5/17/99		9/20/99		12/6/99		2/15/00		5/23/00		2/12/01
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	0.25	U	**0.16**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.44**		0.25	U	0.25	U	**0.19**	J1	0.25	U	0.25	UJ	0.25
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH
1						
2						
3			H		H	
4			ED16K		FF88N	
5			2/25/02		2/13/03	
6						
7	**CHLORINATED PHENOLS (µg/L)**					
8	**EPA Method SW8040**					
9	Pentachlorophenol	U	0.26	U	0.25	U
10	2,4,6-Trichlorophenol		NA		NA	
11	2,3,6-Trichlorophenol		NA		NA	
12	2,4,5-Trichlorophenol		NA		NA	
13	2,3,4-Trichlorophenol		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA	
15	2,3,4,5-Tetrachlorophenol		NA		NA	
16						
17	**SEMIVOLATILES (µg/L)**					
18	**EPA Method SW8270**					
19	Phenol		NA		NA	
20	4-Methylphenol		NA		NA	
21	Isophorone		NA		NA	
22	2,4-Dimethylphenol		NA		NA	
23	Benzoic Acid		NA		NA	
24	Naphthalene		NA		NA	
25	2-Methylnaphthalene		NA		NA	
26	2,4,6-Trichlorophenol		NA		NA	
27	2,4,5-Trichlorophenol		NA		NA	
28	Acenaphthene		NA		NA	
29	Dibenzofuran		NA		NA	
30	Fluorene		NA		NA	
31	Pentachlorophenol		NA		NA	
32	bis(2-Ethylhexyl)phthalate		NA		NA	
33						
34	**VOLATILES (µg/L)**					
35	**EPA Method SW8260**					
36	Acetone		NA		NA	
37	Carbon Disulfide		NA		NA	
38	2-Butanone		NA		NA	
39	Benzene		NA		NA	
40	Bromoform		NA		NA	
41	Toluene		NA		NA	
42	Ethylbenzene		NA		NA	
43	Styrene		NA		NA	
44	m,p-Xylene		NA		NA	
45	o-Xylene		NA		NA	
46	1,3,5-Trimethylbenzene		NA		NA	
47	1,2,4-Trimethylbenzene		NA		NA	
48	Isopropylbenzene		NA		NA	
49	n-Propylbenzene		NA		NA	
50	tert-Butylbenzene		NA		NA	
51	sec-Butylbenzene		NA		NA	
52	4-Isopropyltoluene		NA		NA	
53	n-Butylbenzene		NA		NA	
54	Naphthalene		NA		NA	
55	Methyl tert-butyl ether		NA		NA	
56						
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**					
58	**Method OR-DEQ**					
59	**TPH-Diesel**		NA		NA	
60	**TPH-D Motor Oil**		NA		NA	
61	**TPH-Gasoline**		NA		NA	
62						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			H		H		H		H		H		H		H		H		H		H		H		H		H		H
4			S177B		T176D		U235V		V208C		W371F		Y314A		Z225V		Z960X		AH27D		AU22A		BB82E		BH75K		BR55N		CT37N
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/17/98		11/13/98		2/16/99		5/17/99		9/20/99		12/6/99		2/15/00		5/23/00		2/12/01
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.013**		**0.019**		0.05	U	0.05	U	**0.013**		**0.013**		**0.015**		**0.023**		**0.023**		**0.020**		**0.012**		**0.020**		**0.019**		**0.015**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	**0.003**		**0.006**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.010**		**0.011**		0.002	U	0.002	U	0.002	U	**0.003**		**0.004**
68	61	Lead (7421)	0.001	U	**0.001**		0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	**0.014**	J2	**0.010**		**0.005**		**0.004**	J2	**0.006**		0.004	U	**0.012**	J	0.019	U	**0.006**		0.006	U	0.006	U	0.006	U	0.006
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	**22.4**		**27.7**		**25.4**		**24.9**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**7.80**		**9.86**		**8.80**		**8.27**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**2.3**		**2.2**		**2.4**		**2.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**5.41**		**6.27**		**5.92**		**5.70**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**100**		**110**		**110**		**120**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**100**		**110**		**110**		**120**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**160**	J2	**140**		**150**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
81	74	Chloride (mg/L) (EPA 325.2)	**1.5**		**2.0**		**2.7**		**1.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.016**		0.010	U	**0.011**		0.010	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	0.010	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.016**		0.010	U	**0.011**		0.010	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**4.8**	J	2.5	U	**3.6**		**6.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH
1						
2						
3			H		H	
4			ED16K		FF88N	
5			2/25/02		2/13/03	
63	**PRIORITY POLLUTANT**					
64	**METALS (mg/L)**					
65	Arsenic (7060)		**0.021**		**0.017**	
66	Chromium (6010)	U	0.005	U	0.005	U
67	Copper (6010)		**0.007**		**0.004**	
68	Lead (7421)	U	**0.001**		0.001	U
69	Nickel (6010)	U	0.01	U	0.01	U
70	Zinc (6010)	U	**0.008**		**0.01**	
71						
72	**MAJOR IONS AND CONVENTIONALS**					
73	Calcium (mg/L) (6010)		NA		NA	
74	Magnesium (mg/L) (6010)		NA		NA	
75	Potassium (mg/L) (6010)		NA		NA	
76	Sodium (mg/L) (6010)		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		NA		NA	
81	Chloride (mg/L) (EPA 325.2)		NA		NA	
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		NA	
86						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			H		H		H		H		H		H		H		H		H		H		H		H		H		H
4			S177B		T176D		U235V		V208C		W371F		Y314A		Z225V		Z960X		AH27D		AU22A		BB82E		BH75K		BR55N		CT37N
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/17/98		11/13/98		2/16/99		5/17/99		9/20/99		12/6/99		2/15/00		5/23/00		2/12/01
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.77		6.85		7.02		6.85		6.37		6.56		6.41		7.07		7.07		7.07		6.26		6.64		6.58		6.54
89	82	Temperature (° C) (avg)	13.7		15.1		15.1		14.4		15.0		14.8		14.4		14.3		14.3		14.3		14.5		13.5		14.2		13.3
90	83	Conductivity (um/hos)	212		283		225		243		186		251		100		193		193		193		258		223		191		230
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		1.40		1.69		1.60		1.60		1.60		2.34		2.18		2.00		3.06
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH
1						
2						
3			H		H	
4			ED16K		FF88N	
5			2/25/02		2/13/03	
87	**FIELD PARAMETERS**					
88	pH (avg)		6.29		7.01	
89	Temperature (° C) (avg)		13.4		14.9	
90	Conductivity (um/hos)		292		369	
91	Dissolved oxygen (mg/L) (avg)		4.89		0	
92						
93	**DIOXINS AND FURANS (ng/L)**					
94	**Method 8290**					
95	2,3,7,8-TCDF		NA		NA	
96	Total TCDF		NA		NA	
97	2,3,7,8-TCDD		NA		NA	
98	Total TCDD		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA	
101	Total PeCDF		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA	
103	Total PeCDD		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA	
108	Total HxCDF		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA	
112	Total HxCDD		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA	
115	Total HpCDF		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA	
117	Total HpCDD		NA		NA	
118	OCDF		NA		NA	
119	OCDD		NA		NA	
120						
121	**ETHANOL (mg/L)**		NA		NA	
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			H		H		H		H		H		H		H		H		H		H		H		H		H		H
4			S177B		T176D		U235V		V208C		W371F		Y314A		Z225V		Z960X		AH27D		AU22A		BB82E		BH75K		BR55N		CT37N
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/17/98		11/13/98		2/16/99		5/17/99		9/20/99		12/6/99		2/15/00		5/23/00		2/12/01
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH
1						
2						
3			H		H	
4			ED16K		FF88N	
5			2/25/02		2/13/03	
123	**PAHs (µg/L)**					
124	**EPA Method SW8270 SIM**					
125	Naphthalene		NA		NA	
126	2-Methylnaphthalene		NA		NA	
127	Acenaphthylene		NA		NA	
128	Acenaphthene		NA		NA	
129	Fluorene		NA		NA	
130	Anthracene		NA		NA	
131	Dibenzofuran		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2					Dup of J1								Dup of J1												
3			J1		J1D		J1		J1		J1		J4		J1		J1		J1		J1		J1		J1
4			S177H		S177I		T176P		U235J		V224O		V224K		W371N		Y314I		Z225O		Z960C		AH49C		AU22H
5			4/2/97		4/2/97		7/16/97		10/22/97		1/29/98		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99
6																									
7	1	**CHLORINATED PHENOLS (µg/L)**																							
8	2	**EPA Method SW8040**																							
9	3	Pentachlorophenol	**32**		**33**		**24**		**7.8**		**7.3**		**8.4**		**7.5**		**5.8**		**2.0**		**8.3**		**4.6**		**1.7**
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
12	6	2,4,5-Trichlorophenol	0.4	U	0.25	U	0.27	U	0.67	U	**0.29**		**0.22**	J1	**0.25**		0.25	U	0.25	U	0.25	U	0.25	U	0.25
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**3.4**		**3.4**		**3.0**		**1.8**		**0.98**		**1.1**		**0.51**		**0.33**		0.25	U	**0.43**		0.17	J1	0.25
15	9	2,3,4,5-Tetrachlorophenol	**0.94**		**0.70**		**0.5**		**0.28**		**0.23**	J1	**0.20**	J1	**0.16**	J1	**0.23**	J1	0.25	U	0.25	U	0.25	U	0.25
16	10																								
17	11	**SEMIVOLATILES (µg/L)**																							
18	12	**EPA Method SW8270**																							
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	1.0	U	1.0	U	**1.1**		**1.9**		**2.5**		**2.4**		**2.8**	J2	**1.4**		1.0	U	**3.6**		**2.4**		**1.1**
25	19	2-Methylnaphthalene	1.0	U	1.0	U	**1.1**		**1.8**		**2.6**		**2.4**		**2.9**	J2	**1.3**		1.0	U	**3.5**		**2.2**		**1.2**
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	**44**		**52**		**20**		**11**		**11**		**8.8**		**10**		**6.5**		5.0	U	**12**		**4.4**	J1	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
33	27																								
34	28	**VOLATILES (µg/L)**																							
35	29	**EPA Method SW8260**																							
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	9.9	U	5.0	U	5.0
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	**6.5**		**5.9**		**12**		**7.5**		**4.0**		**3.3**		**8.4**		**5.5**		**2.5**		**6.2**		**1.9**		**1.5**
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	**4.4**		**4.0**		**6.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	**4.9**		**4.1**		**6.1**		**3.8**		**4.0**	J2	**2.4**	J2	**5.2**		**2.7**		**2.1**		**4.4**		1.0	U	**1.4**
47	41	1,2,4-Trimethylbenzene	**41**		**36**		**47**		**37**	J2	**26**	J2	**19**	J2	**46**		**29**		**16**		**44**		**8.8**		**6.4**
48	42	Isopropylbenzene	**5.0**		**4.2**		**7.9**		**6.9**	J2	**4.2**	J2	**2.7**	J2	**7.7**		**6.6**		**4.8**		**7.6**		**2.1**		**2.4**
49	43	n-Propylbenzene	**8.7**		**7.2**		**14**		**14**		**8.0**	J2	**5.0**	J2	**14**		**11**		**7.5**		**12**		**3.4**		**4.4**
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	**1.6**		**1.4**		**2.2**		**1.8**	J2	**1.3**		1.0	U	**2.0**		**1.6**	J2	1.0	U	**2.6**		1.0	U	1.0
52	46	4-Isopropyltoluene	1.0	U	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
53	47	n-Butylbenzene	**1.3**		**1.1**		**1.9**		**1.7**	J2	**1.1**		1.0	U	**2.0**		**1.3**		1.0	U	**1.2**		1.0	U	1.0
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**5.4**		5.0	U	5.0
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	51	**Method OR-DEQ**																							
59	52	**TPH-Diesel**	**0.30**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.52**		0.25	U	0.25
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
3			J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1
4			BC27K		9912050-03A		BH96R		BR64D		CB49G		CL03H		CT55F		DE68I		DM52B		DW48C		ED23C		EM85D		ES04F		EZ03K
5			12/8/99		12/8/1999 (d)		2/16/00		5/24/00		8/29/00		11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol		**0.94**		NA		**0.81**		**1.7**		0.25	U	0.25	U	**0.50**		**0.36**		0.25	U	**0.25**		NA		**4.4**		**3.1**		**0.57**
10	2,4,6-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	U	2.0	U	NA		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.3	U	2
20	4-Methylphenol	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
21	Isophorone	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
22	2,4-Dimethylphenol	U	3.0	U	NA		3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.5	U	3
23	Benzoic Acid	U	10	U	NA		10	U	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	58	U	50
24	Naphthalene		**0.7**	J1	NA		**1.4**		**3.6**		1.0	U	1.0	U	**2.9**		**1.3**		1.0	U	1.0	U	1.0	U	**1.4**		1.2	U	**1**
25	2-Methylnaphthalene		**0.5**	J1	NA		**1.2**		**3.3**		1.0	U	1.0	U	**3.0**		**1.5**		1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
26	2,4,6-Trichlorophenol	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5
27	2,4,5-Trichlorophenol	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5
28	Acenaphthene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
29	Dibenzofuran	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
30	Fluorene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1
31	Pentachlorophenol	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**280**		5.0	U	5.8	U	5
32	bis(2-Ethylhexyl)phthalate	U	**0.6**	J1	NA		1.0	U	1.0	U	1.0	U	1.0	U	**25**		1.0	U	1.0	U	4.0	U	4.0	U	4.7	U	4		
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	12	U	5.0	U	5.0	U	5.0	U	**10**	M	5	U	5
37	Carbon Disulfide	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
38	2-Butanone	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5
39	Benzene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
40	Bromoform	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
41	Toluene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
42	Ethylbenzene		1.0	U	NA		1.0	U	**3.4**		1.0	U	1.0	U	**1.2**		**1.2**		1.0	U	1.0	U	1.0	U	**1.1**		1	U	1
43	Styrene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
44	m,p-Xylene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.5**		1.0	U	1	U	1
45	o-Xylene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.0**		1.0	U	1	U	1
46	1,3,5-Trimethylbenzene		1.0	U	NA		1.0	U	**3.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**6.4**		1.0	U	1	U	1
47	1,2,4-Trimethylbenzene		**2.4**		NA		**2.4**		**7.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**50**		1.0	U	1	U	1
48	Isopropylbenzene		**1.2**		NA		**1.3**		**8.2**		**1.5**		**2.5**		**3.3**		**4.7**		1.0	U	**1.3**		**3.5**		**8.4**		**5.2**		**3.5**
49	n-Propylbenzene		**1.9**		NA		**2.0**		**13**		**3.3**		**3.8**		**5.7**		**8.3**		**1.1**		**2.2**		**4.0**		**12**		**7.8**		**4.9**
50	tert-Butylbenzene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
51	sec-Butylbenzene	U	1.0	U	NA		1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		1	U	1
52	4-Isopropyltoluene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	1	U	1
53	n-Butylbenzene	U	1.0	U	NA		1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1
54	Naphthalene	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	U	0.25	U	NA		0.25	U	0.25	(a)	0.25	U	0.25	U	**0.30**	(d)	NA		NA		NA		**2.1**		NA		NA		NA
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		0.50	U	NA		NA		NA		NA		NA		NA		NA		NA
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2																				
3			J1		J1		J1		J1		J1		J1		J1		J1		J1	J1
4			FF76J		FL58I		FU31A		FY64H		0402105-01		0408019-04		0502102-02		P5F0342-04		P5H1000-10	P5K0699-06
5			2/12/03		5/8/03		8/27/03		10/21/03		2/20/04		8/03/04		2/23/05		6/7/05		08/23/05	11/15/05
6																				
7	**CHLORINATED PHENOLS (µg/L)**																			
8	**EPA Method SW8040**																			
9	Pentachlorophenol		**0.35**		**0.73**		**1.3**		**0.65**		**1.13**		0.5	U	0.48	U	0.500	U	0.490 U	0.481 U
10	2,4,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
11	2,3,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
12	2,4,5-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
13	2,3,4-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
16																				
17	**SEMIVOLATILES (µg/L)**																			
18	**EPA Method SW8270**																			
19	Phenol	U	2.1	U	2	U	2	U	2.1	U	1.93	UJ	2.01	U	1.92	U	5.00	U	5.00 U	NA
20	4-Methylphenol	U	1	U	1	U	1	U	1.1	U	9.63	U	10.1	U	9.58	U	5.00	U	5.00 U	NA
21	Isophorone	U	1	U	1	U	1	U	1.1	U	0.963	U	1.01	U	0.958	U	5.00	U	5.00 U	NA
22	2,4-Dimethylphenol	U	3.1	U	3	U	3	U	3.2	U	2.89	U	3.02	U	2.87	U	10.00	U	10.0 U	NA
23	Benzoic Acid	U	52	U	50	U	50	U	11	U	19.3	U	20.1	U	19.2	U	50.0	U	50.0 U	NA
24	Naphthalene		1	U	1	U	**1.5**		**2.1**		**1.41**		1.01	U	0.958	U	5.00	U	5.00 U	NA
25	2-Methylnaphthalene	U	1	U	1	U	1	U	**1.4**		**1**		1.01	U	0.958	U	5.00	U	5.00 U	NA
26	2,4,6-Trichlorophenol	U	5.2	U	5	U	5	U	5.3	U	4.82	U	5.03	U	4.79	U	5.00	U	5.00 U	NA
27	2,4,5-Trichlorophenol	U	5.2	U	5	U	5	U	5.3	U	4.82	U	5.03	U	4.79	U	5.00	U	5.00 U	NA
28	Acenaphthene	U	1	U	1	U	1	U	1.1	U	0.963	U	1.01	U	0.958	U	5.00	U	5.00 U	NA
29	Dibenzofuran	U	1	U	1	U	1	U	1.1	U	0.963	U	1.01	U	0.958	U	5.00	U	5.00 U	NA
30	Fluorene	U	1	U	1	U	1	U	1.1	U	0.963	U	1.01	U	0.958	U	5.00	U	5.00 U	NA
31	Pentachlorophenol	U	5.2	U	5	U	5	U	5.3	U	4.82	U	5.03	U	4.79	U	10	U	10.0 U	NA
32	bis(2-Ethylhexyl)phthalate	U	1	U	1	U	1	U	1.1	U	0.963	U	1.01	U	0.958	U	10.00	U	10.0 U	NA
33																				
34	**VOLATILES (µg/L)**																			
35	**EPA Method SW8260**																			
36	Acetone	U	5	U	5	U	5	U	5	U	50	U	50	U	50	U	25.0	U	25.0 U	NA
37	Carbon Disulfide	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	10.00	U	10.0 U	NA
38	2-Butanone	U	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10.00	U	10.0 U	NA
39	Benzene	U	1	U	1	U	1	U	1	U	0.4	U	0.3	U	0.3	U	1.00	U	1.00 U	NA
40	Bromoform	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
41	Toluene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
42	Ethylbenzene	U	1	U	1	U	1	U	1	U	**2.82**		1	U	1	U	1.00	U	1.00 U	NA
43	Styrene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
44	m,p-Xylene	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2.00	U	2.00 U	NA
45	o-Xylene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
46	1,3,5-Trimethylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
47	1,2,4-Trimethylbenzene	U	**4.5**		1	U	1	U	1	U	**6.76**		1	U	1	U	1.00	U	1.00 U	NA
48	Isopropylbenzene		**5.4**		**1.1**		**14**		**7.1**		**17**		**5.58**	J	1	U	**8.28**		**7.76**	NA
49	n-Propylbenzene		**7.9**		**1.5**		**21**		**11**		**21.7**		**14**	J	1	U	**12.3**		**8.28**	NA
50	tert-Butylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	NA
51	sec-Butylbenzene	U	**1.6**		1	U	**2**		1	U	**3.14**		1	U	1	U	**1.41**		**1.00**	NA
52	4-Isopropyltoluene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U	NA
53	n-Butylbenzene	U	1	U	1	U	**1.7**		1	U	**1.74**		**1.06**	J	1	U	5.00	U	5.00 U	NA
54	Naphthalene	U	5	U	5	U	**5**		5	U	**4.77**		**1.47**	J	1	U	**2.78**		2.00 U	NA
55	Methyl tert-butyl ether		NA		NA		NA		NA		1	U	1	U	1	U	1.00	U	1.00 U	NA
56																				
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																			
58	**Method OR-DEQ**																			
59	**TPH-Diesel**		**0.4**		NA		NA		NA		NA		NA		NA		NA		NA	NA
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
62																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2					Dup of J1								Dup of J1												
3			J1		J1D		J1		J1		J1		J4		J1		J1		J1		J1		J1		J1
4			S177H		S177I		T176P		U235J		V224O		V224K		W371N		Y314I		Z225O		Z960C		AH49C		AU22H
5			4/2/97		4/2/97		7/16/97		10/22/97		1/29/98		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99
63	56	**PRIORITY POLLUTANT**																							
64	57	**METALS (mg/L)**																							
65	58	Arsenic (7060)	**0.007**		**0.006**		**0.006**		0.05	U	0.05	U	0.05	U	**0.008**		**0.007**		**0.008**		**0.007**		**0.006**		**0.015**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	0.001	U	0.001	U	0.02	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	0.004	U	0.004	U	0.004	U	**0.005**		**0.006**		0.004	U	**0.004**		0.004	U	**0.008**	J	**0.007**		0.004
71	64																								
72	65	**MAJOR IONS AND CONVENTIONALS**																							
73	66	Calcium (mg/L) (6010)	**26.4**		**26.7**		**26.1**		**27.5**		**30.8**		**30.5**		NA		NA		NA		**20.2**		NA		NA
74	67	Magnesium (mg/L) (6010)	**10.1**		**10.2**		**9.96**		**10.1**		**10.9**		**10.8**		NA		NA		NA		**6.67**		NA		NA
75	68	Potassium (mg/L) (6010)	**3.1**		**2.8**		**3.2**		**3.4**		**3.5**		**3.4**		NA		NA		NA		**3.1**		NA		NA
76	69	Sodium (mg/L) (6010)	**7.40**		**7.47**		**8.13**		**8.29**		**8.49**		**8.46**		NA		NA		NA		**8.05**		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**120**		**120**		**100**	J2	**130**		**140**		**140**		NA		NA		NA		**74**		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**120**		**120**		**100**	J2	**130**		**140**		**140**		NA		NA		NA		**74**		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		NT		**160**	J2	**180**		**170**		**170**		180		170		140		**140**		**150**		**170**
81	74	Chloride (mg/L) (EPA 325.2)	**4.3**		**5.4**		**3.4**		**2.5**		**2.3**		**2.2**		3.7		1.0	U	1.8		**3.7**		**3.7**		**2.6**
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.057**		**0.011**		0.010	U	**0.025**		**1.8**	J2	**1.4**	J2	NA		NA		NA		**1.8**		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	**0.01**	J	**0.016**	J2	0.010	U	0.010	UJ	0.010	UJ	NA		NA		NA		0.010	U	NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.057**		**0.021**		**0.015**	J2	**0.025**		**1.8**	J2	**1.4**	J2	NA		NA		NA		**1.8**		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**7.0**	J	**26**	J	**10**		**8.6**		**9.0**		**12**		NA		NA		NA		**15**		NA		NA
86	79																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																													
2																													
3			J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1
4			BC27K		9912050-03A		BH96R		BR64D		CB49G		CL03H		CT55F		DE68I		DM52B		DW48C		ED23C		EM85D		ES04F		EZ03K
5			12/8/99		12/8/1999 (d)		2/16/00		5/24/00		8/29/00		11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)		**0.015**		NA		**0.013**		**0.011**		**0.010**		**0.012**		**0.010**		**0.011**		**0.014**		**0.013**		**0.012**		**0.014**		**0.01**		0.05
66	Chromium (6010)	U	0.005	U	NA		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	Copper (6010)	U	0.002	U	NA		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.003**		0.002	U	**0.003**		0.002
68	Lead (7421)	U	**0.001**		NA		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.02
69	Nickel (6010)	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01
70	Zinc (6010)	U	0.006	U	NA		0.006	U	**0.006**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.007**		0.006	U	**0.007**		**0.006**
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**20.6**		**20.5**		**22.7**		**21.1**		**29.4**		NA		NA		NA
74	Magnesium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**7.21**		**7.38**		**8.65**		**7.62**		**10.1**		NA		NA		NA
75	Potassium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**2.3**		**2.4**		**2.6**		**2.6**		**3.4**		NA		NA		NA
76	Sodium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**6.48**		**6.15**		**6.58**		**6.56**		**8.36**		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		**100**		NA		NA		NA		**130**		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		**100**		NA		NA		NA		**130**		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**160**		NA		**200**		**160**		**160**		**160**		**150**		**160**		**150**		**140**		**210**		**160**		**160**		**180**
81	Chloride (mg/L) (EPA 325.2)		**3.1**		NA		**4.3**		**2.5**		**2.0**		**2.3**		**3.0**		**2.6**		**6.2**		**2.6**		**8.8**		**3.6**		**3.2**		**3.5**
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**2.4**		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.018**		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**2.4**	J	NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA		NA		NA		**10**		NA		NA		NA		**14**		NA		NA		NA
86																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2																				
3			J1		J1		J1		J1		J1		J1		J1		J1		J1	J1
4			FF76J		FL58I		FU31A		FY64H		0402105-01		0408019-04		0502102-02		P5F0342-04		P5H1000-10	P5K0699-06
5			2/12/03		5/8/03		8/27/03		10/21/03		2/20/04		8/03/04		2/23/05		6/7/05		08/23/05	11/15/05
63	**PRIORITY POLLUTANT**																			
64	**METALS (mg/L)**																			
65	Arsenic (7060)	U	**0.014**		**0.014**		**0.009**		**0.006**		**0.009**		**0.0114**		**0.018**		**0.00933**		**0.0083**	NA
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0232**	J	**0.0188**		**0.0068**		0.001	U	0.001 U	NA
67	Copper (6010)	U	**0.004**		0.002	U	0.002	U	**0.002**		0.01	U	0.01	U	0.01	U	0.002	U	0.001 U	NA
68	Lead (7421)	U	**0.002**		0.001	U	0.001	U	0.001	U	**0.0004**		**0.000317**		**0.000543**		0.001	U	0.001 U	NA
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.0151**		0.005	U	**0.0509**		**0.0041**		**0.00335**	NA
70	Zinc (6010)		**0.007**		0.006	U	0.006	U	0.006	U	0.01	U	**0.0121**		0.01	U	0.005	U	0.01 U	NA
71																				
72	**MAJOR IONS AND CONVENTIONALS**																			
73	Calcium (mg/L) (6010)		**43.2**		NA		NA		NA		NA		NA		NA		NA		NA	NA
74	Magnesium (mg/L) (6010)		**16.8**		NA		NA		NA		NA		NA		NA		NA		NA	NA
75	Potassium (mg/L) (6010)		**3.1**		NA		NA		NA		NA		NA		NA		NA		NA	NA
76	Sodium (mg/L) (6010)		**8.7**		NA		NA		NA		NA		NA		NA		NA		NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		**130**		NA		NA		NA		NA		NA		NA		NA		NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		1	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		**130**		NA		NA		NA		NA		NA		NA		NA		NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**260**		**150**		**220**		**190**		**240**	J	**276**		**497**		**183**		**193**	NA
81	Chloride (mg/L) (EPA 325.2)		**2.9**		**3.8**		**2.3**		**2.2**		**2.76**		**4.13**		**2.72**		**2.88**		**4.81**	NA
82	N-Nitrate (mg-N/L) (Calculated)		**0.039**		NA		NA		NA		NA		NA		NA		NA		NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		**0.015**		NA		NA		NA		NA		NA		NA		NA		NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		**0.054**		NA		NA		NA		NA		NA		NA		NA		NA	NA
85	Sulfate (mg/L) (EPA 375.2)		**110**		NA		NA		NA		NA		NA		NA		NA		NA	NA
86																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2					Dup of J1								Dup of J1												
3			J1		J1D		J1		J1		J1		J4		J1		J1		J1		J1		J1		J1
4			S177H		S177I		T176P		U235J		V224O		V224K		W371N		Y314I		Z225O		Z960C		AH49C		AU22H
5			4/2/97		4/2/97		7/16/97		10/22/97		1/29/98		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99
87	80	**FIELD PARAMETERS**																							
88	81	pH (avg)	6.75		6.75		6.62		6.75		6.66		6.65		6.56		6.35		6.17		6.43		5.77		6.33
89	82	Temperature (° C) (avg)	12.8		12.8		14.7		15.3		14.5		14.5		12.6		15.5		15.0		13.1		12.9		16.6
90	83	Conductivity (um/hos)	319		319		256		239		314		315		289		330		138		207		241		222
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		NA		2.85		2.20		1.82		1.84		2.33		2.24
92	85																								
93	86	**DIOXINS AND FURANS (ng/L)**																							
94	87	**Method 8290**																							
95	88	2,3,7,8-TCDF	0.0057	U	0.0017	U	0.0023	U	0.0038	U	NA		NA		0.0017	U	0.0019	U	0.0019	U	0.0035	U	0.0011	U	NA
96	89	Total TCDF	**0.0110**		0.0012-0.0034	U	0.0010-0.0058	U	0.0018-0.0064	U	NA		NA		0.0017	U	0.0019	U	0.0019	U	**0.0024**		0.0011	U	NA
97	90	2,3,7,8-TCDD	0.0054	U	0.0028	U	0.0029	U	0.0053	U	NA		NA		0.0022	U	0.0050	U	0.0034	U	0.0057	U	0.0044	U	NA
98	91	Total TCDD	0.0037-0.0087	U	0.0015-0.0049	U	0.0015-0.0050	U	0.0024-0.0087	U	NA		NA		0.0022	U	0.0050	U	**0.0016**		0.0057	U	0.0044	U	NA
99	92	1,2,3,7,8-PeCDF	0.0029	U	0.0032	U	0.0051	U	0.0031	U	NA		NA		0.0019	U	0.0035	U	0.0020	U	0.0049	U	0.0021	U	NA
100	93	2,3,4,7,8-PeCDF	0.0035	U	0.0031	U	0.0024	U	0.0046	U	NA		NA		0.0023	U	0.0037	U	0.0027	U	0.0042	U	0.0020	U	NA
101	94	Total PeCDF	0.0029-0.0064	U	0.0013-0.0047	U	0.0036-0.0067	U	**0.0022**		NA		NA		0.0021	U	0.0036	U	0.0024	U	0.0046	U	0.0021	U	NA
102	95	1,2,3,7,8-PeCDD	0.0080	U	0.0088	U	0.0048	U	0.0068	U	NA		NA		0.0041	U	0.0046	U	0.0022	U	0.0095	U	0.0027	U	NA
103	96	Total PeCDD	0.0057-0.016	U	0.0033-0.010	U	0.0027-0.010	U	0.0039-0.012	U	NA		NA		0.0041	U	0.0046	U	0.0022	U	0.0095	U	0.0027	U	NA
104	97	1,2,3,4,7,8-HxCDF	0.0054	U	0.0025	U	0.0048	U	0.0017	U	NA		NA		**0.0018**		0.0039	U	0.0018	U	0.0059	U	0.0024	U	NA
105	98	1,2,3,6,7,8-HxCDF	0.0042	U	0.0042	U	0.0020	U	0.0035	U	NA		NA		0.0025	U	0.0036	U	0.0180	U	0.0024	U	**0.0015**		NA
106	99	2,3,4,6,7,8-HxCDF	0.0052	U	0.0050	U	0.0038	U	0.0036	U	NA		NA		0.0041	U	0.0066	U	**0.0031**		0.0044	U	**0.0028**		NA
107	100	1,2,3,7,8,9-HxCDF	0.0044	U	0.0040	U	0.0023	U	0.0026	U	NA		NA		0.0037	U	0.0032	U	0.0025	U	0.0056	U	0.0030	U	NA
108	101	Total HxCDF	0.0052	U	0.0022-0.0063	U	0.0018-0.0071	U	0.0036	U	NA		NA		0.0072	U	**0.0031**		**0.0047**		0.0046	U	**0.0130**		NA
109	102	1,2,3,4,7,8-HxCDD	0.0100	U	0.0058	U	0.0046	U	0.0072	U	NA		NA		0.0047	U	0.0032	U	0.0017	U	0.0085	U	0.0027	U	NA
110	103	1,2,3,6,7,8-HxCDD	0.0100	U	0.0084	U	0.0068	U	0.0051	U	NA		NA		0.0039	U	0.0046	U	0.0015	U	0.0071	U	0.0031	U	NA
111	104	1,2,3,7,8,9-HxCDD	0.0080	U	0.0073	U	0.0044	U	0.0041	U	NA		NA		0.0042	U	0.0037	U	0.0027	U	0.0041	U	0.0015	U	NA
112	105	Total HxCDD	0.0047-0.014	U	0.0031-0.011	U	0.0025-0.011	U	0.0028-0.015	U	NA		NA		0.0043	U	0.0038	U	0.0020	U	0.0066	U	0.0024	U	NA
113	106	1,2,3,4,6,7,8-HpCDF	0.0080	U	**0.0050**		**0.0031**		0.0021	U	NA		NA		0.0037	U	0.0180	U	0.0033	U	0.0023	U	**0.0018**		NA
114	107	1,2,3,4,7,8,9-HpCDF	0.0089	U	0.0190	U	0.0063	U	0.0035	U	NA		NA		0.0055	U	0.0077	U	0.0039	U	0.0039	U	0.0023	U	NA
115	108	Total HpCDF	0.0042-0.015	U	**0.0050**		**0.0110**		0.0011-0.0052	U	NA		NA		0.0046	U	0.0129	U	**0.0055**		0.0031	U	**0.0120**		NA
116	109	1,2,3,4,6,7,8-HpCDD	0.0280	U	0.0250	U	**0.0089**		**0.0100**		NA		NA		0.0067	U	**0.0580**		**0.0067**		**0.0120**		**0.0070**		NA
117	110	Total HpCDD	**0.0410**		0.0250	U	**0.0089**		**0.0100**		NA		NA		0.0067	U	**0.0058**		**0.0150**		**0.0250**		**0.0094**		NA
118	111	OCDF	**0.0320**		**0.0300**		**0.0160**		0.0075	U	NA		NA		0.0110	U	**0.0074**		0.0110	U	**0.0180**		**0.0056**		NA
119	112	OCDD	**0.2500**		**0.2300**		**0.0840**		0.0420	U	NA		NA		0.0210	U	**0.0490**		**0.0580**		**0.1600**		0.0530	U	NA
120	113																								
121	114	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122	115																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																													
2																													
3			J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1
4			BC27K		9912050-03A		BH96R		BR64D		CB49G		CL03H		CT55F		DE68I		DM52B		DW48C		ED23C		EM85D		ES04F		EZ03K
5			12/8/99		12/8/1999 (d)		2/16/00		5/24/00		8/29/00		11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02
87	**FIELD PARAMETERS**																												
88	pH (avg)		6.57		NM		6.59		6.38		6.58		5.27		6.17		6.64		6.85		6.60		6.42		6.52		6.79		6.4
89	Temperature (° C) (avg)		12.4		NM		14.3		14.8		15.6		14.4		14.3		13.6		15.8		14.6		13.6		15.4		15.7		15.6
90	Conductivity (um/hos)		245		NM		272		291		248		212		202		226		278		241		284		224		241		232
91	Dissolved oxygen (mg/L) (avg)		2.78		NM		1.57		1.74		1.62		1.09		0.57		1.51		1.44		3.88		6.41		4.98		1.34		3.21
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121	**ETHANOL (mg/L)**		NA		10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2																				
3			J1		J1		J1		J1		J1		J1		J1		J1		J1	J1
4			FF76J		FL58I		FU31A		FY64H		0402105-01		0408019-04		0502102-02		P5F0342-04		P5H1000-10	P5K0699-06
5			2/12/03		5/8/03		8/27/03		10/21/03		2/20/04		8/03/04		2/23/05		6/7/05		08/23/05	11/15/05
87	**FIELD PARAMETERS**																			
88	pH (avg)		6.9		6.6		6.46		6.80		6.23		7.68		NM		7.02		6.43	6.66
89	Temperature (° C) (avg)		13.7		13.7		15.8		17.8		14		17.1		6.71		15.6		15.9	15.8
90	Conductivity (um/hos)		474		223		343		255		324		551		15.2		257		207	219
91	Dissolved oxygen (mg/L) (avg)		0		3.1		2.23		1.65		1.21		NM		233		2.08		NM	1.16
92																				
93	**DIOXINS AND FURANS (ng/L)**																			
94	**Method 8290**																			
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
120																				
121	**ETHANOL (mg/L)**		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
122																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2					Dup of J1								Dup of J1												
3			J1		J1D		J1		J1		J1		J4		J1		J1		J1		J1		J1		J1
4			S177H		S177I		T176P		U235J		V224O		V224K		W371N		Y314I		Z225O		Z960C		AH49C		AU22H
5			4/2/97		4/2/97		7/16/97		10/22/97		1/29/98		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99
123	116	**PAHs (µg/L)**																							
124	117	**EPA Method SW8270 SIM**																							
125	118	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	119	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	120	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128	121	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	122	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	123	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131	124	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																													
2																													
3			J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1		J1
4			BC27K		9912050-03A		BH96R		BR64D		CB49G		CL03H		CT55F		DE68I		DM52B		DW48C		ED23C		EM85D		ES04F		EZ03K
5			12/8/99		12/8/1999 (d)		2/16/00		5/24/00		8/29/00		11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2																				
3			J1		J1		J1		J1		J1		J1		J1		J1		J1	J1
4			FF76J		FL58I		FU31A		FY64H		0402105-01		0408019-04		0502102-02		P5F0342-04		P5H1000-10	P5K0699-06
5			2/12/03		5/8/03		8/27/03		10/21/03		2/20/04		8/03/04		2/23/05		6/7/05		08/23/05	11/15/05
123	**PAHs (µg/L)**																			
124	**EPA Method SW8270 SIM**																			
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
127	Acenaphthylene		NA		NA		NA		NA		NA		1.01	U	NA		NA		NA	NA
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
130	Anthracene		NA		NA		NA		NA		NA		1.01	U	NA		NA		NA	NA
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2													Dup of K								Dup of K							
3			K		K		K		K		K		W		K		K		K		Z		K		K		K	
4			S177A		T176U		U235X		V208E		W391J		W391K		Y314L		Z225U		Z960W		Z960V		AH27C		BB82B		BH75J	
5			4/1/97		7/16/97		10/23/97		1/28/98		5/19/98		5/19/98		8/17/98		11/13/98		2/16/99		2/16/99		5/17/99		12/6/99		2/15/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	UJ	2.0	U	2.0	U	2.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
20	14	4-Methylphenol	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
21	15	Isophorone	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
22	16	2,4-Dimethylphenol	3.0	UJ	3.0	U	3.0	U	3.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
23	17	Benzoic Acid	10	UJ	10	U	10	U	10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
24	18	Naphthalene	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
25	19	2-Methylnaphthalene	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
26	20	2,4,6-Trichlorophenol	5.0	UJ	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
27	21	2,4,5-Trichlorophenol	5.0	UJ	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
28	22	Acenaphthene	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
29	23	Dibenzofuran	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
30	24	Fluorene	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
31	25	Pentachlorophenol	5.0	UJ	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	3.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA				NA		NA	
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		K		K		K		K		K		K		K		K		K		K		K		K		K		K	
4		BR55O		CB49K		CK77L		CT37O		DE68D		DM52K		DW29I		ED16H		EM75F		ER92B		EZ03J		FF88G		FL41C		FU45B	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
6																													
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
20	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
21	Isophorone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
22	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
23	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
24	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
25	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
26	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
27	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
28	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
29	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
30	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
31	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
37	Carbon Disulfide	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
38	2-Butanone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
39	Benzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
40	Bromoform	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
41	Toluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
42	Ethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
43	Styrene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
44	m,p-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
45	o-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
46	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
47	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
48	Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49	n-Propylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
50	tert-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
51	sec-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
52	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
53	n-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1												
2												
3		K		K		K		K		K		K
4		FY64G		0402098-01		0406060-01		0408020-02		0411052-05		P5H0734-05
5		10/21/03		2/19/04		6/9/04		8/03/04		11/9/04		08/17/05
6												
7	**CHLORINATED PHENOLS (µg/L)**											
8	**EPA Method SW8040**											
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
16												
17	**SEMIVOLATILES (µg/L)**											
18	**EPA Method SW8270**											
19	Phenol	NA		NA		NA		NA		NA		NA
20	4-Methylphenol	NA		NA		NA		NA		NA		NA
21	Isophorone	NA		NA		NA		NA		NA		NA
22	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA
23	Benzoic Acid	NA		NA		NA		NA		NA		NA
24	Naphthalene	NA		NA		NA		NA		NA		NA
25	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA
26	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
27	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
28	Acenaphthene	NA		NA		NA		NA		NA		NA
29	Dibenzofuran	NA		NA		NA		NA		NA		NA
30	Fluorene	NA		NA		NA		NA		NA		NA
31	Pentachlorophenol	NA		NA		NA		NA		NA		NA
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA
33												
34	**VOLATILES (µg/L)**											
35	**EPA Method SW8260**											
36	Acetone	NA		NA		NA		NA		NA		NA
37	Carbon Disulfide	NA		NA		NA		NA		NA		NA
38	2-Butanone	NA		NA		NA		NA		NA		NA
39	Benzene	NA		0.4	U	0.3	U	0.3	U	0.3	U	0.500 U
40	Bromoform	NA		NA		NA		NA		NA		NA
41	Toluene	NA		1	U	1	U	1	U	1	U	0.500 U
42	Ethylbenzene	NA		1	U	1	U	1	U	1	U	0.500 U
43	Styrene	NA		NA		NA		NA		NA		NA
44	m,p-Xylene	NA		2	U	2	U	2	U	2	U	NA
45	o-Xylene	NA		1	U	1	U	1	U	1	U	NA
46	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA
47	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA
48	Isopropylbenzene	NA		NA		NA		NA		NA		NA
49	n-Propylbenzene	NA		NA		NA		NA		NA		NA
50	tert-Butylbenzene	NA		NA		NA		NA		NA		NA
51	sec-Butylbenzene	NA		NA		NA		NA		NA		NA
52	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA
53	n-Butylbenzene	NA		NA		NA		NA		NA		NA
54	Naphthalene	NA		NA		NA		NA		NA		NA
55	Methyl tert-butyl ether	1	U	NA		NA		NA		NA		NA
56												
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**											
58	**Method OR-DEQ**											
59	**TPH-Diesel**	NA		NA		NA		NA		NA		0.250 U
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		0.500 U
61	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	**0.269**
62												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2													Dup of K								Dup of K							
3			K		K		K		K		K		W		K		K		K		Z		K		K		K	
4			S177A		T176U		U235X		V208E		W391J		W391K		Y314L		Z225U		Z960W		Z960V		AH27C		BB82B		BH75J	
5			4/1/97		7/16/97		10/23/97		1/28/98		5/19/98		5/19/98		8/17/98		11/13/98		2/16/99		2/16/99		5/17/99		12/6/99		2/15/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	0.001	U	**0.001**		0.05	U	0.05	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	**0.004**		**0.010**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.028**		**0.117**	
67	60	Copper (6010)	**0.006**		**0.008**		0.002	U	**0.013**		**0.005**		**0.005**		**0.003**		0.002	U	**0.007**		**0.006**		**0.004**		**0.011**		**0.042**	
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.007**		**0.010**	
69	62	Nickel (6010)	**0.03**		**0.04**		**0.13**		**0.10**		**0.04**		0.03		**0.01**		**0.07**		**0.06**		**0.06**		**0.03**		**0.27**		**0.17**	
70	63	Zinc (6010)	**0.025**		**0.042**		**0.051**		**0.128**		**0.045**	J2	**0.045**	J2	**0.008**		**0.036**		**0.052**		**0.053**		0.020	U	**0.111**		**0.155**	
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	NA		NA		NA		**36.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		**8.47**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		**5.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		**5.50**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		**370**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**130**	J2	**650**		**370**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		K		K		K		K		K		K		K		K		K		K		K		K		K		K	
4		BR55O		CB49K		CK77L		CT37O		DE68D		DM52K		DW29I		ED16H		EM75F		ER92B		EZ03J		FF88G		FL41C		FU45B	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	**0.001**		0.001	U	**0.001**		**0.002**		0.001	U	0.05	U	0.001	U	**0.001**		**0.002**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.009**		0.005	U	0.005	U	0.005	U	0.005	U	**0.006**	
67	Copper (6010)	**0.002**		**0.004**		**0.004**	J2	**0.002**		0.002	U	**0.002**		**0.003**		**0.012**		**0.010**		**0.004**		**0.006**		**0.003**		**0.007**		**0.012**	
68	Lead (7421)	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.003**		0.001	U	0.02	U	0.001	U	0.001	U	**0.005**	
69	Nickel (6010)	**0.01**		**0.01**		**0.03**		**0.03**		**0.02**		**0.03**		**0.05**		**0.03**		**0.08**		**0.02**		**0.05**		**0.1**		**0.04**		**0.04**	
70	Zinc (6010)	**0.014**		**0.006**		**0.009**		**0.009**		**0.006**		**0.007**		**0.013**		**0.029**		**0.040**		**0.009**		**0.01**		**0.059**		**0.05**	J	**0.029**	
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		**65.3**		**40.3**		**79.8**		NA		NA		NA		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		**16.0**		**13.7**		**18.2**		NA		NA		NA		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		**6.9**		**4.4**		**7.6**		NA		NA		NA		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		**11.2**		**8.24**		**12.2**		NA		NA		NA		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1												
2												
3		K		K		K		K		K		K
4		FY64G		0402098-01		0406060-01		0408020-02		0411052-05		P5H0734-05
5		10/21/03		2/19/04		6/9/04		8/03/04		11/9/04		08/17/05
63	**PRIORITY POLLUTANT**											
64	**METALS (mg/L)**											
65	Arsenic (7060)	0.001	U	NA		NA		NA		NA		NA
66	Chromium (6010)	0.005	U	NA		NA		NA		NA		NA
67	Copper (6010)	**0.006**		NA		NA		NA		NA		NA
68	Lead (7421)	0.001	U	NA		NA		NA		NA		NA
69	Nickel (6010)	**0.03**		NA		NA		NA		NA		NA
70	Zinc (6010)	**0.014**		NA		NA		NA		NA		NA
71												
72	**MAJOR IONS AND CONVENTIONALS**											
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA
86												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2													Dup of K								Dup of K							
3			K		K		K		K		K		W		K		K		K		Z		K		K		K	
4			S177A		T176U		U235X		V208E		W391J		W391K		Y314L		Z225U		Z960W		Z960V		AH27C		BB82B		BH75J	
5			4/1/97		7/16/97		10/23/97		1/28/98		5/19/98		5/19/98		8/17/98		11/13/98		2/16/99		2/16/99		5/17/99		12/6/99		2/15/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	5.70		5.88		5.68		5.22		5.14		5.15		5.37		5.23		4.89		4.87		4.86		4.91		5.40	
89	82	Temperature (° C) (avg)	12.0		17.4		16.8		12.7		13.9		13.8		17.6		15.2		12.1		11.9		14.1		14.7		11.9	
90	83	Conductivity (um/hos)	157		155		677		382		187		185		130		175		184		187		114		1790		259	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		3.50		3.50		2.23		2.20		2.79		2.79		2.38		2.90		5.01	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		K		K		K		K		K		K		K		K		K		K		K		K		K		K	
4		BR55O		CB49K		CK77L		CT37O		DE68D		DM52K		DW29I		ED16H		EM75F		ER92B		EZ03J		FF88G		FL41C		FU45B	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	5.34		5.63		5.05		6.09		6.22		6.92		5.98		5.05		5.83		5.77		6.21		6.35		6.05		6.25	
89	Temperature (° C) (avg)	14.0		16.0		15.3		13.0		13.6		15.4		14.6		11.1		15.2		15.8		16		13.9		13.3		15.9	
90	Conductivity (um/hos)	157		161		323		694		531		350		645		78		199		157		325		835		143		193	
91	Dissolved oxygen (mg/L) (avg)	1.99		1.78		2.36		3.15		1.80		3.01		3.35		5.92		4.91		0.91		0.66		0		4.61		2.26	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1												
2												
3		K		K		K		K		K		K
4		FY64G		0402098-01		0406060-01		0408020-02		0411052-05		P5H0734-05
5		10/21/03		2/19/04		6/9/04		8/03/04		11/9/04		08/17/05
87	**FIELD PARAMETERS**											
88	pH (avg)	6.37		5.18		4.41		6.93		6.17		6.14
89	Temperature (° C) (avg)	17.3		11.4		15.2		16		16.1		15.7
90	Conductivity (um/hos)	250		109		197		292		269		218
91	Dissolved oxygen (mg/L) (avg)	2.57		6.06		2.12		NM		1.55		NM
92												
93	**DIOXINS AND FURANS (ng/L)**											
94	**Method 8290**											
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA
120												
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA
122												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2													Dup of K								Dup of K							
3			K		K		K		K		K		W		K		K		K		Z		K		K		K	
4			S177A		T176U		U235X		V208E		W391J		W391K		Y314L		Z225U		Z960W		Z960V		AH27C		BB82B		BH75J	
5			4/1/97		7/16/97		10/23/97		1/28/98		5/19/98		5/19/98		8/17/98		11/13/98		2/16/99		2/16/99		5/17/99		12/6/99		2/15/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		K		K		K		K		K		K		K		K		K		K		K		K		K		K	
4		BR55O		CB49K		CK77L		CT37O		DE68D		DM52K		DW29I		ED16H		EM75F		ER92B		EZ03J		FF88G		FL41C		FU45B	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1												
2												
3		K		K		K		K		K		K
4		FY64G		0402098-01		0406060-01		0408020-02		0411052-05		P5H0734-05
5		10/21/03		2/19/04		6/9/04		8/03/04		11/9/04		08/17/05
123	**PAHs (µg/L)**											
124	**EPA Method SW8270 SIM**											
125	Naphthalene	0.1	U	NA		NA		NA		NA		NA
126	2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA
127	Acenaphthylene	0.1	U	NA		NA		NA		NA		NA
128	Acenaphthene	0.1	U	NA		NA		NA		NA		NA
129	Fluorene	0.1	U	NA		NA		NA		NA		NA
130	Anthracene	0.1	U	NA		NA				NA		NA
131	Dibenzofuran	0.1	U	NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			L		L		L		L		L		L		L		L		L		L		L		L		L	
4			S167H		T176A		U258B		V232H		W371E		Y336F		Z225F		Z960B		AH49E		AU22C		BC27A		BH75I		BR64H	
5			4/1/97		7/15/97		10/23/97		1/30/98		5/18/98		8/18/98		11/13/98		2/16/99		5/18/99		9/20/99		12/7/99		2/15/00		5/24/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	**2.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH
1							
2							
3		L		L		L	
4		CT37D		ED16E		FF88K	
5		2/12/01		2/25/02		2/13/03	
6							
7	**CHLORINATED PHENOLS (µg/L)**						
8	**EPA Method SW8040**						
9	Pentachlorophenol	0.25	U	0.25	U	0.26	U
10	2,4,6-Trichlorophenol	NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA	
16							
17	**SEMIVOLATILES (µg/L)**						
18	**EPA Method SW8270**						
19	Phenol	2.0	U	2.0	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1	U
21	Isophorone	1.0	U	1.0	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.1	U
23	Benzoic Acid	10	U	50	U	51	U
24	Naphthalene	1.0	U	1.0	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.1	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.1	U
28	Acenaphthene	1.0	U	1.0	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1	U
30	Fluorene	1.0	U	1.0	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.1	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	4.0	U	1	U
33							
34	**VOLATILES (µg/L)**						
35	**EPA Method SW8260**						
36	Acetone	6.1	U	5.0	U	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1	U
38	2-Butanone	5.0	U	5.0	U	5	U
39	Benzene	1.0	U	1.0	U	1	U
40	Bromoform	1.0	U	1.0	U	1	U
41	Toluene	1.0	U	1.0	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1	U
43	Styrene	1.0	U	1.0	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1	U
45	o-Xylene	1.0	U	1.0	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1	U
48	Isopropylbenzene	1.0	U	1.0	U	1	U
49	n-Propylbenzene	1.0	U	1.0	U	1	U
50	tert-Butylbenzene	1.0	U	1.0	U	1	U
51	sec-Butylbenzene	1.0	U	1.0	U	1	U
52	4-Isopropyltoluene	1.0	U	1.0	U	1	U
53	n-Butylbenzene	1.0	U	1.0	U	1	U
54	Naphthalene	5.0	U	5.0	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA	
56							
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**						
58	**Method OR-DEQ**						
59	**TPH-Diesel**	0.25	U	0.25	U	0.25	U
60	**TPH-D Motor Oil**	NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA	
62							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			L		L		L		L		L		L		L		L		L		L		L		L		L	
4			S167H		T176A		U258B		V232H		W371E		Y336F		Z225F		Z960B		AH49E		AU22C		BC27A		BH75I		BR64H	
5			4/1/97		7/15/97		10/23/97		1/30/98		5/18/98		8/18/98		11/13/98		2/16/99		5/18/99		9/20/99		12/7/99		2/15/00		5/24/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	0.001	U	0.001	U	0.05	U	0.05	U	0.001	U	0.001	U	**0.007**		0.001	U	0.001	U	**0.003**		0.001	U	**0.001**		0.001	U
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.009**		0.005	U
67	60	Copper (6010)	**0.003**		**0.003**		**0.003**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.008**		**0.003**		**0.002**	
68	61	Lead (7421)	**0.001**		0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.004**		**0.004**	J2	**0.005**		**0.005**		**0.005**	J2	**0.005**		**0.004**		**0.051**		**0.004**		**0.008**		0.012	U	0.006	U	0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**2.77**		**3.56**		**4.93**		**3.76**		NA		NA		NA		**3.24**		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**0.99**		**1.56**		**1.98**		**1.35**		NA		NA		NA		**1.18**		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**1.2**		**0.8**		**1.6**		**1.1**		NA		NA		NA		**1.0**		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**4.58**		**5.81**		**8.14**		**3.34**		NA		NA		NA		**3.61**		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**16**		**30**		**28**		**21**		NA		NA		NA		**16**		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**16**		**30**		**28**		**21**		NA		NA		NA		**16**		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**100**	J2	**57**		**60**	J2	46		74		130		**36**		**57**		**92**		**77**		**65**		**56**	
81	74	Chloride (mg/L) (EPA 325.2)	1.0	U	**3.8**		**1.9**		**1.0**		1.0		1.0	U	1.7		1.0	U	**1.5**		**1.5**		**3.4**		**2.0**		**1.8**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.34**	J	**0.01**		**0.84**		**0.31**	J2	NA		NA		NA		**0.24**	J	NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	0.010	UJ	NA		NA		NA		0.010	UJ	NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.34**	J	**0.01**		**0.84**		**0.31**	J2	NA		NA		NA		**0.24**	J	NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**2.7**	J	**4.8**		**4.0**		**2.8**		NA		NA		NA		**3.6**		NA		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH
1							
2							
3		L		L		L	
4		CT37D		ED16E		FF88K	
5		2/12/01		2/25/02		2/13/03	
63	**PRIORITY POLLUTANT**						
64	**METALS (mg/L)**						
65	Arsenic (7060)	0.001	U	0.001	U	**0.001**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U
67	Copper (6010)	0.002	U	0.002	U	**0.004**	
68	Lead (7421)	0.001	U	0.001	U	**0.001**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	0.006	U	0.006	U	**0.009**	
71							
72	**MAJOR IONS AND CONVENTIONALS**						
73	Calcium (mg/L) (6010)	**11.5**		**3.20**		**2.61**	
74	Magnesium (mg/L) (6010)	**4.04**		**1.34**		**1.19**	
75	Potassium (mg/L) (6010)	**1.4**		**0.8**		**0.7**	
76	Sodium (mg/L) (6010)	**8.26**		**3.29**		**2.5**	
77	Alkalinity (mg/L CaCO3) (SM 2320)	**64**		**21**		**16**	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1	U
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**64**		**21**		**16**	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**120**		**57**		**66**	
81	Chloride (mg/L) (EPA 325.2)	**1.4**		**2.4**		**1**	
82	N-Nitrate (mg-N/L) (Calculated)	**0.47**		**0.36**		**0.45**	
83	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.01	U
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.47**	J	**0.36**		**0.45**	
85	Sulfate (mg/L) (EPA 375.2)	**4.4**		**3.6**		2.5	U
86							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			L		L		L		L		L		L		L		L		L		L		L		L		L	
4			S167H		T176A		U258B		V232H		W371E		Y336F		Z225F		Z960B		AH49E		AU22C		BC27A		BH75I		BR64H	
5			4/1/97		7/15/97		10/23/97		1/30/98		5/18/98		8/18/98		11/13/98		2/16/99		5/18/99		9/20/99		12/7/99		2/15/00		5/24/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.02		6.18		6.24		7.10		5.49		5.87		5.84		6.26		5.54		5.41		5.72		6.16		5.94	
89	82	Temperature (° C) (avg)	9.8		15.5		16.4		9.6		13.1		15.7		13.8		8.9		13.1		15.5		13.0		10.8		13.1	
90	83	Conductivity (um/hos)	41		68		81		55		60		95		89		39		42		101		75		50		63	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		4.51		2.60		1.87		5.67		2.93		2.16		4.48		4.25		3.14	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH
1							
2							
3		L		L		L	
4		CT37D		ED16E		FF88K	
5		2/12/01		2/25/02		2/13/03	
87	**FIELD PARAMETERS**						
88	pH (avg)	6.07		5.89		7.12	
89	Temperature (° C) (avg)	13.2		8.5		11.2	
90	Conductivity (um/hos)	104		37		41	
91	Dissolved oxygen (mg/L) (avg)	2.56		7.55		0	
92							
93	**DIOXINS AND FURANS (ng/L)**						
94	**Method 8290**						
95	2,3,7,8-TCDF	NA		NA		NA	
96	Total TCDF	NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA	
98	Total TCDD	NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA	
101	Total PeCDF	NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA	
103	Total PeCDD	NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA	
108	Total HxCDF	NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA	
112	Total HxCDD	NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA	
115	Total HpCDF	NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA	
117	Total HpCDD	NA		NA		NA	
118	OCDF	NA		NA		NA	
119	OCDD	NA		NA		NA	
120							
121	**ETHANOL (mg/L)**	NA		NA		NA	
122							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			L		L		L		L		L		L		L		L		L		L		L		L		L	
4			S167H		T176A		U258B		V232H		W371E		Y336F		Z225F		Z960B		AH49E		AU22C		BC27A		BH75I		BR64H	
5			4/1/97		7/15/97		10/23/97		1/30/98		5/18/98		8/18/98		11/13/98		2/16/99		5/18/99		9/20/99		12/7/99		2/15/00		5/24/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH
1							
2							
3		L		L		L	
4		CT37D		ED16E		FF88K	
5		2/12/01		2/25/02		2/13/03	
123	**PAHs (µg/L)**						
124	**EPA Method SW8270 SIM**						
125	Naphthalene	NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA	
127	Acenaphthylene	NA		NA		NA	
128	Acenaphthene	NA		NA		NA	
129	Fluorene	NA		NA		NA	
130	Anthracene	NA		NA		NA	
131	Dibenzofuran	NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S
4			S167K		T176E		U235T		V208F		W371G		Y336I		Z225E		Z960A		AH27G		AU45J		BB82C		BH75G		BR55G		CB49C
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00		8/28/00
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S	
4			CK77D		CT37B		DE68F		DM52E		DW48M		ED16J		EM75G		ER92C		EY88E		FF88M		FL41F		FU31C		FY64J		0402098-02	
5			11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03		2/19/04	
7	**CHLORINATED PHENOLS (µg/L)**																													
8	**EPA Method SW8040**																													
9	Pentachlorophenol	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.28	U	0.25	U	0.25	U	0.26	U	0.54	U	0.5	U	NA	
10	2,4,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																														
17	**SEMIVOLATILES (µg/L)**																													
18	**EPA Method SW8270**																													
19	Phenol	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U	2	U	2	U	2	U	2.2	U	2	U	NA	
20	4-Methylphenol	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
21	Isophorone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U	3	U	3	U	3.1	U	3.3	U	3	U	NA	
23	Benzoic Acid	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	56	U	50	U	50	U	51	U	54	U	10	U	NA	
24	Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
25	2-Methylnaphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5	U	5	U	5.1	U	5.4	U	5	U	NA	
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5	U	5	U	5.1	U	5.4	U	5	U	NA	
28	Acenaphthene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
30	Fluorene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.1	U	1	U	NA	
31	Pentachlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5	U	5	U	5.1	U	5.4	U	5	U	NA	
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.4	U	4	U	1	U	1	U	1.1	U	1	U	NA	
33																														
34	**VOLATILES (µg/L)**																													
35	**EPA Method SW8260**																													
36	Acetone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	NA	
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
38	2-Butanone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	NA	
39	Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4	U
40	Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
41	Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
44	m,p-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
45	o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
47	1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
48	Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
49	n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
50	tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
51	sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
53	n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	NA	
54	Naphthalene	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	NA	
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA	
56																														
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																													
58	**Method OR-DEQ**																													
59	**TPH-Diesel**	U	0.25	U	0.25	U	NA		NA		NA		0.25	U	NA		NA		NA		0.25	U	NA		NA		NA		NA	
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.25	U	0.1	U
62																														

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1										
2										
3		LW1S		LW1S		LW1S		LW1S		LW1S
4		0406060-02		0408020-01		0411052-06		0502099-01		P5H0814-01
5		6/9/04		8/03/04		11/9/04		2/22/05		08/18/05
6										
7	**CHLORINATED PHENOLS (µg/L)**									
8	**EPA Method SW8040**									
9	Pentachlorophenol	NA		NA		NA		NA		NA
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA
16										
17	**SEMIVOLATILES (µg/L)**									
18	**EPA Method SW8270**									
19	Phenol	NA		NA		NA		1.97	U	5.00 U
20	4-Methylphenol	NA		NA		NA		9.86	U	5.00 U
21	Isophorone	NA		NA		NA		0.986	U	5.00 U
22	2,4-Dimethylphenol	NA		NA		NA		2.96	U	10.0 U
23	Benzoic Acid	NA		NA		NA		19.7	U	50.0 U
24	Naphthalene	NA		NA		NA		0.986	U	5.00 U
25	2-Methylnaphthalene	NA		NA		NA		0.986	U	5.00 U
26	2,4,6-Trichlorophenol	NA		NA		NA		4.93	U	5.00 U
27	2,4,5-Trichlorophenol	NA		NA		NA		4.93	U	5.00 U
28	Acenaphthene	NA		NA		NA		0.986	U	5.00 U
29	Dibenzofuran	NA		NA		NA		0.986	U	5.00 U
30	Fluorene	NA		NA		NA		0.986	U	5.00 U
31	Pentachlorophenol	NA		NA		NA		4.93	U	5 UJ
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		0.986	U	10.0 U
33										
34	**VOLATILES (µg/L)**									
35	**EPA Method SW8260**									
36	Acetone	NA		NA		NA		50	U	25.0 U
37	Carbon Disulfide	NA		NA		NA		2	U	10.0 U
38	2-Butanone	NA		NA		NA		10	U	10.0 U
39	Benzene	0.3	U	0.3	U	0.3	U	0.3	U	1.00 U
40	Bromoform	NA		NA		NA		1	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1.00 U
43	Styrene	NA		NA		NA		1	U	1.00 U
44	m,p-Xylene	2	U	2	U	2	U	2	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	1	U	1.00 U
46	1,3,5-Trimethylbenzene	NA		NA		NA		1	U	1.00 U
47	1,2,4-Trimethylbenzene	NA		NA		NA		1	U	1.00 U
48	Isopropylbenzene	NA		NA		NA		1	U	2.00 U
49	n-Propylbenzene	NA		NA		NA		1	U	1.00 U
50	tert-Butylbenzene	NA		NA		NA		1	U	1.00 U
51	sec-Butylbenzene	NA		NA		NA		1	U	1.00 U
52	4-Isopropyltoluene	NA		NA		NA		1	U	2.00 U
53	n-Butylbenzene	NA		NA		NA		1	U	5.00 U
54	Naphthalene	NA		NA		NA		1	U	2.00 U
55	Methyl tert-butyl ether	NA		NA		NA		1	U	1.00 U
56										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**									
58	**Method OR-DEQ**									
59	**TPH-Diesel**	NA		NA		NA		0.246	U	0.263 U
60	**TPH-D Motor Oil**	NA		NA		NA		0.608	U	0.526 U
61	**TPH-Gasoline**	0.1	U	0.1	U	0.1	U	0.1	U	NA
62										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S
4			S167K		T176E		U235T		V208F		W371G		Y336I		Z225E		Z960A		AH27G		AU45J		BB82C		BH75G		BR55G		CB49C
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00		8/28/00
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.008**		**0.008**		0.05	U	0.05	U	**0.011**		**0.011**		**0.012**		**0.010**		**0.008**		**0.014**		**0.011**		**0.013**		**0.010**		**0.010**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	**0.005**	J2	**0.011**		0.004	U	**0.008**	J2	**0.012**		0.004	U	**0.010**	J	0.012	U	**0.005**		0.006	U	**0.007**		0.006	U	0.006
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	**16.7**		**19.5**		**20.2**		**20.1**		NA		NA		NA		**18.4**		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**5.95**		**6.73**		**7.53**		**7.23**		NA		NA		NA		**6.09**		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**2.9**		**3.3**		**2.6**		**2.4**		NA		NA		NA		**2.8**		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**7.70**		**9.08**		**7.22**		**8.08**		NA		NA		NA		**8.54**		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**80**		**77**		**88**		**94**		NA		NA		NA		**87**		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**80**		**77**		**88**		**94**		NA		NA		NA		**87**		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**140**	J2	**130**		**140**		110		99		140		**120**		**130**		**140**		**150**		**140**		**130**		**160**
81	74	Chloride (mg/L) (EPA 325.2)	**2.1**	J	**2.3**		**2.5**		**2.4**		2.3		1.0	U	1.8		**1.2**		**1.2**		**2.4**		**3.7**		**2.9**		**3.4**		**3.5**
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.58**	J	**1.3**		**0.11**		**0.48**		NA		NA		NA		**0.12**		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.58**	J	**1.3**		**0.11**		**0.48**		NA		NA		NA		**0.12**		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**9.3**	J	**13**		**5.5**		**5.1**		NA		NA		NA		**7.2**		NA		NA		NA		NA		NA		NA
86	79																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S	
4			CK77D		CT37B		DE68F		DM52E		DW48M		ED16J		EM75G		ER92C		EY88E		FF88M		FL41F		FU31C		FY64J		0402098-02	
5			11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03		2/19/04	
63	**PRIORITY POLLUTANT**																													
64	**METALS (mg/L)**																													
65	Arsenic (7060)		**0.011**		**0.010**		**0.009**		**0.011**		**0.012**		**0.023**		**0.010**		**0.011**		0.05	U	**0.014**		**0.007**		**0.009**		**0.008**		NA	
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.007**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA	
67	Copper (6010)	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.009**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.003**		NA	
68	Lead (7421)	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	**0.004**		0.001	U	0.001	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	NA	
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA	
70	Zinc (6010)	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.030**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.007**		NA	
71																														
72	**MAJOR IONS AND CONVENTIONALS**																													
73	Calcium (mg/L) (6010)		NA		**25.5**		**28.4**		**25.8**		**27.3**		**30.4**		NA		NA		NA		**36.9**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)		NA		**9.47**		**10.6**		**10.2**		**10.4**		**11.7**		NA		NA		NA		**13.6**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)		NA		**2.0**		**2.4**		**2.2**		**2.4**		**3.4**		NA		NA		NA		**3.2**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)		NA		**7.23**		**7.87**		**7.24**		**7.20**		**10.2**		NA		NA		NA		**9.8**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		**120**		NA		NA		NA		**120**		NA		NA		NA		**150**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		**120**		NA		NA		NA		**120**		NA		NA		NA		**150**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**170**		**170**		**180**		**160**		**170**		**160**		**200**		**210**		**210**		**180**		**190**		**190**		**200**			
81	Chloride (mg/L) (EPA 325.2)		**3.6**		**4.1**		**3.1**		**3.7**		**2.6**		**3.2**		**2.7**		**3.1**		**3**		**3.6**		**2.4**		**3**		**3.2**			
82	N-Nitrate (mg-N/L) (Calculated)		NA		**0.17**		NA		NA		NA		**0.91**		NA		NA		NA		**0.66**		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		0.01	U	NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		**0.17**	J	NA		NA		NA		**0.91**		NA		NA		NA		**0.66**		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		**6.8**		NA		NA		NA		**5.7**		NA		NA		NA		**4.2**		NA		NA		NA		NA	
86																														

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1										
2										
3		LW1S		LW1S		LW1S		LW1S		LW1S
4		0406060-02		0408020-01		0411052-06		0502099-01		P5H0814-01
5		6/9/04		8/03/04		11/9/04		2/22/05		08/18/05
63	**PRIORITY POLLUTANT**									
64	**METALS (mg/L)**									
65	Arsenic (7060)	NA		NA		NA		**0.0132**		**0.00898**
66	Chromium (6010)	NA		NA		NA		**0.0104**		0.001 U
67	Copper (6010)	NA		NA		NA		0.01	U	0.001 U
68	Lead (7421)	NA		NA		NA		**0.00119**		0.001 U
69	Nickel (6010)	NA		NA		NA		0.005	U	**0.00232**
70	Zinc (6010)	NA		NA		NA		**0.0124**		0.01 U
71										
72	**MAJOR IONS AND CONVENTIONALS**									
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		**202**		**194**
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		**4.05**		**2.97**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		**0.910**
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		**6.58**
86										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S
4			S167K		T176E		U235T		V208F		W371G		Y336I		Z225E		Z960A		AH27G		AU45J		BB82C		BH75G		BR55G		CB49C
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00		8/28/00
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.72		6.83		6.94		6.60		6.32		6.51		6.48		6.84		5.72		6.88		6.24		6.73		6.57		6.49
89	82	Temperature (° C) (avg)	13.4		16.9		15.8		15.4		14.8		15.9		14.5		14.5		14.4		16.1		14.9		14.4		14.3		16.0
90	83	Conductivity (um/hos)	190		203		154		213		195		193		100		174		146		197		212		206		182		196
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		1.73		1.84		3.04		3.91		1.22		2.53		2.34		2.17		1.80
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S	
4			CK77D		CT37B		DE68F		DM52E		DW48M		ED16J		EM75G		ER92C		EY88E		FF88M		FL41F		FU31C		FY64J		0402098-02	
5			11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03		2/19/04	
87	**FIELD PARAMETERS**																													
88	pH (avg)		5.21		6.56		6.75		6.94		6.71		6.22		6.57		6.61		6.62		6.94		6.88		6.86		6.77		5.92	
89	Temperature (° C) (avg)		15.2		14.9		14.6		15.8		15.4		14.3		16.1		16.3		16		16		14.9		16.8		18.3		15.7	
90	Conductivity (um/hos)		207		217		250		245		245		257		370		265		367		327		233		228		237		277	
91	Dissolved oxygen (mg/L) (avg)		1.86		1.90		1.99		1.09		3.75		4.77		5.34		0.77		3.86		0		3.28		2.2		1.64		2.32	
92																														
93	**DIOXINS AND FURANS (ng/L)**																													
94	**Method 8290**																													
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121	**ETHANOL (mg/L)**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																														

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1										
2										
3		LW1S		LW1S		LW1S		LW1S		LW1S
4		0406060-02		0408020-01		0411052-06		0502099-01		P5H0814-01
5		6/9/04		8/03/04		11/9/04		2/22/05		08/18/05
87	**FIELD PARAMETERS**									
88	pH (avg)	5.1		6.55		6.45		6.82		6.63
89	Temperature (° C) (avg)	16.2		16.7		16.6		15.4		16.8
90	Conductivity (um/hos)	207		269		228		157		222
91	Dissolved oxygen (mg/L) (avg)	1.46		NM		2.02		0.72		NM
92										
93	**DIOXINS AND FURANS (ng/L)**									
94	**Method 8290**									
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA
120										
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA
122										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S
4			S167K		T176E		U235T		V208F		W371G		Y336I		Z225E		Z960A		AH27G		AU45J		BB82C		BH75G		BR55G		CB49C
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00		8/28/00
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S		LW1S	
4			CK77D		CT37B		DE68F		DM52E		DW48M		ED16J		EM75G		ER92C		EY88E		FF88M		FL41F		FU31C		FY64J		0402098-02	
5			11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03		2/19/04	
123	**PAHs (µg/L)**																													
124	**EPA Method SW8270 SIM**																													
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK	BL	BM	BN	BO
1										
2										
3		LW1S		LW1S		LW1S		LW1S		LW1S
4		0406060-02		0408020-01		0411052-06		0502099-01		P5H0814-01
5		6/9/04		8/03/04		11/9/04		2/22/05		08/18/05
123	**PAHs (µg/L)**									
124	**EPA Method SW8270 SIM**									
125	Naphthalene	NA		NA		NA		0.0479	U	0.111 U
126	2-Methylnaphthalene	NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		0.0479	U	0.111 U
128	Acenaphthene	NA		NA		NA		0.0479	U	0.111 U
129	Fluorene	NA		NA		NA		0.0479	U	0.111 U
130	Anthracene	NA		NA		NA		0.0479	U	0.111 U
131	Dibenzofuran	NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																														
2																									Dup of LW4S				
3			LW4S		LW4S		LW4S		LW4S		LW4S (a)		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW40S		LW4S			
4			S167J		T176G		U235O		V232E		B802035-01		W391F		Y314F		Z225K		Z960L		AH49G		AU45B		AU45A		BC27Q			
5			4/1/97		7/15/97		10/22/97		1/30/98		1/30/98		5/20/98		8/17/98		11/14/98		2/18/99		5/18/99		9/22/99		9/22/99		12/9/99			
6																														
7	1	**CHLORINATED PHENOLS (µg/L)**																												
8	2	**EPA Method SW8040**																												
9	3	Pentachlorophenol	**5.3**		**1.7**		**1.2**		**0.43**		**0.282**		**5.3**		**5.9**		**3900**		**0.42**		**6.4**		**22**		**23**		**5.4**			
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	**0.85**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25		
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25		
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	4.4	U	0.25	U	0.25	U	0.29	U	0.29	U	0.25			
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25		
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**0.32**		**0.16**	J1	0.25	U	0.25	U	0.250	U	**0.92**		**0.73**		**170**		0.25	U	**0.83**		**3.2**		**3.2**		**0.63**			
15	9	2,3,4,5-Tetrachlorophenol	**0.27**		0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	**15**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25			
16	10																													
17	11	**SEMIVOLATILES (µg/L)**																												
18	12	**EPA Method SW8270**																												
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	5.00	U	2.0	U	2.0	U	2.0	U	2.0	U	**170**	J2	2.0	U	2.0	U	2.0			
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	5.00	U	1.0	U	1.0	U	1.0	U	1.0	U	**27**		1.0	U	1.0	U	1.0			
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	10.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0			
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		10	U	10	U	10	U	10	U	**29**		10	U	10	U	10			
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	**39**		1.0	U	1.0	U	1.0			
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	**55**		1.0	U	1.0	U	1.0			
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.00	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0			
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.00	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0			
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	10.0	U	**5.6**		**8.2**		**4200**		5.0	U	**2.3**	J1	**22**		**21**		**4.9**			
32	26	bis(2-Ethylhexyl)phthalate	**2.0**		**2.8**	J2	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
33	27																													
34	28	**VOLATILES (µg/L)**																												
35	29	**EPA Method SW8260**																												
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0			
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	**12**		**13**		5.0					
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**1.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0			
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**3.8**		1.0	U	1.0	U	**1.0**	J1	**1.4**		1.0			
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**20**		1.0	U	**8.1**		**1.4**		**1.9**		1.0			
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**5.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0			
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**77**		1.0	U	1.0	U	**10**	J2	**13**	J2	1.0			
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**5.3**		1.0	U	1.0	U	1.0	U	**1.1**		1.0			
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**6.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0			
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	UJ	**5.9**		1.0	U	1.0	U	1.0	U	1.0	U	1.0			
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0			
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	**2.5**		1.0	U	1.0	U	1.0	U	1.0	U	1.0			
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	**7.1**		5.0	U	5.0	U	5.0	U	5.0	U	5.0			
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
56	49																													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	51	**Method OR-DEQ**																												
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		**0.44**		**0.32**		**3.6**		0.25	U	0.25	U	**0.42**		**0.56**		0.25			
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
62	55																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
2			Dup of LW4S																									
3			LW40S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S	
4			BC27O		BH96D		BR55C		CB68C		CL03F		CT67C		DE87J		DM30C		DW29F		ED30G		EN00G		ER93K		EZ17E	
5			12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02	
7	**CHLORINATED PHENOLS (µg/L)**																											
8	**EPA Method SW8040**																											
9	Pentachlorophenol		**5.4**		**2.5**		**740**	J2	**7200**		**48**		0.25	U	0.25	U	0.25	U	0.25	U	**2.0**		NA		NA		**1.5**	
10	2,4,6-Trichlorophenol	U	0.25	U	0.25	U	**0.35**	J2	**2.2**		0.25	U	NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	U	0.25	U	0.25	U	**0.27**	J2	**6.1**		0.25	U	NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	U	0.25	U	0.25	U	**2.7**	J2	37	U	3.8	U	NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	U	0.25	U	0.25	U	0.25	U	**2.9**		0.25	U	NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		**0.59**		**0.32**		**190**	J2	**730**		**4.1**		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	0.25	U	**1.6**		**130**		**5.9**		NA		NA		NA		NA		NA		NA		NA		NA	
16																												
17	**SEMIVOLATILES (µg/L)**																											
18	**EPA Method SW8270**																											
19	Phenol	U	2.0	U	2.0	UJ	2.0	U	200	U	**730**		**100**		2.0	U	**3.3**		2.0	U	2.1	U	**56**		**210**		2.2	U
20	4-Methylphenol	U	1.0	U	1.0	UJ	1.0	U	**3.6**	M	**120**		**210**		**1.7**		1.0	U	1.0	U	1.1	U	22	U	**50**		1.1	U
21	Isophorone	U	1.0	U	1.0	UJ	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.0	U	1.2	U	1.1	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	UJ	3.0	U	3.0	U	9.0	U	**4.4**		**3.1**		**5.9**		3.0	U	3.2	U	3.0	U	3.8	U	3.3	U
23	Benzoic Acid	U	10	U	10	UJ	10	U	**44**		**96**		**200**		10	U	10	U	30	U	53	U	50	U	62	U	54	U
24	Naphthalene	U	1.0	U	1.0	UJ	**15**		**21**		**13**		**8.5**		**19**		**19**		1.0	U	1.1	U	**14**		**5.6**		1.1	U
25	2-Methylnaphthalene	U	1.0	U	1.0	UJ	1.0	U	1.0	U	**5.7**		**3.6**		**9.5**		**12**		1.0	U	1.1	U	**7.5**		**2.1**		1.1	U
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	UJ	5.0	U	5.0	U	15	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	**17**		**7.7**		5.4	U
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	UJ	5.0	U	5.0	U	15	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	**8.9**		6.2	U	5.4	U
28	Acenaphthene	U	1.0	U	1.0	UJ	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.0	U	1.2	U	1.1	U
29	Dibenzofuran	U	1.0	U	1.0	UJ	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.0	U	1.2	U	1.1	U
30	Fluorene	U	1.0	U	1.0	UJ	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.0	U	1.2	U	1.1	U
31	Pentachlorophenol	J1	**4.4**	J1	5.0	UJ	**760**	J2	**9400**	J2	**120**		5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	**2200**		**770**		5.4	U
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.1	UJ	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**120**		4.0	U	5	U	4.3	U
33																												
34	**VOLATILES (µg/L)**																											
35	**EPA Method SW8260**																											
36	Acetone	U	5.0	U	5.0	U	**25**		**83**		**49**		**41**		5.0	U	15	U	5.0	U	5.0	U	**120**		**320**		19	U
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U
38	2-Butanone	U	5.0	U	5.0	U	**18**		25	U	**110**		**100**		5.0	U	15	U	5.0	U	5.0	U	**58**		**27**		5	U
39	Benzene	U	1.0	U	1.0	U	1.0	U	5.0	U	**7.4**		**110**		**80**		**78**		1.0	U	1.0	U	**4.1**		3	U	1	U
40	Bromoform	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U
41	Toluene	U	1.0	U	1.0	U	1.0	U	**9.2**		**19**		**25**		**41**		**6.9**		1.0	U	1.0	U	**7.5**		**10**		1	U
42	Ethylbenzene	U	1.0	U	1.0	U	**9.8**		**94**		**61**		**79**		**190**		**140**		1.0	U	1.0	U	**68**		**94**	J	**4.8**	
43	Styrene	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U
44	m,p-Xylene	U	1.0	U	1.0	U	**17**		**110**		**170**		**240**		**600**		**460**		1.0	U	1.0	U	**95**		**150**		**3.8**	
45	o-Xylene	U	1.0	U	1.0	U	**140**		**210**		**88**		**120**		**240**		**180**		1.0	U	1.0	U	**180**		**180**		**5.9**	
46	1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	**3.2**		**140**		**46**		**58**		**130**		**94**		1.0	U	1.0	U	**58**		**150**	J	**1.7**	
47	1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	**33**		**500**		**160**		**130**		**350**		**280**		**1.5**		1.0	U	**230**		**540**	J	**19**	
48	Isopropylbenzene	U	1.0	U	1.0	U	**28**		**48**		**19**		**28**		**62**		**37**		1.0	U	1.0	U	**38**		**63**	J	**4.5**	
49	n-Propylbenzene	U	1.0	U	1.0	U	**9.8**		**79**		**27**		**36**		**79**		**48**		**1.1**		1.0	U	**43**		**94**	J	**5.4**	
50	tert-Butylbenzene	U	1.0	U	1.0	U	**3.4**		5.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	**3.1**		3	U	1	U
51	sec-Butylbenzene	U	1.0	U	1.0	U	**26**		**25**		**7.7**		**7.0**		1.0	U	3.0	U	1.0	U	1.0	U	**16**		**21**	J	**2**	
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	**19**		**4.8**		**4.9**		**9.9**		**6.7**		1.0	U	1.0	U	**8.8**		**16**		1	U
53	n-Butylbenzene	U	1.0	U	1.0	U	1.6	U	13	U	6.8	U	**6.2**		10	U	7.5	U	1.0	U	1.0	U	7.9		**11**	J	1	U
54	Naphthalene	U	5.0	U	5.0	U	**26**		**31**		**19**		**18**		**48**		**27**		5.0	U	5.0	U	**21**		15	U	5	U
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																												
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	**Method OR-DEQ**																											
59	**TPH-Diesel**	U	0.25	U	0.25	U	**3.6**		**15**		**19**		**3.4**		**7.9**		**4.1**		0.25	U	**0.34**		**25**		**9.9**		**3.2**	
60	**TPH-D Motor Oil**		NA		NA		NA		NA		5.0	U	NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																							
2																Dup of LW4S							
3		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		X		LW4S		LW4S		LW4S	LW4S
4		FF65F		FL58F		FU45O		FY82K		0402113-07		0408036-08		0411066-12		0411066-01		0502087-01		P5F0223-07		P5H0814-05	P5K0699-03
5		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04		8/05/04		11/11/04		11/11/04		2/17/05		6/6/05		08/18/05	11/15/05
6																							
7	**CHLORINATED PHENOLS (µg/L)**																						
8	**EPA Method SW8040**																						
9	Pentachlorophenol	0.26	U	NA		NA		**3.9**		0.49	U	NA		5.08	U	0.5	U	0.501	U	NA		NA	NA
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
16																							
17	**SEMIVOLATILES (µg/L)**																						
18	**EPA Method SW8270**																						
19	Phenol	2	U	2	U	2	U	2	U	2.05	U	2	U	2.03	U	1.97	U	2.01	U	5.00	U	5.00 U	9.90 U
20	4-Methylphenol	1	U	1	U	1	U	1	U	10.2	U	10	U	10.2	U	9.83	U	10.1	U	5.00	U	5.00 U	4.95 U
21	Isophorone	1	U	1	U	1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
22	2,4-Dimethylphenol	3.1	U	3	U	3	U	3	U	3.07	U	3	U	3.05	U	2.95	U	3.02	U	10.00	U	10.0 U	14.9 U
23	Benzoic Acid	51	U	50	U	50	U	10	U	20.5	U	20	U	20.3	U	19.7	U	20.1	U	50.0	U	50.0 U	248 U
24	Naphthalene	1	U	**4.8**		1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
25	2-Methylnaphthalene	1	U	1	U	1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
26	2,4,6-Trichlorophenol	5.1	U	5	U	5	U	5	U	5.12	U	5	U	5.08	U	4.92	U	5.03	U	5.00	U	5.00 U	24.8 U
27	2,4,5-Trichlorophenol	5.1	U	5	U	5	U	5	U	5.12	U	5	U	5.08	U	4.92	U	5.03	U	5.00	U	5.00 U	24.8 U
28	Acenaphthene	1	U	1	U	1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
29	Dibenzofuran	1	U	1	U	1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
30	Fluorene	1	U	1	U	1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	5.00	U	5.00 U	4.95 UJ
31	Pentachlorophenol	5.1	U	**1400**		**17**		5	U	5.12	U	**8.52**		0.494	U	4.92	U	5.03	U	**58.4**		**1960**	**50.4**
32	bis(2-Ethylhexyl)phthalate	1	U	**1**		1	U	1	U	1.02	U	1	U	1.02	U	0.983	U	1.01	U	10.00	U	10.0 U	49.5 UJ
33																							
34	**VOLATILES (µg/L)**																						
35	**EPA Method SW8260**																						
36	Acetone	5	U	**7.2**	M	5	U	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	50.0 U	25.0 U
37	Carbon Disulfide	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	20.0 U	10.0 U
38	2-Butanone	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	20.0 U	10.0 U
39	Benzene	1	U	**3.2**		1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	**1.20**		**11.3**	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
42	Ethylbenzene	1	U	**11**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
44	m,p-Xylene	1	U	**14**		1	U	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	4.00 U	2.00 U
45	o-Xylene	1	U	**59**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	**16.5**		**231**	1.00 U
46	1,3,5-Trimethylbenzene	1	U	**18**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	**210**		**1.2**	J	**1.4**		1	U	1	U	1	U	1	U	1	U	**4.49**		**199**	1.00 U
48	Isopropylbenzene	1	U	**24**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	**46.3**	2.00 U
49	n-Propylbenzene	1	U	**27**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	**18.4**	1.00 U
50	tert-Butylbenzene	1	U	**1.7**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	**3.10**	1.00 U
51	sec-Butylbenzene	1	U	**8.3**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	**15.5**	1.00 U
52	4-Isopropyltoluene	1	U	**5.7**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	4.00 U	2.00 U
53	n-Butylbenzene	1	U	**5**	M	1	U	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	10.0 U	5.00 U
54	Naphthalene	5	U	**42**		5	U	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	4.00 U	2.00 U
55	Methyl tert-butyl ether	NA		NA		NA		NA		1	U	1	U	1	U	1	U	1	U	1.00	U	2.00 U	1.00 U
56																							
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																						
58	**Method OR-DEQ**																						
59	**TPH-Diesel**	0.25	U	**5.3**		**0.36**		**0.26**		0.244	U	0.256	U	0.244	U	0.248	U	0.254	U	0.278	U	**1.52**	0.250 U
60	**TPH-D Motor Oil**	NA		NA		NA		0.5	U	0.487	U	0.511	U	0.488	U	0.496	U	0.509	U	0.556	U	0.526 U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.161**		**1.86**	80.0 U
62																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																									Dup of LW4S		
3			LW4S		LW4S		LW4S		LW4S		LW4S (a)		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW40S		LW4S
4			S167J		T176G		U235O		V232E		B802035-01		W391F		Y314F		Z225K		Z960L		AH49G		AU45B		AU45A		BC27Q
5			4/1/97		7/15/97		10/22/97		1/30/98		1/30/98		5/20/98		8/17/98		11/14/98		2/18/99		5/18/99		9/22/99		9/22/99		12/9/99
63	56	**PRIORITY POLLUTANT**																									
64	57	**METALS (mg/L)**																									
65	58	Arsenic (7060)	0.001	U	**0.002**		0.05	U	0.05	U	NA		**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
66	59	Chromium (6010)	0.005	U	**0.015**		0.005	U	0.005	U	NA		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	**0.004**		**0.015**		0.002	U	**0.004**		NA		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	**0.006**		0.02	U	0.02	U	NA		0.001	U	0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U	0.001
69	62	Nickel (6010)	**0.02**		**0.02**		0.01	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01
70	63	Zinc (6010)	**0.008**		**0.035**		0.004	U	**0.009**		NA		**0.005**	J2	0.004	U	**0.005**		**0.009**	J2	**0.011**		**0.007**		0.004	U	0.008
71	64																										
72	65	**MAJOR IONS AND CONVENTIONALS**																									
73	66	Calcium (mg/L) (6010)	**20.7**		**20.4**		**16.9**		**15.1**		NA		NA		NA		NA		**10.7**		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**5.92**		**7.1**		**4.46**		**4.60**		NA		NA		NA		NA		**2.98**		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**3.9**		**4.5**		**4.2**		**3.5**		NA		NA		NA		NA		**2.6**		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**13.2**		**13.7**		**11.6**		**10.0**		NA		NA		NA		NA		**6.10**		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**75**		**64**		**62**		**64**		NA		NA		NA		NA		**43**		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		1.0	U	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**75**		**64**		**62**		**64**		NA		NA		NA		NA		**43**		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**140**	J2	**110**		**140**	J2	NA		160		160		180		**110**		**140**		**150**		**160**		**120**
81	74	Chloride (mg/L) (EPA 325.2)	**4.5**	J	**3.1**		**3.5**		**2.1**		NA		4.5		4.3		13		1.0	U	**2.2**		**7.1**		**6.9**		**4.3**
82	75	N-Nitrate (mg-N/L) (Calculated)	**11**	J	**3.3**		**5.1**		**4.2**	J2	NA		NA		NA		NA		**1.8**		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	**0.021**	J2	NA		NA		NA		NA		0.010	U	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**11**	J	**3.3**		**5.1**		**4.3**	J2	NA		NA		NA		NA		**1.8**		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**13**	J	**15**		**4.5**		**6.8**		NA		NA		NA		NA		**6.5**		NA		NA		NA		NA
86	79																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
1																												
2			Dup of LW4S																									
3			LW40S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S	
4			BC27O		BH96D		BR55C		CB68C		CL03F		CT67C		DE87J		DM30C		DW29F		ED30G		EN00G		ER93K		EZ17E	
5			12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02	
63	**PRIORITY POLLUTANT**																											
64	**METALS (mg/L)**																											
65	Arsenic (7060)	U	0.001	U	0.001	U	**0.001**		**0.004**		**0.006**		**0.009**		**0.008**		**0.010**		**0.002**		0.001	U	**0.002**		**0.006**		0.05	U
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.07**	
67	Copper (6010)	U	0.002	U	0.002	U	**0.008**		**0.016**		**0.008**		0.002	U	**0.002**		0.002	U	0.002	U	0.002	U	**0.085**		**0.05**		**0.163**	
68	Lead (7421)	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.002**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.04**	
69	Nickel (6010)	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.03**		0.01	U	**0.11**	
70	Zinc (6010)	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.009**		0.006	U	0.006	U	**0.007**		0.006	U	0.006	U	0.006	U	**0.011**		**0.17**	
71																												
72	**MAJOR IONS AND CONVENTIONALS**																											
73	Calcium (mg/L) (6010)		NA		NA		NA		NA		NA		**164**		**149**		**144**		**13.9**		**25.8**		**163**		NA		NA	
74	Magnesium (mg/L) (6010)		NA		NA		NA		NA		NA		**56.0**		**48.2**		**43.6**		**4.06**		**7.66**		**49.6**		NA		NA	
75	Potassium (mg/L) (6010)		NA		NA		NA		NA		NA		**5.6**		**5.9**		**6.4**		**2.5**		**3.5**		**7.9**		NA		NA	
76	Sodium (mg/L) (6010)		NA		NA		NA		NA		NA		**9.87**		**9.35**		**11.5**		**4.35**		**7.39**		**15.0**		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		**810**		NA		NA		NA		**80**		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		**810**		NA		NA		NA		**80**		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**120**		**150**		**490**		**420**		**990**		**760**		**720**	J	**580**	J	**95**		**300**		**890**		**380**		**320**	
81	Chloride (mg/L) (EPA 325.2)		**4.5**		**3.5**		**9.9**		**4.6**		**7.7**		**7.5**	J	**5.3**		**7.1**		**1.7**		**6.7**	J	**9.4**		**5.2**		**7.3**	
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**8.4**		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA		NA		**0.013**	J	NA		NA		NA		**0.022**		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**8.4**		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA		NA		**8.4**		NA		NA		NA		**18**		NA		NA		NA	
86																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																							
2																Dup of LW4S							
3		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		X		LW4S		LW4S		LW4S	LW4S
4		FF65F		FL58F		FU45O		FY82K		0402113-07		0408036-08		0411066-12		0411066-01		0502087-01		P5F0223-07		P5H0814-05	P5K0699-03
5		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04		8/05/04		11/11/04		11/11/04		2/17/05		6/6/05		08/18/05	11/15/05
63	**PRIORITY POLLUTANT**																						
64	**METALS (mg/L)**																						
65	Arsenic (7060)	0.001	U	0.001	U	**0.002**		**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001 U	0.001 U
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	**0.006**		**0.0071**		0.005	U	0.005	U	0.005	U	**0.008**		0.001	U	0.001 U	0.001 U
67	Copper (6010)	**0.002**		**0.028**		**0.003**		**0.006**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.0202**		**0.057**	**0.00696**
68	Lead (7421)	0.001	U	0.001	U	0.001	U	0.001	U	0.0001	U	0.0001	U	**0.00018**		**0.00067**		**0.000546**		0.001	U	0.001 U	0.001 U
69	Nickel (6010)	0.01	U	**0.01**		0.01	U	0.01	U	0.005	U	0.005	U	0.0121	U	0.0128	U	**0.0219**		**0.0524**		**0.158**	**0.0189**
70	Zinc (6010)	0.006	U	0.006	U	0.006	U	**0.009**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U	0.005 U
71																							
72	**MAJOR IONS AND CONVENTIONALS**																						
73	Calcium (mg/L) (6010)	**7.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
74	Magnesium (mg/L) (6010)	**2.25**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
75	Potassium (mg/L) (6010)	**1.8**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
76	Sodium (mg/L) (6010)	**4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	**36**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**36**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**66**		**290**		**200**		**140**		**166**		**244**		**232**		**194**		**192**		**326**		**364**	NA
81	Chloride (mg/L) (EPA 325.2)	1	U	**9.8**		**5.8**		**3**		**6.03**		**15.5**		**2.29**	J	**1.78**	J	**3.89**		**4.71**		**5.16**	NA
82	N-Nitrate (mg-N/L) (Calculated)	**0.76**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	0.01	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.76**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
85	Sulfate (mg/L) (EPA 375.2)	**6.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
86																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2																									Dup of LW4S		
3			LW4S		LW4S		LW4S		LW4S		LW4S (a)		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW40S		LW4S
4			S167J		T176G		U235O		V232E		B802035-01		W391F		Y314F		Z225K		Z960L		AH49G		AU45B		AU45A		BC27Q
5			4/1/97		7/15/97		10/22/97		1/30/98		1/30/98		5/20/98		8/17/98		11/14/98		2/18/99		5/18/99		9/22/99		9/22/99		12/9/99
87	80	**FIELD PARAMETERS**																									
88	81	pH (avg)	6.46		6.86		6.76		6.61		6.61		6.08		6.23		6.33		6.31		5.67		6.51		6.49		6.57
89	82	Temperature (° C) (avg)	11.3		17.0		14.9		12.1		12.1		12.6		16.6		14.3		10.0		13.3		15.4		15.4		13.0
90	83	Conductivity (um/hos)	212		212		173		163		163		263		301		111		110		192		229		229		177
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		2.41		2.15		1.75		4.54		2.58		1.74		1.67		4.58
92	85																										
93	86	**DIOXINS AND FURANS (ng/L)**																									
94	87	**Method 8290**																									
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																											
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
1																												
2			Dup of LW4S																									
3			LW40S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S	
4			BC27O		BH96D		BR55C		CB68C		CL03F		CT67C		DE87J		DM30C		DW29F		ED30G		EN00G		ER93K		EZ17E	
5			12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02	
87	**FIELD PARAMETERS**																											
88	pH (avg)		6.57		6.48		6.28		5.70		5.74		6.31		6.80		6.75		6.21		5.64		6.23		6.68		6.2	
89	Temperature (° C) (avg)		12.9		13.1		14.5		15.1		14.3		13.5		14.2		16.2		14.6		12.6		14.4		15.8		16.1	
90	Conductivity (um/hos)		177		209		478		433		884		809		1400		973		129		253		843		477		465	
91	Dissolved oxygen (mg/L) (avg)		4.75		0.93		1.91		1.36		0.62		0.00		0.00		0.84		4		7.53		5.19		0.62		2.03	
92																												
93	**DIOXINS AND FURANS (ng/L)**																											
94	**Method 8290**																											
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121	**ETHANOL (mg/L)**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																							
2																Dup of LW4S							
3		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		X		LW4S		LW4S		LW4S	LW4S
4		FF65F		FL58F		FU45O		FY82K		0402113-07		0408036-08		0411066-12		0411066-01		0502087-01		P5F0223-07		P5H0814-05	P5K0699-03
5		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04		8/05/04		11/11/04		11/11/04		2/17/05		6/6/05		08/18/05	11/15/05
87	**FIELD PARAMETERS**																						
88	pH (avg)	6.59		6.33		6.82		6.65		5.8		5.89		6.4		6.43		6.55		6.75		5.58	6.78
89	Temperature (° C) (avg)	10.9		13		16.1		15.2		11.6		15.2		16.3		16.4		14.2		14.8		16.5	15.0
90	Conductivity (um/hos)	85		383		231		217		166		438		199		200		147		277		509	17.4
91	Dissolved oxygen (mg/L) (avg)	0		2.4		1.86		2.95		2.27		2.66		2.11		2.04		5.78		3.69		NM	4.06
92																							
93	**DIOXINS AND FURANS (ng/L)**																						
94	**Method 8290**																						
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
120																							
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
122																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																									Dup of LW4S		
2			LW4S		LW4S		LW4S		LW4S		LW4S (a)		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW40S		LW4S
3			S167J		T176G		U235O		V232E		B802035-01		W391F		Y314F		Z225K		Z960L		AH49G		AU45B		AU45A		BC27Q
4			4/1/97		7/15/97		10/22/97		1/30/98		1/30/98		5/20/98		8/17/98		11/14/98		2/18/99		5/18/99		9/22/99		9/22/99		12/9/99
5																											
123		**PAHs (µg/L)**																									
124		**EPA Method SW8270 SIM**																									
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
1																												
2			Dup of LW4S																									
3			LW40S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S	
4			BC27O		BH96D		BR55C		CB68C		CL03F		CT67C		DE87J		DM30C		DW29F		ED30G		EN00G		ER93K		EZ17E	
5			12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02	
123	**PAHs (µg/L)**																											
124	**EPA Method SW8270 SIM**																											
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																							
2																Dup of LW4S							
3		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		LW4S		X		LW4S		LW4S		LW4S	LW4S
4		FF65F		FL58F		FU45O		FY82K		0402113-07		0408036-08		0411066-12		0411066-01		0502087-01		P5F0223-07		P5H0814-05	P5K0699-03
5		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04		8/05/04		11/11/04		11/11/04		2/17/05		6/6/05		08/18/05	11/15/05
123	**PAHs (µg/L)**																						
124	**EPA Method SW8270 SIM**																						
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
127	Acenaphthylene	NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA		NA	NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
130	Anthracene	NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA		NA	NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2					Dup of LW5S																							
3			LW5S		LW5D		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S	
4			S167E		S167F		T160A		U235G		V232G		W391C		Y336E		Z225G		Z960J		AH49F		AU22E		BC27C		BH96C	
5			3/31/97		3/31/97		7/14/97		10/22/97		1/30/98		5/19/98		8/18/98		11/13/98		2/18/99		5/18/99		9/20/99		12/7/99		2/17/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	**0.25**		**0.26**		**0.24**	J1	**0.25**		**0.27**		**0.18**	J1	**0.18**	J1	0.25	U	**0.25**		0.25	U	**0.13**	J1	0.25	U	**0.18**	J1
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ
1									
2									
3		LW5S		LW5S		LW5S		LW5S	
4		BR64F		CT37E		ED16F		FF88C	
5		5/24/00		2/12/01		2/25/02		2/13/03	
6									
7	**CHLORINATED PHENOLS (µg/L)**								
8	**EPA Method SW8040**								
9	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U
10	2,4,6-Trichlorophenol	0.25	U	NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	NA		NA		NA	
16									
17	**SEMIVOLATILES (µg/L)**								
18	**EPA Method SW8270**								
19	Phenol	2.0	U	2.0	U	2.0	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3	U
23	Benzoic Acid	10	U	10	U	50	U	50	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	4.0	U	1	U
33									
34	**VOLATILES (µg/L)**								
35	**EPA Method SW8260**								
36	Acetone	5.0	U	6.6	U	5.0	U	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1	U
38	2-Butanone	5.0	U	5.0	U	5.0	U	5	U
39	Benzene	1.0	U	1.0	U	1.0	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1.0	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1	U
48	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1	U
49	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1	U
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1	U
51	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1	U
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1	U
53	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1	U
54	Naphthalene	5.0	U	5.0	U	5.0	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA	
56									
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	**Method OR-DEQ**								
59	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U
60	**TPH-D Motor Oil**	NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA	
62									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1					Dup of LW5S																							
3			LW5S		LW5D		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S	
4			S167E		S167F		T160A		U235G		V232G		W391C		Y336E		Z225G		Z960J		AH49F		AU22E		BC27C		BH96C	
5			3/31/97		3/31/97		7/14/97		10/22/97		1/30/98		5/19/98		8/18/98		11/13/98		2/18/99		5/18/99		9/20/99		12/7/99		2/17/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.001**		**0.002**		**0.002**		0.05	U	0.05	U	**0.003**		**0.003**		**0.003**		**0.008**		**0.003**		**0.003**		**0.002**		**0.003**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.028**		0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	**0.004**		**0.004**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.027**		0.002	U	0.002	U	0.002	U	0.002	U
68	61	Lead (7421)	**0.004**		**0.003**		**0.002**		0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	**0.036**		0.001	U	0.001	U	0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.02**		0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.008**		**0.011**		**0.004**		**0.005**		**0.004**		**0.008**	J2	0.004	U	**0.006**		**0.081**		0.004	U	0.004	U	0.006	U	0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**18.5**		**18.8**		**16**		**11.5**		**14.2**		NA		NA		NA		**22.3**		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**5.42**		**5.51**		**4.67**		**3.22**		**3.96**		NA		NA		NA		**9.38**		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**3.5**		**3.5**		**2.7**		**2.8**		**3.0**		NA		NA		NA		**4.8**		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**11.6**		**11.8**		**10.3**		**10.2**		**10.3**		NA		NA		NA		**13.4**		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**86**		**82**		**72**		**58**		**77**		NA		NA		NA		**78**		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**86**		**82**		**72**		**58**		**77**		NA		NA		NA		**78**		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		NT		**130**		**100**		**120**	J2	110		97		98		**120**		**160**		**120**		**110**		**100**	
81	74	Chloride (mg/L) (EPA 325.2)	1.0	U	**5.6**	J	**1.8**		**1.4**		**1.5**		2.5		1.0	U	1.5		**1.5**		**2.4**		**1.4**		**1.9**		**1.9**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.75**	J	0.010	U	**1.3**		**0.40**		**0.044**	J2	NA		NA		NA		**1.0**		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	**0.022**	J	0.010	U	0.010	U	**0.010**	J2	NA		NA		NA		**0.034**		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.75**	J	**0.016**	J	**1.3**		**0.40**		**0.054**	J2	NA		NA		NA		**1.0**		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**11**	J	**4.0**	J	**10**		**5.7**		**6.7**		NA		NA		NA		**9.5**		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ
1									
2									
3		LW5S		LW5S		LW5S		LW5S	
4		BR64F		CT37E		ED16F		FF88C	
5		5/24/00		2/12/01		2/25/02		2/13/03	
63	**PRIORITY POLLUTANT**								
64	**METALS (mg/L)**								
65	Arsenic (7060)	**0.003**		**0.002**		**0.003**		**0.003**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	0.002	U	0.002	U	0.002	U	**0.013**	
68	Lead (7421)	0.001	U	0.001	U	0.001	U	0.001	U
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	0.006	U	0.006	U	0.006	U	**0.013**	
71									
72	**MAJOR IONS AND CONVENTIONALS**								
73	Calcium (mg/L) (6010)	NA		**16.3**		**22.4**		**20.5**	
74	Magnesium (mg/L) (6010)	NA		**4.44**		**6.49**		**5.99**	
75	Potassium (mg/L) (6010)	NA		**2.6**		**3.4**		**3**	
76	Sodium (mg/L) (6010)	NA		**9.64**		**11.4**		**10.1**	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		**81**		**100**		**88**	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		1.0	U	1.0	U	1	U
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		**81**		**100**		**88**	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**97**		**140**		**150**		**140**	
81	Chloride (mg/L) (EPA 325.2)	**1.6**		**6.3**		**1.1**		**2.1**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		**1.2**		**1.6**		**0.73**	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		0.010	U	0.010	U	0.01	U
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		**1.2**	J	**1.6**		**0.73**	
85	Sulfate (mg/L) (EPA 375.2)	NA		**9.1**		**9.0**		**10**	
86									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2					Dup of LW5S																							
3			LW5S		LW5D		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S	
4			S167E		S167F		T160A		U235G		V232G		W391C		Y336E		Z225G		Z960J		AH49F		AU22E		BC27C		BH96C	
5			3/31/97		3/31/97		7/14/97		10/22/97		1/30/98		5/19/98		8/18/98		11/13/98		2/18/99		5/18/99		9/20/99		12/7/99		2/17/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.56		6.56		6.58		6.74		6.86		6.24		6.33		6.19		6.65		5.79		6.43		6.33		6.49	
89	82	Temperature (° C) (avg)	11.7		11.7		14.3		14.7		13.8		13.0		16.0		13.3		14.2		12.8		17.2		13.1		11.8	
90	83	Conductivity (um/hos)	175		175		197		125		175		177		171		80		169		200		146		133		149	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		3.37		1.83		1.86		5.67		2.40		2.38		2.85		2.51	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ
1									
2									
3		LW5S		LW5S		LW5S		LW5S	
4		BR64F		CT37E		ED16F		FF88C	
5		5/24/00		2/12/01		2/25/02		2/13/03	
87	**FIELD PARAMETERS**								
88	pH (avg)	6.42		6.17		5.91		6.79	
89	Temperature (° C) (avg)	14.6		13.7		12.4		13.3	
90	Conductivity (um/hos)	144		148		221		208	
91	Dissolved oxygen (mg/L) (avg)	2.85		2.08		5.42		0	
92									
93	**DIOXINS AND FURANS (ng/L)**								
94	**Method 8290**								
95	2,3,7,8-TCDF	NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA	
120									
121	**ETHANOL (mg/L)**	NA		NA		NA		NA	
122									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2					Dup of LW5S																							
3			LW5S		LW5D		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S		LW5S	
4			S167E		S167F		T160A		U235G		V232G		W391C		Y336E		Z225G		Z960J		AH49F		AU22E		BC27C		BH96C	
5			3/31/97		3/31/97		7/14/97		10/22/97		1/30/98		5/19/98		8/18/98		11/13/98		2/18/99		5/18/99		9/20/99		12/7/99		2/17/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ
1									
2									
3		LW5S		LW5S		LW5S		LW5S	
4		BR64F		CT37E		ED16F		FF88C	
5		5/24/00		2/12/01		2/25/02		2/13/03	
123	**PAHs (µg/L)**								
124	**EPA Method SW8270 SIM**								
125	Naphthalene	NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2							Dup of LW7S																					
3			LW7S		LW7S		LW7D		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4			S167M		T176S		T176T		U235W		V208D		W371I		Y314G		Z225R		Z960N		AH27E		AU22F		BB82A		BH75E	
5			4/1/97		7/16/97		7/16/97		10/23/97		1/28/98		5/18/98		8/17/98		11/12/98		2/17/99		5/17/99		9/20/99		12/6/99		2/15/00	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	**23**		**43**		**42**		**13**		**13**		**19**	J2	**10**		**6.5**		**4.0**		**17**		**19**		**7.8**		**1.6**	
25	19	2-Methylnaphthalene	**6.9**		**16**		**15**		**7.4**		**4.1**		**5.9**	J2	**4.6**		**3.4**		**1.2**		**4.7**		**11**		**7.4**		1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	**3.6**	J2	2.7	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	20	U	10	U	5.0	U	57	U	5.0	U	5.0	U	**23**		13	U	**29**		5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	**8.8**		**9.0**	J2	**12**	J2	5.0	U	**5.8**		**8.9**		**8.1**		**11**		**10**		**20**		5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	**160**		**140**		**160**		**86**		**71**		**62**		**69**		**36**		**14**		**56**		**80**		**40**		**5.6**	
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	**110**		**100**		**120**		**37**		**43**		**30**		**33**		**21**		**8.4**		**22**		**28**		**17**		**2.8**	
45	39	o-Xylene	**4.2**		**3.9**		**4.4**		**1.3**		**1.3**		**1.6**		**1.6**		**1.1**		1.0	U	**1.0**		**1.6**		1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	**15**		**24**		**25**		**21**		**6.4**		**9.1**		**5.9**		**8.0**		**2.0**		**8.3**		**4.4**		**2.4**		**2.3**	
47	41	1,2,4-Trimethylbenzene	**81**		**86**		**100**		**30**	J2	**15**		**9.9**		**7.0**		**2.9**		**3.7**		**17**		**6.3**		**2.5**		1.1	U
48	42	Isopropylbenzene	**22**		**45**		**42**		**60**	J2	**20**		**29**		**33**		**38**		**7.9**		**27**		**36**		**29**		**8.1**	
49	43	n-Propylbenzene	**31**		**64**		60		**78**		**34**		**43**		**46**		**59**		**13**		**42**		**48**		**41**		**15**	
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	**2.4**		**4.9**		**4.6**		**5.7**	J2	**3.6**		**3.6**		**4.1**	J2	**4.5**		**1.8**		**3.1**		**4.0**		**3.4**		**1.7**	
52	46	4-Isopropyltoluene	**2.5**		**4.2**		**4.2**		**3.4**	J2	**1.6**		**2.3**		**2.4**		**2.1**		1.0	U	**2.0**		**2.2**		**1.4**		1.0	U
53	47	n-Butylbenzene	**3.6**		**7.4**		**7.4**		**6.4**	J2	5.0		**4.4**		**5.2**		**5.3**		**2.5**		**3.4**		**5.2**		**4.3**	M	2.4	U
54	48	Naphthalene	**64**		**66**	J2	**87**	J2	**35**	J2	**37**		**28**		**32**		**22**		**9.1**		**29**		**41**		**9.6**		5.0	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	**0.48**		**0.54**		**0.48**		**0.56**		0.25	U	**0.40**		**0.28**		0.25	U	0.25	U	**0.27**		**0.54**		**0.40**		0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4		BR55H		CB49A		CK77C		CT37A		DE68A		DM52J		DW29A		ED16G		EM75E		ER92A		EZ03M		FF88E		FL41B		FU45A	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
6																													
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	0.25	UJ	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	**0.25**		0.25	U	0.25	U	0.28	U	0.25	U	0.26	U	0.25	U	0.50	UJ
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U	2.3	U	2	U	2	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U	3.4	U	3.1	U	3	U	3.1	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	56	U	57	U	51	U	50	U	51	U
24	Naphthalene	**5.7**		**12**		**5.2**		**3.7**		2.0		**1.8**		**1.3**		1.0	U	**9.0**		**5.2**		**1.8**		**2.1**		**1.2**		**4.4**	
25	2-Methylnaphthalene	**1.2**		**3.7**		**1.6**		**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	**3.0**		**2**		1.1	U	1	U	1	U	**1.3**	
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.7	U	5.1	U	5	U	5.1	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.7	U	5.1	U	5	U	5.1	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.7	U	5.1	U	5	U	5.1	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.3**		4.0	U	4.0	U	4.4	U	4.5	U	1	U	1	U	1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	56	U	110	U	83	U	5.0	U	5.0	U	5.0	U	21	U	5.0	U	48	U	86	U	20	U	**36**	M	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	9.3	U	5.0	U	**8.2**		5.0	U	**7.7**		5.0	U	5.0	U	**13**		6.6	U	**21**	M	**9.3**	M	**7.6**	M	**18**	M
39	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	**19**		**40**		**23**		**15**		**4.6**		**18**		**17**		**8.6**		**31**		**42**		**24**		**8.3**		**10**	J	**42**	
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	**8.8**		**15**		**19**		**9.1**		**5.4**		**10**		**13**		**3.7**		**15**		**18**		**12**		**6.3**		**5**	J	**20**	J
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	**2.1**		**3.0**		**2.8**		**1.5**		1.0	U	**1.6**		**1.4**		1.0	U	**20**		**4**		**1.4**		**1**		1	U	**3.4**	
47	1,2,4-Trimethylbenzene	**4.6**		**3.0**		**1.6**		**1.2**		1.0	U	**2.3**		1.0	U	**1.1**		**6.9**		**4.9**		**1.2**		**2.1**		**1.1**	J	**3.2**	J
48	Isopropylbenzene	**11**		**18**		**22**		**16**		**1.3**		**21**		**20**		**6.1**		**20**		**26**		**26**		**14**		**8.7**	J	**31**	
49	n-Propylbenzene	**18**		**28**		**33**		**25**		**1.3**		**27**		**27**		**11**		**30**		**40**		**36**		**23**		**14**	J	**40**	
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	**1.4**		**2.3**		**2.6**		**2.3**		1.0	U	**2.2**		**2.3**		1.0	U	**2.6**		**3.3**		**3**		**2.2**		**1.5**	J	**2.9**	
52	4-Isopropyltoluene	**1.5**		**1.1**		**1.2**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		**2.2**		**1.1**		1	U	1	U	**1.2**	
53	n-Butylbenzene	1.5	U	**2.8**		**3.2**		**2.6**		1.0	U	**2.8**	M	3.1	U	**1.0**		2.6	U	3.7	U	**3.2**	M	**2.5**	M	**1.8**	J	**3**	
54	Naphthalene	**12**		**18**		**13**		**5.7**		5.0	U	**7.0**		5.0	U	5.0	U	**14**		**12**		**5.4**		5	U	5	U	**6.6**	
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	0.25	U	**0.32**		**0.32**		**0.32**		**20**		**0.26**		**0.42**		0.25	U	**0.31**		**0.53**		**0.5**		**0.31**		0.25	U	**0.54**	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.5	U	NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S
4		FY64F		0402099-03		0406059-05		0408019-01		0411051-10		0502102-07		P5F0223-01		P5H0734-04
5		10/20/03		2/19/04		6/9/04		8/03/04		11/9/04		2/23/05		6/6/05		08/17/05
7	**CHLORINATED PHENOLS (µg/L)**															
8	**EPA Method SW8040**															
9	Pentachlorophenol	0.5	U	0.486	U	0.499	U	0.5	U	0.488	U	0.499	U	0.481	U	0.490 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16																
17	**SEMIVOLATILES (µg/L)**															
18	**EPA Method SW8270**															
19	Phenol	2	U	1.95	U	2.02	U	1.99	U	2	U	1.9	U	5.00	U	5.00 U
20	4-Methylphenol	1	U	9.75	U	10.1	U	9.96	U	10	U	9.51	U	5.00	U	5.00 U
21	Isophorone	1	U	0.975	U	1.01	U	0.996	U	1	U	0.951	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	3	U	2.92	U	3.02	U	2.99	U	3.01	U	2.85	U	10.00	U	10.0 U
23	Benzoic Acid	10	U	19.5	U	20.2	U	19.9	U	20	U	19	U	50.0	U	50.0 U
24	Naphthalene	**4.4**		0.975	U	**5.13**		**4.43**		1	U	0.951	U	5.00	U	5.00 U
25	2-Methylnaphthalene	**1.9**		0.975	U	1.01	U	**1.66**		1	U	0.951	U	5.00	U	5.00 U
26	2,4,6-Trichlorophenol	5	U	4.87	U	5.04	U	4.98	U	5.01	U	4.75	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	5	U	4.87	U	5.04	U	4.98	U	5.01	U	4.75	U	5.00	U	5.00 U
28	Acenaphthene	1	U	0.975	U	1.01	U	0.996	U	1	U	0.951	U	5.00	U	5.00 U
29	Dibenzofuran	1	U	0.975	U	1.01	U	0.996	U	1	U	0.951	U	5.00	U	5.00 U
30	Fluorene	1	U	0.975	U	1.01	U	0.996	U	1	U	0.951	U	5.00	U	5.00 U
31	Pentachlorophenol	5	U	4.87	U	5.04	U	4.98	U	5.01	U	4.75	U	10	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	1	U	0.975	U	1.01	U	0.996	U	1	U	0.951	U	10.00	U	10.0 U
33																
34	**VOLATILES (µg/L)**															
35	**EPA Method SW8260**															
36	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	**17**	M	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	**29**		**7.76**		**50.8**		**78.8**		**13.8**		**5.14**		**2.76**		**11.9**
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	**16**		2	U	**21.6**		**33.2**		**15.3**		**4.85**		2.00	U	**3.99**
45	o-Xylene	1	U	1	U	1	U	**1.02**		**1.87**		1	U	1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	**3.3**		1	U	**4.24**		**4.78**		**1.63**		1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	**2.2**		1	U	**3.34**		**3.58**		1	U	1	U	1.00	U	1.00 U
48	Isopropylbenzene	**42**		**13.6**		**24.9**		**54.7**		**34.4**		**11.4**		**4.88**		**10.3**
49	n-Propylbenzene	**54**		**27.5**		**41.8**		**62.9**		**50**		**23.7**		**7.60**		**12.5**
50	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	sec-Butylbenzene	**3.7**		**2.18**		**2.15**		**4.13**		**2.8**		**2.32**		1.00	U	**1.72**
52	4-Isopropyltoluene	**1.6**		1	U	1	U	**1.81**		**1.32**		**1.84**		2.00	U	2.00 U
53	n-Butylbenzene	**4.3**		**2.67**		**2.16**		**3.74**		**3.79**		**7.48**		5.00	U	5.00 U
54	Naphthalene	**5.5**		1	U	**11.3**		**10.1**		1	U	**4.9**		2.00	U	**3.34**
55	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56																
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	**Method OR-DEQ**															
59	**TPH-Diesel**	**0.6**		**0.333**		**0.651**		**0.516**		**0.413**		0.248	U	0.25	U	0.250 U
60	**TPH-D Motor Oil**	0.5	U	0.476	U	**0.567**		0.501	U	0.497	U	0.495	U	0.5	U	0.500 U
61	**TPH-Gasoline**	**2.1**		**1.2**		**0.38**		**1.73**		**1.63**		**1.26**		**0.416**		**0.752**
62																

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2							Dup of LW7S																					
3			LW7S		LW7S		LW7D		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4			S167M		T176S		T176T		U235W		V208D		W371I		Y314G		Z225R		Z960N		AH27E		AU22F		BB82A		BH75E	
5			4/1/97		7/16/97		7/16/97		10/23/97		1/28/98		5/18/98		8/17/98		11/12/98		2/17/99		5/17/99		9/20/99		12/6/99		2/15/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.014**		**0.017**		**0.017**		0.05	U	0.05	U	**0.015**		**0.015**		**0.017**		**0.016**		**0.010**		**0.018**		**0.016**		**0.017**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	**0.004**		**0.002**		**0.002**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
68	61	Lead (7421)	**0.003**		**0.005**		**0.005**		0.02	U	0.02	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.015**		**0.005**		**0.005**		0.004	U	**0.004**		**0.007**	J2	**0.008**		0.004	U	**0.007**	J	0.006	U	**0.004**		**0.007**		0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**24.9**		**27.9**		**26.9**		**31.4**		**30.6**		NA		NA		NA		**29.8**		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**9.15**		**10.2**		**9.94**		**11.6**		**11.0**		NA		NA		NA		**10.8**		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**2.7**		**3.0**		**2.9**		**2.9**		**2.5**		NA		NA		NA		**2.9**		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**8.93**		**9.78**		**9.84**		**9.53**		**9.52**		NA		NA		NA		**9.86**		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**120**		**93**	**J2**	**130**	**J2**	**160**		**150**		NA		NA		NA		**140**		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**120**		**93**	J2	**130**	J2	**160**		**150**		NA		NA		NA		**140**		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**180**	J2	**150**	J2	**170**		**180**		130		130		140		**190**		**200**		**180**		**190**		**190**	
81	74	Chloride (mg/L) (EPA 325.2)	**3.6**	J	**3.5**		**3.6**		**3.0**		**2.4**		2.8		1.0	U	1.9		**3.0**		**3.0**		**2.6**		**5.0**		**3.6**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.23**	J	0.010	U	0.010	U	**0.023**		**0.010**		NA		NA		NA		**0.24**		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.015**	J	**0.021**	J2	**0.048**	J2	0.010	U	0.010	U	NA		NA		NA		**0.017**		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.25**	J	**0.016**	J2	**0.027**	J2	**0.023**		**0.010**		NA		NA		NA		**0.26**		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**4.3**	J	**2.8**		**2.7**		2.5	U	2.5	U	NA		NA		NA		**7.7**		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4		BR55H		CB49A		CK77C		CT37A		DE68A		DM52J		DW29A		ED16G		EM75E		ER92A		EZ03M		FF88E		FL41B		FU45A	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.016**		**0.015**		**0.015**		**0.016**		**0.016**		**0.019**		**0.017**		**0.017**		**0.017**		**0.015**		0.05	U	**0.017**		**0.015**		**0.013**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.016**		0.005	U
67	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.008**		**0.014**		**0.002**	
68	Lead (7421)	**0.001**		0.001	U	**0.002**		0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.002**		**0.002**		0.02	U	**0.005**		**0.006**		**0.001**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		**0.03**		0.01	U
70	Zinc (6010)	0.006	U	0.006	U	**0.024**		0.006	U	**0.009**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.037**		**0.108**	J	0.006	U
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		NA		**29.4**		**37.4**		**41.0**		**36.2**		**35.4**		NA		NA		NA		**47.7**		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		**10.5**		**13.4**		**15.3**		**13.0**		**13.3**		NA		NA		NA		**18.9**		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		**2.5**		**3.1**		**3.2**		**3.4**		**3.5**		NA		NA		NA		**4.1**		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		**13.0**		**15.6**		**18.8**		**18.8**		**19.4**		NA		NA		NA		**17.6**		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		**160**		NA		NA		NA		**180**		NA		NA		NA		**220**		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		**160**		NA		NA		NA		**180**		NA		NA		NA		**220**		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**160**		**190**		**210**		**200**		**250**		**250**		**230**		**230**		**260**		**290**		**250**		**240**		**230**		**220**	
81	Chloride (mg/L) (EPA 325.2)	**3.5**		**2.9**		**4.1**		**2.8**		**3.3**		**5.3**		**2.6**		**3.6**		**3.5**		**7.4**		**4.7**		**5.1**		**2.1**		**2.5**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		**0.053**		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		**0.013**		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		0.010	UJ	NA		NA		NA		0.010	U	NA		NA		NA		**0.066**		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		**3.0**		NA		NA		NA		**7.9**		NA		NA		NA		2.5	U	NA		NA	
86																													

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
1																
2																
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S
4		FY64F		0402099-03		0406059-05		0408019-01		0411051-10		0502102-07		P5F0223-01		P5H0734-04
5		10/20/03		2/19/04		6/9/04		8/03/04		11/9/04		2/23/05		6/6/05		08/17/05
63	**PRIORITY POLLUTANT**															
64	**METALS (mg/L)**															
65	Arsenic (7060)	**0.012**		**0.013**		**0.015**		**0.0143**		**0.0136**		**0.0148**		**0.0169**		**0.0147**
66	Chromium (6010)	0.005	U	0.005	U	**0.0148**		**0.0146**		**0.0186**		**0.0091**		0.001	U	0.001 U
67	Copper (6010)	**0.003**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	Lead (7421)	0.001	U	**0.0005**		0.0001	U	**0.000792**		**0.00073**		**0.000786**		0.001	U	0.001 U
69	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.002	U	0.001 U
70	Zinc (6010)	0.006	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71																
72	**MAJOR IONS AND CONVENTIONALS**															
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**220**		**203**		**259**		**265**		**225**		**150**		**225**		**225**
81	Chloride (mg/L) (EPA 325.2)	**2.9**		**5.73**		**3.53**		**3.43**		**3.2**		**3.24**		**2.51**		**2.15**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2							Dup of LW7S																					
3			LW7S		LW7S		LW7D		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4			S167M		T176S		T176T		U235W		V208D		W371I		Y314G		Z225R		Z960N		AH27E		AU22F		BB82A		BH75E	
5			4/1/97		7/16/97		7/16/97		10/23/97		1/28/98		5/18/98		8/17/98		11/12/98		2/17/99		5/17/99		9/20/99		12/6/99		2/15/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.76		6.73		6.74		6.91		6.79		6.35		6.51		6.35		6.84		5.72		6.22		6.13		6.73	
89	82	Temperature (° C) (avg)	13.7		16.2		16.0		15.4		15.2		14.4		16.6		14.1		13.7		14.5		16.3		13.6		15.5	
90	83	Conductivity (um/hos)	278		299		303		310		323		315		308		121		309		293		267		297		296	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		NA		1.35		1.39		2.13		2.09		1.91		2.84		1.20	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4		BR55H		CB49A		CK77C		CT37A		DE68A		DM52J		DW29A		ED16G		EM75E		ER92A		EZ03M		FF88E		FL41B		FU45A	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	6.52		6.36		5.18		6.46		6.70		6.93		6.60		6.21		6.56		6.66		6.6		6.99		7.1		6.8	
89	Temperature (° C) (avg)	14.5		15.5		14.9		14.2		14.1		15.2		15.1		14.1		15.1		15.5		15.6		14.7		14.4		15.7	
90	Conductivity (um/hos)	263		299		302		300		419		433		378		351		408		364		352		492		320		308	
91	Dissolved oxygen (mg/L) (avg)	0.87		1.66		2.02		2.78		1.37		1.06		3.24		4.55		5.27		1.46		0.41		0		5.9		2.76	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
1																
2																
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S
4		FY64F		0402099-03		0406059-05		0408019-01		0411051-10		0502102-07		P5F0223-01		P5H0734-04
5		10/20/03		2/19/04		6/9/04		8/03/04		11/9/04		2/23/05		6/6/05		08/17/05
87	**FIELD PARAMETERS**															
88	pH (avg)	6.77		5.97		5.13		7.68		6.51		6.79		7.13		6.80
89	Temperature (° C) (avg)	15.6		14.6		15.6		16.1		15.8		15.6		15.0		15.7
90	Conductivity (um/hos)	308		300		352		451		285		176		250		270
91	Dissolved oxygen (mg/L) (avg)	1.08		1.26		1.23		NM		1.68		0		2.33		NM
92																
93	**DIOXINS AND FURANS (ng/L)**															
94	**Method 8290**															
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA
122																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2							Dup of LW7S																					
3			LW7S		LW7S		LW7D		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4			S167M		T176S		T176T		U235W		V208D		W371I		Y314G		Z225R		Z960N		AH27E		AU22F		BB82A		BH75E	
5			4/1/97		7/16/97		7/16/97		10/23/97		1/28/98		5/18/98		8/17/98		11/12/98		2/17/99		5/17/99		9/20/99		12/6/99		2/15/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		**4.0**		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		**1.3**		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S	
4		BR55H		CB49A		CK77C		CT37A		DE68A		DM52J		DW29A		ED16G		EM75E		ER92A		EZ03M		FF88E		FL41B		FU45A	
5		5/23/00		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/27/01		2/25/02		6/25/02		08/26/02		11/12/02		2/13/03		5/7/03		8/28/03	
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS
1																
2																
3		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S		LW7S
4		FY64F		0402099-03		0406059-05		0408019-01		0411051-10		0502102-07		P5F0223-01		P5H0734-04
5		10/20/03		2/19/04		6/9/04		8/03/04		11/9/04		2/23/05		6/6/05		08/17/05
123	**PAHs (µg/L)**															
124	**EPA Method SW8270 SIM**															
125	Naphthalene	4.1		NA		**5.73**		**5.83**		**0.503**		**0.591**		0.216	U	**2.21**
126	2-Methylnaphthalene	1.6		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	0.1	U	NA		0.05	U	0.05	U	0.0493	U	0.0501	U	0.0481	U	0.0490 U
128	Acenaphthene	0.1	U	NA		0.05	U	**0.05**		0.0493	U	0.0501	U	0.0481	U	0.0490 U
129	Fluorene	0.1	U	NA		0.05	U	0.05	U	0.0493	U	0.0501	U	0.0481	U	0.0490 U
130	Anthracene	0.1	U	NA		0.05	U	0.05	U	0.0493	U	0.0501	U	0.0481	U	0.0490 U
131	Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2													Dup of LW8S						Dup of LW8S						Dup of LW8S	
3			LW8S		LW8S		LW8S		LW8S		LW8S		Z		LW8S		LW8S		W		LW8S		LW8S		W	
4			AH27K		AU36D		BC30G		9912050-05A		BH96W		BH96V		BR64N		CB68F		CB68H		CL03A		CT67J		CT67I	
5			5/17/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00		2/16/00		5/25/00		8/30/00		8/30/00		11/9/00		2/15/01		2/15/01	
6																										
7	1	**CHLORINATED PHENOLS (µg/L)**																								
8	2	**EPA Method SW8040**																								
9	3	Pentachlorophenol	0.25	U	0.25	U	**1.2**		NA		**0.13**	J1,J2	**0.27**	J2	**0.51**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		**0.14**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	**0.21**	J1	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA	
16	10																									
17	11	**SEMIVOLATILES (µg/L)**																								
18	12	**EPA Method SW8270**																								
19	13	Phenol	**2.7**		2.0	U	2.0	U	NA		**3.1**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	**32**		1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	NA		3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	NA		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	**99**		**74**		**120**		NA		**55**		**54**		**70**		**40**		**38**		**4.3**		**6.7**		**6.4**	
25	19	2-Methylnaphthalene	**76**		**58**		**72**		NA		**71**		**73**		**77**		**30**		**30**		**4.7**		**7.0**		**6.8**	
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	**6.9**		5.0	U	**5.8**		5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	**6.8**		NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27																									
34	28	**VOLATILES (µg/L)**																								
35	29	**EPA Method SW8260**																								
36	30	Acetone	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	12	J2	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	**11**		5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**12**		5.0	U	5.0	U
39	33	Benzene	**110**		**55**		**49**		NA		**62**		**60**		**77**		**29**		**29**		**5.0**		**9.1**		**9.1**	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	**180**		**160**		**170**		NA		**110**		**98**		**140**		**130**		**120**		**8.5**		**22**		**23**	
43	37	Styrene	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	**290**		**320**		**260**		NA		**160**		**130**		**180**		**200**		**200**		**2.2**		**4.7**		**5.0**	
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	**62**		**120**		**100**		NA		**57**	J2	**45**	J2	**52**		**81**		**81**		1.0	U	**4.1**		**5.0**	
47	41	1,2,4-Trimethylbenzene	**280**		**180**		**180**		NA		**140**		**120**		**130**		**130**		**120**		**2.6**		**6.4**		**7.1**	
48	42	Isopropylbenzene	**290**		**130**		**160**		NA		**190**		**180**		**250**		**120**		**120**		**100**		**100**		**130**	
49	43	n-Propylbenzene	**190**		**110**		**140**		NA		**150**		**150**		**170**		**100**		**98**		**56**		**83**		**100**	
50	44	tert-Butylbenzene	**5.7**		**5.6**		**6.6**		NA		**8.8**		**8.7**		**7.3**		**5.5**		**5.5**		**4.9**		**5.7**		**6.2**	
51	45	sec-Butylbenzene	**22**		**23**		**25**		NA		**30**		**29**		**28**		**20**		20		**11**		**14**		**15**	
52	46	4-Isopropyltoluene	**5.1**		**10**		**5.4**		NA		**4.2**		**3.4**		**3.9**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	**12**		**18**		16	U	NA		**15**		**14**		**15**		**14**		13		**4.1**		**6.8**		**7.1**	
54	48	Naphthalene	**150**		**120**		**160**		NA		**180**		**160**		**150**		**110**		**100**		**6.6**		**19**		**20**	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	51	**Method OR-DEQ**																								
59	52	**TPH-Diesel**	**1.9**		**2.1**		**2.0**		NA		**2.2**	J2	**3.2**	J2	**2.6**		**1.6**		**1.6**		**2.3**		**3.4**		**3.2**	
60	53	**TPH-D Motor Oil**	0.50	U	0.50	U	0.50	U	NA		0.50	UJ	**1.3**	J2	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
61	54	**TPH-Gasoline**	**9.8**		**9.4**		**10**		NA		**9.5**		**10**		**15**		**13**		**13**		**3.9**		**4.6**		**4.9**	
62	55																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
2								Dup of LW8S								Dup of LW8S								Dup of LW8S			
3		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S	
4		DE68N		DM30J		ED23J		ED23K		EM85G		ER92E		EZ17G		EZ17A		FF65C		FL58B		FU45I		FU45H		FY64L	
5		6/4/01		8/14/01		2/26/02		2/26/02		6/26/02		08/26/02		11/13/02		11/13/02		2/11/03		5/8/03		8/28/03		8/28/03		10/21/03	
7	**CHLORINATED PHENOLS (µg/L)**																										
8	**EPA Method SW8040**																										
9	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.27	U	0.25	U	0.25	U	1.2	U	0.26	U	**2.1**	J	**6.3**	J	0.55	U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																											
17	**SEMIVOLATILES (µg/L)**																										
18	**EPA Method SW8270**																										
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U	2.3	U	2.3	U	2	U	2	UJ	2	U	2.1	U	2.2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1.1	U	1	U	1	UJ	1	U	1.1	U	1.1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1.1	U	1	U	1	UJ	1	U	1.1	U	1.1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U	3.5	U	3.4	U	3	U	3.1	UJ	3.1	U	3.2	U	3.3	U
23	Benzoic Acid	10	U	10	U	50	U	50	U	50	U	54	U	58	U	57	U	50	U	51	UJ	51	U	53	U	11	U
24	Naphthalene	**22**		**2.3**		**54**		**57**		**57**		**62**		**11**		**11**		**44**		**24**	J	**39**		**40**		**2.2**	
25	2-Methylnaphthalene	**14**		**2.6**		**69**		**74**		**51**		**44**		**22**		**25**		**47**		**49**	J	**31**		**34**		**3.1**	
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U	5.8	U	5.7	U	5	U	5.1	UJ	5.1	U	5.3	U	5.5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U	5.8	U	5.7	U	5	U	5.1	UJ	5.1	U	5.3	U	5.5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1.1	U	1	U	1	UJ	1	U	1.1	U	1.1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1.1	U	1	U	1	UJ	1	U	1.1	U	1.1	U
30	Fluorene	1.0	U	1.0	U	**1.3**		**1.2**		1.0	U	1.1	U	1.2	U	1.1	U	1	U	1	UJ	2	U	1.6	U	1.1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U	5.8	U	5.7	U	5	U	5.1	UJ	5.1	U	5.3	U	5.5	U
32	bis(2-Ethylhexyl)phthalate	**1.5**		1.0	U	**5.0**		4.0	U	4.0	U	4.3	U	4.7	U	4.5	U	1	U	1	UJ	1	U	1.1	U	1.1	U
33																											
34	**VOLATILES (µg/L)**																										
35	**EPA Method SW8260**																										
36	Acetone	5.0	U	8.2	U	5.0	U	5.0	U	**14**	M	15	U	**7.2**		**7.4**	M	**7.7**		**21**	M	**16**	J	5	U	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	1	U	1	U
38	2-Butanone	5.0	U	5.3	U	5.0	U	5.0	U	5.9	U	15	U	5	U	5	U	5	U	15	U	15	U	5	U	5	U
39	Benzene	**9.0**		**2.0**		**30**		**30**		**91**	J	**35**		**2.5**		**2.4**		**15**		**31**		**19**		**23**		1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	1	U	1	U
42	Ethylbenzene	**61**		**11**		**420**	J	**390**		**300**	J	**280**		**37**		**33**		**240**		**270**		**180**		**220**		**7.2**	
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	1	U	1	U
44	m,p-Xylene	**17**		1.0	U	**56**		**60**		**44**	J	**37**		**1**		1	U	**4.6**		**8.2**		**11**	J	**15**	J	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	1	U	1	U
46	1,3,5-Trimethylbenzene	**15**		**1.7**		**62**		**64**		**67**	J	**68**		**7.7**		**6.3**		**9.1**		**9.6**		**13**	J	**16**	J	1	U
47	1,2,4-Trimethylbenzene	**23**		**1.8**		**130**		**140**		**150**	J	**170**		**13**		**11**		**23**		**29**		**28**	J	**36**	J	1	U
48	Isopropylbenzene	**130**		**67**		**240**	J	**240**		**260**	J	**240**		**180**		**170**		**240**		**340**		**260**		**280**		**140**	
49	n-Propylbenzene	**110**		**40**		**210**	J	**210**		**250**	J	**220**		**160**		**150**		**200**		**260**		**230**		**260**		**94**	
50	tert-Butylbenzene	**6.0**		**4.7**		**10**		**10**		**12**	MJ	**8.4**		**7.6**		**7.1**		**9.4**		**12**		**9.1**		**10**		**7.4**	
51	sec-Butylbenzene	**16**		**8.7**		**31**		**32**		**40**	J	**24**		**24**		**23**		**29**		**33**		**28**		**32**		**19**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3	U	1	U	1	U	1	U	3	U	3	U	**2**		1	U
53	n-Butylbenzene	8.0	U	**3.2**	M	**18**		**18**		**20**	MJ	**16**	M	**14**	M	**13**	M	**13**	M	**14**		**14**		**16**		**9**	
54	Naphthalene	**35**		5.0	U	**180**		**100**		**140**		**150**		**19**		**17**		**76**		**51**		**83**		**120**		5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																											
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	**Method OR-DEQ**																										
59	**TPH-Diesel**	**4.4**		**4.0**		**7.1**		**7.6**		**4.0**		**4.5**		**4.3**		**4.2**		**11**		**7.4**		**4.3**		**4.2**		**3.5**	
60	**TPH-D Motor Oil**	0.50	U	2.5	U	0.50	U	0.50	U	0.50	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
61	**TPH-Gasoline**	**4.7**		**3.9**		**12**	J	**12**		**11**		**10**		**7.8**		**8.6**		**9.8**		**9.5**	J	**7.4**		**7.5**		**4.6**	
62																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
1																	
2						Dup of LW8S											
3		LW8S		LW8S		X		LW8S		LW8S		LW8S		LW8S		LW8S	LW8S
4		0402113-09		0406059-07		0406059-06		0408036-02		0411051-09		0502087-12		P5F0668-01		P5H0853-04	P5K0699-04
5		2/23/04		6/9/04		6/9/04		8/05/04		11/9/04		2/18/05		6/14/05		08/19/05	11/15/05
6																	
7	**CHLORINATED PHENOLS (µg/L)**																
8	**EPA Method SW8040**																
9	Pentachlorophenol	0.504	U	0.517	U	0.491	U	0.5	U	0.525	U	0.484	UJ	4.81	U	0.500 U	2.43 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
16																	
17	**SEMIVOLATILES (µg/L)**																
18	**EPA Method SW8270**																
19	Phenol	2.06	U	2.08	U	1.99	U	2	U	2.01	U	1.95	U	5.00	U	5.00 U	10.0 U
20	4-Methylphenol	10.3	U	10.4	U	9.94	U	10	U	10.1	U	9.77	U	5.00	U	5.00 U	5.00 U
21	Isophorone	1.03	U	1.04	U	0.994	U	1	U	1.01	U	0.977	U	5.00	U	5.00 U	5.00 U
22	2,4-Dimethylphenol	3.1	U	3.12	U	2.98	U	3	U	3.02	U	2.93	U	10.00	U	10.0 U	15.0 U
23	Benzoic Acid	20.6	U	20.8	U	19.9	U	20	U	20.1	U	19.5	U	50.0	U	50.0 U	250 U
24	Naphthalene	**15.2**		**25.4**		**29.2**		**6.7**		1.01	U	**20.7**		**34.5**		**21.8**	**24.6**
25	2-Methylnaphthalene	**20.3**		**19.6**		**22.1**		**6.88**		1.01	U	**10.4**		11.0	U	**13.4**	**10.8**
26	2,4,6-Trichlorophenol	5.16	U	5.21	U	4.97	U	5	U	5.04	U	4.88	U	5.00	U	5.00 U	25.0 U
27	2,4,5-Trichlorophenol	5.16	U	5.21	U	4.97	U	5	U	5.04	U	4.88	U	5.00	U	5.00 U	25.0 U
28	Acenaphthene	1.03	U	1.04	U	0.994	U	1	U	1.01	U	0.977	U	5.00	U	5.00 U	5.00 U
29	Dibenzofuran	1.03	U	1.04	U	0.994	U	1	U	1.01	U	0.977	U	5.00	U	5.00 U	5.00 U
30	Fluorene	1.03	U	1.04	U	0.994	U	1	U	1.01	U	0.977	U	5.00	U	5.00 U	5.00 U
31	Pentachlorophenol	5.16	U	5.21	U	4.97	U	5	U	5.04	U	4.88	U	10	U	10.0 U	25.0 U
32	bis(2-Ethylhexyl)phthalate	1.03	U	1.04	U	0.994	U	1	U	1.01	U	0.977	U	10.00	U	10.0 U	50.0 U
33																	
34	**VOLATILES (µg/L)**																
35	**EPA Method SW8260**																
36	Acetone	50	U	50	U	50	U	50	U	50	U	50	U	50.0	U	25.0 U	50.0 U
37	Carbon Disulfide	2	U	2	U	2	U	2	U	2	U	2	U	20.0	U	10.0 U	20.0 U
38	2-Butanone	10	U	10	U	10	U	10	U	**45.8**		10	U	20.0	U	10.0 U	20.0 U
39	Benzene	**5.11**		**9.45**		**9.52**		**1.86**		**0.59**		**2.86**		2.00	U	**1.70**	2.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	1.00 U	2.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	1.00 U	2.00 U
42	Ethylbenzene	**184**		**272**	J	**204**	J	**17.9**		**3.7**		**68.2**		**86**		**34.8**	**39.7**
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	1.00 U	2.00 U
44	m,p-Xylene	2	U	2	U	2	U	**2.31**		2	U	2	U	4.00	U	2.00 U	4.00 U
45	o-Xylene	1	U	1	U	1	U	**1.21**		1	U	1	U	2.00	U	1.00 U	2.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	1.00 U	2.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	**3.74**		1	U	1	U	2.00	U	1.00 U	2.00 U
48	Isopropylbenzene	**239**		**244**		**215**		**232**		**52.4**		**225**		**158**		**197**	**267**
49	n-Propylbenzene	**205**		**275**		**228**		**183**		**93.2**		**259**		**120**		**179**	**196**
50	tert-Butylbenzene	**6.52**		**8.3**		**8.1**		**8.83**		**6.74**		**12.2**		**6.4**		**9.11**	**10.1**
51	sec-Butylbenzene	**23.1**		**29.8**		**29.5**		**25.6**		**18.5**		**36.5**		**14.1**		**23.9**	**23.5**
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	4.00	U	2.00 U	4.00 U
53	n-Butylbenzene	**8.07**		**10.2**		**9.5**		**10.1**		**7.05**		**16.2**		10.00	U	**8.56**	**10.3**
54	Naphthalene	**24.5**		**51.7**		**46.6**		**16.7**		1	U	**54.2**		**26.5**		**28.2**	**42.1**
55	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	1.00 U	2.00 U
56																	
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																
58	**Method OR-DEQ**																
59	**TPH-Diesel**	**11.7**		**8.52**		**8.36**		**5.15**		**4.11**		**7.97**		**1.35**		**1.18**	**1.39**
60	**TPH-D Motor Oil**	0.504	U	0.496	U	0.506	U	0.488	U	0.484	U	0.482	U	0.5	U	0.500 U	0.495 U
61	**TPH-Gasoline**	**9.2**		**8.62**		**8.37**		**4.44**		**4.37**		**6.16**		**2.59**		**1.88 J**	**2860**
62																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2													Dup of LW8S						Dup of LW8S						Dup of LW8S	
3			LW8S		LW8S		LW8S		LW8S		LW8S		Z		LW8S		LW8S		W		LW8S		LW8S		W	
4			AH27K		AU36D		BC30G		9912050-05A		BH96W		BH96V		BR64N		CB68F		CB68H		CL03A		CT67J		CT67I	
5			5/17/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00		2/16/00		5/25/00		8/30/00		8/30/00		11/9/00		2/15/01		2/15/01	
63	56	**PRIORITY POLLUTANT**																								
64	57	**METALS (mg/L)**																								
65	58	Arsenic (7060)	**0.022**		**0.025**		**0.025**		NA		**0.027**		**0.027**		**0.023**		**0.022**		**0.023**		**0.022**		**0.022**		**0.022**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	NA		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	NA		0.002	U	0.002	U	**0.003**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
68	61	Lead (7421)	0.001	U	0.001	U	0.001	U	NA		**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	**0.005**		0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	0.008	U	**0.008**		**0.006**		NA		0.006	U	0.006	U	**0.007**		0.006	U	**0.007**		**0.041**		0.006	U	0.006	U
71	64																									
72	65	**MAJOR IONS AND CONVENTIONALS**																								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**25.5**		**25.6**	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**6.81**		**6.85**	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**2.6**		**2.5**	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**7.52**		**7.55**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**170**		**160**	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	1.0	U
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**170**		**160**	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**220**		**200**		**210**		NA		**190**		**210**		**180**		**210**		**210**		**190**		**220**		**210**	
81	74	Chloride (mg/L) (EPA 325.2)	**5.4**		**4.1**		**4.6**		NA		**4.1**		**3.4**		**3.7**		**2.2**		**2.3**		**4.2**		**3.4**	J2	**4.9**	J
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	0.010	U
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.051**	J2	**0.035**	J
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.041**		**0.035**	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**2.8**		2.5	U
86	79																									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1																											
2								Dup of LW8S								Dup of LW8S								Dup of LW8S			
3		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S	
4		DE68N		DM30J		ED23J		ED23K		EM85G		ER92E		EZ17G		EZ17A		FF65C		FL58B		FU45I		FU45H		FY64L	
5		6/4/01		8/14/01		2/26/02		2/26/02		6/26/02		08/26/02		11/13/02		11/13/02		2/11/03		5/8/03		8/28/03		8/28/03		10/21/03	
63	**PRIORITY POLLUTANT**																										
64	**METALS (mg/L)**																										
65	Arsenic (7060)	**0.024**		**0.028**		**0.027**		**0.030**		**0.025**		**0.028**		0.05	U	0.05	U	**0.024**		**0.026**		**0.021**		**0.024**		**0.021**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.017**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.007**	
67	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.029**		0.002	U	0.002	U	**0.004**		0.002	U	0.002	U	**0.002**		**0.007**	
68	Lead (7421)	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.006**		0.02	U	0.02	U	**0.002**		0.001	U	0.001	U	0.001	U	**0.002**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.04**		0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	**0.02**	
70	Zinc (6010)	**0.007**		0.006	U	0.006	U	0.006	U	0.006	U	**0.096**		**0.009**		0.006	U	**0.013**		**0.582**		0.006	U	0.006	U	**0.027**	
71																											
72	**MAJOR IONS AND CONVENTIONALS**																										
73	Calcium (mg/L) (6010)	**31.1**		**27.5**		**41.6**		**38.6**		NA		NA		NA		NA		**33.8**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	**8.18**		**7.58**		**9.98**		**9.30**		NA		NA		NA		NA		**8.4**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	**2.8**		**2.8**		**4.2**		**4.0**		NA		NA		NA		NA		**3.4**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	**8.47**		**7.86**		**9.95**		**9.31**		NA		NA		NA		NA		**7.8**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		**220**		**230**		NA		NA		NA		NA		**190**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		1.0	U	1.0	U	NA		NA		NA		NA		1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		**220**		**230**		NA		NA		NA		NA		**190**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**250**		**200**		**300**		**290**		**240**		**220**		**200**		**200**		**280**		**260**		**250**		**250**		**260**	
81	Chloride (mg/L) (EPA 325.2)	**2.8**		**5.3**		**4.2**		**3.6**		**4.4**		**2.7**		**2.9**		**2.9**		**3.7**		**2.3**		**2.3**		**2.2**		**4.8**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		0.010	U	**0.012**		NA		NA		NA		NA		0.01	U	NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		**0.059**		**0.054**		NA		NA		NA		NA		**0.072**		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		**0.044**	J	**0.066**	J	NA		NA		NA		NA		**0.062**		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		2.5	U	**3.2**		NA		NA		NA		NA		**3.8**		NA		NA		NA		NA	
86																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
1																	
2						Dup of LW8S											
3		LW8S		LW8S		X		LW8S		LW8S		LW8S		LW8S		LW8S	LW8S
4		0402113-09		0406059-07		0406059-06		0408036-02		0411051-09		0502087-12		P5F0668-01		P5H0853-04	P5K0699-04
5		2/23/04		6/9/04		6/9/04		8/05/04		11/9/04		2/18/05		6/14/05		08/19/05	11/15/05
63	**PRIORITY POLLUTANT**																
64	**METALS (mg/L)**																
65	Arsenic (7060)	**0.025**		**0.023**		**0.023**		**0.0223**		**0.0239**		**0.0263**		**0.0302**		**0.0254**	**0.0304**
66	Chromium (6010)	**0.0064**		**0.0144**		**0.0161**		0.005	U	0.005	U	0.005	U	0.001	U	0.001 U	0.001 U
67	Copper (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U	0.002 U
68	Lead (7421)	**0.0001**		0.0001	U	0.0001	U	0.0001	U	0.00013	U	0.000157	U	0.001	U	0.001 U	0.001 U
69	Nickel (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0105**		**0.00756**	**0.00877**
70	Zinc (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U	**0.00934**
71																	
72	**MAJOR IONS AND CONVENTIONALS**																
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**263**		**271**		**300**		**709**		**240**		**243**		**308**		**283**	NA
81	Chloride (mg/L) (EPA 325.2)	**3.31**		**2.96**		**3.39**		**3.24**		**3.72**		**1.97**		**2.46**		**1.55**	NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
86																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2													Dup of LW8S						Dup of LW8S						Dup of LW8S	
3			LW8S		LW8S		LW8S		LW8S		LW8S		Z		LW8S		LW8S		W		LW8S		LW8S		W	
4			AH27K		AU36D		BC30G		9912050-05A		BH96W		BH96V		BR64N		CB68F		CB68H		CL03A		CT67J		CT67I	
5			5/17/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00		2/16/00		5/25/00		8/30/00		8/30/00		11/9/00		2/15/01		2/15/01	
87	80	**FIELD PARAMETERS**																								
88	81	pH (avg)	5.55		6.10		6.28		NM		6.57		6.56		6.44		4.89		4.89		5.74		6.26		6.28	
89	82	Temperature (° C) (avg)	14.0		17.2		13.0		NM		13.2		13.2		13.4		15.2		15.3		14.7		13.6		13.6	
90	83	Conductivity (um/hos)	357		303		328		NM		351		351		354		330		330		352		404		403	
91	84	Dissolved oxygen (mg/L) (avg)	2.14		2.13		2.06		NM		0.83		0.82		1.55		1.12		1.13		0.53		0.57		0.53	
92	85																									
93	86	**DIOXINS AND FURANS (ng/L)**																								
94	87	**Method 8290**																								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121		**ETHANOL (mg/L)**	NA		NA		NA		10	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
122																										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1																											
2								Dup of LW8S								Dup of LW8S								Dup of LW8S			
3		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S	
4		DE68N		DM30J		ED23J		ED23K		EM85G		ER92E		EZ17G		EZ17A		FF65C		FL58B		FU45I		FU45H		FY64L	
5		6/4/01		8/14/01		2/26/02		2/26/02		6/26/02		08/26/02		11/13/02		11/13/02		2/11/03		5/8/03		8/28/03		8/28/03		10/21/03	
87	**FIELD PARAMETERS**																										
88	pH (avg)	6.49		6.61		6.37		6.37		6.23		6.42		6.17		6.16		6.74		6.58		6.64		6.65		6.57	
89	Temperature (° C) (avg)	14.4		15.0		13.6		13.6		15.3		16.1		14.7		14.6		15.2		12.9		16.5		16.5		19.0	
90	Conductivity (um/hos)	402		467		489		490		405		330		353		351		503		397		349		348		352	
91	Dissolved oxygen (mg/L) (avg)	1.58		1.85		6.71		6.75		3.92		0.87		1.82		1.94		1.29		3.35		1.61		1.57		1.03	
92																											
93	**DIOXINS AND FURANS (ng/L)**																										
94	**Method 8290**																										
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																											
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																											

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
1																	
2						Dup of LW8S											
3		LW8S		LW8S		X		LW8S		LW8S		LW8S		LW8S		LW8S	LW8S
4		0402113-09		0406059-07		0406059-06		0408036-02		0411051-09		0502087-12		P5F0668-01		P5H0853-04	P5K0699-04
5		2/23/04		6/9/04		6/9/04		8/05/04		11/9/04		2/18/05		6/14/05		08/19/05	11/15/05
87	**FIELD PARAMETERS**																
88	pH (avg)	6.21		4.87		4.87		5.86		6.43		6.57		6.16		5.88	7.10
89	Temperature (° C) (avg)	14.1		14.7		14.7		16.5		15.7		14		15.3		15.8	15.0
90	Conductivity (um/hos)	402		368		368		523		343		188		262		454	377
91	Dissolved oxygen (mg/L) (avg)	1.26		0.74		0.74		1.71		1.79		1.26		0		NM	2.95
92																	
93	**DIOXINS AND FURANS (ng/L)**																
94	**Method 8290**																
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
120																	
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA	NA
122																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2													Dup of LW8S						Dup of LW8S						Dup of LW8S	
3			LW8S		LW8S		LW8S		LW8S		LW8S		Z		LW8S		LW8S		W		LW8S		LW8S		W	
4			AH27K		AU36D		BC30G		9912050-05A		BH96W		BH96V		BR64N		CB68F		CB68H		CL03A		CT67J		CT67I	
5			5/17/99		9/21/99		12/8/99		12/8/1999 (d)		2/16/00		2/16/00		5/25/00		8/30/00		8/30/00		11/9/00		2/15/01		2/15/01	
123		**PAHs (µg/L)**																								
124		**EPA Method SW8270 SIM**																								
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1																											
2								Dup of LW8S								Dup of LW8S								Dup of LW8S			
3		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S		LW8S		LW8S		X		LW8S	
4		DE68N		DM30J		ED23J		ED23K		EM85G		ER92E		EZ17G		EZ17A		FF65C		FL58B		FU45I		FU45H		FY64L	
5		6/4/01		8/14/01		2/26/02		2/26/02		6/26/02		08/26/02		11/13/02		11/13/02		2/11/03		5/8/03		8/28/03		8/28/03		10/21/03	
123	**PAHs (µg/L)**																										
124	**EPA Method SW8270 SIM**																										
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

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PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
1																	
2						Dup of LW8S											
3		LW8S		LW8S		X		LW8S		LW8S		LW8S		LW8S		LW8S	LW8S
4		0402113-09		0406059-07		0406059-06		0408036-02		0411051-09		0502087-12		P5F0668-01		P5H0853-04	P5K0699-04
5		2/23/04		6/9/04		6/9/04		8/05/04		11/9/04		2/18/05		6/14/05		08/19/05	11/15/05
123	**PAHs (µg/L)**																
124	**EPA Method SW8270 SIM**																
125	Naphthalene	NA		NA		NA		NA		NA		NA		**21.5**		NA	NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA	NA
127	Acenaphthylene	NA		NA		NA		1	U	NA		NA		0.481	U	NA	NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		0.481	U	NA	NA
129	Fluorene	NA		NA		NA		NA		NA		NA		0.481	U	NA	NA
130	Anthracene	NA		NA		NA		1	U	NA		NA		0.481	U	NA	NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																								
3			LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S	
4			AH76O		BC30A		BH96G		BR64K		ED30B		EN00B		FF76B		FL41M		0402113-01		0406073-01		P5F0223-04	
5			5/19/99		12/8/99		2/17/00		5/25/00		2/27/02		6/27/02		2/12/03		5/7/03		2/23/04		6/10/04		6/6/05	
6																								
7	1	**CHLORINATED PHENOLS (µg/L)**																						
8	2	**EPA Method SW8040**																						
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.33**		0.493	U	0.478	U	0.500	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
16	10																							
17	11	**SEMIVOLATILES (µg/L)**																						
18	12	**EPA Method SW8270**																						
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2	U	2	U	1.98	U	NA		5.00	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	9.9	U	NA		5.00	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3	U	3	U	2.97	U	NA		10.00	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	50	U	50	U	50	U	50	U	19.8	U	NA		50.0	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	4.95	U	NA		5.00	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	4.95	U	NA		5.00	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.99	U	NA		5.00	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	4.95	U	NA		10	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	**22**		1.0	U	1.0	U	4.0	U	4.0	U	1	U	1	U	0.99	U	NA		10.00	U
33	27																							
34	28	**VOLATILES (µg/L)**																						
35	29	**EPA Method SW8260**																						
36	30	Acetone	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	50	U	NA		25.0	U
37	31	Carbon Disulfide	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	2	U	NA		10.00	U
38	32	2-Butanone	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	10	U	NA		10.00	U
39	33	Benzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	0.4	U	NA		1.00	U
40	34	Bromoform	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
41	35	Toluene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
42	36	Ethylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
43	37	Styrene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
44	38	m,p-Xylene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	2	U	NA		2.00	U
45	39	o-Xylene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
46	40	1,3,5-Trimethylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
47	41	1,2,4-Trimethylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
48	42	Isopropylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		2.00	U
49	43	n-Propylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
50	44	tert-Butylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
51	45	sec-Butylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		1.00	U
52	46	4-Isopropyltoluene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		2.00	U
53	47	n-Butylbenzene	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	NA		5.00	U
54	48	Naphthalene	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	1	U	NA		2.00	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA		1.00	U
56	49																							
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																						
58	51	**Method OR-DEQ**																						
59	52	**TPH-Diesel**	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.286	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		0.501	U	NA		0.571	U
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.08	U
62	55																							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																								
3			LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S	
4			AH76O		BC30A		BH96G		BR64K		ED30B		EN00B		FF76B		FL41M		0402113-01		0406073-01		P5F0223-04	
5			5/19/99		12/8/99		2/17/00		5/25/00		2/27/02		6/27/02		2/12/03		5/7/03		2/23/04		6/10/04		6/6/05	
63	56	**PRIORITY POLLUTANT**																						
64	57	**METALS (mg/L)**																						
65	58	Arsenic (7060)	0.001	U	NA		**0.004**		**0.001**		**0.002**		**0.001**		0.001	U	0.001	U	0.001	U	NA		0.001	U
66	59	Chromium (6010)	0.005	U	NA		0.005	U	0.005	U	0.005	U	**0.007**		0.005	U	0.005	U	0.005	U	NA		0.001	U
67	60	Copper (6010)	0.002	U	NA		**0.004**		0.002	U	0.002	U	**0.012**		**0.003**		0.002	U	0.01	U	NA		**0.00348**	
68	61	Lead (7421)	0.001	U	NA		**0.003**		**0.001**		**0.001**		**0.001**		0.001	U	0.001	U	**0.0004**		NA		0.001	U
69	62	Nickel (6010)	0.01	U	NA		0.01	U	0.01	U	0.01	U	**0.02**		0.01	U	0.01	U	0.005	U	NA		**0.0075**	
70	63	Zinc (6010)	**0.004**		NA		**0.016**		**0.007**		**0.008**	J	**0.043**		**0.01**		0.006	U	0.01	U	NA		0.005	U
71	64																							
72	65	**MAJOR IONS AND CONVENTIONALS**																						
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		**11.1**		**26.2**		**9.5**		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		**3.27**		**9.50**		**2.58**		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		**2.5**		**3.9**		**2.5**		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		**5.27**		**8.31**		**6**		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		**34**		NA		**36**		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		1.0	U	NA		1	U	NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		**34**		NA		**36**		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**84**		NA		**100**		**90**		**100**		**120**		**74**		**74**		**81**		NA		**108**	
81	74	Chloride (mg/L) (EPA 325.2)	**1.3**		NA		**3.2**		**2.2**		**1.4**	J	**2.3**		**1.2**		**1.6**		**1.04**		NA		**1.21**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		**3.4**		NA		**2.1**		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		**0.014**		NA		0.01	U	NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		**3.4**		NA		**2.1**		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		**12**		NA		**5.6**		NA		NA		NA		NA	
86	79																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																								
3			LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S	
4			AH76O		BC30A		BH96G		BR64K		ED30B		EN00B		FF76B		FL41M		0402113-01		0406073-01		P5F0223-04	
5			5/19/99		12/8/99		2/17/00		5/25/00		2/27/02		6/27/02		2/12/03		5/7/03		2/23/04		6/10/04		6/6/05	
87	80	**FIELD PARAMETERS**																						
88	81	pH (avg)	6.01		NM		6.66		6.45		6.09		6.44		7.19		6.78		6.17		NA		7.30	
89	82	Temperature (° C) (avg)	13.6		NM		13.4		13.0		12.6		14.3		11.9		13		13.9		NA		14.6	
90	83	Conductivity (um/hos)	93		NM		111		129		109		149		110		88		75		NA		85	
91	84	Dissolved oxygen (mg/L) (avg)	5.76		NM		2.87		4.30		8.85		7.22		7.33		9.77		6.53		NA		6.67	
92	85																							
93	86	**DIOXINS AND FURANS (ng/L)**																						
94	87	**Method 8290**																						
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																								
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																								
3			LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S		LW10S	
4			AH76O		BC30A		BH96G		BR64K		ED30B		EN00B		FF76B		FL41M		0402113-01		0406073-01		P5F0223-04	
5			5/19/99		12/8/99		2/17/00		5/25/00		2/27/02		6/27/02		2/12/03		5/7/03		2/23/04		6/10/04		6/6/05	
123		**PAHs (µg/L)**																						
124		**EPA Method SW8270 SIM**																						
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
2					Dup of LW11S												Dup of LW11S									
3			LW11S		LW110S		LW11S		LW11S		LW11S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4			AH76E		AH76D		AU36F		BC27J		9912050-06A		BH96U		BR55L		BR55K		CB49J		CK77K		CT55H		DE68M	
5			5/20/99		5/20/99		9/21/99		12/8/99		12/8/1999 (d)		2/17/00		5/23/00		5/23/00		8/28/00		11/8/00		2/14/01		6/4/01	
7	1	**CHLORINATED PHENOLS (µg/L)**																								
8	2	**EPA Method SW8040**																								
9	3	Pentachlorophenol	**15000**		**15000**		**9400**		**7200**		NA		**9700**		**7700**	J2	**7600**	J2	**3900**		NA		**320**	J	NA	
10	4	2,4,6-Trichlorophenol	**2.9**		**2.8**		**1.3**		**1.0**		NA		**1.8**		**1.4**		**1.2**		**0.68**		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	**0.13**	J1	0.25	U	0.25	U	**0.12**	J1	NA		**0.13**	J1	0.25	U	0.25	U	0.25	U	NA		NA		NA	
12	6	2,4,5-Trichlorophenol	1.0	U	0.25	U	**0.32**		0.25	U	NA		**0.61**		**0.96**		**0.95**		0.72	U	NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.32	U	NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**750**		**750**		**450**		**360**		NA		**560**		**940**		**850**		**250**		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	**7.5**		**6.8**		**3.7**		**2.4**		NA		**6.2**		**4.2**		**4.4**		**2.5**		NA		NA		NA	
16	10																									
17	11	**SEMIVOLATILES (µg/L)**																								
18	12	**EPA Method SW8270**																								
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	NA		2.0	U	2.0	U	2.0	U	2.0	U	NA		**10**		**2.6**	
20	14	4-Methylphenol	**3.5**	M	**2.8**	M	1.0	U	**1.4**	MJ1	NA		1.0	U	1.0	U	1.0	U	**3.5**		NA		**3.7**		**2.3**	
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	NA		3.0	U	3.0	U	3.0	U	3.0	U	NA		3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		10	U	10	U	10	U	10	U	NA		10	U	10	U
24	18	Naphthalene	**41**		**38**		**20**		**12**		NA		**23**		**22**		**20**		**13**		NA		**5.7**		**3.1**	
25	19	2-Methylnaphthalene	**14**		**13**		**8.9**		**5.7**		NA		**9.0**		**9.0**		**9.4**		**4.9**		NA		**3.9**		**2.0**	
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U
31	25	Pentachlorophenol	**24000**		**20000**		**8000**		**5400**		NA		**11000**		**6800**	J2	**6500**	J2	**3600**		NA		**460**	J	**560**	
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	**0.8**	J1	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U
33	27																									
34	28	**VOLATILES (µg/L)**																								
35	29	**EPA Method SW8260**																								
36	30	Acetone	**18**		**21**		5.0	U	**29**		NA		11	U	9.8	U	5.0	U	**11**		NA			R	**17**	
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		2.0	U	1.0	U
38	32	2-Butanone	**6.1**		**6.3**		**27**		5.0	U	NA		**40**	M	5.0	U	5.0	U	5.0	U	NA		10	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		2.0	U	**1.7**	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		2.0	U	1.0	U
41	35	Toluene	**51**		**48**		**23**		**14**		NA		**17**		**37**		**36**		**15**		NA		**2.4**		**5.3**	
42	36	Ethylbenzene	**160**		**150**		**86**		**54**		NA		**75**		**110**		**110**		**69**		NA		**24**		**33**	
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		2.0	U	1.0	U
44	38	m,p-Xylene	**360**		**350**		**160**		**96**		NA		**140**		**220**		**210**		**120**		NA		**53**		**57**	
45	39	o-Xylene	**300**		**290**		**170**		**96**		NA		**130**		**240**		**210**		**120**		NA		**40**		**50**	
46	40	1,3,5-Trimethylbenzene	**100**		**92**		**68**		**43**		NA		**62**		**88**		**89**		**53**		NA		**48**		**32**	
47	41	1,2,4-Trimethylbenzene	**410**		**430**		**180**		**130**		NA		**200**		**370**		**320**		**180**		NA		**150**		**120**	
48	42	Isopropylbenzene	**50**	J2	**40**	J2	**27**		**18**		NA		**27**		**40**		**38**		**22**		NA		**13**		**12**	
49	43	n-Propylbenzene	**66**		**56**		**40**		**26**		NA		**42**		**53**		**52**		**32**		NA		**24**		**21**	
50	44	tert-Butylbenzene	**2.8**		**2.3**		1.0	U	1.0	U	NA		**1.9**	M	2.3	U	2.2	U	**1.5**	M	NA		2.0	U	**1.3**	M
51	45	sec-Butylbenzene	**15**		**13**		**10**		**9.1**		NA		**14**		**14**		**13**		**8.8**		NA		**7.5**		**7.3**	
52	46	4-Isopropyltoluene	**11**		**9.9**		1.0	U	1.0	U	NA		**10**		**9.8**		**9.4**		**5.9**		NA		**7.1**		**6.6**	
53	47	n-Butylbenzene	**12**		**10**		**8.0**		5.3	U	NA		**11**		10	U	9.9	U	**7.0**	M	NA		**8.4**	M	7.6	U
54	48	Naphthalene	**46**		**38**		**19**		**15**		NA		**25**		**45**		**44**		**22**		NA		10	U	**11**	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	51	**Method OR-DEQ**																								
59	52	**TPH-Diesel**	**14**		**13**		**10**		**8.8**		NA		**12**		**10**		**9.6**		**5.9**		NA		**2.2**		**1.7**	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		**1.1**		**0.50**		**0.77**		NA		NA		0.50	U	0.50	U
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		**11**		**24**		**20**		**14**		NA		**4.8**		**2.9**	
62	55																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
2										Dup of LW11S						Dup of LW11S									
3		LW11S		LW11S		LW11S		LW11S		OX005S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4		ED34D		EM66C		ES04D		EX87C		EX87A		EZ03I		FF76H		FF76L		FL58H		FU45D		FY72I		0402086-06	
5		2/28/02		6/24/02		08/28/02		10/29/02		10/29/02		11/12/02		2/12/03		2/12/03		5/8/03		8/28/03		10/22/03		2/18/04	
7	**CHLORINATED PHENOLS (µg/L)**																								
8	**EPA Method SW8040**																								
9	Pentachlorophenol	NA		NA		NA		**3600**		**3700**		NA		NA		NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		**1.3**		**1.3**		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		**0.4**		**0.37**		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		0.58	U	0.6	U	NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		0.25	U	0.29	U	NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		**380**		**380**		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		**3.2**	J	**4.2**	J	NA		NA		NA		NA		NA		NA		NA	
16																									
17	**SEMIVOLATILES (µg/L)**																								
18	**EPA Method SW8270**																								
19	Phenol	2.0	U	2.0	U	2.2	U	NA		NA		2.2	U	2	U	2	U	2	U	2.1	U	2	U	1.96	U
20	4-Methylphenol	**1.9**		**1.0**		1.1	U	NA		NA		1.1	U	**1.2**	M	**1.3**	M	**5.4**		1.1	U	1	U	9.8	U
21	Isophorone	1.0	U	1.0	U	1.1	U	NA		NA		1.1	U	1	U	1	U	1	U	1.1	U	1	U	0.98	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.3	U	NA		NA		3.3	U	3.1	U	3.1	U	3	U	3.2	U	3	U	2.94	U
23	Benzoic Acid	50	U	50	U	54	U	NA		NA		56	U	51	U	51	U	50	U	53	U	10	U	19.6	U
24	Naphthalene	**5.3**		**6.7**		**4.9**		NA		NA		**4.7**		**4.9**		**5.1**		**10**		**5.6**		**3.2**		**9.22**	
25	2-Methylnaphthalene	**1.7**		**2.6**		**1.7**		NA		NA		**2.8**		**3.6**		**3.7**		**4.5**		**3.7**		**2.9**		**4.2**	
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.4	U	NA		NA		5.6	U	5.1	U	5.1	U	5	U	**8.3**	M	5.1	U	4.9	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.4	U	NA		NA		5.6	U	5.1	U	5.1	U	5	U	5.3	U	5.1	U	4.9	U
28	Acenaphthene	1.0	U	1.0	U	1.1	U	NA		NA		1.1	U	1	U	1	U	1	U	1.1	U	1	U	0.98	U
29	Dibenzofuran	1.0	U	1.0	U	1.1	U	NA		NA		1.1	U	1	U	1	U	1	U	1.1	U	1	U	0.98	U
30	Fluorene	1.0	U	1.0	U	1.1	U	NA		NA		1.1	U	1	U	1	U	1	U	1.1	U	1	U	0.98	U
31	Pentachlorophenol	**4700**		**4000**		**2600**		NA		NA		**2200**		**1600**	J	**2000**	J	**3800**		**1700**		**900**		**6350**	
32	bis(2-Ethylhexyl)phthalate	4.0	U	4.0	U	4.3	U	NA		NA		4.4	U	1	U	1	U	1	U	1.1	U	1	U	0.98	U
33																									
34	**VOLATILES (µg/L)**																								
35	**EPA Method SW8260**																								
36	Acetone	**28**		5.0	U	11	UJ	**99**	M	**110**		**46**	M	**18**	M	**22**	M	**23**	M	**10**	MJ	**7**	M	50	UJ
37	Carbon Disulfide	1.0	U	1.0	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2	UJ
38	2-Butanone	**13**		5.0	U	**23**	J	**12**		**14**		**7.4**		5	U	5	U	5	U	**9.5**	M	**7.5**	M	10	UJ
39	Benzene	**6.6**		**12**		**9.1**		**2.9**		**2.6**		**2.7**		**11**	J	**14**	J	**18**		**5.4**		**2.1**		**30.3**	J
40	Bromoform	1.0	U	1.0	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ
41	Toluene	**9.1**		**10**		**3.6**	J	**3**		**2.8**		**1.3**		**3.9**	J	**4.8**	J	**6.4**		**1.2**		1	U	1	UJ
42	Ethylbenzene	**36**		**56**		**44**		**56**		**55**		**25**		**34**		**39**		**75**		**29**		**14**		**71.6**	J
43	Styrene	1.0	U	1.0	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ
44	m,p-Xylene	**71**		**100**		**69**	J	**67**		**67**		**26**		**52**		**62**		**120**		**48**	J	**20**		**61.6**	J
45	o-Xylene	**77**		**94**		**68**	J	**88**		**83**		**37**		**48**		**55**		**130**		**50**		**23**		**123**	J
46	1,3,5-Trimethylbenzene	**29**		**35**		**28**		**28**	J	**22**	J	**8.3**		**16**		**19**		**46**		**28**		**16**		**34.8**	J
47	1,2,4-Trimethylbenzene	**140**		**150**		**120**		**160**		**150**		**84**		**95**		**110**		**210**		**120**	J	**73**		**160**	J
48	Isopropylbenzene	**14**		**16**		**16**		**22**		**18**		**10**		**12**		**14**		**27**		**15**		**7.6**		**15.9**	J
49	n-Propylbenzene	**20**		**24**		**24**		**31**		**27**		**15**		**20**		**23**		**37**		**20**		**13**		**18.6**	J
50	tert-Butylbenzene	**1.4**		**2.8**	J	**1.8**		**2**		**1.8**		**1.3**	M	**1.5**	M	**1.6**	M	**2.4**		**1.6**		**1**		1	UJ
51	sec-Butylbenzene	**6.9**		**7.4**		**5.8**		**10**		**9.3**		**5.6**		**7.4**		**7.8**		**11**		**7.9**		**4.7**		**7.19**	J
52	4-Isopropyltoluene	**3.9**		**6.0**		**5.8**	J	**7**		**6.4**		**3.2**		**5.2**		**5.8**		**7.4**		**4.6**		**3.2**		**4.32**	J
53	n-Butylbenzene	**4.1**		5.0	U	**6.8**	M	**7.6**	M	**7.2**	M	**3.8**	M	**6**	M	**6.6**	M	**8.2**		**5.2**		**3.7**	M	**3.41**	J
54	Naphthalene	**12**		**17**		**15**	J	**22**		**19**		**7.8**		**10**		**12**		**22**		**9.4**		5	U	**15.1**	J
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																									
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	**Method OR-DEQ**																								
59	**TPH-Diesel**	**7.4**		**8.0**		**7.9**		NA		NA		**4.7**		**4.5**		**4.4**		**8.6**		**4**		**2.3**		**3.07**	
60	**TPH-D Motor Oil**	0.50	U	0.50	U	0.5	U	NA		NA		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.573**	
61	**TPH-Gasoline**	8.9		**9.7**		**7.3**		NA		NA		**6.1**		**7.1**		**7.7**		**8.6**	J	**4.8**		**2.8**		**6.8**	
62																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
3		LW11S		LW11S		LW11S		LW11S		LW11S		LW11S	LW11S
4		0406074-09		0408035-01		0411066-09		0502087-02		P5F0223-02		P5H1000-09	P5K0820-03
5		6/10/04		8/05/04		11/11/04		2/17/05		6/6/05		08/23/05	11/17/05
7	**CHLORINATED PHENOLS (µg/L)**												
8	**EPA Method SW8040**												
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA	NA
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA	NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA	NA
16													
17	**SEMIVOLATILES (µg/L)**												
18	**EPA Method SW8270**												
19	Phenol	2.03	U	2	U	1.94	U	2.01	U	20.0	U	5.00 U	50.0 UJ
20	4-Methylphenol	10.2	U	10	U	9.72	U	10.1	U	20.0	U	5.00 U	25.0 U
21	Isophorone	1.02	U	1	U	0.972	U	1.01	U	20.0	U	5.00 U	25.0 U
22	2,4-Dimethylphenol	3.05	U	3	U	2.92	U	**3.36**		40.0	U	10.0 U	75.0 U
23	Benzoic Acid	20.3	U	20	U	19.4	U	20.1	U	200	U	50.0 U	1250 U
24	Naphthalene	**3.55**		**7.81**		**2.24**		**5.65**		20.0	U	5.00 U	25.0 U
25	2-Methylnaphthalene	**2.07**		**3.81**		**1.86**		**3.22**		20.0	U	5.00 U	25.0 U
26	2,4,6-Trichlorophenol	5.09	U	5	U	4.86	U	5.03	U	20.0	U	5.00 U	125 U
27	2,4,5-Trichlorophenol	5.09	U	5	U	4.86	U	5.03	U	20.0	U	5.00 U	125 U
28	Acenaphthene	1.02	U	1	U	0.972	U	1.01	U	20.0	U	5.00 U	25.0 U
29	Dibenzofuran	1.02	U	1	U	0.972	U	1.01	U	20.0	U	5.00 U	25.0 U
30	Fluorene	1.02	U	1	U	0.972	U	1.01	U	20.0	U	5.00 U	25.0 U
31	Pentachlorophenol	**2130**		**604**		**184**		**178**		**545**		**687**	**236**
32	bis(2-Ethylhexyl)phthalate	1.02	U	1	U	0.972	U	1.01	U	40.0	U	10.0 U	250 U
33													
34	**VOLATILES (µg/L)**												
35	**EPA Method SW8260**												
36	Acetone	50	U	**54**	J	50	U	50	U	25.0	U	25.0 U	25.0 U
37	Carbon Disulfide	2	U	2	U	2	U	2	U	10.00	U	10.0 U	10.0 U
38	2-Butanone	**11.6**		**13**	J	10	U	10	U	10.00	U	10.0 U	10.0 U
39	Benzene	**11.6**		**9.79**	J	**2.38**		**9.91**		**6.80**		**4.58**	**2.66**
40	Bromoform	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
41	Toluene	1	U	1	U	1	U	**1.3**		1.00	U	1.00 U	1.00 U
42	Ethylbenzene	**38.6**		**83.1**	J	**21.4**		**47.1**		**22.8**		**17.6**	**16.9**
43	Styrene	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
44	m,p-Xylene	**59**		**126**	J	**30.9**		**73.9**		**25.6**		**15.6**	**15.4**
45	o-Xylene	**67.8**		**176**	J	**44.2**		**84.1**		**35.9**		**27.5**	**20.4**
46	1,3,5-Trimethylbenzene	**27.7**		**56.7**	J	**21.6**		**34.5**		**9.50**		**6.22**	**4.02**
47	1,2,4-Trimethylbenzene	**99.4**		**234**	J	**91.2**		**175**		**62.3**		**47.1**	**37.1**
48	Isopropylbenzene	**12**		**28.2**	J	**11.1**		**15**		**8.25**		**7.34**	**8.79**
49	n-Propylbenzene	**18.1**		**30.5**	J	**14.1**		**25.9**		**11.0**		**9.85**	**11.9**
50	tert-Butylbenzene	**1.16**		**1.55**	J	**1.42**		**3.03**		1.00	U	1.00 U	1.00 U
51	sec-Butylbenzene	**5.49**		**8.97**	J	**5.12**		**10.8**		**3.58**		**3.15**	**3.69**
52	4-Isopropyltoluene	**3.19**		**6.91**	J	**4.26**		**8.43**		**2.56**		**2.08**	**2.34**
53	n-Butylbenzene	**2.47**		**5.42**	J	**2.94**		**8.86**		5.00	U	5.00 U	5.00 U
54	Naphthalene	**8.95**		**24.5**	J	**8.69**		**12.9**		**9.06**		**6.79**	**7.05**
55	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
56													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**												
58	**Method OR-DEQ**												
59	**TPH-Diesel**	NA		NA		NA		**2.72**		**0.364**		**0.463**	**0.396**
60	**TPH-D Motor Oil**	NA		NA		NA		0.483	U	0.5	U	0.500 U	0.481 U
61	**TPH-Gasoline**	NA		NA		NA		**3.66**		**1.6**		**1.44**	**739 J**
62													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1					Dup of LW11S												Dup of LW11S									
3			LW11S		LW110S		LW11S		LW11S		LW11S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4			AH76E		AH76D		AU36F		BC27J		9912050-06A		BH96U		BR55L		BR55K		CB49J		CK77K		CT55H		DE68M	
5			5/20/99		5/20/99		9/21/99		12/8/99		12/8/1999 (d)		2/17/00		5/23/00		5/23/00		8/28/00		11/8/00		2/14/01		6/4/01	
63	56	**PRIORITY POLLUTANT**																								
64	57	**METALS (mg/L)**																								
65	58	Arsenic (7060)	**0.007**		**0.008**		**0.006**		**0.007**		NA		**0.007**		**0.008**		**0.008**		**0.007**		NA		**0.007**		**0.007**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U	0.005	U
67	60	Copper (6010)	**0.002**		**0.003**		0.002	U	0.002	U	NA		**0.005**		0.002	U	0.002	U	0.002	U	NA		0.002	U	0.002	U
68	61	Lead (7421)	0.001	U	0.001	U	0.001	U	0.001	U	NA		**0.002**		0.001	U	0.001	U	0.001	U	NA		0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U	0.01	U
70	63	Zinc (6010)	**0.010**		**0.010**		0.004	U	0.006	U	NA		**0.011**		0.006	U	0.006	U	0.006	U	NA		0.006	U	0.006	U
71	64																									
72	65	**MAJOR IONS AND CONVENTIONALS**																								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**20.3**		**28.6**	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**6.41**		**9.34**	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**1.6**		**2.7**	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**4.03**		**6.10**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**140**		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**140**		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**230**		**240**		**150**		**200**		NA		**160**		**160**		**170**		**220**		NA		**190**		**190**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.3**		**2.2**		**3.3**		**5.3**		NA		**5.2**		**5.8**	J2	**12**	J2	**6.5**		NA		**3.1**		**3.2**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**5.6**		NA	
86	79																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																									
2										Dup of LW11S						Dup of LW11S									
3		LW11S		LW11S		LW11S		LW11S		OX005S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4		ED34D		EM66C		ES04D		EX87C		EX87A		EZ03I		FF76H		FF76L		FL58H		FU45D		FY72I		0402086-06	
5		2/28/02		6/24/02		08/28/02		10/29/02		10/29/02		11/12/02		2/12/03		2/12/03		5/8/03		8/28/03		10/22/03		2/18/04	
63	**PRIORITY POLLUTANT**																								
64	**METALS (mg/L)**																								
65	Arsenic (7060)	**0.006**		**0.006**		**0.006**		NA		NA		0.05	U	**0.004**		**0.004**		**0.005**		**0.005**		**0.006**		**0.004**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	NA		NA		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0069**	
67	Copper (6010)	**0.003**		0.002	U	0.002	U	NA		NA		0.002	U	0.002	UJ	**0.007**	J	**0.002**		**0.004**		**0.002**		0.01	U
68	Lead (7421)	0.001	U	0.001	U	0.001	U	NA		NA		0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.0002**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	NA		NA		**0.12**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U
70	Zinc (6010)	0.006	U	0.006	U	0.006	U	NA		NA		**0.019**		**0.009**		**0.011**		0.006	U	0.006	U	0.006	U	0.01	U
71																									
72	**MAJOR IONS AND CONVENTIONALS**																								
73	Calcium (mg/L) (6010)	**59.0**		NA		NA		NA		NA		NA		**22.5**		**23.1**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	**18.2**		NA		NA		NA		NA		NA		**7.52**		**7.8**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	**4.0**		NA		NA		NA		NA		NA		**2.9**		**3**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	**8.55**		NA		NA		NA		NA		NA		**12.5**		**12.9**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	**230**		NA		NA		140		**140**		NA		**120**		**120**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	NA		NA		1	U	1	U	NA		1	U	1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**230**		NA		NA		140		**140**		NA		**120**		**120**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**410**		**180**		**160**		NA		NA		**560**		**170**		**160**		**190**		**270**		**240**		**274**	
81	Chloride (mg/L) (EPA 325.2)	**58**		**2.7**		**3.8**		NA		NA		**4.7**		**3.1**		**3**		**4.9**		**3.3**		**4**		**3.13**	
82	N-Nitrate (mg-N/L) (Calculated)	0.010	U	NA		NA		NA		NA		NA		**0.042**	J	**0.031**	J	NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	**0.031**		NA		NA		NA		NA		NA		0.01	U	0.01	U	NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.040**		NA		NA		NA		NA		NA		**0.042**	J	**0.031**	J	NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	**13**		NA		NA		NA		NA		NA		**24**		**26**		NA		NA		NA		NA	
86																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1													
2													
3		LW11S		LW11S		LW11S		LW11S		LW11S		LW11S	LW11S
4		0406074-09		0408035-01		0411066-09		0502087-02		P5F0223-02		P5H1000-09	P5K0820-03
5		6/10/04		8/05/04		11/11/04		2/17/05		6/6/05		08/23/05	11/17/05
63	**PRIORITY POLLUTANT**												
64	**METALS (mg/L)**												
65	Arsenic (7060)	**0.005**		**0.00333**		**0.00394**		**0.00367**		**0.00372**		**0.00303**	**0.00316**
66	Chromium (6010)	**0.0173**		**0.0161**		**0.0206**		**0.0065**		0.001	U	0.001 U	0.001 U
67	Copper (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	**0.00109**	0.002 U
68	Lead (7421)	0.0001	U	0.0001	U	**0.00104**		0.000202	U	0.001	U	0.001 U	0.001 U
69	Nickel (6010)	0.005	U	0.005	U	0.005	U	**0.0377**		**0.0916**		**0.143**	**0.0448**
70	Zinc (6010)	0.01	U	0.01	U	0.01	U	**0.0135**		**0.00948**		**0.0127**	0.005 U
71													
72	**MAJOR IONS AND CONVENTIONALS**												
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**389**		**356**		**366**		**295**		**456**		**450**	NA
81	Chloride (mg/L) (EPA 325.2)	**3.92**		**3.59**		**4.83**		**3.69**		**3.27**		**3.70**	NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA	NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA	NA
86													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2					Dup of LW11S												Dup of LW11S									
3			LW11S		LW110S		LW11S		LW11S		LW11S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4			AH76E		AH76D		AU36F		BC27J		9912050-06A		BH96U		BR55L		BR55K		CB49J		CK77K		CT55H		DE68M	
5			5/20/99		5/20/99		9/21/99		12/8/99		12/8/1999 (d)		2/17/00		5/23/00		5/23/00		8/28/00		11/8/00		2/14/01		6/4/01	
87	80	**FIELD PARAMETERS**																								
88	81	pH (avg)	6.55		6.56		5.83		6.50		NM		6.52		6.52		6.53		6.27		NM		6.25		6.50	
89	82	Temperature (° C) (avg)	14.1		14.1		15.0		12.2		NM		15.0		14.0		14.0		15.1		NM		13.2		14.1	
90	83	Conductivity (um/hos)	285		286		226		323		NM		291		234		234		346		NM		296		270	
91	84	Dissolved oxygen (mg/L) (avg)	2.09		2.21		2.45		2.72		NM		0.11		2.02		2.02		1.37		NM		0.61		0.96	
92	85																									
93	86	**DIOXINS AND FURANS (ng/L)**																								
94	87	**Method 8290**																								
95	88	2,3,7,8-TCDF	NA		NA		0.0055	U	0.00130	U	NA		0.0025	U	NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		**0.018**		**0.0011**	J1	NA		**0.0064**		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		0.0056	U	0.00130	U	NA		0.0044	U	NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		0.0056	U	0.00130	U	NA		0.0044	U	NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		0.0320	UE	0.00160	U	NA		0.11	U	NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		0.0120	U	0.00130	U	NA		0.0026	U	NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		0.0220	U	0.00140	U	NA		0.0034	U	NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		0.0061	U	0.00160	U	NA		0.0044	U	NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		0.0061	U	0.00160	U	NA		0.0044	U	NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		0.0083	U	0.00120	U	NA		0.54	U	NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		0.0079	U	0.018	U	NA		0.0036	U	NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		0.0067	U	0.0032	U	NA		0.0038	U	NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		0.0130	U	0.00140	U	NA		0.0058	U	NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		**0.015**		0.0170	U	NA		**0.1600**		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		0.0076	U	0.00260	U	NA		0.0069	U	NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		**0.015**		**0.0025**	J1	NA		**0.0230**	J1	NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		0.0100	U	0.00130	U	NA		0.0078	U	NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		**0.035**		**0.0068**	J1	NA		**0.0310**		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		**0.043**		**0.0071**	J1	NA		0.14	U	NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		0.0094	U	0.00200	U	NA		0.0120	U	NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		**0.043**		**0.0320**	J1	NA		**0.3800**		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		**0.270**		**0.0500**	J1	NA		**0.6900**		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		**0.410**		**0.0780**		NA		**1.1000**		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		0.220	U	**0.0280**	J1	NA		**0.5100**		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		**1.900**		**0.2800**		NA		**5.3000**		NA		NA		NA		NA		NA		NA	
120																										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		10	U	**11**		5.0	U	5.0	U	5.0	U	NA		5.0	U	NA	
122																										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																									
2										Dup of LW11S						Dup of LW11S									
3		LW11S		LW11S		LW11S		LW11S		OX005S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4		ED34D		EM66C		ES04D		EX87C		EX87A		EZ03I		FF76H		FF76L		FL58H		FU45D		FY72I		0402086-06	
5		2/28/02		6/24/02		08/28/02		10/29/02		10/29/02		11/12/02		2/12/03		2/12/03		5/8/03		8/28/03		10/22/03		2/18/04	
87	**FIELD PARAMETERS**																								
88	pH (avg)	6.29		6.14		6.44		6.47		6.48		6.21		6.9		6.92		6.6		6.65		6.65		6.53	
89	Temperature (° C) (avg)	13.6		15.6		16.4		16.4		16.4		15.5		14.6		14.7		13.7		14.3		15.8		14.3	
90	Conductivity (um/hos)	460		205		218		554		554		528		323		324		248		356		300		341	
91	Dissolved oxygen (mg/L) (avg)	7.46		4.17		1.31		0		0		0		0		0		2.96		1.61		1.97		1.52	
92																									
93	**DIOXINS AND FURANS (ng/L)**																								
94	**Method 8290**																								
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**6.88**	J	NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**7.91**		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		3.08	U	NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		3.08	U	NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**30.1**		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**23.8**	J	NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**664**		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		5.19	U	NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**144**		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**185**		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**101**		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**141**		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		11	U	NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**6013**		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**31**		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**812**		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**111**		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**2769**		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**5015**		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**335**		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**23730**		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**34761**	J	NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**53330**		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**25345**	J	NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**276444**	J	NA	
120																									
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1													
2													
3		LW11S		LW11S		LW11S		LW11S		LW11S		LW11S	LW11S
4		0406074-09		0408035-01		0411066-09		0502087-02		P5F0223-02		P5H1000-09	P5K0820-03
5		6/10/04		8/05/04		11/11/04		2/17/05		6/6/05		08/23/05	11/17/05
87	**FIELD PARAMETERS**												
88	pH (avg)	6.31		5.78		6.66		6.58		7.16		6.11	7.30
89	Temperature (° C) (avg)	14.3		15.6		14.9		14.3		15.2		15.4	15.5
90	Conductivity (um/hos)	418		585		428		207		470		468	363
91	Dissolved oxygen (mg/L) (avg)	1.24		1.68		0.87		0		2.06		NM	2.19
92													
93	**DIOXINS AND FURANS (ng/L)**												
94	**Method 8290**												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA	NA
96	Total TCDF	NA		NA		NA		NA		NA		NA	NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA	NA
98	Total TCDD	NA		NA		NA		NA		NA		NA	NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA	NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA	NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA	NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA	NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA	NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA	NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA	NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA	NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA	NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA	NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA	NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA	NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA	NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA	NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA	NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA	NA
118	OCDF	NA		NA		NA		NA		NA		NA	NA
119	OCDD	NA		NA		NA		NA		NA		NA	NA
120													
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA	NA
122													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2					Dup of LW11S												Dup of LW11S									
3			LW11S		LW110S		LW11S		LW11S		LW11S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4			AH76E		AH76D		AU36F		BC27J		9912050-06A		BH96U		BR55L		BR55K		CB49J		CK77K		CT55H		DE68M	
5			5/20/99		5/20/99		9/21/99		12/8/99		12/8/1999 (d)		2/17/00		5/23/00		5/23/00		8/28/00		11/8/00		2/14/01		6/4/01	
123		**PAHs (µg/L)**																								
124		**EPA Method SW8270 SIM**																								
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																									
2										Dup of LW11S						Dup of LW11S									
3		LW11S		LW11S		LW11S		LW11S		OX005S		LW11S		LW11S		X		LW11S		LW11S		LW11S		LW11S	
4		ED34D		EM66C		ES04D		EX87C		EX87A		EZ03I		FF76H		FF76L		FL58H		FU45D		FY72I		0402086-06	
5		2/28/02		6/24/02		08/28/02		10/29/02		10/29/02		11/12/02		2/12/03		2/12/03		5/8/03		8/28/03		10/22/03		2/18/04	
123	**PAHs (µg/L)**																								
124	**EPA Method SW8270 SIM**																								
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1													
2													
3		LW11S		LW11S		LW11S		LW11S		LW11S		LW11S	LW11S
4		0406074-09		0408035-01		0411066-09		0502087-02		P5F0223-02		P5H1000-09	P5K0820-03
5		6/10/04		8/05/04		11/11/04		2/17/05		6/6/05		08/23/05	11/17/05
123	**PAHs (µg/L)**												
124	**EPA Method SW8270 SIM**												
125	Naphthalene	NA		NA		NA		NA		NA		**3.97**	NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA	NA
127	Acenaphthylene	NA		1	U	NA		NA		NA		2.50 U	NA
128	Acenaphthene	NA		NA		NA		NA		NA		2.50 U	NA
129	Fluorene	NA		NA		NA		NA		NA		2.50 U	NA
130	Anthracene	NA		1	U	NA		NA		NA		2.50 U	NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																											Dup of LW13S	
3			LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		Y	
4			BR64S		CB68A		CL03U		CT67O		DE87F		DM30R		DW29K		ED30F		EN00F		ER93H		EZ03N		FF65H		FF65J	
5			5/25/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/12/02		2/11/03		2/11/03	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	**0.60**		**0.89**		**1.4**		**9.3**		**4.4**		**6.9**		0.25	U	0.26	U	0.25	U	0.26	U	**0.49**		0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
37	31	Carbon Disulfide	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
38	32	2-Butanone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
39	33	Benzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
40	34	Bromoform	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
41	35	Toluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
42	36	Ethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
43	37	Styrene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
44	38	m,p-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
45	39	o-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
46	40	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
47	41	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
48	42	Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49	43	n-Propylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
50	44	tert-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
51	45	sec-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
52	46	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
53	47	n-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	48	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
3		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S
4		FL58C		FU45M		FY82E		0402113-06		0408036-07		0411066-16		0502102-08		P5F0342-05		P5H0814-03
5		5/8/03		8/28/03		10/23/03		2/23/04		8/05/04		11/11/04		2/23/05		6/7/05		08/18/05
7	**CHLORINATED PHENOLS (µg/L)**																	
8	**EPA Method SW8040**																	
9	Pentachlorophenol	0.25	U	**1.1**	J	**1.0**		0.482	U	0.5	U	NA		0.479	U	0.526	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
17	**SEMIVOLATILES (µg/L)**																	
18	**EPA Method SW8270**																	
19	Phenol	NA		NA		NA		NA		NA		1.92	U	NA		5.00	U	NA
20	4-Methylphenol	NA		NA		NA		NA		NA		9.62	U	NA		5.00	U	NA
21	Isophorone	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
22	2,4-Dimethylphenol	NA		NA		NA		NA		NA		2.89	U	NA		10.00	U	NA
23	Benzoic Acid	NA		NA		NA		NA		NA		19.2	U	NA		50.0	U	NA
24	Naphthalene	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
25	2-Methylnaphthalene	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
26	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		4.81	U	NA		5.00	U	NA
27	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		4.81	U	NA		5.00	U	NA
28	Acenaphthene	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
29	Dibenzofuran	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
30	Fluorene	NA		NA		NA		NA		NA		0.962	U	NA		5.00	U	NA
31	Pentachlorophenol	NA		NA		NA		NA		NA		4.81	U	NA		10	U	NA
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		0.962	U	NA		10.00	U	NA
34	**VOLATILES (µg/L)**																	
35	**EPA Method SW8260**																	
36	Acetone	NA		NA		NA		NA		NA		50	U	NA		25.0	U	NA
37	Carbon Disulfide	NA		NA		NA		NA		NA		2	U	NA		10.00	U	NA
38	2-Butanone	NA		NA		NA		NA		NA		10	U	NA		10.00	U	NA
39	Benzene	NA		NA		NA		NA		NA		0.3	U	NA		1.00	U	NA
40	Bromoform	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
41	Toluene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
42	Ethylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
43	Styrene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
44	m,p-Xylene	NA		NA		NA		NA		NA		2	U	NA		2.00	U	NA
45	o-Xylene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
46	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
47	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
48	Isopropylbenzene	NA		NA		NA		NA		NA		1	U	NA		2.00	U	NA
49	n-Propylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
50	tert-Butylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
51	sec-Butylbenzene	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
52	4-Isopropyltoluene	NA		NA		NA		NA		NA		1	U	NA		2.00	U	NA
53	n-Butylbenzene	NA		NA		NA		NA		NA		1	U	NA		5.00	U	NA
54	Naphthalene	NA		NA		NA		NA		NA		1	U	NA		2.00	U	NA
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		1	U	NA		1.00	U	NA
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																	
58	**Method OR-DEQ**																	
59	**TPH-Diesel**	NA		NA		NA		NA		NA		0.244	U	0.243	U	0.25	U	0.250 U
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		0.489	U	0.487	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		0.1	U	0.08	U	0.08 U

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																											Dup of LW13S	
3			LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		Y	
4			BR64S		CB68A		CL03U		CT67O		DE87F		DM30R		DW29K		ED30F		EN00F		ER93H		EZ03N		FF65H		FF65J	
5			5/25/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/12/02		2/11/03		2/11/03	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1																		
2																		
3		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S
4		FL58C		FU45M		FY82E		0402113-06		0408036-07		0411066-16		0502102-08		P5F0342-05		P5H0814-03
5		5/8/03		8/28/03		10/23/03		2/23/04		8/05/04		11/11/04		2/23/05		6/7/05		08/18/05
63	**PRIORITY POLLUTANT**																	
64	**METALS (mg/L)**																	
65	Arsenic (7060)	NA		NA		NA		NA		NA		0.001	U	NA		0.001	U	NA
66	Chromium (6010)	NA		NA		NA		NA		NA		**0.0235**		NA		**0.00194**		NA
67	Copper (6010)	NA		NA		NA		NA		NA		**0.0609**		NA		**0.0143**		NA
68	Lead (7421)	NA		NA		NA		NA		NA		**0.00029**		NA		0.001	U	NA
69	Nickel (6010)	NA		NA		NA		NA		NA		**0.0853**		NA		**0.0357**		NA
70	Zinc (6010)	NA		NA		NA		NA		NA		0.01	U	NA		0.005	U	NA
71																		
72	**MAJOR IONS AND CONVENTIONALS**																	
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		**229**		NA		**164**		NA
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		**10.6**		NA		**3.64**		NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
86																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																											Dup of LW13S	
3			LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		Y	
4			BR64S		CB68A		CL03U		CT67O		DE87F		DM30R		DW29K		ED30F		EN00F		ER93H		EZ03N		FF65H		FF65J	
5			5/25/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/12/02		2/11/03		2/11/03	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.22		5.57		5.62		6.34		6.54		6.82		6.56		6.35		6.43		6.32		6.43		6.77		6.76	
89	82	Temperature (° C) (avg)	12.0		13.5		10.7		12.2		12.8		15.2		13.8		11.2		12.7		14.1		14.1		12.8		12.8	
90	83	Conductivity (um/hos)	128		149		272		149		336		383		214		89		180		146		141		71		71	
91	84	Dissolved oxygen (mg/L) (avg)	5.81		3.67		1.47		0.94		2.62		1.49		5.86		9.57		7.00		2.31		2.27		0		0	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1																		
2																		
3		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S
4		FL58C		FU45M		FY82E		0402113-06		0408036-07		0411066-16		0502102-08		P5F0342-05		P5H0814-03
5		5/8/03		8/28/03		10/23/03		2/23/04		8/05/04		11/11/04		2/23/05		6/7/05		08/18/05
87	**FIELD PARAMETERS**																	
88	pH (avg)	6.36		6.67		6.38		6.23		5.86		6.51		6.89		6.45		6.00
89	Temperature (° C) (avg)	11.9		15.6		14.7		13.2		14.2		15.4		13.9		13.9		14.6
90	Conductivity (um/hos)	81		131		119		70		267		192		93		141		155
91	Dissolved oxygen (mg/L) (avg)	6.14		3.68		5.65		4.4		4.6		2.85		4.87		5.84		NM
92																		
93	**DIOXINS AND FURANS (ng/L)**																	
94	**Method 8290**																	
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
120																		
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA
122																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																											Dup of LW13S	
3			LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		Y	
4			BR64S		CB68A		CL03U		CT67O		DE87F		DM30R		DW29K		ED30F		EN00F		ER93H		EZ03N		FF65H		FF65J	
5			5/25/00		8/30/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/12/02		2/11/03		2/11/03	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1																		
2																		
3		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S		LW13S
4		FL58C		FU45M		FY82E		0402113-06		0408036-07		0411066-16		0502102-08		P5F0342-05		P5H0814-03
5		5/8/03		8/28/03		10/23/03		2/23/04		8/05/04		11/11/04		2/23/05		6/7/05		08/18/05
123	**PAHs (µg/L)**																	
124	**EPA Method SW8270 SIM**																	
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S	LW19S
4			FZ04O		0402115-04		0406050-12		0408056-08		0411059-01		0502099-03		P5F0666-01		P5H0734-06	P5K0698-06
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/22/05		6/15/05		08/17/05	11/16/05
6																		
7	1	**CHLORINATED PHENOLS (µg/L)**																
8	2	**EPA Method SW8040**																
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																	
17	11	**SEMIVOLATILES (µg/L)**																
18	12	**EPA Method SW8270**																
19	13	Phenol	2	U	2	U	2.03	U	2.03	U	1.95	U	1.99	U	5.00	U	5.00 U	40.0 U
20	14	4-Methylphenol	1	U	10	U	10.2	U	10.1	U	9.77	U	9.95	U	5.00	U	5.00 U	20.0 U
21	15	Isophorone	1	U	1	U	1.02	U	1.01	U	0.977	U	0.995	U	5.00	U	5.00 U	20.0 U
22	16	2,4-Dimethylphenol	3	U	3	U	3.05	U	3.04	U	2.93	U	2.99	U	10.00	U	10.0 U	60.0 U
23	17	Benzoic Acid	10	U	20	U	20.3	U	20.3	U	19.5	U	19.9	U	50.0	U	50.0 U	1000 U
24	18	Naphthalene	1	U	1	U	1.02	U	1.01	U	0.977	U	0.995	U	5.00	U	5.00 U	20.0 U
25	19	2-Methylnaphthalene	1	U	1	U	1.02	U	1.01	U	0.977	U	0.995	U	5.00	U	5.00 U	20.0 U
26	20	2,4,6-Trichlorophenol	5	U	5	U	5.08	U	5.07	U	4.88	U	4.98	U	5.00	U	5.00 U	100 U
27	21	2,4,5-Trichlorophenol	5	U	5	U	5.08	U	5.07	U	4.88	U	4.98	U	5.00	U	5.00 U	100 U
28	22	Acenaphthene	**1.1**		**1.18**		1.02	U	**1.09**		**1.04**		0.995	U	5.00	U	5.00 U	20.0 U
29	23	Dibenzofuran	**1.5**		**1.02**		**1.08**		1.01	U	**1.33**		0.995	U	5.00	U	5.00 U	20.0 U
30	24	Fluorene	**3.5**		**2.82**		**3.04**		**3.46**		**3.41**		**11.3**		5.00	U	5.00 U	20.0 U
31	25	Pentachlorophenol	5	U	5	U	5.08	U	5.07	U	4.88	U	4.98	U	10	U	5 UJ	100 U
32	26	bis(2-Ethylhexyl)phthalate	1	U	1	U	1.02	U	1.01	U	0.977	U	**2**		10.00	U	10.0 U	200 U
33	27																	
34	28	**VOLATILES (µg/L)**																
35	29	**EPA Method SW8260**																
36	30	Acetone	**5.1**	M	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	**1.23**		1	U	1.00	U	1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
48	42	Isopropylbenzene	**6.5**		**6.65**		**7.29**		**7.65**		**5.89**		**2.55**		**5.70**		**6.35**	**7.05**
49	43	n-Propylbenzene	**8.9**		**9.37**		**12.3**		**9.41**		**9.38**		**5.54**		**8.48**		**8.49**	**10.3**
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
51	45	sec-Butylbenzene	**4.7**		**4.92**		**5.87**		**4.62**		**3.65**		**2.67**		**4.20**		**4.64**	**5.25**
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U	2.00 U
53	47	n-Butylbenzene	**2.9**	M	**2.78**		**3.17**		**2**		**3**		**6.28**		5.00	U	5.00 U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	**7.88**		2.00	U	2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
56	49																	
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																
58	51	**Method OR-DEQ**																
59	52	**TPH-Diesel**	**4.4**		**7.53**		**7.12**		**6.15**		**5.32**		**11.3**		**1.77**		**0.991**	**1.02**
60	53	**TPH-D Motor Oil**	0.5	U	**1.07**		0.516	U	0.5	U	**1.66**		0.481	U	0.5	U	0.500 U	0.495 U
61	54	**TPH-Gasoline**	**1.1**		**1.3**		**1.28**		**0.786**		**1.30**		**0.973**		**0.441**		**0.145**	**315**
62	55																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S	LW19S
4			FZ04O		0402115-04		0406050-12		0408056-08		0411059-01		0502099-03		P5F0666-01		P5H0734-06	P5K0698-06
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/22/05		6/15/05		08/17/05	11/16/05
63	56	**PRIORITY POLLUTANT**																
64	57	**METALS (mg/L)**																
65	58	Arsenic (7060)	**0.046**		**0.040**		**0.039**		**0.0406**		**0.0406**		**0.0434**		**0.0472**		**0.0382**	**0.046**
66	59	Chromium (6010)	0.005	U	**0.0095**		0.005	U	**0.0158**		**0.0149**		**0.0063**		0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	**0.159**		0.01	U	0.01	U	0.002	U	0.001 U	0.002 U
68	61	Lead (7421)	**0.001**		**0.0005**		0.0001	U	**0.000177**		**0.00045**		**0.00056**		0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00426**		**0.00193**	0.002 U
70	63	Zinc (6010)	0.006	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U	**0.00617**
71	64																	
72	65	**MAJOR IONS AND CONVENTIONALS**																
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**140**		**256**		**148**		**152**		**191**		**218**		**244**		**232**	NA
81	74	Chloride (mg/L) (EPA 325.2)	**1.1**		**2.18**		**1.19**		0.5	U	0.5	U	**0.98**		**2.63**		**1.86**	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																	

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S	LW19S
4			FZ04O		0402115-04		0406050-12		0408056-08		0411059-01		0502099-03		P5F0666-01		P5H0734-06	P5K0698-06
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/22/05		6/15/05		08/17/05	11/16/05
87	80	**FIELD PARAMETERS**																
88	81	pH (avg)	6.65		6.63		6.64		6.01		6.86		6.34		6.58		6.52	7.40
89	82	Temperature (° C) (avg)	14.4		12.8		15		14.7		14		13.4		13.6		14.7	13.9
90	83	Conductivity (um/hos)	506		492		452		781		582		223		354		626	654
91	84	Dissolved oxygen (mg/L) (avg)	1.72		1.26		1.05		2.69		1.79		0.06		0		NM	3.23
92	85																	
93	86	**DIOXINS AND FURANS (ng/L)**																
94	87	**Method 8290**																
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
120																		
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA	NA
122																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S		LW19S	LW19S
4			FZ04O		0402115-04		0406050-12		0408056-08		0411059-01		0502099-03		P5F0666-01		P5H0734-06	P5K0698-06
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/22/05		6/15/05		08/17/05	11/16/05
123		**PAHs (µg/L)**																
124		**EPA Method SW8270 SIM**																
125		Naphthalene	0.1	U	**0.369**		**0.76**		**0.14**		**0.515**		**1.13**		1.50	U	1.25 U	1.75 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	0.1	U	**0.159**		**0.3**		1.01	U	**0.283**		**0.76**		1.00	U	0.500 U	0.500 U
128		Acenaphthene	0.84		**0.857**		**1.19**		**0.678**		**0.989**		**2.28**		**1.05**		**1.19**	**0.905**
129		Fluorene	2.5		**2.35**		**3.88**		**1.59**		**3.29**		**7.83**		**2.94**		**3.69**	**2.62**
130		Anthracene	0.1	U	0.0498	U	**0.18**		**0.0997**		**0.0807**		**0.267**		1.00	U	0.500 U	0.500 U
131		Dibenzofuran	0.77		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1																					
2							Dup of LW20S						Dup of LW20S								
3			LW20S		LW20S		X		LW20S		LW20S		X		LW20S		LW20S		LW20S		LW20S
4			FZ04M		0402115-02		0402115-01		0406050-11		0408056-09		0408056-01		0411059-02		0502110-06		P5F0666-03		P5H0813-01
5			10/28/03		2/24/04		2/24/04		6/8/04		8/09/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
6																					
7	1	**CHLORINATED PHENOLS (µg/L)**																			
8	2	**EPA Method SW8040**																			
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																				
17	11	**SEMIVOLATILES (µg/L)**																			
18	12	**EPA Method SW8270**																			
19	13	Phenol	2.2	U	2.02	U	2.1	U	1.98	U	2.07	U	2.08	U	1.95	U	1.97	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.1	U	10.1	U	10.5	U	9.92	U	10.3	U	10.4	U	9.76	U	9.87	U	5.00	U	5.00 U
21	15	Isophorone	1.1	U	1.01	U	1.05	U	0.992	U	1.03	U	1.04	U	0.976	U	0.987	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.3	U	3.03	U	3.15	U	2.98	U	3.1	U	3.12	U	2.93	U	2.96	U	10.00	U	10.0 U
23	17	Benzoic Acid	11	U	20.2	U	21	U	19.8	U	20.7	U	20.8	U	19.5	U	19.7	U	50.0	U	50.0 U
24	18	Naphthalene	1.1	U	1.01	U	1.05	U	0.992	U	1.03	U	1.04	U	0.976	U	0.987	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.1	U	1.01	U	1.05	U	0.992	U	1.03	U	1.04	U	0.976	U	0.987	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.6	U	5.05	U	5.25	U	4.96	U	5.17	U	5.19	U	4.88	U	4.94	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.6	U	5.05	U	5.25	U	4.96	U	5.17	U	5.19	U	4.88	U	4.94	U	5.00	U	5.00 U
28	22	Acenaphthene	**1.4**		**1.25**		1.05	U	**1.32**		**1.5**		**1.43**		**1.35**		**1.15**		5.00	U	5.00 U
29	23	Dibenzofuran	1.1	U	**1.43**		**1.49**		**1.24**		1.03	U	1.04	U	**1.17**		0.987	U	5.00	U	5.00 U
30	24	Fluorene	**3.8**		**3.7**		**3.53**		**3.64**		**3.86**		**3.63**		**3.24**		**3.18**		**6.12**		5.00 U
31	25	Pentachlorophenol	5.6	U	5.05	U	5.25	U	4.96	U	5.17	U	5.19	U	4.88	U	4.94	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.1	U	1.01	U	1.05	U	0.992	U	1.03	U	1.04	U	0.976	U	0.987	U	10.00	U	10.0 U
33	27																				
34	28	**VOLATILES (µg/L)**																			
35	29	**EPA Method SW8260**																			
36	30	Acetone	5	U	50	UJ	50	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	UJ	2	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	UJ	10	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	**0.95**	J	**0.85**	J	0.3	U	0.3	U	0.3	U	**0.38**		0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	UJ	2	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	UJ	1	U	1	U	1	U	1	U	**1.3**		1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**7**		**7.89**	J	**5.82**	J	**7.53**		**8.52**	J	**6.79**	J	**7.75**		**4.55**		**7.00**		**8.06**
49	43	n-Propylbenzene	**9.2**		**10.8**	J	**9.94**		**13.5**		**10.6**		**10.5**		**11.3**		**9.38**		**10.5**		**10.3**
50	44	tert-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	**5.1**		**6.27**	J	**5.19**		**6.65**		**5.55**	J	**4.41**	J	**5.26**		**4.57**		**5.92**		**6.17**
52	46	4-Isopropyltoluene	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**2.2**		**3.43**	J	**2.78**		**3.12**		**2.17**		**1.76**		**3.24**		**7.22**		5.00	U	5.00 U
54	48	Naphthalene	5	U	1	UJ	1	U	1	U	1	U	1	U	1	U	**13.1**		2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																				
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																			
58	51	**Method OR-DEQ**																			
59	52	**TPH-Diesel**	**5.4**		**6.77**		**6.29**		**10.7**		**9.21**		**8.43**		**6.45**		**6.27**		0.543	U	**0.712**
60	53	**TPH-D Motor Oil**	0.5	U	**1.06**		**0.998**		0.498	U	0.511	U	0.528	U	**2.37**		0.488	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.96**		**1.4**		**1.2**		**0.981**		**0.783**		**0.676**		**1.21**		**0.699**		**0.337**		**0.353**
62	55																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1																					
2							Dup of LW20S						Dup of LW20S								
3			LW20S		LW20S		X		LW20S		LW20S		X		LW20S		LW20S		LW20S		LW20S
4			FZ04M		0402115-02		0402115-01		0406050-11		0408056-09		0408056-01		0411059-02		0502110-06		P5F0666-03		P5H0813-01
5			10/28/03		2/24/04		2/24/04		6/8/04		8/09/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
63	56	**PRIORITY POLLUTANT**																			
64	57	**METALS (mg/L)**																			
65	58	Arsenic (7060)	**0.04**		**0.020**		**0.019**		**0.029**		**0.0317**		**0.031**		**0.0336**		**0.0313**		**0.0263**		**0.0313**
66	59	Chromium (6010)	0.005	U	**0.013**		**0.0123**	J	**0.0133**		**0.014**		**0.0176**		0.005	U	0.005	U	0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	**0.605**	J	0.01	UJ	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.001	U	**0.0005**	J	**0.0007**	J	**0.0001**		0.0001	U	0.0001	U	**0.00042**		0.000277	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	**0.016**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00601**		**0.0034**
70	63	Zinc (6010)	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	**0.0211**		0.01	U	**0.0146**		0.005	U	0.01 U
71	64																				
72	65	**MAJOR IONS AND CONVENTIONALS**																			
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**270**		**240**		**237**		**281**		**242**		**247**		**287**		**411**		**265**		**326**
81	74	Chloride (mg/L) (EPA 325.2)	**2**		**1.45**		**1.79**		**1.91**		0.5	U	0.5	U	0.5	U	**2.23**		**1.56**		**1.83**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1																					
2							Dup of LW20S						Dup of LW20S								
3			LW20S		LW20S		X		LW20S		LW20S		X		LW20S		LW20S		LW20S		LW20S
4			FZ04M		0402115-02		0402115-01		0406050-11		0408056-09		0408056-01		0411059-02		0502110-06		P5F0666-03		P5H0813-01
5			10/28/03		2/24/04		2/24/04		6/8/04		8/09/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
87	80	**FIELD PARAMETERS**																			
88	81	pH (avg)	6.33		6.12		6.12		6.56		5.94		5.94		6.52		6.72		6.30		6.15
89	82	Temperature (° C) (avg)	16.5		11.6		11.7		14.5		16.9		16.4		16.1		13		14.7		15.5
90	83	Conductivity (um/hos)	445		314		314		445		717		718		385		196		245		526
91	84	Dissolved oxygen (mg/L) (avg)	1.79		1.82		1.79		1.94		1.51		2.13		1.4		0.47		0		NM
92	85																				
93	86	**DIOXINS AND FURANS (ng/L)**																			
94	87	**Method 8290**																			
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																					
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1																					
2							Dup of LW20S						Dup of LW20S								
3			LW20S		LW20S		X		LW20S		LW20S		X		LW20S		LW20S		LW20S		LW20S
4			FZ04M		0402115-02		0402115-01		0406050-11		0408056-09		0408056-01		0411059-02		0502110-06		P5F0666-03		P5H0813-01
5			10/28/03		2/24/04		2/24/04		6/8/04		8/09/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
122																					
123		**PAHs (µg/L)**																			
124		**EPA Method SW8270 SIM**																			
125		Naphthalene	0.11	U	**0.429**		**0.518**		**0.85**		**0.39**		**0.392**		**0.554**		**0.45**		1.50	U	0.800 U
126		2-Methylnaphthalene	0.11	U	NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	**0.256**		**0.352**		**0.39**		**0.107**	J	**0.245**	J	**0.301**		**0.29**		0.500	U	0.300 U
128		Acenaphthene	1.3		**0.91**	J	**1.19**	J	**1.41**		**0.956**	J	**1.21**	J	**1.14**		**0.94**		**1.25**		**1.05**
129		Fluorene	3.3		**2.55**	J	**3.52**	J	**3.92**		**2.14**	J	**2.75**	J	**3.46**		**2.94**		**3.83**		**2.62**
130		Anthracene	0.14		**0.0716**		**0.0932**		**0.17**		**0.127**		**0.0979**		**0.0875**		**0.07**		0.250	U	0.150 U
131		Dibenzofuran	0.59		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			LW21S	
4			FZ04Q	
5			10/28/03	
6				
7	1	**CHLORINATED PHENOLS (µg/L)**		
8	2	**EPA Method SW8040**		
9	3	Pentachlorophenol	NA	
10	4	2,4,6-Trichlorophenol	NA	
11	5	2,3,6-Trichlorophenol	NA	
12	6	2,4,5-Trichlorophenol	NA	
13	7	2,3,4-Trichlorophenol	NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA	
15	9	2,3,4,5-Tetrachlorophenol	NA	
16	10			
17	11	**SEMIVOLATILES (µg/L)**		
18	12	**EPA Method SW8270**		
19	13	Phenol	**11**	
20	14	4-Methylphenol	1.2	U
21	15	Isophorone	1.2	U
22	16	2,4-Dimethylphenol	**5.4**	
23	17	Benzoic Acid	12	U
24	18	Naphthalene	**100**	
25	19	2-Methylnaphthalene	**46**	
26	20	2,4,6-Trichlorophenol	6	U
27	21	2,4,5-Trichlorophenol	6	U
28	22	Acenaphthene	1.2	U
29	23	Dibenzofuran	1.2	U
30	24	Fluorene	**1.9**	
31	25	Pentachlorophenol	6	U
32	26	bis(2-Ethylhexyl)phthalate	1.2	U
33	27			
34	28	**VOLATILES (µg/L)**		
35	29	**EPA Method SW8260**		
36	30	Acetone	5	U
37	31	Carbon Disulfide	1	U
38	32	2-Butanone	5	U
39	33	Benzene	**1600**	
40	34	Bromoform	1	U
41	35	Toluene	**72**	
42	36	Ethylbenzene	**940**	
43	37	Styrene	1	U
44	38	m,p-Xylene	**2400**	
45	39	o-Xylene	**770**	
46	40	1,3,5-Trimethylbenzene	**120**	
47	41	1,2,4-Trimethylbenzene	**540**	
48	42	Isopropylbenzene	**72**	
49	43	n-Propylbenzene	**110**	
50	44	tert-Butylbenzene	1	U
51	45	sec-Butylbenzene	1	U
52	46	4-Isopropyltoluene	1	U
53	47	n-Butylbenzene	**8**	
54	48	Naphthalene	**190**	
55	48.5	Methyl tert-butyl ether	**7.5**	M
56	49			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**		
58	51	**Method OR-DEQ**		
59	52	**TPH-Diesel**	**4.3**	
60	53	**TPH-D Motor Oil**	0.5	U
61	54	**TPH-Gasoline**	**24**	
62	55			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			LW21S	
4			FZ04Q	
5			10/28/03	
63	56	**PRIORITY POLLUTANT**		
64	57	**METALS (mg/L)**		
65	58	Arsenic (7060)	**0.025**	
66	59	Chromium (6010)	0.005	U
67	60	Copper (6010)	**0.005**	
68	61	Lead (7421)	**0.005**	
69	62	Nickel (6010)	0.01	U
70	63	Zinc (6010)	**0.012**	
71	64			
72	65	**MAJOR IONS AND CONVENTIONALS**		
73	66	Calcium (mg/L) (6010)	NA	
74	67	Magnesium (mg/L) (6010)	NA	
75	68	Potassium (mg/L) (6010)	NA	
76	69	Sodium (mg/L) (6010)	NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**240**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.7**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA	
86	79			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			LW21S	
4			FZ04Q	
5			10/28/03	
87	80	**FIELD PARAMETERS**		
88	81	pH (avg)	6.54	
89	82	Temperature (° C) (avg)	16.4	
90	83	Conductivity (um/hos)	373	
91	84	Dissolved oxygen (mg/L) (avg)	1.25	
92	85			
93	86	**DIOXINS AND FURANS (ng/L)**		
94	87	**Method 8290**		
95	88	2,3,7,8-TCDF	NA	
96	89	Total TCDF	NA	
97	90	2,3,7,8-TCDD	NA	
98	91	Total TCDD	NA	
99	92	1,2,3,7,8-PeCDF	NA	
100	93	2,3,4,7,8-PeCDF	NA	
101	94	Total PeCDF	NA	
102	95	1,2,3,7,8-PeCDD	NA	
103	96	Total PeCDD	NA	
104	97	1,2,3,4,7,8-HxCDF	NA	
105	98	1,2,3,6,7,8-HxCDF	NA	
106	99	2,3,4,6,7,8-HxCDF	NA	
107	100	1,2,3,7,8,9-HxCDF	NA	
108	101	Total HxCDF	NA	
109	102	1,2,3,4,7,8-HxCDD	NA	
110	103	1,2,3,6,7,8-HxCDD	NA	
111	104	1,2,3,7,8,9-HxCDD	NA	
112	105	Total HxCDD	NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA	
115	108	Total HpCDF	NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA	
117	110	Total HpCDD	NA	
118	111	OCDF	NA	
119	112	OCDD	NA	
120				
121		**ETHANOL (mg/L)**	NA	
122				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			LW21S	
4			FZ04Q	
5			10/28/03	
123		**PAHs (µg/L)**		
124		**EPA Method SW8270 SIM**		
125		Naphthalene	100	
126		2-Methylnaphthalene	46	
127		Acenaphthylene	0.12	U
128		Acenaphthene	0.8	
129		Fluorene	2.1	
130		Anthracene	0.12	U
131		Dibenzofuran	0.57	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW27S		LW27S	LW27S
4			FZ04R		0406072-01	P5K0819-04
5			10/28/03		6/10/04	11/17/05
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA	NA
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	2.4	U	1.93	9.62 UJ
20	14	4-Methylphenol	1.2	U	9.66	4.81 U
21	15	Isophorone	1.2	U	0.966	4.81 U
22	16	2,4-Dimethylphenol	3.7	U	2.9	14.4 U
23	17	Benzoic Acid	12	U	19.3	240 U
24	18	Naphthalene	1.2	U	0.966	4.81 U
25	19	2-Methylnaphthalene	1.2	U	0.966	4.81 U
26	20	2,4,6-Trichlorophenol	6.1	U	4.83	24.0 U
27	21	2,4,5-Trichlorophenol	6.1	U	4.83	24.0 U
28	22	Acenaphthene	**1.2**		**1.25**	4.81 U
29	23	Dibenzofuran	1.2	U	0.966	4.81 U
30	24	Fluorene	**2.3**		**2.68**	4.81 U
31	25	Pentachlorophenol	6.1	U	4.83	24.0 U
32	26	bis(2-Ethylhexyl)phthalate	1.2	U	0.966	48.1 U
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	**6**		50	25.0 U
37	31	Carbon Disulfide	1	U	2	10.0 U
38	32	2-Butanone	5	U	10	10.0 U
39	33	Benzene	1	U	0.3	1.00 U
40	34	Bromoform	1	U	1	1.00 U
41	35	Toluene	1	U	1	1.00 U
42	36	Ethylbenzene	1	U	1	1.00 U
43	37	Styrene	1	U	1	1.00 U
44	38	m,p-Xylene	1	U	2	2.00 U
45	39	o-Xylene	1	U	1	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	1.00 U
48	42	Isopropylbenzene	**12**		**6.97**	2.00 U
49	43	n-Propylbenzene	**13**		**9.41**	1.00 U
50	44	tert-Butylbenzene	1	U	1	1.00 U
51	45	sec-Butylbenzene	**4**		**2.24**	1.00 U
52	46	4-Isopropyltoluene	1	U	1	2.00 U
53	47	n-Butylbenzene	**3.3**		**2.24**	5.00 U
54	48	Naphthalene	5	U	1	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	1.00 U
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	**4.4**		**6.95**	**2.09**
60	53	**TPH-D Motor Oil**	0.5	U	0.498	0.500 U
61	54	**TPH-Gasoline**	**1.6**		**1.66**	**240**
62	55					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW27S		LW27S	LW27S
4			FZ04R		0406072-01	P5K0819-04
5			10/28/03		6/10/04	11/17/05
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	**0.038**		**0.024**	**0.0596**
66	59	Chromium (6010)	0.005	U	**0.0144**	0.001 U
67	60	Copper (6010)	**0.002**		0.01	0.002 U
68	61	Lead (7421)	**0.002**		0.0001	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	**0.00535**
70	63	Zinc (6010)	**0.008**		0.01	0.005 U
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**270**		**311**	NA
81	74	Chloride (mg/L) (EPA 325.2)	**1.9**		**1.9**	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	NA
86	79					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW27S		LW27S	LW27S
4			FZ04R		0406072-01	P5K0819-04
5			10/28/03		6/10/04	11/17/05
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.62		6.33	7.10
89	82	Temperature (° C) (avg)	14.9		12.8	14.9
90	83	Conductivity (um/hos)	400		413	358
91	84	Dissolved oxygen (mg/L) (avg)	1.53		0.81	3.10
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	NA
96	89	Total TCDF	NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA	NA
98	91	Total TCDD	NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA	NA
101	94	Total PeCDF	NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA	NA
103	96	Total PeCDD	NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA	NA
108	101	Total HxCDF	NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA	NA
112	105	Total HxCDD	NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	NA
115	108	Total HpCDF	NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	NA
117	110	Total HpCDD	NA		NA	NA
118	111	OCDF	NA		NA	NA
119	112	OCDD	NA		NA	NA
120						
121		**ETHANOL (mg/L)**	NA		NA	NA
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW27S		LW27S	LW27S
4			FZ04R		0406072-01	P5K0819-04
5			10/28/03		6/10/04	11/17/05
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	0.12	U	**1.28**	0.990 U
126		2-Methylnaphthalene	0.12	U	NA	NA
127		Acenaphthylene	0.12	U	**0.21**	0.396 U
128		Acenaphthene	1.1		**1.24**	0.594 U
129		Fluorene	2.3		**2.89**	0.396 U
130		Anthracene	0.16		**0.06**	0.396 U
131		Dibenzofuran	0.71		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			LW28S		LW28S		LW28S	
4			0402080-02		0406040-01		P5F0441-09	
5			2/17/04		6/7/04		6/9/05	
6								
7	1	**CHLORINATED PHENOLS (µg/L)**						
8	2	**EPA Method SW8040**						
9	3	Pentachlorophenol	NA		NA		NA	
10	4	2,4,6-Trichlorophenol	NA		NA		NA	
11	5	2,3,6-Trichlorophenol	NA		NA		NA	
12	6	2,4,5-Trichlorophenol	NA		NA		NA	
13	7	2,3,4-Trichlorophenol	NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA	
16	10							
17	11	**SEMIVOLATILES (µg/L)**						
18	12	**EPA Method SW8270**						
19	13	Phenol	1.92	U	1.94	U	5.00	U
20	14	4-Methylphenol	9.62	U	9.71	U	5.00	U
21	15	Isophorone	0.962	U	0.971	U	5.00	U
22	16	2,4-Dimethylphenol	2.89	U	2.91	U	10.00	U
23	17	Benzoic Acid	19.2	U	19.4	U	50.0	U
24	18	Naphthalene	0.962	U	0.971	U	5.00	U
25	19	2-Methylnaphthalene	0.962	U	0.971	U	5.00	U
26	20	2,4,6-Trichlorophenol	4.81	U	4.85	U	5.00	U
27	21	2,4,5-Trichlorophenol	4.81	U	4.85	U	5.00	U
28	22	Acenaphthene	0.962	U	0.971	U	5.00	U
29	23	Dibenzofuran	0.962	U	0.971	U	5.00	U
30	24	Fluorene	0.962	U	0.971	U	5.00	U
31	25	Pentachlorophenol	4.81	U	4.85	U	10	U
32	26	bis(2-Ethylhexyl)phthalate	0.962	U	0.971	U	10.00	U
33	27							
34	28	**VOLATILES (µg/L)**						
35	29	**EPA Method SW8260**						
36	30	Acetone	50	U	50	U	25.0	U
37	31	Carbon Disulfide	2	U	2	U	10.00	U
38	32	2-Butanone	10	U	10	U	10.00	U
39	33	Benzene	0.4	U	0.3	U	1.00	U
40	34	Bromoform	1	U	1	U	1.00	U
41	35	Toluene	1	U	1	U	1.00	U
42	36	Ethylbenzene	1	U	1	U	1.00	U
43	37	Styrene	1	U	1	U	1.00	U
44	38	m,p-Xylene	2	U	2	U	2.00	U
45	39	o-Xylene	1	U	1	U	1.00	U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U
48	42	Isopropylbenzene	1	U	1	U	2.00	U
49	43	n-Propylbenzene	1	U	1	U	1.00	U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U
53	47	n-Butylbenzene	1	U	1	U	5.00	U
54	48	Naphthalene	1	U	1	U	2.00	U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1.00	U
56	49							
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**						
58	51	**Method OR-DEQ**						
59	52	**TPH-Diesel**	0.242	U	**0.331**		0.25	U
60	53	**TPH-D Motor Oil**	0.484	U	0.513	U	0.5	U
61	54	**TPH-Gasoline**	0.1	U	0.1	U	0.08	U
62	55							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			LW28S		LW28S		LW28S	
4			0402080-02		0406040-01		P5F0441-09	
5			2/17/04		6/7/04		6/9/05	
63	56	**PRIORITY POLLUTANT**						
64	57	**METALS (mg/L)**						
65	58	Arsenic (7060)	0.001	U	0.001	U	0.001	U
66	59	Chromium (6010)	0.005	U	0.005	U	0.001	U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U
68	61	Lead (7421)	0.0001	U	**0.0002**		0.001	U
69	62	Nickel (6010)	0.005	U	**0.0094**		**0.0124**	
70	63	Zinc (6010)	0.01	U	0.01	U	0.005	U
71	64							
72	65	**MAJOR IONS AND CONVENTIONALS**						
73	66	Calcium (mg/L) (6010)	NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**75**		**92**		**99**	
81	74	Chloride (mg/L) (EPA 325.2)	**1.17**		**1.04**		**2.25**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA	
86	79							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			LW28S		LW28S		LW28S	
4			0402080-02		0406040-01		P5F0441-09	
5			2/17/04		6/7/04		6/9/05	
87	80	**FIELD PARAMETERS**						
88	81	pH (avg)	5.84		4.93		5.50	
89	82	Temperature (° C) (avg)	11.5		13.2		14.8	
90	83	Conductivity (um/hos)	61		67		80	
91	84	Dissolved oxygen (mg/L) (avg)	6.56		4.51		6.17	
92	85							
93	86	**DIOXINS AND FURANS (ng/L)**						
94	87	**Method 8290**						
95	88	2,3,7,8-TCDF	NA		NA		NA	
96	89	Total TCDF	NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA	
98	91	Total TCDD	NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA	
118	111	OCDF	NA		NA		NA	
119	112	OCDD	NA		NA		NA	
120								
121		**ETHANOL (mg/L)**	NA		NA		NA	
122								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			LW28S		LW28S		LW28S	
4			0402080-02		0406040-01		P5F0441-09	
5			2/17/04		6/7/04		6/9/05	
123		**PAHs (µg/L)**						
124		**EPA Method SW8270 SIM**						
125		Naphthalene	**0.0675**	J	0.05	U	0.100	U
126		2-Methylnaphthalene	NA		NA		NA	
127		Acenaphthylene	0.0482	UJ	0.05	U	0.100	U
128		Acenaphthene	0.0482	UJ	0.05	U	0.100	U
129		Fluorene	0.0482	UJ	**0.0599**		0.100	U
130		Anthracene	0.0482	UJ	0.05	U	0.100	U
131		Dibenzofuran	NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S
4			FZ04C		0402080-08		0406050-06		0408006-06		0411047-02		0502059-02		P5F0343-04		P5H0625-08
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2	U	1.96	U	2.01	U	1.94	U	2.07	U	1.96	U	5.00	U	5.71 U
20	14	4-Methylphenol	1	U	9.79	U	10.1	U	9.71	U	10.4	U	9.8	U	5.00	U	5.71 U
21	15	Isophorone	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
22	16	2,4-Dimethylphenol	3	U	2.94	U	3.02	U	2.91	U	3.11	U	2.94	U	10.00	U	11.4 U
23	17	Benzoic Acid	10	U	19.6	U	20.1	U	19.4	U	20.7	U	19.6	U	50.0	U	57.1 U
24	18	Naphthalene	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
25	19	2-Methylnaphthalene	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
26	20	2,4,6-Trichlorophenol	5	U	4.9	U	5.04	U	4.85	U	5.18	U	4.9	U	5.00	U	5.71 U
27	21	2,4,5-Trichlorophenol	5	U	4.9	U	5.04	U	4.85	U	5.18	U	4.9	U	5.00	U	5.71 U
28	22	Acenaphthene	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
29	23	Dibenzofuran	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
30	24	Fluorene	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	5.00	U	5.71 U
31	25	Pentachlorophenol	5	U	4.9	U	5.04	U	4.85	U	5.18	U	4.9	U	10	U	6 UJ
32	26	bis(2-Ethylhexyl)phthalate	1	U	0.979	U	1.01	U	0.971	U	1.04	U	0.98	U	10.00	U	11.4 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	0.25	U	0.243	U	0.255	U	**0.337**		**0.36**		0.242	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.485	U	0.511	U	0.481	U	0.503	U	0.484	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	**0.108**		0.08	U	0.08 U
62	55																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S
4			FZ04C		0402080-08		0406050-06		0408006-06		0411047-02		0502059-02		P5F0343-04		P5H0625-08
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.002**		**0.002**		**0.001**		0.00269	U	**0.00329**		**0.00234**		**0.00196**		**0.00205**
66	59	Chromium (6010)	0.005	U	0.005	U	**0.0178**		**0.0171**		**0.0169**		**0.0088**		0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00328**		**0.00274**
70	63	Zinc (6010)	**0.007**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**91**		**98**		**103**		**79**		**135**		**134**		**136**		**149**
81	74	Chloride (mg/L) (EPA 325.2)	**1.8**		**1.03**		**1.32**		**1.4**		**1.37**		**5.44**		**1.78**		**1.47**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S
4			FZ04C		0402080-08		0406050-06		0408006-06		0411047-02		0502059-02		P5F0343-04		P5H0625-08
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.56		6.65		6.65		5.72		6.66		6.81		6.51		6.73
89	82	Temperature (° C) (avg)	14.7		12.7		13.6		15.4		14.5		12.9		15.2		16.8
90	83	Conductivity (um/hos)	112		129		88		151		136		102		177		167
91	84	Dissolved oxygen (mg/L) (avg)	1.44		2.33		2.36		NM		0.96		1.38		7.52		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA
122																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S		LW29S
4			FZ04C		0402080-08		0406050-06		0408006-06		0411047-02		0502059-02		P5F0343-04		P5H0625-08
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
122																	
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	0.0489	UJ	0.05	U	**0.06**		0.0529	U	0.0507	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0529	U	0.0507	U	0.100	U	0.100 U
128		Acenaphthene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0529	U	0.0507	U	0.100	U	0.100 U
129		Fluorene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0529	U	0.0507	U	0.100	U	0.100 U
130		Anthracene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0529	U	0.0507	U	0.100	U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2					Dup of LW30S														
3			LW30S		X		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S
4			FZ04E		FZ04L		0402085-01		0406050-08		0408020-04		0411047-04		0502059-03		P5F0441-07		P5H0625-03
5			10/27/03		10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
6																			
7	1	**CHLORINATED PHENOLS (µg/L)**																	
8	2	**EPA Method SW8040**																	
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																		
17	11	**SEMIVOLATILES (µg/L)**																	
18	12	**EPA Method SW8270**																	
19	13	Phenol	2.2	U	2.2	U	1.95	U	1.97	U	1.94	U	1.96	U	2.04	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.1	U	1.1	U	9.75	U	9.85	U	9.69	U	9.78	U	10.2	U	5.00	U	5.00 U
21	15	Isophorone	1.1	U	1.1	U	0.975	U	0.985	U	0.969	U	0.978	U	1.02	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.3	U	3.3	U	2.92	U	2.96	U	2.91	U	2.93	U	3.06	U	10.00	U	10.0 U
23	17	Benzoic Acid	11	U	11	U	19.5	U	19.7	U	19.4	U	19.6	U	20.4	U	50.0	U	50.0 U
24	18	Naphthalene	1.1	U	1.1	U	0.975	U	0.985	U	0.969	U	0.978	U	1.02	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.1	U	1.1	U	0.975	U	0.985	U	0.969	U	0.978	U	1.02	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.5	U	5.4	U	4.87	U	4.93	U	4.84	U	4.89	U	5.11	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.5	U	5.4	U	4.87	U	4.93	U	4.84	U	4.89	U	5.11	U	5.00	U	5.00 U
28	22	Acenaphthene	1.1	U	1.1	U	0.975	U	**1.02**		0.969	U	0.978	U	1.02	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.1	U	1.1	U	0.975	U	0.985	U	0.969	U	0.978	U	1.02	U	5.00	U	5.00 U
30	24	Fluorene	**1.4**		**1.5**		**1.39**		**2.02**		1.05	U	0.978	U	1.02	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.5	U	5.4	U	4.87	U	4.93	U	4.84	U	4.89	U	5.11	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.1	U	**1.7**		0.975	U	0.985	U	0.969	U	0.978	U	1.02	U	10.00	U	10.0 U
33	27																		
34	28	**VOLATILES (µg/L)**																	
35	29	**EPA Method SW8260**																	
36	30	Acetone	5	U	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	**1**		2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	**1.3**		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**9.8**		**9.6**		**7.32**		**8.76**		**7.68**	J	**4.67**		**2.96**		**4.93**		**3.70**
49	43	n-Propylbenzene	**25**		**23**		**26.7**		**36.4**		**27.8**	J	**28**		**17.2**		**13.7**		**9.96**
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	**2.25**		1.00	U	1.00 U
51	45	sec-Butylbenzene	**2.5**		**2.4**		**1.64**		**2.3**		**2.48**	J	**1.17**		**3.13**		**1.56**		**1.38**
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**3.5**		**3.2**	M	**3.13**		**3.98**		**3.46**	J	**3.55**		**4.75**		5.00	U	5.00 U
54	48	Naphthalene	5	U	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																		
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																	
58	51	**Method OR-DEQ**																	
59	52	**TPH-Diesel**	**0.87**		**0.86**		**2.06**		**2.23**		**1.44**		**0.747**		**1.34**		**0.427**		**0.349**
60	53	**TPH-D Motor Oil**	0.5	U	0.5	U	0.486	U	0.497	U	0.493	U	0.491	U	0.496	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.84**		**0.89**		**0.90**		**1.0**		**0.719**		**0.637**		**0.927**		**0.225**		**0.271**
62	55																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2					Dup of LW30S														
3			LW30S		X		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S
4			FZ04E		FZ04L		0402085-01		0406050-08		0408020-04		0411047-04		0502059-03		P5F0441-07		P5H0625-03
5			10/27/03		10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
63	56	**PRIORITY POLLUTANT**																	
64	57	**METALS (mg/L)**																	
65	58	Arsenic (7060)	**0.013**		**0.013**		**0.018**		**0.015**		**0.0163**		**0.0141**		**0.0155**		**0.017**		**0.014**
66	59	Chromium (6010)	0.005	U	0.005	U	**0.008**		0.005	U	**0.0147**		**0.0229**		**0.0059**		0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.001	U	0.001	U	**0.0015**		**0.0012**		**0.00079**		**0.00076**		**0.00141**		0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0021**		0.001 U
70	63	Zinc (6010)	0.006	U	**0.007**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.0056**		0.01 U
71	64																		
72	65	**MAJOR IONS AND CONVENTIONALS**																	
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**130**		**140**		**173**		**179**		**199**		**168**		**177**		**203**		**185**
81	74	Chloride (mg/L) (EPA 325.2)	**1.3**		**1.3**		**1.35**		**1.41**		**1.2**		**1.35**		**1.6**		**1.47**		**1.28**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2					Dup of LW30S														
3			LW30S		X		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S
4			FZ04E		FZ04L		0402085-01		0406050-08		0408020-04		0411047-04		0502059-03		P5F0441-07		P5H0625-03
5			10/27/03		10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
87	80	**FIELD PARAMETERS**																	
88	81	pH (avg)	6.59		6.59		6.64		6.67		6.06		6.84		6.94		6.26		5.89
89	82	Temperature (° C) (avg)	14.7		14.7		13.5		13.6		15.5		14.3		12.9		13.8		15.3
90	83	Conductivity (um/hos)	192		193		239		210		298		176		180		325		238
91	84	Dissolved oxygen (mg/L) (avg)	2.46		2.27		1.22		2.55		2.24		0.31		5.08		7.41		NM
92	85																		
93	86	**DIOXINS AND FURANS (ng/L)**																	
94	87	**Method 8290**																	
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
120																			
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA
122																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2					Dup of LW30S														
3			LW30S		X		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S		LW30S
4			FZ04E		FZ04L		0402085-01		0406050-08		0408020-04		0411047-04		0502059-03		P5F0441-07		P5H0625-03
5			10/27/03		10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
123		**PAHs (µg/L)**																	
124		**EPA Method SW8270 SIM**																	
125		Naphthalene	0.11	U	0.11	U	**0.379**		**0.51**		**0.55**		**0.308**		**0.261**		0.800	U	0.350 U
126		2-Methylnaphthalene	0.11	U	0.11	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	0.11	U	**0.126**		**0.19**		**0.32**		**0.0866**		**0.0965**		2.00	U	0.150 U
128		Acenaphthene	0.84		0.84		**0.864**		**0.83**		**0.64**		**0.404**		**0.425**		2.00	U	**0.456**
129		Fluorene	1.6		1.7		**1.38**		**1.54**		**1.15**		**0.799**		**0.772**		2.00	U	**0.744**
130		Anthracene	0.11	U	0.11	U	**0.0583**		**0.08**		**0.09**		**0.0481**		**0.0579**		0.100	U	0.100 U
131		Dibenzofuran	0.8		0.82		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S
4			FZ04G		0402080-03		0406050-02		0408006-02		0411052-02		0502056-01		P5F0441-11		P5H0734-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/9/05		08/17/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2	U	1.93	U	1.9	U	1.9	U	1.97	U	1.93	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	9.66	U	9.52	U	9.52	U	9.85	U	9.65	U	5.00	U	5.00 U
21	15	Isophorone	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3	U	2.9	U	2.86	U	2.86	U	2.96	U	2.9	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	19.3	U	19	U	19	U	19.7	U	19.3	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.1	U	4.83	U	4.76	U	4.76	U	4.93	U	4.83	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.1	U	4.83	U	4.76	U	4.76	U	4.93	U	4.83	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
30	24	Fluorene	1	U	0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.1	U	4.83	U	4.76	U	4.76	U	4.93	U	4.83	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**2.4**		0.966	U	0.952	U	0.952	U	0.985	U	0.965	U	10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	UJ	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	UJ	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	UJ	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	UJ	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	UJ	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**0.59**		0.242	U	**0.469**		**0.576**		**0.568**		**0.261**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.483	U	0.492	U	0.475	U	**0.593**		0.5	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.08	U	0.08 U
62	55																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S
4			FZ04G		0402080-03		0406050-02		0408006-02		0411052-02		0502056-01		P5F0441-11		P5H0734-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/9/05		08/17/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	0.001	U	0.001	U	0.001	U	0.00148	U	**0.00136**		**0.00109**		0.001	U	**0.00103**
66	59	Chromium (6010)	0.005	U	0.005	U	**0.0187**		**0.0138**		**0.0182**		**0.0056**		0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.001	U	0.0001	U	0.0001	U	0.0001	U	**0.00018**		0.0001	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0024**		**0.00199**
70	63	Zinc (6010)	**0.008**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**140**		**101**		**143**		**100**		**160**		**124**		**112**		**120**
81	74	Chloride (mg/L) (EPA 325.2)	**1.7**		**1.08**		**2.53**		**2.96**		**1.82**		**1.63**		**1.19**		**0.93**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S
4			FZ04G		0402080-03		0406050-02		0408006-02		0411052-02		0502056-01		P5F0441-11		P5H0734-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/9/05		08/17/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	5.90		6.15		5.86		5.7		6.38		6.48		5.96		5.69
89	82	Temperature (° C) (avg)	14.7		12.8		13		15.2		14.3		11.6		13.9		14.7
90	83	Conductivity (um/hos)	187		98		128		215		161		94		126		88
91	84	Dissolved oxygen (mg/L) (avg)	3.10		4.42		2.6		NM		1.98		1.71		10.08		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA
122																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S		LW31S
4			FZ04G		0402080-03		0406050-02		0408006-02		0411052-02		0502056-01		P5F0441-11		P5H0734-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/9/05		08/17/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	0.0486	UJ	0.05	U	0.05	U	0.0521	U	0.0479	U	0.111	U	0.100 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	0.0486	UJ	0.05	U	0.05	U	0.0521	U	0.0479	U	0.111	U	0.100 U
128		Acenaphthene	0.1	U	0.0486	UJ	0.05	U	0.05	U	0.0521	U	0.0479	U	0.111	U	0.100 U
129		Fluorene	0.1	U	0.0486	UJ	0.05	U	0.05	U	0.0521	U	0.0479	U	0.111	U	0.100 U
130		Anthracene	0.1	U	0.0486	UJ	0.05	U	0.05	U	0.0521	U	0.0479	U	0.111	U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S
4			FZ04H		0402080-05		0406050-04		0408006-04		0411052-03		0502056-04		P5F0343-01		P5H0701-03
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.1	U	1.96	U	1.99	U	1.94	U	1.98	U	1.97	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	9.8	U	9.93	U	9.7	U	9.91	U	9.86	U	5.00	U	5.00 U
21	15	Isophorone	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.1	U	2.94	U	2.98	U	2.91	U	2.97	U	2.96	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	19.6	U	19.9	U	19.4	U	19.8	U	19.7	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.2	U	4.9	U	4.97	U	4.85	U	4.96	U	4.93	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.2	U	4.9	U	4.97	U	4.85	U	4.96	U	4.93	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
30	24	Fluorene	1	U	0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.2	U	4.9	U	4.97	U	4.85	U	4.96	U	4.93	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**2.1**		0.98	U	0.993	U	0.97	U	0.991	U	0.986	U	**549**		10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	UJ	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	UJ	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	UJ	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	UJ	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	UJ	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	UJ	1	U	1	U	**1.6**		1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**18**		**4.27**	J	**7.05**		**19.4**	J	**37.5**		**40.2**		**10.6**		**20.2**
49	43	n-Propylbenzene	**20**		**4.87**	J	**9.16**		**20.5**	J	**50.6**		**55.9**		**11.6**		**22.9**
50	44	tert-Butylbenzene	**1**		1	UJ	1	U	1	U	**1.58**		**3.84**		**1.09**		**1.81**
51	45	sec-Butylbenzene	**6.5**		**2.52**	J	**3.73**		**8.65**	J	**12**		**20.6**		**6.19**		**10.2**
52	46	4-Isopropyltoluene	1	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**6.1**		**2.24**	J	**2.69**		**8.47**	J	**10.7**		**18.2**		**5.70**		**10.6**
54	48	Naphthalene	5	U	1	UJ	1	U	1	U	1	U	**3.36**		2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**3.3**		**1.84**		**3.48**		**4.24**		**4.44**		**3.13**		**0.562**		**0.987**
60	53	**TPH-D Motor Oil**	0.5	U	0.488	U	0.5	U	0.488	U	**0.721**		0.5	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**1.8**		**1.1**		**1.17**		**1.33**		**2.87**		**4.67**		**0.971**		**0.807**
62	55																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S
4			FZ04H		0402080-05		0406050-04		0408006-04		0411052-03		0502056-04		P5F0343-01		P5H0701-03
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.034**		**0.023**		**0.026**		**0.0314**		**0.0303**		**0.0302**		**0.0202**		**0.0254**
66	59	Chromium (6010)	0.005	U	**0.0124**		**0.0162**		**0.0125**		**0.0175**		0.005	U	0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	**0.00117**
68	61	Lead (7421)	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0147**		**0.00205**
70	63	Zinc (6010)	**0.008**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**250**		**196**		**232**		**290**		**273**		**252**		**273**		**289**
81	74	Chloride (mg/L) (EPA 325.2)	**2.8**		**1.71**		**3.19**		**27**		**2.39**		**2.2**		**7.28**		**8.29**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S
4			FZ04H		0402080-05		0406050-04		0408006-04		0411052-03		0502056-04		P5F0343-01		P5H0701-03
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.35		6.46		6.36		6.09		6.71		6.78		6.36		6.65
89	82	Temperature (° C) (avg)	14.6		12.8		13.4		14.4		14.4		13.1		12.8		13.8
90	83	Conductivity (um/hos)	409		265		316		637		380		248		467		397
91	84	Dissolved oxygen (mg/L) (avg)	1.65		1.65		1.45		NM		1.32		0.1		5.60		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121		**ETHANOL (mg/L)**					NA		NA		NA		NA		NA		NA
122																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S		LW32S
4			FZ04H		0402080-05		0406050-04		0408006-04		0411052-03		0502056-04		P5F0343-01		P5H0701-03
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
122																	
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	**0.498**	J	**0.63**		**1.78**		**0.9**		**1.09**		2.00	U	4.00 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	**0.0976**	J	**0.08**		**0.4**		**0.108**		**0.189**		2.00	U	1.00 U
128		Acenaphthene	0.52		**0.38**	J	**0.3**		0.05	U	**0.47**		**0.726**		2.00	U	1.00 U
129		Fluorene	0.67		**0.488**	J	**0.36**		**0.1**		**0.705**		**0.905**		2.00	U	**1.03**
130		Anthracene	0.1	U	0.0488	UJ	**0.05**		**0.1**		0.0489	U	0.0497	U	0.100	U	0.200 U
131		Dibenzofuran	0.38		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3			LW33S		LW33S		LW33S		LW33S		LW33S		LW33S
4			0402080-04		0406050-03		0408006-03		0502099-06		P5F0343-03		P5H0701-02
5			2/17/04		6/8/04		8/02/04		2/22/05		6/8/05		08/16/05
6													
7	1	**CHLORINATED PHENOLS (µg/L)**											
8	2	**EPA Method SW8040**											
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
16	10												
17	11	**SEMIVOLATILES (µg/L)**											
18	12	**EPA Method SW8270**											
19	13	Phenol	1.94	U	1.94	U	1.93	U	1.94	U	5.00	U	5.00 U
20	14	4-Methylphenol	9.68	U	9.71	U	9.64	U	9.68	U	5.00	U	5.00 U
21	15	Isophorone	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	2.9	U	2.91	U	2.89	U	2.9	U	10.00	U	10.0 U
23	17	Benzoic Acid	19.4	U	19.4	U	19.3	U	19.4	U	50.0	U	50.0 U
24	18	Naphthalene	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	4.84	U	4.85	U	4.82	U	4.84	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	4.84	U	4.85	U	4.82	U	4.84	U	5.00	U	5.00 U
28	22	Acenaphthene	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
29	23	Dibenzofuran	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
30	24	Fluorene	0.968	U	0.971	U	0.964	U	0.968	U	5.00	U	5.00 U
31	25	Pentachlorophenol	4.84	U	4.85	U	4.82	U	4.84	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	0.968	U	0.971	U	**1.99**		0.968	U	10.00	U	10.0 U
33	27												
34	28	**VOLATILES (µg/L)**											
35	29	**EPA Method SW8260**											
36	30	Acetone	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	0.4	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**											
58	51	**Method OR-DEQ**											
59	52	**TPH-Diesel**	0.247	U	0.244	U	0.241	U	0.243	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.494	U	0.487	U	0.482	U	0.669	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.1	U	0.1	U	0.1	U	0.1	U	0.08	U	0.08 U
62	55												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3			LW33S		LW33S		LW33S		LW33S		LW33S		LW33S
4			0402080-04		0406050-03		0408006-03		0502099-06		P5F0343-03		P5H0701-02
5			2/17/04		6/8/04		8/02/04		2/22/05		6/8/05		08/16/05
63	56	**PRIORITY POLLUTANT**											
64	57	**METALS (mg/L)**											
65	58	Arsenic (7060)	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001 U
66	59	Chromium (6010)	**0.0113**		0.005	U	0.005	U	**0.0079**		0.001	U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.0001	U	0.0001	U	0.0001	U	**0.000251**		0.001	U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	0.005	U	0.005	U	**0.0027**		**0.00278**
70	63	Zinc (6010)	**0.0111**		0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71	64												
72	65	**MAJOR IONS AND CONVENTIONALS**											
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**105**		**150**		**100**		**135**		**130**		**130**
81	74	Chloride (mg/L) (EPA 325.2)	**1.39**		**1.93**		**2.19**		**1.42**		**1.74**		**1.74**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA
86	79												

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3			LW33S		LW33S		LW33S		LW33S		LW33S		LW33S
4			0402080-04		0406050-03		0408006-03		0502099-06		P5F0343-03		P5H0701-02
5			2/17/04		6/8/04		8/02/04		2/22/05		6/8/05		08/16/05
87	80	**FIELD PARAMETERS**											
88	81	pH (avg)	6.18		6.08		5.23		6.85		6.53		5.97
89	82	Temperature (° C) (avg)	11.7		14.2		16.8		13.1		15.0		15.9
90	83	Conductivity (um/hos)	113		140		235		77		123		145
91	84	Dissolved oxygen (mg/L) (avg)	4.61		1.85		NM		1.94		4.44		NM
92	85												
93	86	**DIOXINS AND FURANS (ng/L)**											
94	87	**Method 8290**											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA
120													
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA
122													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3			LW33S		LW33S		LW33S		LW33S		LW33S		LW33S
4			0402080-04		0406050-03		0408006-03		0502099-06		P5F0343-03		P5H0701-02
5			2/17/04		6/8/04		8/02/04		2/22/05		6/8/05		08/16/05
123		**PAHs (µg/L)**											
124		**EPA Method SW8270 SIM**											
125		Naphthalene	0.0483	UJ	0.05	U	0.05	U	0.0486	U	0.111	U	0.100 U
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.0483	UJ	0.05	U	0.05	U	0.0486	U	0.111	U	0.100 U
128		Acenaphthene	0.0483	UJ	0.05	U	0.05	U	0.0486	U	0.111	U	0.100 U
129		Fluorene	0.0483	UJ	0.05	U	0.05	U	0.0486	U	0.111	U	0.100 U
130		Anthracene	0.0483	UJ	0.05	U	**0.05**		0.0486	U	0.111	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S
4			FZ04J		0402080-01		0406050-01		0408006-01		0411047-01		0502099-07		P5F0441-06		P5H0701-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/22/05		6/9/05		08/16/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2	U	1.93	U	1.97	U	1.97	U	2	U	1.92	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	9.65	U	9.85	U	9.83	U	10	U	9.62	U	5.00	U	5.00 U
21	15	Isophorone	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.1	U	2.9	U	2.96	U	2.95	U	3	U	2.88	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	19.3	U	19.7	U	19.7	U	20	U	19.2	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.1	U	4.83	U	4.93	U	4.92	U	5	U	4.81	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.1	U	4.83	U	4.93	U	4.92	U	5	U	4.81	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
30	24	Fluorene	1	U	0.965	U	0.985	U	0.983	U	1	U	0.962	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.1	U	4.83	U	4.93	U	4.92	U	5	U	4.81	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**4.9**		0.965	U	0.985	U	0.983	U	1	U	0.962	U	10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	**1.18**
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	0.25	U	0.242	U	0.242	U	0.242	U	0.251	U	0.248	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.484	U	0.484	U	0.483	U	0.501	U	0.495	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.08	U	0.08 U
62	55																

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S
4			FZ04J		0402080-01		0406050-01		0408006-01		0411047-01		0502099-07		P5F0441-06		P5H0701-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/22/05		6/9/05		08/16/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001 U
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	**0.0116**		0.005	U	**0.008**		0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	0.001	U	0.0001	U	**0.0002**		0.0001	U	0.00015	U	0.0001	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00377**		**0.00337**
70	63	Zinc (6010)	**0.009**		0.01	U	0.01	U	**0.0133**		0.01	U	0.01	U	0.005	U	0.01 U
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**180**		**121**		**201**		**149**		**201**		**195**		**175**		**158**
81	74	Chloride (mg/L) (EPA 325.2)	**2.9**		**1.29**		**2.85**		**2.98**		**2.62**		**2.72**		**1.83**		**1.49**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S
4			FZ04J		0402080-01		0406050-01		0408006-01		0411047-01		0502099-07		P5F0441-06		P5H0701-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/22/05		6/9/05		08/16/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.01		6.42		6.03		6.41		5.8		6.58		6.22		6.20
89	82	Temperature (° C) (avg)	15.4		12.2		13.8		15		15.1		13.5		15.3		15.5
90	83	Conductivity (um/hos)	234		142		218		303		207		167		167		169
91	84	Dissolved oxygen (mg/L) (avg)	2.62		5.01		1.43		NM		1.38		1.12		4.66		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA
122																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S		LW34S
4			FZ04J		0402080-01		0406050-01		0408006-01		0411047-01		0502099-07		P5F0441-06		P5H0701-01
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/22/05		6/9/05		08/16/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	0.049	UJ	0.05	U	0.05	U	0.0498	U	0.0489	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	0.049	UJ	0.05	U	0.05	U	0.0498	U	0.0489	U	0.100	U	0.100 U
128		Acenaphthene	0.1	U	0.049	UJ	0.05	U	0.05	U	0.0498	U	0.0489	U	0.100	U	0.100 U
129		Fluorene	0.1	U	0.049	UJ	0.05	U	0.05	U	0.0498	U	0.0489	U	0.100	U	0.100 U
130		Anthracene	0.1	U	0.049	UJ	0.05	U	0.05	U	0.0498	U	0.0489	U	0.100	U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW40S	
4			0411047-06		P5F0554-04	
5			11/8/04		6/13/05	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	5.13		NA	
10	4	2,4,6-Trichlorophenol	NA		NA	
11	5	2,3,6-Trichlorophenol	NA		NA	
12	6	2,4,5-Trichlorophenol	NA		NA	
13	7	2,3,4-Trichlorophenol	NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		NA	
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	2.05		5.00	U
20	14	4-Methylphenol	10.3		5.00	U
21	15	Isophorone	1.03		5.00	U
22	16	2,4-Dimethylphenol	3.08		10.00	U
23	17	Benzoic Acid	20.5		50.0	U
24	18	Naphthalene	1.03		5.00	U
25	19	2-Methylnaphthalene	1.03		5.00	U
26	20	2,4,6-Trichlorophenol	5.13		5.00	U
27	21	2,4,5-Trichlorophenol	5.13		5.00	U
28	22	Acenaphthene	**1.59**		5.00	U
29	23	Dibenzofuran	1.03		5.00	U
30	24	Fluorene	**3.36**		5.00	U
31	25	Pentachlorophenol	NA		10	U
32	26	bis(2-Ethylhexyl)phthalate	1.03		10.00	U
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	50		25.0	U
37	31	Carbon Disulfide	2		10.00	U
38	32	2-Butanone	10		10.00	U
39	33	Benzene	**1.22**		1.00	U
40	34	Bromoform	1		1.00	U
41	35	Toluene	1		1.00	U
42	36	Ethylbenzene	1		1.00	U
43	37	Styrene	1		1.00	U
44	38	m,p-Xylene	2		2.00	U
45	39	o-Xylene	1		1.00	U
46	40	1,3,5-Trimethylbenzene	1		1.00	U
47	41	1,2,4-Trimethylbenzene	1		1.00	U
48	42	Isopropylbenzene	**8.96**		2.00	U
49	43	n-Propylbenzene	**41.1**		1.00	U
50	44	tert-Butylbenzene	1		1.00	U
51	45	sec-Butylbenzene	**3.67**		1.00	U
52	46	4-Isopropyltoluene	1		2.00	U
53	47	n-Butylbenzene	**9.75**		5.00	U
54	48	Naphthalene	1		2.00	U
55	48.5	Methyl tert-butyl ether	1		1.00	U
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	**2.23**		0.25	UJ
60	53	**TPH-D Motor Oil**	0.505		0.5	UJ
61	54	**TPH-Gasoline**	**1.72**		0.08	U
62	55					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW40S	
4			0411047-06		P5F0554-04	
5			11/8/04		6/13/05	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	**0.0152**		0.001	U
66	59	Chromium (6010)	**0.0215**		0.001	U
67	60	Copper (6010)	0.01		0.002	U
68	61	Lead (7421)	**0.00336**		0.001	U
69	62	Nickel (6010)	0.005		**0.00557**	
70	63	Zinc (6010)	0.01		0.005	U
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**235**		**184**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.05**		**1.39**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW40S	
4			0411047-06		P5F0554-04	
5			11/8/04		6/13/05	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.56		5.49	
89	82	Temperature (° C) (avg)	14.9		14.1	
90	83	Conductivity (um/hos)	283		126	
91	84	Dissolved oxygen (mg/L) (avg)	0.74		10.88	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121		**ETHANOL (mg/L)**	NA		NA	
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW40S	
4			0411047-06		P5F0554-04	
5			11/8/04		6/13/05	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	**0.401**		0.100	U
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	**0.245**		0.100	U
128		Acenaphthene	**1.09**		0.100	U
129		Fluorene	**2.75**		0.100	U
130		Anthracene	**0.137**		0.100	U
131		Dibenzofuran	NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW41S	
4			0411047-06		P5F0441-01	
5			11/8/04		6/8/05	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	5.13		NA	
10	4	2,4,6-Trichlorophenol	NA		NA	
11	5	2,3,6-Trichlorophenol	NA		NA	
12	6	2,4,5-Trichlorophenol	NA		NA	
13	7	2,3,4-Trichlorophenol	NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		NA	
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	2.05		5.00	U
20	14	4-Methylphenol	10.3		5.00	U
21	15	Isophorone	1.03		5.00	U
22	16	2,4-Dimethylphenol	3.08		10.00	U
23	17	Benzoic Acid	20.5		50.0	U
24	18	Naphthalene	1.03		5.00	U
25	19	2-Methylnaphthalene	1.03		5.00	U
26	20	2,4,6-Trichlorophenol	5.13		5.00	U
27	21	2,4,5-Trichlorophenol	5.13		5.00	U
28	22	Acenaphthene	**1.59**		5.00	U
29	23	Dibenzofuran	1.03		5.00	U
30	24	Fluorene	**3.36**		5.00	U
31	25	Pentachlorophenol	NA		10	U
32	26	bis(2-Ethylhexyl)phthalate	1.03		10.00	U
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	50		25.0	U
37	31	Carbon Disulfide	2		10.00	U
38	32	2-Butanone	10		10.00	U
39	33	Benzene	**1.22**		1.00	U
40	34	Bromoform	1		1.00	U
41	35	Toluene	1		1.00	U
42	36	Ethylbenzene	1		1.00	U
43	37	Styrene	1		1.00	U
44	38	m,p-Xylene	2		2.00	U
45	39	o-Xylene	1		1.00	U
46	40	1,3,5-Trimethylbenzene	1		1.00	U
47	41	1,2,4-Trimethylbenzene	1		1.00	U
48	42	Isopropylbenzene	**8.96**		2.00	U
49	43	n-Propylbenzene	**41.1**		1.00	U
50	44	tert-Butylbenzene	1		1.00	U
51	45	sec-Butylbenzene	**3.67**		1.00	U
52	46	4-Isopropyltoluene	1		2.00	U
53	47	n-Butylbenzene	**9.75**		5.00	U
54	48	Naphthalene	1		2.00	U
55	48.5	Methyl tert-butyl ether	1		1.00	U
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	**2.23**		0.25	U
60	53	**TPH-D Motor Oil**	0.505		0.5	U
61	54	**TPH-Gasoline**	**1.72**		0.08	U
62	55					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW41S	
4			0411047-06		P5F0441-01	
5			11/8/04		6/8/05	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	**0.0152**		0.001	U
66	59	Chromium (6010)	**0.0215**		0.001	U
67	60	Copper (6010)	0.01		0.002	U
68	61	Lead (7421)	**0.00336**		0.001	U
69	62	Nickel (6010)	0.005		0.002	U
70	63	Zinc (6010)	0.01		0.005	U
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**235**		**140**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.05**		**1.62**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW41S	
4			0411047-06		P5F0441-01	
5			11/8/04		6/8/05	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.56		6.64	
89	82	Temperature (° C) (avg)	14.9		16.1	
90	83	Conductivity (um/hos)	283		162	
91	84	Dissolved oxygen (mg/L) (avg)	0.74		2.93	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121		**ETHANOL (mg/L)**	NA		NA	
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW42S		LW41S	
4			0411047-06		P5F0441-01	
5			11/8/04		6/8/05	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	**0.401**		0.300	U
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	**0.245**		0.100	U
128		Acenaphthene	**1.09**		0.100	U
129		Fluorene	**2.75**		0.100	U
130		Anthracene	**0.137**		0.100	U
131		Dibenzofuran	NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2							Dup of LW42S				Dup of LW42S			Dup of LW42S
3			LW42S		LW42S		Z		LW42S		Z		LW42S	Z
4			0411047-06		0502099-10		0502099-13		P5F0441-14		P5F0443-01		P5H0625-02	P5H0625-01
5			11/8/04		2/22/05		2/22/05		6/10/05		6/10/05		08/15/05	08/15/05
6														
7	1	**CHLORINATED PHENOLS (µg/L)**												
8	2	**EPA Method SW8040**												
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA	NA
16	10													
17	11	**SEMIVOLATILES (µg/L)**												
18	12	**EPA Method SW8270**												
19	13	Phenol	2.05		1.97	U	1.95	U	5.00	U	5.00	U	5.00 U	5.00 U
20	14	4-Methylphenol	10.3		9.85	U	9.74	U	5.00	U	5.00	U	5.00 U	5.00 U
21	15	Isophorone	1.03		0.985	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U
22	16	2,4-Dimethylphenol	3.08		2.96	U	2.92	U	10.00	U	10.00	U	10.0 U	10.0 U
23	17	Benzoic Acid	20.5		19.7	U	19.5	U	50.0	U	50.0	U	50.0 U	50.0 U
24	18	Naphthalene	1.03		0.985	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U
25	19	2-Methylnaphthalene	1.03		0.985	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U
26	20	2,4,6-Trichlorophenol	5.13		4.93	U	4.87	U	5.00	U	5.00	U	5.00 U	5.00 U
27	21	2,4,5-Trichlorophenol	5.13		4.93	U	4.87	U	5.00	U	5.00	U	5.00 U	5.00 U
28	22	Acenaphthene	**1.59**		**1.7**		**1.4**		5.00	U	5.00	U	5.00 U	5.00 U
29	23	Dibenzofuran	1.03		**1.86**		**1.80**		5.00	U	5.00	U	5.00 U	5.00 U
30	24	Fluorene	**3.36**		**3.63**		**3.47**		**6.93**		**6.91**		5.00 U	5.00 U
31	25	Pentachlorophenol	5.13		4.93	U	4.87	U	10	U	10	U	5 UJ	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.03		0.985	U	0.974	U	10.00	U	10.00	U	10.0 U	10.0 U
33	27													
34	28	**VOLATILES (µg/L)**												
35	29	**EPA Method SW8260**												
36	30	Acetone	50		50	U	50	U	25.0	U	25.0	U	25.0 U	25.0 U
37	31	Carbon Disulfide	2		2	U	2	U	10.00	U	10.00	U	10.0 U	10.0 U
38	32	2-Butanone	10		10	U	10	U	10.00	U	10.00	U	10.0 U	10.0 U
39	33	Benzene	**1.22**		0.3	U	0.3	U	1.00	U	1.00	U	1.00 U	1.00 U
40	34	Bromoform	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
41	35	Toluene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
42	36	Ethylbenzene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
43	37	Styrene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
44	38	m,p-Xylene	2		2	U	2	U	2.00	U	2.00	U	2.00 U	2.00 U
45	39	o-Xylene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
48	42	Isopropylbenzene	**8.96**		**14.3**		**13.2**		**19.2**		**20.9**		**18.4**	**17.8**
49	43	n-Propylbenzene	**41.1**		**39.2**		**41.6**		**43.5**		**50.3**		**38.8**	**38.1**
50	44	tert-Butylbenzene	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
51	45	sec-Butylbenzene	**3.67**		**4.77**		**4.32**		**5.01**	J	**6.26**	J	**4.59**	**4.49**
52	46	4-Isopropyltoluene	1		1	U	1	U	2.00	U	2.00	U	2.00 U	2.00 U
53	47	n-Butylbenzene	**9.75**		**11.6**		**2.16**		**7.44**		**10.4**		**6.17**	**6.14**
54	48	Naphthalene	1		**1.81**		**2.16**		2.00	U	2.00	U	2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	1		1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U
56	49													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**												
58	51	**Method OR-DEQ**												
59	52	**TPH-Diesel**	**2.23**		**3.74**	J	**2.98**	J	**1.27**		**1.15**		**0.810**	**0.880**
60	53	**TPH-D Motor Oil**	0.505		1.13	U	0.484	U	0.5	U	0.5	U	0.500 U	0.500 U
61	54	**TPH-Gasoline**	**1.72**		**1.35**		**1.61**		**0.6**	J	**0.882**	J	**0.628**	**0.622**
62	55													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2							Dup of LW42S				Dup of LW42S			Dup of LW42S
3			LW42S		LW42S		Z		LW42S		Z		LW42S	Z
4			0411047-06		0502099-10		0502099-13		P5F0441-14		P5F0443-01		P5H0625-02	P5H0625-01
5			11/8/04		2/22/05		2/22/05		6/10/05		6/10/05		08/15/05	08/15/05
63	56	**PRIORITY POLLUTANT**												
64	57	**METALS (mg/L)**												
65	58	Arsenic (7060)	**0.0152**		**0.0192**		**0.0191**		**0.0233**		**0.0226**		**0.0171**	**0.0168**
66	59	Chromium (6010)	**0.0215**		**0.0077**		0.005	U	0.001	U	0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01		0.01	U	0.01	U	0.002	U	0.002	U	0.001 U	0.001 U
68	61	Lead (7421)	**0.00336**		**0.00519**		**0.00514**		**0.00494**		**0.00505**		**0.00442**	**0.00434**
69	62	Nickel (6010)	0.005		0.005	U	0.005	U	0.002	U	0.002	U	0.001 U	0.001 U
70	63	Zinc (6010)	0.01		0.01	U	0.01	U	0.005	U	0.005	U	0.01 U	0.01 U
71	64													
72	65	**MAJOR IONS AND CONVENTIONALS**												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**235**		**230**		**223**		**226**		**220**		**201**	**205**
81	74	Chloride (mg/L) (EPA 325.2)	**2.05**		**1.48**		**1.50**		**1.38**		**1.59**		**1.54**	**1.56**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA	NA
86	79													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2							Dup of LW42S				Dup of LW42S			Dup of LW42S
3			LW42S		LW42S		Z		LW42S		Z		LW42S	Z
4			0411047-06		0502099-10		0502099-13		P5F0441-14		P5F0443-01		P5H0625-02	P5H0625-01
5			11/8/04		2/22/05		2/22/05		6/10/05		6/10/05		08/15/05	08/15/05
87	80	**FIELD PARAMETERS**												
88	81	pH (avg)	6.56		6.66		6.66		6.72		6.72		5.37	5.37
89	82	Temperature (° C) (avg)	14.9		13.4		13.4		13.9		13.9		17.7	17.7
90	83	Conductivity (um/hos)	283		172		172		293		293		193	192
91	84	Dissolved oxygen (mg/L) (avg)	0.74		0.69		0.69		2.41		2.47		NM	NM
92	85													
93	86	**DIOXINS AND FURANS (ng/L)**												
94	87	**Method 8290**												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA		NA		NA	NA
120														
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA	NA
122														

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2							Dup of LW42S				Dup of LW42S			Dup of LW42S
3			LW42S		LW42S		Z		LW42S		Z		LW42S	Z
4			0411047-06		0502099-10		0502099-13		P5F0441-14		P5F0443-01		P5H0625-02	P5H0625-01
5			11/8/04		2/22/05		2/22/05		6/10/05		6/10/05		08/15/05	08/15/05
123		**PAHs (µg/L)**												
124		**EPA Method SW8270 SIM**												
125		Naphthalene	**0.401**		0.68	U	0.771	U	1.20	U	2.00	U	0.750 U	1.00 U
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	**0.245**		**0.554**		**0.605**		0.600	U	1.00	U	0.500 U	0.500 U
128		Acenaphthene	**1.09**		**2.04**		**2.11**		**2.45**		**2.38**		**1.83**	**1.85**
129		Fluorene	**2.75**		**4.72**		**4.83**		**4.73**		**5.05**		**3.16**	**3.31**
130		Anthracene	**0.137**		**0.243**		**0.224**		**0.183**		0.250	U	0.500 U	0.500 U
131		Dibenzofuran	NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW43S		LW43S		LW43S		LW43S
4			0411052-01		0502056-02		P5F0441-15		P5H0734-02
5			11/9/04		2/14/05		6/10/05		08/17/05
6									
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	2.01	U	2.02	U	5.00	U	5.00 U
20	14	4-Methylphenol	10	U	10.1	U	5.00	U	5.00 U
21	15	Isophorone	1	U	1.01	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.01	U	3.03	U	10.00	U	10.0 U
23	17	Benzoic Acid	20.1	U	20.2	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	1.01	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	1.01	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.02	U	5.05	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.02	U	5.05	U	5.00	U	5.00 U
28	22	Acenaphthene	**1.52**		1.01	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	1.01	U	5.00	U	5.00 U
30	24	Fluorene	**3.24**		1.22	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.02	U	5.05	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1	U	1.01	U	10.00	U	10.0 U
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	**0.68**		0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**6.94**		**5.59**		**11.1**		**4.87**
49	43	n-Propylbenzene	**27.7**		**22.1**		**26.5**		**12.6**
50	44	tert-Butylbenzene	1	U	**2.72**		1.00	U	1.00 U
51	45	sec-Butylbenzene	**2.42**		**3.84**		**2.81**		**1.72**
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**6.08**		**6.36**		5.00	U	5.00 U
54	48	Naphthalene	1	U	**4.04**		2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	**1.91**		**2.34**		**0.588**		**0.595**
60	53	**TPH-D Motor Oil**	**0.654**		0.5	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.988**		**1.33**		**0.476**		**0.248**
62	55								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW43S		LW43S		LW43S		LW43S
4			0411052-01		0502056-02		P5F0441-15		P5H0734-02
5			11/9/04		2/14/05		6/10/05		08/17/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	**0.0109**		**0.0148**		**0.0166**		**0.0132**
66	59	Chromium (6010)	**0.0176**		0.005	U	0.001	U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	0.001 U
68	61	Lead (7421)	**0.00068**		**0.000281**		0.001	U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	0.002	U	0.001 U
70	63	Zinc (6010)	0.01	U	**0.0262**		0.005	U	0.01 U
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**199**		**276**		**243**		**234**
81	74	Chloride (mg/L) (EPA 325.2)	**1.79**		**2.09**		**1.55**		**1.65**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA
86	79								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW43S		LW43S		LW43S		LW43S
4			0411052-01		0502056-02		P5F0441-15		P5H0734-02
5			11/9/04		2/14/05		6/10/05		08/17/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	6.47		6.8		6.97		6.49
89	82	Temperature (° C) (avg)	15.1		12.9		14.1		14.7
90	83	Conductivity (um/hos)	255		283		294		307
91	84	Dissolved oxygen (mg/L) (avg)	1.32		0.45		1.80		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121		**ETHANOL (mg/L)**	NA		NA		NA		NA
122									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW43S		LW43S		LW43S		LW43S
4			0411052-01		0502056-02		P5F0441-15		P5H0734-02
5			11/9/04		2/14/05		6/10/05		08/17/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	**0.453**		**0.387**		0.650	U	1.10 U
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	**0.306**		**0.163**		0.200	U	0.250 U
128		Acenaphthene	**1.32**		**0.703**		**1.01**		**0.748**
129		Fluorene	**3.16**		**1.35**		**1.49**		**1.43**
130		Anthracene	**0.126**		**0.0917**		0.100	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW44S		LW44S		LW44S		LW44S
4			0411047-07		0502099-11		P5F0441-10		P5H0734-03
5			11/8/04		2/23/05		6/9/05		08/17/05
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	1.97	U	1.96	U	5.00	U	5.00 U
20	14	4-Methylphenol	9.86	U	9.78	U	**8.93**		5.00 U
21	15	Isophorone	0.986	U	0.978	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	2.96	U	2.93	U	10.00	U	10.0 U
23	17	Benzoic Acid	19.7	U	19.6	U	50.0	U	50.0 U
24	18	Naphthalene	0.986	U	0.978	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	0.986	U	0.978	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	4.93	U	4.89	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	4.93	U	4.89	U	5.00	U	5.00 U
28	22	Acenaphthene	0.986	U	0.978	U	5.00	U	5.00 U
29	23	Dibenzofuran	0.986	U	0.978	U	5.00	U	5.00 U
30	24	Fluorene	0.986	U	0.978	U	5.00	U	5.00 U
31	25	Pentachlorophenol	4.93	U	4.89	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	0.986	U	0.978	U	10.00	U	10.0 U
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**78.9**		**65.9**		**23.6**		**106**
49	43	n-Propylbenzene	**61.4**		**51**		**13.0**		**78.7**
50	44	tert-Butylbenzene	**1.72**		1	U	1.00	U	**2.12**
51	45	sec-Butylbenzene	**11.9**		**8.93**		**1.17**		**17.7**
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**2.33**		**5.35**		5.00	U	5.00 U
54	48	Naphthalene	1	U	**6.14**		2.00	U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	**3.77**		**9.38**		**0.779**		**1.4**
60	53	**TPH-D Motor Oil**	0.502	U	0.488	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**2.94**		**2.97**		**0.545**		**0.933 J**
62	55								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW44S		LW44S		LW44S		LW44S
4			0411047-07		0502099-11		P5F0441-10		P5H0734-03
5			11/8/04		2/23/05		6/9/05		08/17/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	**0.0123**		**0.0256**		**0.0175**		**0.0289**
66	59	Chromium (6010)	**0.0176**		**0.0093**		0.001	U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	**0.00857**		**0.00187**
68	61	Lead (7421)	**0.00717**		**0.000158**		0.001	U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	**0.00733**		**0.00169**
70	63	Zinc (6010)	**0.0294**		0.01	U	0.005	U	0.01 U
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**387**		**314**		**229**		**285**
81	74	Chloride (mg/L) (EPA 325.2)	**3.89**		**2.54**		**1.80**		**2.94**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA
86	79								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW44S		LW44S		LW44S		LW44S
4			0411047-07		0502099-11		P5F0441-10		P5H0734-03
5			11/8/04		2/23/05		6/9/05		08/17/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	6.46		6.64		6.40		6.50
89	82	Temperature (° C) (avg)	14.9		13.6		15.7		16.0
90	83	Conductivity (um/hos)	332		208		242		352
91	84	Dissolved oxygen (mg/L) (avg)	0.56		0.73		4.17		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121		**ETHANOL (mg/L)**	NA		NA		NA		NA
122									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW44S		LW44S		LW44S		LW44S
4			0411047-07		0502099-11		P5F0441-10		P5H0734-03
5			11/8/04		2/23/05		6/9/05		08/17/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	**0.706**		**1.31**		1.50	U	4.00 U
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	0.0498	U	0.0488	U	1.00	U	0.400 U
128		Acenaphthene	**0.129**		**0.283**		1.00	U	0.400 U
129		Fluorene	**0.179**		**0.361**		1.00	U	**0.665**
130		Anthracene	0.0498	U	0.0488	U	0.100	U	0.400 U
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			N		N		N		N	N
4			0408066-02		0502110-01		P5F0666-05		P5H0852-01	P5K0819-03
5			8/10/04		2/24/05		6/15/05		08/19/05	11/17/05
6										
7	1	**CHLORINATED PHENOLS (µg/L)**								
8	2	**EPA Method SW8040**								
9	3	Pentachlorophenol	NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA	NA
16	10									
17	11	**SEMIVOLATILES (µg/L)**								
18	12	**EPA Method SW8270**								
19	13	Phenol	2	U	1.9	U	**14.7**	J	5.00 U	**17.3 J**
20	14	4-Methylphenol	9.99	U	9.48	U	**5.36**		5.00 U	5.00 U
21	15	Isophorone	0.999	U	0.948	U	5.00	U	5.00 U	5.00 U
22	16	2,4-Dimethylphenol	**4.48**		2.84	U	**14.4**		**11.5**	15.0 U
23	17	Benzoic Acid	20	U	19	U	50.0	U	50.0 U	250 U
24	18	Naphthalene	**53.7**		**5.5**		**66.8**		**77.3**	**17.6**
25	19	2-Methylnaphthalene	**37.7**		**16.4**		**25.2**		**39.4**	**37.2**
26	20	2,4,6-Trichlorophenol	5	U	4.74	U	5.00	U	5.00 U	25.0 U
27	21	2,4,5-Trichlorophenol	5	U	4.74	U	5.00	U	5.00 U	25.0 U
28	22	Acenaphthene	**1.19**		**0.967**		5.00	U	5.00 U	5.00 U
29	23	Dibenzofuran	0.999	U	0.948	U	5.00	U	5.00 U	5.00 U
30	24	Fluorene	**2.55**		1.75	U	5.00	U	5.00 U	5.00 U
31	25	Pentachlorophenol	5	U	4.74	U	10	U	5 UJ	25.0 U
32	26	bis(2-Ethylhexyl)phthalate	**1.23**		0.948	U	10.00	U	10.0 U	50.0 U
33	27									
34	28	**VOLATILES (µg/L)**								
35	29	**EPA Method SW8260**								
36	30	Acetone	50	U	50	U	125	U	500 U	250 U
37	31	Carbon Disulfide	2	U	2	U	50.0	U	200 U	100 U
38	32	2-Butanone	10	U	10	U	50.0	U	200 U	100 U
39	33	Benzene	**424**		**214**		**396**		**419**	**716**
40	34	Bromoform	1	U	1	U	5.00	U	20.0 U	10.0 U
41	35	Toluene	**92.3**		**14.3**		**66.2**		**107**	**19**
42	36	Ethylbenzene	**744**		**24.6**		**785**		**898**	**131**
43	37	Styrene	1	U	1	U	5.00	U	20.0 U	10.0 U
44	38	m,p-Xylene	**904**		**48.5**		**1480**		**1960**	**314**
45	39	o-Xylene	**446**		**13.9**		**390**		**518**	**62.2**
46	40	1,3,5-Trimethylbenzene	**124**		**12.6**		**65.5**		**120**	**70.4**
47	41	1,2,4-Trimethylbenzene	**518**		**35.6**		**322**		**514**	**244**
48	42	Isopropylbenzene	**61.6**		**43.1**		**59.2**		**57.4**	**51.6**
49	43	n-Propylbenzene	**102**		**54.8**		**89.3**		**85.6**	**77.5**
50	44	tert-Butylbenzene	1	U	1	U	5.00	U	20.0 U	10.0 U
51	45	sec-Butylbenzene	**4.72**		**3.97**		5.00	U	20.0 U	**201**
52	46	4-Isopropyltoluene	**5.33**		**1.43**		10.00	U	40.0 U	20.0 U
53	47	n-Butylbenzene	**5.14**		**7.83**		25.0	U	100 U	50.0 U
54	48	Naphthalene	**112**		**12.1**		**79.4**		**91.2**	**38.9**
55	48.5	Methyl tert-butyl ether	1	U	1	U	5.00	U	20.0 U	10.0 U
56	49									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	51	**Method OR-DEQ**								
59	52	**TPH-Diesel**	**7.65**		**1.76**		1.27	U	**1.32**	**3.41**
60	53	**TPH-D Motor Oil**	0.501	U	0.5	U	0.5	U	0.500 U	0.500 U
61	54	**TPH-Gasoline**	**0.012**		**2.44**		**7.99**		**0.996**	**5100 J**
62	55									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			N		N		N		N	N
4			0408066-02		0502110-01		P5F0666-05		P5H0852-01	P5K0819-03
5			8/10/04		2/24/05		6/15/05		08/19/05	11/17/05
63	56	**PRIORITY POLLUTANT**								
64	57	**METALS (mg/L)**								
65	58	Arsenic (7060)	**0.0373**		**0.0353**		**0.0424**		**0.0402**	**0.0383**
66	59	Chromium (6010)	**0.0165**		0.005	U	0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	0.001 U	0.002 U
68	61	Lead (7421)	**0.00733**		**0.00454**		**0.00515**		**0.00656**	**0.00683**
69	62	Nickel (6010)	0.005	U	0.005	U	**0.00275**		**0.00245**	**0.00226**
70	63	Zinc (6010)	**0.0193**		0.01	U	0.005	U	0.01 U	0.005 U
71	64									
72	65	**MAJOR IONS AND CONVENTIONALS**								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**278**		**362**		**337**		**342**	NA
81	74	Chloride (mg/L) (EPA 325.2)	**1.68**		**2.12**		**2.07**		**2.34**	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.100 U	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		1.00 U	NA
86	79									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			N		N		N		N	N
4			0408066-02		0502110-01		P5F0666-05		P5H0852-01	P5K0819-03
5			8/10/04		2/24/05		6/15/05		08/19/05	11/17/05
87	80	**FIELD PARAMETERS**								
88	81	pH (avg)	5.61		6.72		6.11		6.18	6.57
89	82	Temperature (° C) (avg)	16.7		12		14.1		15.7	14.0
90	83	Conductivity (um/hos)	664		200		487		519	198
91	84	Dissolved oxygen (mg/L) (avg)	1.65		0		3.22		NM	NM
92	85									
93	86	**DIOXINS AND FURANS (ng/L)**								
94	87	**Method 8290**								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA	NA
120										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA	NA
122										

BZTO104(e)026968

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			N		N		N		N	N
4			0408066-02		0502110-01		P5F0666-05		P5H0852-01	P5K0819-03
5			8/10/04		2/24/05		6/15/05		08/19/05	11/17/05
123		**PAHs (µg/L)**								
124		**EPA Method SW8270 SIM**								
125		Naphthalene	**54.5**		**3.78**		**52.3**		**64.4**	**15.7**
126		2-Methylnaphthalene	NA		NA		NA		NA	NA
127		Acenaphthylene	**0.253**		**0.133**		2.00	U	0.250 U	0.408 U
128		Acenaphthene	**1.16**		**0.702**		2.00	U	**1.07**	**0.902**
129		Fluorene	**2.49**		**1.65**		**2.50**		**2.03**	**2.13**
130		Anthracene	**0.121**		0.0474	U	0.100	U	**0.118**	0.408 U
131		Dibenzofuran	NA		NA		NA		NA	NA

BZTO104(e)026969

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S
4			EM65A		EX87D		FF48G		FL41I		FU45F		FY72G		0402086-07		0406074-01		0408026-02		0502070-01		P5F0668-02		P5H1000-03
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
6																									
7	1	**CHLORINATED PHENOLS (µg/L)**																							
8	2	**EPA Method SW8040**																							
9	3	Pentachlorophenol	NA		**200**		**620**		**67**		**19**	J	**0.69**		**62.1**		NA		NA		NA		**2.99**		0.481 U
10	4	2,4,6-Trichlorophenol	NA		**1.1**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		**0.56**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		**70**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		**6.9**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																								
17	11	**SEMIVOLATILES (µg/L)**																							
18	12	**EPA Method SW8270**																							
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		1.97	U	2	U	**2.09**		5.00	U	5.00 U
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		9.83	U	10	U	10.2	U	5.00	U	5.00 U
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		0.983	U	1	U	1.02	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		2.95	U	3	U	**5.7**		10.00	U	10.0 U
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		19.7	U	20	U	20.4	U	50.0	U	50.0 U
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		**10.4**		**11**		**6.89**		**14.2**		5.00 U
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		**5.53**		**6.81**		**2.88**		**8.74**		5.00 U
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		4.92	U	5	U	5.09	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		**9.9**		5	U	5.09	U	5.00	U	5.00 U
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		0.983	U	1	U	1.02	U	5.00	U	5.00 U
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		0.983	U	1	U	1.02	U	5.00	U	5.00 U
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		0.983	U	1	U	1.02	U	5.00	U	5.00 U
31	25	Pentachlorophenol	NA		NA		NA		NA		**19**	J	NA		NA		NA		5	U	5.09	U	10	U	10.0 U
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		0.983	U	1	U	1.02	U	10.00	U	10.0 U
33	27																								
34	28	**VOLATILES (µg/L)**																							
35	29	**EPA Method SW8260**																							
36	30	Acetone	**19**		**56**		NA		NA		NA		NA		NA		50	U	50	U	50	U	NA		25.0 U
37	31	Carbon Disulfide	1.0	U	1	U	NA		NA		NA		NA		NA		2	U	2	U	2	U	NA		10.0 U
38	32	2-Butanone	6.8	U	**5.4**		NA		NA		NA		NA		NA		10	U	10	U	10	U	NA		10.0 U
39	33	Benzene	**320**		**65**		NA		NA		NA		NA		NA		**112**		**118**	J	**102**		NA		**48.1**
40	34	Bromoform	1.0	U	1	U	NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		1.00 U
41	35	Toluene	**29**		**3.9**		NA		NA		NA		NA		NA		**4.66**		**8.87**	J	**2**		NA		1.00 U
42	36	Ethylbenzene	**180**		**43**		NA		NA		NA		NA		NA		**118**		**163**	J	**129**		NA		**70.2**
43	37	Styrene	1.0	U	1	U	NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		1.00 U
44	38	m,p-Xylene	**740**		**110**		NA		NA		NA		NA		NA		**273**		**466**	J	**260**		NA		**108**
45	39	o-Xylene	**280**		**42**		NA		NA		NA		NA		NA		**112**		**161**	J	**83.6**		NA		**14.3**
46	40	1,3,5-Trimethylbenzene	**160**		**54**		NA		NA		NA		NA		NA		**73.5**		**83**	J	**97.8**		NA		**27.0**
47	41	1,2,4-Trimethylbenzene	**460**		**160**		NA		NA		NA		NA		NA		**208**		**231**	J	**310**		NA		**117**
48	42	Isopropylbenzene	**140**		**27**		NA		NA		NA		NA		NA		**35.5**		**48.7**	J	**47.1**		NA		**26.7**
49	43	n-Propylbenzene	1.0	U	**38**		NA		NA		NA		NA		NA		**54.7**		**47.8**	J	**67.3**		NA		**34.7**
50	44	tert-Butylbenzene	**100**		1	U	NA		NA		NA		NA		NA		**1.95**		**1.63**	J	**4**		NA		**1.74**
51	45	sec-Butylbenzene	1.0	U	**6.8**		NA		NA		NA		NA		NA		**9.01**		**8.09**	J	**15.1**		NA		**6.12**
52	46	4-Isopropyltoluene	**29**		**6.9**		NA		NA		NA		NA		NA		**6.85**		**6.84**	J	**13**		NA		**3.71**
53	47	n-Butylbenzene	28	U	**6.1**	M	NA		NA		NA		NA		NA		**4.85**		**4.21**	J	**11.2**		NA		5.00 U
54	48	Naphthalene	**83**		**15**		NA		NA		NA		NA		NA		**18.2**		**17.7**	J	**21.3**		NA		**12.7**
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		1.00 U
56	49																								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	51	**Method OR-DEQ**																							
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX1S
4		P5K0699-10
5		11/16/05
6		
7	**CHLORINATED PHENOLS (µg/L)**	
8	**EPA Method SW8040**	
9	Pentachlorophenol	NA
10	2,4,6-Trichlorophenol	NA
11	2,3,6-Trichlorophenol	NA
12	2,4,5-Trichlorophenol	NA
13	2,3,4-Trichlorophenol	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA
15	2,3,4,5-Tetrachlorophenol	NA
16		
17	**SEMIVOLATILES (µg/L)**	
18	**EPA Method SW8270**	
19	Phenol	4.04 U
20	4-Methylphenol	2.02 U
21	Isophorone	2.02 U
22	2,4-Dimethylphenol	6.06 U
23	Benzoic Acid	101 U
24	Naphthalene	**8.32**
25	2-Methylnaphthalene	**4.14**
26	2,4,6-Trichlorophenol	10.1 U
27	2,4,5-Trichlorophenol	10.1 U
28	Acenaphthene	2.02 U
29	Dibenzofuran	2.02 U
30	Fluorene	2.02 U
31	Pentachlorophenol	10.1 U
32	bis(2-Ethylhexyl)phthalate	20.2 U
33		
34	**VOLATILES (µg/L)**	
35	**EPA Method SW8260**	
36	Acetone	25.0 U
37	Carbon Disulfide	10.0 U
38	2-Butanone	10.0 U
39	Benzene	**31**
40	Bromoform	1.00 U
41	Toluene	1.00 U
42	Ethylbenzene	**72.5**
43	Styrene	1.00 U
44	m,p-Xylene	**96.3**
45	o-Xylene	**9.61**
46	1,3,5-Trimethylbenzene	**33**
47	1,2,4-Trimethylbenzene	**136**
48	Isopropylbenzene	**27.6**
49	n-Propylbenzene	**33.8**
50	tert-Butylbenzene	**1.56**
51	sec-Butylbenzene	**6.31**
52	4-Isopropyltoluene	**4.19**
53	n-Butylbenzene	5.00 U
54	Naphthalene	**17.8**
55	Methyl tert-butyl ether	1.00 U
56		
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**	
58	**Method OR-DEQ**	
59	**TPH-Diesel**	NA
60	**TPH-D Motor Oil**	NA
61	**TPH-Gasoline**	NA
62		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S
4			EM65A		EX87D		FF48G		FL41I		FU45F		FY72G		0402086-07		0406074-01		0408026-02		0502070-01		P5F0668-02		P5H1000-03
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
63	56	**PRIORITY POLLUTANT**																							
64	57	**METALS (mg/L)**																							
65	58	Arsenic (7060)	**0.02**		NA		NA		NA		NA		NA		NA		**0.015**		**0.00838**		**0.0179**		**0.018**		**0.0176**
66	59	Chromium (6010)	0.005	U	NA		NA		NA		NA		NA		NA		**0.0173**		**0.0177**		**0.0077**		0.001	U	0.001 U
67	60	Copper (6010)	0.002	U	NA		NA		NA		NA		NA		NA		0.01	U	0.01	U	0.01	U	**0.00661**		**0.00255**
68	61	Lead (7421)	0.001	U	NA		NA		NA		NA		NA		NA		0.0001	U	**0.000113**		**0.00045**		0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	NA		NA		NA		NA		NA		NA		**0.0078**		**0.0061**		**0.0104**		**0.047**		**0.0519**
70	63	Zinc (6010)	**0.009**		NA		NA		NA		NA		NA		NA		0.01	U	0.01	U	0.01	U	**0.00504**		0.01 U
71	64																								
72	65	**MAJOR IONS AND CONVENTIONALS**																							
73	66	Calcium (mg/L) (6010)	**32.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**8.55**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**3.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**7.45**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**160**		**190**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**160**		**190**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**240**		NA		NA		NA		NA		NA		NA		**301**		**210**		**237**		NA		NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		**3.07**		**2.52**		**4.25**		NA		NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX1S
4		P5K0699-10
5		11/16/05
63	**PRIORITY POLLUTANT**	
64	**METALS (mg/L)**	
65	Arsenic (7060)	**0.0181**
66	Chromium (6010)	0.001 U
67	Copper (6010)	0.002 U
68	Lead (7421)	0.001 U
69	Nickel (6010)	**0.0278**
70	Zinc (6010)	0.005 U
71		
72	**MAJOR IONS AND CONVENTIONALS**	
73	Calcium (mg/L) (6010)	NA
74	Magnesium (mg/L) (6010)	NA
75	Potassium (mg/L) (6010)	NA
76	Sodium (mg/L) (6010)	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA
81	Chloride (mg/L) (EPA 325.2)	NA
82	N-Nitrate (mg-N/L) (Calculated)	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA
85	Sulfate (mg/L) (EPA 375.2)	NA
86		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S
4			EM65A		EX87D		FF48G		FL41I		FU45F		FY72G		0402086-07		0406074-01		0408026-02		0502070-01		P5F0668-02		P5H1000-03
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
87	80	**FIELD PARAMETERS**																							
88	81	pH (avg)	5.99		6.52		6.53		6.74		6.71		6.57		6.52		6.23		5.83		6.6		6.11		5.80
89	82	Temperature (° C) (avg)	14.3		16.4		15		13		14.9		15.9		14.2		14.2		16		13.4		15.7		15.8
90	83	Conductivity (um/hos)	302		427		369		274		262		317		270		387		351		263		221		420
91	84	Dissolved oxygen (mg/L) (avg)	3.97		0.7		0.79		3.39		2.08		1.26		1.14		0.94		2.2		1.22		0		NM
92	85																								
93	86	**DIOXINS AND FURANS (ng/L)**																							
94	87	**Method 8290**																							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000676	U	NA		0.0099 U
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000676	U	NA		0.0099 U
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000325	U	NA		0.0099 U
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000325	U	NA		0.0099 U
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000393	U	NA		0.049 U
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000378	U	NA		0.049 U
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.005961**		NA		0.049 U
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000554	U	NA		0.049 U
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000554	U	NA		0.049 U
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.001266	UJ	NA		0.049 U
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000917	U	NA		0.049 U
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.00098	U	NA		0.049 U
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.001128	U	NA		0.049 U
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.050538**		NA		0.049 U
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000267	U	NA		0.049 U
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.00805**	J	NA		0.049 U
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.000844	UJ	NA		0.049 U
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.016634**		NA		0.049 U
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.031277**		NA		0.049 U
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.001392	UJ	NA		0.049 U
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.159035**		NA		**0.092**
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.232233**		NA		**0.140**
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.35569**		NA		**0.220**
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.133707**		NA		0.099 U
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		**1.32**		NA		**1.000**
120																									
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX1S
4		P5K0699-10
5		11/16/05
87	**FIELD PARAMETERS**	
88	pH (avg)	5.95
89	Temperature (° C) (avg)	14.9
90	Conductivity (um/hos)	238
91	Dissolved oxygen (mg/L) (avg)	NM
92		
93	**DIOXINS AND FURANS (ng/L)**	
94	**Method 8290**	
95	2,3,7,8-TCDF	0.00992 U
96	Total TCDF	0.00992 U
97	2,3,7,8-TCDD	0.00992 U
98	Total TCDD	0.00992 U
99	1,2,3,7,8-PeCDF	0.0496 U
100	2,3,4,7,8-PeCDF	0.0496 U
101	Total PeCDF	0.0496 U
102	1,2,3,7,8-PeCDD	0.0496 U
103	Total PeCDD	0.0496 U
104	1,2,3,4,7,8-HxCDF	0.0496 U
105	1,2,3,6,7,8-HxCDF	0.0496 U
106	2,3,4,6,7,8-HxCDF	0.0496 U
107	1,2,3,7,8,9-HxCDF	0.0496 U
108	Total HxCDF	0.0496 U
109	1,2,3,4,7,8-HxCDD	0.0496 U
110	1,2,3,6,7,8-HxCDD	0.0496 U
111	1,2,3,7,8,9-HxCDD	0.0496 U
112	Total HxCDD	0.0496 U
113	1,2,3,4,6,7,8-HpCDF	**0.204**
114	1,2,3,4,7,8,9-HpCDF	0.0496 U
115	Total HpCDF	**0.525**
116	1,2,3,4,6,7,8-HpCDD	**0.567**
117	Total HpCDD	**0.851**
118	OCDF	**0.354**
119	OCDD	**4.29**
120		
121	**ETHANOL (mg/L)**	NA
122		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S		OX1S
4			EM65A		EX87D		FF48G		FL41I		FU45F		FY72G		0402086-07		0406074-01		0408026-02		0502070-01		P5F0668-02		P5H1000-03
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
123		**PAHs (µg/L)**																							
124		**EPA Method SW8270 SIM**																							
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX1S
4		P5K0699-10
5		11/16/05
123	**PAHs (µg/L)**	
124	**EPA Method SW8270 SIM**	
125	Naphthalene	NA
126	2-Methylnaphthalene	NA
127	Acenaphthylene	NA
128	Acenaphthene	NA
129	Fluorene	NA
130	Anthracene	NA
131	Dibenzofuran	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																					Dup of OX2S			
3			OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		Y		OX2S	
4			EM65B		EX87B		FF48H		FL58G		FU45E		0402086-09		0406074-02		0408026-03		0411066-10		0411066-02		P5F0668-04	
5			6/24/02		10/29/02		2/10/03		5/8/03		8/28/03		2/18/04		6/10/04		8/04/04		11/11/04		11/11/04		6/14/05	
6																								
7	1	**CHLORINATED PHENOLS (µg/L)**																						
8	2	**EPA Method SW8040**																						
9	3	Pentachlorophenol	NA		**1200**		**5400**		**6700**		**5800**	J	**5320**		NA		NA		NA		NA		NA	
10	4	2,4,6-Trichlorophenol	NA		0.26	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	NA		**0.28**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	NA		0.94	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	NA		0.26	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		**110**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		**6.5**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																							
17	11	**SEMIVOLATILES (µg/L)**																						
18	12	**EPA Method SW8270**																						
19	13	Phenol	NA		NA		NA		NA		NA		NA		2.05	U	2	U	1.99	U	2	U	5.00	U
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		10.2	U	10	U	9.94	U	10	U	5.00	U
21	15	Isophorone	NA		NA		NA		NA		NA		NA		1.02	U	1	U	0.994	U	1	U	5.00	U
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		3.07	U	3	U	2.98	U	3	U	10.00	U
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		20.5	U	20	U	19.9	U	20	U	50.0	U
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		**13.5**		**9.21**		**10.4**	J	**22.2**	J	**14.9**	
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		**6.53**		**6.24**		**8.69**	J	**23.9**	J	**8.21**	
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		5.12	U	5	U	4.97	U	5	U	5.00	U
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		5.12	U	5	U	4.97	U	5	U	5.00	U
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		1.02	U	1	U	0.994	U	1	U	5.00	U
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		1.02	U	1	U	0.994	U	1	U	5.00	U
30	24	Fluorene	NA		NA		NA		NA		NA		NA		1.02	U	1	U	0.994	U	1	U	5.00	U
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		**5030**		**1500**		**727**	J	**1150**	J	**1540**	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		1.02	U	1	U	0.994	U	1	U	10.00	U
33	27																							
34	28	**VOLATILES (µg/L)**																						
35	29	**EPA Method SW8260**																						
36	30	Acetone	**16**		**22**	M	NA		NA		NA		NA		50	U	**108**	J	50	U	50	U	NA	
37	31	Carbon Disulfide	3.0	U	1	U	NA		NA		NA		NA		2	U	**3.32**	J	2	U	2	U	NA	
38	32	2-Butanone	15	U	5	U	NA		NA		NA		NA		10	U	**11.3**	J	10	U	10	U	NA	
39	33	Benzene	3.0	U	**1.1**		NA		NA		NA		NA		**6.51**		**5.3**	J	**3.49**		**3.67**		NA	
40	34	Bromoform	3.0	U	1	U	NA		NA		NA		NA		1	U	1	U	1	U	1	U	NA	
41	35	Toluene	**6.7**		1	U	NA		NA		NA		NA		**1.19**		**1.38**	J	1	U	1	U	NA	
42	36	Ethylbenzene	**43**		**24**		NA		NA		NA		NA		**91.3**		**74.7**	J	**48.9**		**50**		NA	
43	37	Styrene	3.0	U	1	U	NA		NA		NA		NA		1	U	1	U	1	U	1	U	NA	
44	38	m,p-Xylene	**72**		**29**		NA		NA		NA		NA		**105**		**89.7**	J	**62.7**		**61.5**		NA	
45	39	o-Xylene	**79**		**36**		NA		NA		NA		NA		**190**		**137**	J	**99.2**		**110**		NA	
46	40	1,3,5-Trimethylbenzene	**46**		**21**		NA		NA		NA		NA		**83.1**		**72.3**	J	**78.8**		**70.1**		NA	
47	41	1,2,4-Trimethylbenzene	**190**		**110**		NA		NA		NA		NA		**307**		**233**	J	**320**	J	**212**	J	NA	
48	42	Isopropylbenzene	**18**		**14**		NA		NA		NA		NA		**48.5**		**39.4**	J	**32.8**		**29.9**		NA	
49	43	n-Propylbenzene	**28**		**25**		NA		NA		NA		NA		**62.8**		**40.7**	J	**46**		**39.4**		NA	
50	44	tert-Butylbenzene	3.0	U	**1.8**		NA		NA		NA		NA		**2.91**		**2.14**	J	**2.74**		**2.22**		NA	
51	45	sec-Butylbenzene	3.0	U	**8.4**		NA		NA		NA		NA		**22.9**		**13.6**	J	**16**		**13.4**		NA	
52	46	4-Isopropyltoluene	**5.2**		**6.3**		NA		NA		NA		NA		**10.1**		**9.35**	J	**14.6**	J	**11.1**	J	NA	
53	47	n-Butylbenzene	5.8	U	**6.7**	M	NA		NA		NA		NA		**6.92**		**6.37**	J	**11.2**	J	**8.71**	J	NA	
54	48	Naphthalene	15	U	**11**		NA		NA		NA		NA		**22.6**		**21.6**	J	**23.3**		**25.2**		NA	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		1	U	1	U	1	U	1	U	NA	
56	49																							
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																						
58	51	**Method OR-DEQ**																						
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																					Dup of OX2S			
3			OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		Y		OX2S	
4			EM65B		EX87B		FF48H		FL58G		FU45E		0402086-09		0406074-02		0408026-03		0411066-10		0411066-02		P5F0668-04	
5			6/24/02		10/29/02		2/10/03		5/8/03		8/28/03		2/18/04		6/10/04		8/04/04		11/11/04		11/11/04		6/14/05	
63	56	**PRIORITY POLLUTANT**																						
64	57	**METALS (mg/L)**																						
65	58	Arsenic (7060)	**0.01**		NA		NA		NA		NA		NA		**0.004**		**0.00752**		**0.00915**		**0.00768**		**0.00755**	
66	59	Chromium (6010)	0.005	U	NA		NA		NA		NA		NA		**0.0134**		0.005	U	**0.0191**		**0.0141**		0.001	U
67	60	Copper (6010)	0.002	U	NA		NA		NA		NA		NA		0.01	U	0.01	U	0.01	U	0.01	U	0.002	U
68	61	Lead (7421)	0.001	U	NA		NA		NA		NA		NA		0.0001	U	**0.000258**		**0.0401**	J	**0.0214**	J	0.001	U
69	62	Nickel (6010)	0.01	U	NA		NA		NA		NA		NA		0.005	U	0.005	U	0.005	U	0.005	U	**0.234**	
70	63	Zinc (6010)	**0.009**		NA		NA		NA		NA		NA		0.01	U	0.01	U	**0.0299**		**0.0247**		**0.0201**	
71	64																							
72	65	**MAJOR IONS AND CONVENTIONALS**																						
73	66	Calcium (mg/L) (6010)	**33**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**10.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**2.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**6.06**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**120**		**200**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**120**		**200**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**220**		NA		NA		NA		NA		NA		**389**		**358**		**443**		**428**		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		**3.58**		**2.81**		**4.69**		**4.56**		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																					Dup of OX2S			
3			OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		Y		OX2S	
4			EM65B		EX87B		FF48H		FL58G		FU45E		0402086-09		0406074-02		0408026-03		0411066-10		0411066-02		P5F0668-04	
5			6/24/02		10/29/02		2/10/03		5/8/03		8/28/03		2/18/04		6/10/04		8/04/04		11/11/04		11/11/04		6/14/05	
87	80	**FIELD PARAMETERS**																						
88	81	pH (avg)	6.15		6.40		6.7		6.49		6.66		6.57		6.25		5.96		6.62		6.61		6.03	
89	82	Temperature (° C) (avg)	15.5		15.9		14.2		13.6		14.9		13.6		14.8		15.6		15.2		15.1		15.1	
90	83	Conductivity (um/hos)	249		599		222		267		263		313		434		624		487		487		303	
91	84	Dissolved oxygen (mg/L) (avg)	4.10		0		1.49		2.21		1.43		1.48		1.07		1.82		1.34		1.34		0	
92	85																							
93	86	**DIOXINS AND FURANS (ng/L)**																						
94	87	**Method 8290**																						
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		0.00099	U	0.001855	U	**0.011663**	J	NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		**0.008498**		0.001855	U	**0.028916**		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		0.001186	U	0.002202	U	0.000465	UJ	NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		0.001186	U	0.002202	U	0.000465	U	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		**0.005426**	J	0.001628	U	**0.028919**	J	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		**0.003945**	J	0.001557	U	**0.022008**	J	NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		**0.093578**		**0.021311**		**0.589224**		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		0.001145	U	0.002569	U	**0.003825**	J	NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		0.001145	U	0.002569	U	**0.006169**		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		**0.027685**		**0.006922**	J	**0.129685**		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		**0.012362**	J	**0.003692**	J	**0.060882**		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		**0.01246**	J	**0.004637**	J	**0.086431**		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		0.001979	U	0.001753	U	0.003279	U	NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		**0.873515**		**0.232308**		**3.438667**		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		**0.00466**	J	0.00237	U	0.000658	U	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		**0.115964**		**0.030842**		**0.672776**		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		**0.011181**	J	0.002173	U	0.055833	U	NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		**0.294442**		**0.062692**		**1.508675**		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		**0.705588**		**0.189857**		**3.607867**		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		**0.035143**		**0.013672**	J	**0.180702**		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		**3.428142**		**0.913668**		**17.465984**		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		**4.502444**		**1.222349**		**16.086098**	J	NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		**7.076281**		**1.891967**		**35.962568**		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		**3.277332**		**0.901706**		**18.415892**	J	NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		**33.577997**	J	**9.445627**		**172.764658**	J	NA		NA	
120																								
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																								
2																					Dup of OX2S			
3			OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		OX2S		Y		OX2S	
4			EM65B		EX87B		FF48H		FL58G		FU45E		0402086-09		0406074-02		0408026-03		0411066-10		0411066-02		P5F0668-04	
5			6/24/02		10/29/02		2/10/03		5/8/03		8/28/03		2/18/04		6/10/04		8/04/04		11/11/04		11/11/04		6/14/05	
123		**PAHs (µg/L)**																						
124		**EPA Method SW8270 SIM**																						
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		O03S		OX3S
4			EM65C		EX87E		FF48F		FL41J		FU45G		FY72H		0402086-08		0406074-03		0408026-04		0502070-02		P5F0668-03		P5H1000-04
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
6																									
7	1	**CHLORINATED PHENOLS (µg/L)**																							
8	2	**EPA Method SW8040**																							
9	3	Pentachlorophenol	NA		**1200**	J	**5700**		**2600**		NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		**2.4**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		**1.3**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		9.2	UJ	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		0.25	UJ	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		**320**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		**29**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																								
17	11	**SEMIVOLATILES (µg/L)**																							
18	12	**EPA Method SW8270**																							
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		1.95	U	**15.7**		1.94	U	11.0	U	5.00 U
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		9.77	U	**22.2**		9.68	U	5.00	U	5.00 U
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		0.977	U	1	U	0.968	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		2.93	U	**13.9**		**6.2**		10.00	U	10.0 U
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		19.5	U	20	U	19.4	U	50.0	U	50.0 U
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		**29.9**		**20.2**		**23.8**		**16**		**13.8**
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		**13.5**		**9.63**		**7.17**		**10.2**		**7.96**
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		4.88	U	5	U	4.84	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		4.88	U	5	U	4.84	U	5.00	U	5.00 U
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		0.977	U	1	U	0.968	U	5.00	U	5.00 U
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		0.977	U	1	U	0.968	U	5.00	U	5.00 U
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		0.977	U	1	U	0.968	U	5.00	U	5.00 U
31	25	Pentachlorophenol	NA		NA		NA		NA		**1400**	J	**130**		**344**		**728**		**59.2**		**28.7**		**77.9**		**42**
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		0.977	U	1	U	0.968	U	10.00	U	10.0 U
33	27																								
34	28	**VOLATILES (µg/L)**																							
35	29	**EPA Method SW8260**																							
36	30	Acetone	120	U	**240**		NA		NA		NA		NA		NA		50	U	**78.2**		50	U	NA		50.0 U
37	31	Carbon Disulfide	25	U	1	U	NA		NA		NA		NA		NA		2	U	**3.34**		2	U	NA		20.0 U
38	32	2-Butanone	120	U	**20**		NA		NA		NA		NA		NA		10	U	**27**		10	U	NA		20.0 U
39	33	Benzene	**66**		**94**		NA		NA		NA		NA		NA		**130**		**156**		**111**		NA		**79.2**
40	34	Bromoform	25	U	1	U	NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		2.00 U
41	35	Toluene	**63**		**31**		NA		NA		NA		NA		NA		**7.84**		**21.6**		**3.44**		NA		2.00 U
42	36	Ethylbenzene	**280**		**110**		NA		NA		NA		NA		NA		**206**		**250**		**161**		NA		**132**
43	37	Styrene	25	U	1	U	NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		2.00 U
44	38	m,p-Xylene	**820**		**430**		NA		NA		NA		NA		NA		**477**		**605**		**278**		NA		**129**
45	39	o-Xylene	**370**		**150**		NA		NA		NA		NA		NA		**225**		**295**		**152**		NA		**114**
46	40	1,3,5-Trimethylbenzene	**160**		**120**		NA		NA		NA		NA		NA		**92.3**		**113**		**139**		NA		**53.3**
47	41	1,2,4-Trimethylbenzene	**520**		**350**		NA		NA		NA		NA		NA		**331**		**360**		**354**		NA		**210**
48	42	Isopropylbenzene	**57**		**56**		NA		NA		NA		NA		NA		**70.1**		**79.1**		**69.9**		NA		**40.6**
49	43	n-Propylbenzene	**83**		**75**		NA		NA		NA		NA		NA		**103**		**78.4**		**99.7**		NA		**58.3**
50	44	tert-Butylbenzene	25	U	1	U	NA		NA		NA		NA		NA		**2.81**		**2.34**		1	U	NA		**2.36**
51	45	sec-Butylbenzene	25	U	**13**		NA		NA		NA		NA		NA		**15**		**13**		**17**		NA		**8.80**
52	46	4-Isopropyltoluene	25	U	**13**		NA		NA		NA		NA		NA		**12.1**		**12.5**		**14.8**		NA		**7.54**
53	47	n-Butylbenzene	25	U	**11**	M	NA		NA		NA		NA		NA		**8.37**		**8.92**		**13**		NA		10.0 U
54	48	Naphthalene	120	U	**37**		NA		NA		NA		NA		NA		**48.7**		**50.4**		**39.4**		NA		**28.3**
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		1	U	1	U	1	U	NA		2.00 U
56	49																								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	51	**Method OR-DEQ**																							
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX3S
4		P5K0699-09
5		11/16/05
6		
7	**CHLORINATED PHENOLS (µg/L)**	
8	**EPA Method SW8040**	
9	Pentachlorophenol	NA
10	2,4,6-Trichlorophenol	NA
11	2,3,6-Trichlorophenol	NA
12	2,4,5-Trichlorophenol	NA
13	2,3,4-Trichlorophenol	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA
15	2,3,4,5-Tetrachlorophenol	NA
16		
17	**SEMIVOLATILES (µg/L)**	
18	**EPA Method SW8270**	
19	Phenol	8.16 UJ
20	4-Methylphenol	4.08 U
21	Isophorone	4.08 U
22	2,4-Dimethylphenol	12.2 U
23	Benzoic Acid	204 U
24	Naphthalene	**11.7**
25	2-Methylnaphthalene	**5.27**
26	2,4,6-Trichlorophenol	20.4 U
27	2,4,5-Trichlorophenol	20.4 U
28	Acenaphthene	4.08 U
29	Dibenzofuran	4.08 U
30	Fluorene	4.08 U
31	Pentachlorophenol	20.4 U
32	bis(2-Ethylhexyl)phthalate	40.8 U
33		
34	**VOLATILES (µg/L)**	
35	**EPA Method SW8260**	
36	Acetone	25.0 U
37	Carbon Disulfide	10.0 U
38	2-Butanone	10.0 U
39	Benzene	**43.3**
40	Bromoform	1.00 U
41	Toluene	1.00 U
42	Ethylbenzene	**106**
43	Styrene	1.00 U
44	m,p-Xylene	**104**
45	o-Xylene	**83.7**
46	1,3,5-Trimethylbenzene	**44.8**
47	1,2,4-Trimethylbenzene	**173**
48	Isopropylbenzene	**33.8**
49	n-Propylbenzene	**42.5**
50	tert-Butylbenzene	**1.78**
51	sec-Butylbenzene	**7.18**
52	4-Isopropyltoluene	**5.68**
53	n-Butylbenzene	**7.31**
54	Naphthalene	**20.4**
55	Methyl tert-butyl ether	1.00 U
56		
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**	
58	**Method OR-DEQ**	
59	**TPH-Diesel**	NA
60	**TPH-D Motor Oil**	NA
61	**TPH-Gasoline**	NA
62		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		O03S		OX3S
4			EM65C		EX87E		FF48F		FL41J		FU45G		FY72H		0402086-08		0406074-03		0408026-04		0502070-02		P5F0668-03		P5H1000-04
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
63	56	**PRIORITY POLLUTANT**																							
64	57	**METALS (mg/L)**																							
65	58	Arsenic (7060)	**0.02**		NA		NA		NA		NA		NA		NA		**0.021**		**0.0148**		**0.0126**		**0.0144**		**0.0116**
66	59	Chromium (6010)	0.005	U	NA		NA		NA		NA		NA		NA		**0.0119**		**0.0159**		**0.0051**		0.001	U	0.001 U
67	60	Copper (6010)	**0.002**		NA		NA		NA		NA		NA		NA		0.01	U	0.01	U	0.01	U	**0.00352**		**0.00256**
68	61	Lead (7421)	0.001	U	NA		NA		NA		NA		NA		NA		0.0001	U	**0.000426**		**0.00022**		0.001	U	0.001 U
69	62	Nickel (6010)	0.01	U	NA		NA		NA		NA		NA		NA		0.005	U	**0.0435**		**0.0915**		**0.18**		**0.153**
70	63	Zinc (6010)	**0.012**		NA		NA		NA		NA		NA		NA		0.01	U	**0.019**		**0.0181**		**0.0154**		**0.0128**
71	64																								
72	65	**MAJOR IONS AND CONVENTIONALS**																							
73	66	Calcium (mg/L) (6010)	**40.2**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**11**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**3.8**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**8.75**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**160**		**270**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**160**		**270**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**270**		NA		NA		NA		NA		NA		NA		**369**		**461**		**226**		NA		NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		**4.44**		**3.73**		**4.67**		NA		NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																								

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX3S
4		P5K0699-09
5		11/16/05
63	**PRIORITY POLLUTANT**	
64	**METALS (mg/L)**	
65	Arsenic (7060)	**0.0141**
66	Chromium (6010)	0.001 U
67	Copper (6010)	0.002 U
68	Lead (7421)	0.001 U
69	Nickel (6010)	**0.0238**
70	Zinc (6010)	0.005 U
71		
72	**MAJOR IONS AND CONVENTIONALS**	
73	Calcium (mg/L) (6010)	NA
74	Magnesium (mg/L) (6010)	NA
75	Potassium (mg/L) (6010)	NA
76	Sodium (mg/L) (6010)	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA
81	Chloride (mg/L) (EPA 325.2)	NA
82	N-Nitrate (mg-N/L) (Calculated)	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA
85	Sulfate (mg/L) (EPA 375.2)	NA
86		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		O03S		OX3S
4			EM65C		EX87E		FF48F		FL41J		FU45G		FY72H		0402086-08		0406074-03		0408026-04		0502070-02		P5F0668-03		P5H1000-04
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
87	80	**FIELD PARAMETERS**																							
88	81	pH (avg)	5.94		6.44		6.59		6.73		6.7		6.65		6.54		6.16		5.85		6.45		5.99		5.71
89	82	Temperature (° C) (avg)	14.4		15.3		15.1		13.5		15.2		16.2		14.1		15		18		13.9		15.3		16.1
90	83	Conductivity (um/hos)	342		502		381		340		287		318		386		447		592		237		257		416
91	84	Dissolved oxygen (mg/L) (avg)	4.34		0		1.24		2.93		2.07		2.14		1.76		0.74		1.4		0		0		NM
92	85																								
93	86	**DIOXINS AND FURANS (ng/L)**																							
94	87	**Method 8290**																							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																									
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX3S
4		P5K0699-09
5		11/16/05
87	**FIELD PARAMETERS**	
88	pH (avg)	7.21
89	Temperature (° C) (avg)	14.8
90	Conductivity (um/hos)	371
91	Dissolved oxygen (mg/L) (avg)	2.96
92		
93	**DIOXINS AND FURANS (ng/L)**	
94	**Method 8290**	
95	2,3,7,8-TCDF	NA
96	Total TCDF	NA
97	2,3,7,8-TCDD	NA
98	Total TCDD	NA
99	1,2,3,7,8-PeCDF	NA
100	2,3,4,7,8-PeCDF	NA
101	Total PeCDF	NA
102	1,2,3,7,8-PeCDD	NA
103	Total PeCDD	NA
104	1,2,3,4,7,8-HxCDF	NA
105	1,2,3,6,7,8-HxCDF	NA
106	2,3,4,6,7,8-HxCDF	NA
107	1,2,3,7,8,9-HxCDF	NA
108	Total HxCDF	NA
109	1,2,3,4,7,8-HxCDD	NA
110	1,2,3,6,7,8-HxCDD	NA
111	1,2,3,7,8,9-HxCDD	NA
112	Total HxCDD	NA
113	1,2,3,4,6,7,8-HpCDF	NA
114	1,2,3,4,7,8,9-HpCDF	NA
115	Total HpCDF	NA
116	1,2,3,4,6,7,8-HpCDD	NA
117	Total HpCDD	NA
118	OCDF	NA
119	OCDD	NA
120		
121	**ETHANOL (mg/L)**	NA
122		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2																									
3			OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		OX3S		O03S		OX3S
4			EM65C		EX87E		FF48F		FL41J		FU45G		FY72H		0402086-08		0406074-03		0408026-04		0502070-02		P5F0668-03		P5H1000-04
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		10/22/03		2/18/04		6/10/04		8/04/04		2/16/05		6/14/05		08/23/05
123		**PAHs (µg/L)**																							
124		**EPA Method SW8270 SIM**																							
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z
1		
2		
3		OX3S
4		P5K0699-09
5		11/16/05
123	**PAHs (µg/L)**	
124	**EPA Method SW8270 SIM**	
125	Naphthalene	NA
126	2-Methylnaphthalene	NA
127	Acenaphthylene	NA
128	Acenaphthene	NA
129	Fluorene	NA
130	Anthracene	NA
131	Dibenzofuran	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3			OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S	
4			EM65D		EX87F		FF48I		FL41K		FU45J		0402086-11		0406074-04		0408026-05		P5F0553-02	
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		2/18/04		6/10/04		8/04/04		6/13/05	
6																				
7	1	**CHLORINATED PHENOLS (µg/L)**																		
8	2	**EPA Method SW8040**																		
9	3	Pentachlorophenol	NA		**1200**	J	**880**		**8300**		**2200**	J	**1410**		NA		NA		NA	
10	4	2,4,6-Trichlorophenol	NA		**2.7**	J	NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	NA		**0.81**	J	NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	NA		11	UJ	NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	NA		0.25	UJ	NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		**320**	J	NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		**32**	J	NA		NA		NA		NA		NA		NA		NA	
16	10																			
17	11	**SEMIVOLATILES (µg/L)**																		
18	12	**EPA Method SW8270**																		
19	13	Phenol	NA		NA		NA		NA		NA		NA		1.99	U	2	U	5.00	U
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		9.93	U	10	U	5.00	U
21	15	Isophorone	NA		NA		NA		NA		NA		NA		0.993	U	1	U	5.00	U
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		2.98	U	**7.25**		10.00	U
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		19.9	U	20	U	50.0	U
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		**43.7**		**28.5**		**38.5**	
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		**42.9**		**20.7**		**26.7**	
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		4.97	U	5	U	5.00	U
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		**7.59**		5	U	5.00	U
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		0.993	U	1	U	5.00	U
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		0.993	U	1	U	5.00	U
30	24	Fluorene	NA		NA		NA		NA		NA		NA		0.993	U	1	U	5.00	U
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		**634**		**96.7**		**13.1**	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		**1.42**		1	U	10.00	U
33	27																			
34	28	**VOLATILES (µg/L)**																		
35	29	**EPA Method SW8260**																		
36	30	Acetone	120	U	**12**	M	NA		NA		NA		NA		50	U	**157**		NA	
37	31	Carbon Disulfide	25	U	**1.3**		NA		NA		NA		NA		2	U	2	U	NA	
38	32	2-Butanone	120	U	5	U	NA		NA		NA		NA		10	U	**18.8**		NA	
39	33	Benzene	25	U	**24**		NA		NA		NA		NA		**109**		**77**		NA	
40	34	Bromoform	25	U	1	U	NA		NA		NA		NA		1	U	1	U	NA	
41	35	Toluene	**71**		**23**		NA		NA		NA		NA		**2.77**		**6.91**		NA	
42	36	Ethylbenzene	**440**		**330**		NA		NA		NA		NA		**292**		**303**		NA	
43	37	Styrene	25	U	1	U	NA		NA		NA		NA		1	U	1	U	NA	
44	38	m,p-Xylene	**1300**		**820**		NA		NA		NA		NA		**236**		**324**		NA	
45	39	o-Xylene	**500**		**430**		NA		NA		NA		NA		**318**		**336**		NA	
46	40	1,3,5-Trimethylbenzene	**220**		**200**		NA		NA		NA		NA		**158**		**141**		NA	
47	41	1,2,4-Trimethylbenzene	**590**		**580**		NA		NA		NA		NA		**524**		**532**		NA	
48	42	Isopropylbenzene	**86**		**120**		NA		NA		NA		NA		**108**		**88.2**		NA	
49	43	n-Propylbenzene	**110**		**120**		NA		NA		NA		NA		**125**		**114**		NA	
50	44	tert-Butylbenzene	25	U	1	U	NA		NA		NA		NA		**3.95**		**2.82**		NA	
51	45	sec-Butylbenzene	25	U	**22**		NA		NA		NA		NA		**24.6**		**14.6**		NA	
52	46	4-Isopropyltoluene	25	U	**24**		NA		NA		NA		NA		**22.3**		**15.4**		NA	
53	47	n-Butylbenzene	25	U	**25**	M	NA		NA		NA		NA		**17.7**		**10.8**		NA	
54	48	Naphthalene	120	U	**99**		NA		NA		NA		NA		**64.9**		**66**		NA	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		1	U	1	U	NA	
56	49																			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																		
58	51	**Method OR-DEQ**																		
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3			OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S	
4			EM65D		EX87F		FF48I		FL41K		FU45J		0402086-11		0406074-04		0408026-05		P5F0553-02	
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		2/18/04		6/10/04		8/04/04		6/13/05	
63	56	**PRIORITY POLLUTANT**																		
64	57	**METALS (mg/L)**																		
65	58	Arsenic (7060)	**0.021**		NA		NA		NA		NA		NA		**0.015**		**0.0137**		**0.0132**	
66	59	Chromium (6010)	0.005	U	NA		NA		NA		NA		NA		**0.034**		0.005	U	0.001	U
67	60	Copper (6010)	0.002	U	NA		NA		NA		NA		NA		**0.0256**		0.01	U	**0.00504**	
68	61	Lead (7421)	0.001	U	NA		NA		NA		NA		NA		**0.0084**		**0.00107**		0.001	U
69	62	Nickel (6010)	0.01	U	NA		NA		NA		NA		NA		**0.0219**		**0.0099**		**0.0483**	
70	63	Zinc (6010)	**0.008**		NA		NA		NA		NA		NA		**0.0674**		**0.0114**		**0.00939**	
71	64																			
72	65	**MAJOR IONS AND CONVENTIONALS**																		
73	66	Calcium (mg/L) (6010)	**37.9**		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**10.4**		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**3.6**		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**8.42**		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**160**		**240**		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1	U	NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**160**		**240**		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**250**		NA		NA		NA		NA		NA		**271**		**456**		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		**4.11**		**3.42**		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3			OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S	
4			EM65D		EX87F		FF48I		FL41K		FU45J		0402086-11		0406074-04		0408026-05		P5F0553-02	
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		2/18/04		6/10/04		8/04/04		6/13/05	
87	80	**FIELD PARAMETERS**																		
88	81	pH (avg)	6.74		NM		6.39		6.09		6.41		6.27		6.19		6.07		6.44	
89	82	Temperature (° C) (avg)	14.5		NM		14.7		14		18		13.8		14.9		16.6		15.6	
90	83	Conductivity (um/hos)	326		NM		336		142		262		242		384		813		365	
91	84	Dissolved oxygen (mg/L) (avg)	4.42		NM		2.19		2.47		2.16		2.22		1.1		3.44		2.24	
92	85																			
93	86	**DIOXINS AND FURANS (ng/L)**																		
94	87	**Method 8290**																		
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																				
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3			OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S		OX4S	
4			EM65D		EX87F		FF48I		FL41K		FU45J		0402086-11		0406074-04		0408026-05		P5F0553-02	
5			6/24/02		10/29/02		2/10/03		5/7/03		8/28/03		2/18/04		6/10/04		8/04/04		6/13/05	
122																				
123		**PAHs (µg/L)**																		
124		**EPA Method SW8270 SIM**																		
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		1	U	NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		1	U	NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S	OX5S
4			FY72A		0402086-01		0406074-05		0408026-06		0411066-03		0502070-03		P5F0342-01		P5H1000-01	P5K0699-07
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/15/05
6																		
7	1	**CHLORINATED PHENOLS (µg/L)**																
8	2	**EPA Method SW8040**																
9	3	Pentachlorophenol	0.5	U	0.482	U	NA		NA		NA		NA		0.495	U	0.476 U	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																	
17	11	**SEMIVOLATILES (µg/L)**																
18	12	**EPA Method SW8270**																
19	13	Phenol	NA		NA		1.95	U	2	U	2.02	U	1.97	U	5.00	U	5.00 UJ	2.02 U
20	14	4-Methylphenol	NA		NA		9.73	U	10	U	10.1	U	9.87	U	5.00	U	5.00 UJ	1.01 U
21	15	Isophorone	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
22	16	2,4-Dimethylphenol	NA		NA		2.92	U	3	U	3.03	U	2.96	U	10.00	U	10.0 UJ	3.03 U
23	17	Benzoic Acid	NA		NA		19.5	U	20	U	20.2	U	19.7	U	50.0	U	50.0 UJ	50.5 U
24	18	Naphthalene	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
25	19	2-Methylnaphthalene	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
26	20	2,4,6-Trichlorophenol	NA		NA		4.86	U	5	U	5.05	U	4.94	U	5.00	U	5.00 UJ	5.05 U
27	21	2,4,5-Trichlorophenol	NA		NA		4.86	U	5	U	5.05	U	4.94	U	5.00	U	5.00 UJ	5.05 U
28	22	Acenaphthene	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
29	23	Dibenzofuran	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
30	24	Fluorene	NA		NA		0.973	U	1	U	1.01	U	0.987	U	5.00	U	5.00 U	1.01 U
31	25	Pentachlorophenol	NA		NA		4.86	U	5	U	5.05	U	4.94	U	10.00	U	10.0 UJ	5.05 U
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		0.973	U	1	U	1.01	U	0.987	U	10.00	U	10.0 U	10.1 U
33	27																	
34	28	**VOLATILES (µg/L)**																
35	29	**EPA Method SW8260**																
36	30	Acetone	NA		NA		50	U	50	U	50	U	50	U	NA		25.0 U	25.0 U
37	31	Carbon Disulfide	NA		NA		2	U	2	U	2	U	2	U	NA		10.0 U	10.0 U
38	32	2-Butanone	NA		NA		10	U	10	U	10	U	10	U	NA		10.0 U	10.0 U
39	33	Benzene	NA		NA		0.3	U	0.3	U	0.3	U	**0.46**		NA		1.00 U	1.00 U
40	34	Bromoform	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
41	35	Toluene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
42	36	Ethylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
43	37	Styrene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
44	38	m,p-Xylene	NA		NA		2	U	2	U	2	U	2	U	NA		2.00 U	2.00 U
45	39	o-Xylene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
48	42	Isopropylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		2.00 U	2.00 U
49	43	n-Propylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
50	44	tert-Butylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
51	45	sec-Butylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
52	46	4-Isopropyltoluene	NA		NA		1	U	1	U	1	U	1	U	NA		2.00 U	2.00 U
53	47	n-Butylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		5.00 U	5.00 U
54	48	Naphthalene	NA		NA		1	U	1	U	1	U	**3.06**		NA		2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
56	49																	
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																
58	51	**Method OR-DEQ**																
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA	NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA	NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA	NA
62	55																	

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S	OX5S
4			FY72A		0402086-01		0406074-05		0408026-06		0411066-03		0502070-03		P5F0342-01		P5H1000-01	P5K0699-07
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/15/05
63	56	**PRIORITY POLLUTANT**																
64	57	**METALS (mg/L)**																
65	58	Arsenic (7060)	NA		NA		**0.010**		**0.014**		**0.0135**		**0.0145**		**0.0142**		**0.0124**	**0.0157**
66	59	Chromium (6010)	NA		NA		**0.0126**		**0.0155**		0.005	U	**0.0088**		0.001	U	0.001 U	**0.00972**
67	60	Copper (6010)	NA		NA		0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U	**0.013**
68	61	Lead (7421)	NA		NA		0.0001	U	0.0001	U	0.00048	U	**0.000561**		0.001	U	0.001 U	**0.00478**
69	62	Nickel (6010)	NA		NA		0.005	U	0.005	U	0.005	U	0.005	U	**0.00291**		**0.00252**	**0.0123**
70	63	Zinc (6010)	NA		NA		0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U	**0.0378**
71	64																	
72	65	**MAJOR IONS AND CONVENTIONALS**																
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		**255**		**276**		**211**		**171**		NA		NA	NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		**3.44**		**3.19**		**2.3**		**2.19**		NA		NA	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S	OX5S
4			FY72A		0402086-01		0406074-05		0408026-06		0411066-03		0502070-03		P5F0342-01		P5H1000-01	P5K0699-07
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/15/05
87	80	**FIELD PARAMETERS**																
88	81	pH (avg)	6.59		6.63		6.27		5.96		6.41		6.8		6.68		6.07	6.73
89	82	Temperature (° C) (avg)	16.5		12.9		12.3		15.6		15.5		13.7		14.2		15.5	15.6
90	83	Conductivity (um/hos)	288		234		346		510		248		148		202		262	193
91	84	Dissolved oxygen (mg/L) (avg)	1.18		3.16		1.76		2.63		2.05		0.67		4.29		NM	1.42
92	85																	
93	86	**DIOXINS AND FURANS (ng/L)**																
94	87	**Method 8290**																
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
120																		
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA	NA
122																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S		OX5S	OX5S
4			FY72A		0402086-01		0406074-05		0408026-06		0411066-03		0502070-03		P5F0342-01		P5H1000-01	P5K0699-07
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/15/05
123		**PAHs (µg/L)**																
124		**EPA Method SW8270 SIM**																
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA	NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	NA		NA		NA		1	U	NA		NA		NA		NA	NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA	NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA	NA
130		Anthracene	NA		NA		NA		1	U	NA		NA		NA		NA	NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2											Dup of OX6S									
3			OX6S		OX6S		OX6S		OX6S		Y		OX6S		OX6S		OX6S		OX6S	OX6S
4			FY72B		0402086-02		0406074-06		0408026-07		0408026-01		0411066-04		0502070-04		P5F0342-02		P5H1000-08	P5K0699-12
5			10/22/03		2/18/04		6/10/04		8/04/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
6																				
7	1	**CHLORINATED PHENOLS (µg/L)**																		
8	2	**EPA Method SW8040**																		
9	3	Pentachlorophenol	**2100**		**527**		NA		NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																			
17	11	**SEMIVOLATILES (µg/L)**																		
18	12	**EPA Method SW8270**																		
19	13	Phenol	NA		NA		2	U	2	U	2	U	1.97	U	1.9	U	5.00	U	5.00 U	100 UJ
20	14	4-Methylphenol	NA		NA		10	U	10	U	10	U	9.84	U	9.51	U	5.00	U	5.00 U	50.0 U
21	15	Isophorone	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
22	16	2,4-Dimethylphenol	NA		NA		3	U	3	U	3	U	2.95	U	2.85	U	10.00	U	10.0 U	150 U
23	17	Benzoic Acid	NA		NA		20	U	20	U	20	U	19.7	U	19	U	50.0	U	50.0 U	2500 U
24	18	Naphthalene	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
25	19	2-Methylnaphthalene	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
26	20	2,4,6-Trichlorophenol	NA		NA		5.01	U	5	U	5	U	4.92	U	4.75	U	5.00	U	5.00 U	250 U
27	21	2,4,5-Trichlorophenol	NA		NA		5.01	U	5	U	5	U	4.92	U	4.75	U	5.00	U	5.00 U	250 U
28	22	Acenaphthene	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
29	23	Dibenzofuran	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
30	24	Fluorene	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	5.00	U	5.00 U	50.0 U
31	25	Pentachlorophenol	NA		NA		NA		**604**		**498**		**624**		**127**		**600**		**2030**	**307**
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		1	U	1	U	1	U	0.984	U	0.951	U	10.00	U	10.0 U	500 U
33	27																			
34	28	**VOLATILES (µg/L)**																		
35	29	**EPA Method SW8260**																		
36	30	Acetone	NA		NA		50	U	50	U	50	U	50	U	50	U	NA		25.0 U	25.0 U
37	31	Carbon Disulfide	NA		NA		2	U	2	U	2	U	2	U	2	U	NA		10.0 U	10.0 U
38	32	2-Butanone	NA		NA		10	U	10	U	10	U	10	U	10	U	NA		10.0 U	10.0 U
39	33	Benzene	NA		NA		0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	NA		1.00 U	1.00 U
40	34	Bromoform	NA		NA		1	U	1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
41	35	Toluene	NA		NA		1	U	1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
42	36	Ethylbenzene	NA		NA		**1.31**		1	U	**1.19**	J	1	U	1	U	NA		1.00 U	1.00 U
43	37	Styrene	NA		NA		1	U	1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
44	38	m,p-Xylene	NA		NA		2	U	2	U	2	U	2	U	2	U	NA		2.00 U	2.00 U
45	39	o-Xylene	NA		NA		**5.49**		**3.11**	J	**3.36**	J	1	U	**4.09**		NA		1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	NA		NA		**17.7**		**10.9**	J	**11.9**	J	1	U	1	U	NA		1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	NA		NA		**83.7**		**77.6**	J	**75.9**	J	1	U	**11.6**		NA		**7.47**	1.00 U
48	42	Isopropylbenzene	NA		NA		**4.94**		**2.23**	J	**2.43**	J	**1.8**		**2.51**		NA		2.00 U	2.00 U
49	43	n-Propylbenzene	NA		NA		**9.71**		**4.69**	J	**5.33**	J	1	U	**2.81**		NA		**1.17**	1.00 U
50	44	tert-Butylbenzene	NA		NA		1	U	1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
51	45	sec-Butylbenzene	NA		NA		**6.54**		**8.04**	J	**7.9**	J	**1.5**		**4.7**		NA		**3.68**	**1.81**
52	46	4-Isopropyltoluene	NA		NA		**2.71**		**3.4**	J	**3.74**	J	1	U	1	U	NA		2.00 U	2.00 U
53	47	n-Butylbenzene	NA		NA		**2.06**		**2.1**	J	**2.31**	J	1	U	**3.89**		NA		5.00 U	5.00 U
54	48	Naphthalene	NA		NA		**5.3**		**3.92**	J	**4.48**	J	1	U	**2.71**		NA		2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	NA		NA		1	U	1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
56	49																			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																		
58	51	**Method OR-DEQ**																		
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
62	55																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2											Dup of OX6S									
3			OX6S		OX6S		OX6S		OX6S		Y		OX6S		OX6S		OX6S		OX6S	OX6S
4			FY72B		0402086-02		0406074-06		0408026-07		0408026-01		0411066-04		0502070-04		P5F0342-02		P5H1000-08	P5K0699-12
5			10/22/03		2/18/04		6/10/04		8/04/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
63	56	**PRIORITY POLLUTANT**																		
64	57	**METALS (mg/L)**																		
65	58	Arsenic (7060)	NA		NA		**0.013**		**0.013**		**0.0127**		**0.0133**		**0.0531**		**0.00548**		**0.00352**	**0.00598**
66	59	Chromium (6010)	NA		NA		**0.0147**		**0.0127**		**0.0142**		0.005	U	**0.0068**		0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	NA		NA		0.01	U	0.01	U	0.01	U	0.01	U	**0.0444**		**0.00716**		**0.0125**	**0.0083**
68	61	Lead (7421)	NA		NA		0.0001	U	0.0001	U	0.0001	U	**0.00194**		**0.00287**		0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	NA		NA		0.005	U	0.005	U	0.005	U	**0.25**		**0.113**		**0.117**		**0.0616**	**0.0415**
70	63	Zinc (6010)	NA		NA		0.01	U	0.01	U	0.01	U	**0.0833**		**0.0964**		**0.020**		**0.0174**	**0.0113**
71	64																			
72	65	**MAJOR IONS AND CONVENTIONALS**																		
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		**284**		**284**		**277**		**160**		**313**		NA		NA	NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		**3.13**		**3.13**		**3.07**		**3.75**		**2.95**		NA		NA	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2											Dup of OX6S									
3			OX6S		OX6S		OX6S		OX6S		Y		OX6S		OX6S		OX6S		OX6S	OX6S
4			FY72B		0402086-02		0406074-06		0408026-07		0408026-01		0411066-04		0502070-04		P5F0342-02		P5H1000-08	P5K0699-12
5			10/22/03		2/18/04		6/10/04		8/04/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
87	80	**FIELD PARAMETERS**																		
88	81	pH (avg)	6.67		6.63		6.38		5.93		5.91		6.55		6.43		6.22		6.15	6.10
89	82	Temperature (° C) (avg)	16.3		14.4		14.6		15.8		16.2		16.2		NM		13.8		15.5	15.6
90	83	Conductivity (um/hos)	352		353		374		517		517		479		NM		575		335	216
91	84	Dissolved oxygen (mg/L) (avg)	2.63		1.23		1.38		2.6		2.28		0.55		NM		2.42		NM	NM
92	85																			
93	86	**DIOXINS AND FURANS (ng/L)**																		
94	87	**Method 8290**																		
95	88	2,3,7,8-TCDF	NA		NA		0.001007	U	0.001308	U	NA		0.001679	UJ	0.000503	U	0.0098	U	0.0096 U	0.00986 U
96	89	Total TCDF	NA		NA		0.001007	U	0.001308	U	NA		0.001679	U	0.000503	U	0.0098	U	0.0096 U	0.00986 U
97	90	2,3,7,8-TCDD	NA		NA		0.001143	U	0.001655	U	NA		0.000421	UJ	0.000247	U	0.0098	U	0.0096 U	0.00986 U
98	91	Total TCDD	NA		NA		0.001143	U	0.001655	U	NA		0.000421	U	0.000247	U	0.0098	U	0.0096 U	0.00986 U
99	92	1,2,3,7,8-PeCDF	NA		NA		0.000721	U	0.001565	U	NA		0.000886	UJ	0.001959	UJ	0.049	U	0.048 U	0.0493 U
100	93	2,3,4,7,8-PeCDF	NA		NA		0.000702	U	0.001496	U	NA		0.001359	UJ	0.001528	UJ	0.049	U	0.048 U	0.0493 U
101	94	Total PeCDF	NA		NA		**0.00675**		0.001496	U	NA		**0.016804**		**0.042411**		0.049	U	0.048 U	0.0493 U
102	95	1,2,3,7,8-PeCDD	NA		NA		0.001091	U	0.002223	U	NA		0.001631	U	0.000308	U	0.049	U	0.048 U	0.0493 U
103	96	Total PeCDD	NA		NA		0.001091	U	0.002223	U	NA		0.001631	U	0.000308	U	0.049	U	0.048 U	0.0493 U
104	97	1,2,3,4,7,8-HxCDF	NA		NA		**0.002389**	J	**0.005124**	J	NA		0.002207	UJ	**0.006875**	J	0.049	U	0.048 U	0.0493 U
105	98	1,2,3,6,7,8-HxCDF	NA		NA		0.000732	U	0.001659	U	NA		0.001128	U	0.004071	U	0.049	U	0.048 U	0.0493 U
106	99	2,3,4,6,7,8-HxCDF	NA		NA		0.000802	U	0.001727	U	NA		0.001206	U	0.004352	U	0.049	U	0.048 U	0.0493 U
107	100	1,2,3,7,8,9-HxCDF	NA		NA		0.000894	U	0.002002	U	NA		0.001389	U	0.005011	U	0.049	U	0.048 U	0.0493 U
108	101	Total HxCDF	NA		NA		**0.037855**		**0.117654**		NA		**0.064214**		**0.311203**		0.049	U	**0.070**	**0.214**
109	102	1,2,3,4,7,8-HxCDD	NA		NA		0.001267	U	0.002125	U	NA		0.000608	U	0.000383	U	0.049	U	0.048 U	0.0493 U
110	103	1,2,3,6,7,8-HxCDD	NA		NA		**0.006653**	J	**0.014629**	J	NA		**0.013944**	J	**0.053899**		0.049	U	0.048 U	0.0493 U
111	104	1,2,3,7,8,9-HxCDD	NA		NA		0.001076	U	0.001949	U	NA		0.000578	U	0.003976	UJ	0.049	U	0.048 U	0.0493 U
112	105	Total HxCDD	NA		NA		**0.017614**		**0.037485**		NA		**0.029549**		**0.125227**		0.049	U	0.048 U	0.0493 U
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		**0.023098**		**0.059996**		NA		**0.045009**		**0.228015**		0.049	U	**0.049**	**0.434**
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		0.001711	U	**0.007017**	J	NA		0.001752	U	**0.008529**	J	0.049	U	0.048 U	0.0493 U
115	108	Total HpCDF	NA		NA		**0.125689**		**0.325386**		NA		**0.23456**		**1.17**		**0.12**		**0.240**	**1.04**
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		**0.160343**		**0.381169**		NA		**0.292709**		**1.55**		**0.16**		**0.260**	**0.949**
117	110	Total HpCDD	NA		NA		**0.251496**		**0.588687**		NA		**0.450367**		**2.40**		**0.25**		**0.440**	**1.42**
118	111	OCDF	NA		NA		**0.087928**		**0.244329**		NA		**0.201198**		**1.50**		**0.12**		**0.180**	**0.551**
119	112	OCDD	NA		NA		**0.761183**		**1.997929**		NA		**1.588077**		**11.76**		**1.00**		**1.700**	**5.1**
120																				
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
122																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2											Dup of OX6S									
3			OX6S		OX6S		OX6S		OX6S		Y		OX6S		OX6S		OX6S		OX6S	OX6S
4			FY72B		0402086-02		0406074-06		0408026-07		0408026-01		0411066-04		0502070-04		P5F0342-02		P5H1000-08	P5K0699-12
5			10/22/03		2/18/04		6/10/04		8/04/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
123		**PAHs (µg/L)**																		
124		**EPA Method SW8270 SIM**																		
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	NA		NA		NA		1	U	1	U	NA		NA		NA		NA	NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
130		Anthracene	NA		NA		NA		1	U	1	U	NA		NA		NA		NA	NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S	OX7S
4			FY72C		0402086-03		0406074-07		0408026-08		0411066-05		0502070-05		P5F0342-03		P5H1000-07	P5K0699-13
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
6																		
7	1	**CHLORINATED PHENOLS (µg/L)**																
8	2	**EPA Method SW8040**																
9	3	Pentachlorophenol	**720**		**166**		NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																	
17	11	**SEMIVOLATILES (µg/L)**																
18	12	**EPA Method SW8270**																
19	13	Phenol	NA		NA		1.98	U	2	U	2.01	U	1.95	U	5.00	U	5.00 U	10.1 UJ
20	14	4-Methylphenol	NA		NA		9.92	U	10	U	10	U	9.76	U	5.00	U	5.00 U	5.05 U
21	15	Isophorone	NA		NA		0.992	U	1	U	1	U	0.976	U	5.00	U	5.00 U	5.05 U
22	16	2,4-Dimethylphenol	NA		NA		2.98	U	3	U	3.01	U	2.93	U	10.00	U	10.0 U	15.2 U
23	17	Benzoic Acid	NA		NA		19.8	U	20	U	20.1	U	19.5	U	50.0	U	50.0 U	253 U
24	18	Naphthalene	NA		NA		**1.86**		**1.5**		1	U	0.976	U	5.00	U	5.00 U	5.05 U
25	19	2-Methylnaphthalene	NA		NA		0.992	U	1	U	1	U	0.976	U	5.00	U	5.00 U	5.05 U
26	20	2,4,6-Trichlorophenol	NA		NA		4.96	U	5	U	5.02	U	4.88	U	5.00	U	5.00 U	25.3 U
27	21	2,4,5-Trichlorophenol	NA		NA		4.96	U	5	U	5.02	U	4.88	U	5.00	U	5.00 U	25.3 U
28	22	Acenaphthene	NA		NA		0.992	U	1	U	1	U	0.976	U	5.00	U	5.00 U	5.05 U
29	23	Dibenzofuran	NA		NA		0.992	U	1	U	1	U	0.976	U	5.00	U	5.00 U	5.05 U
30	24	Fluorene	NA		NA		0.992	U	1	U	1	U	0.976	U	5.00	U	5.00 U	5.05 U
31	25	Pentachlorophenol	NA		NA		**634**		**130**		**84.7**		**30.8**		**41.6**		**81.0**	**2060**
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		0.992	U	1	U	1	U	0.976	U	10.00	U	10.0 U	50.5 U
33	27																	
34	28	**VOLATILES (µg/L)**																
35	29	**EPA Method SW8260**																
36	30	Acetone	NA		NA		50	U	50	U	50	U	50	U	NA		25.0 U	25.0 U
37	31	Carbon Disulfide	NA		NA		2	U	2	U	2	U	2	U	NA		10.0 U	10.0 U
38	32	2-Butanone	NA		NA		10	U	10	U	10	U	10	U	NA		10.0 U	10.0 U
39	33	Benzene	NA		NA		0.3	U	0.3	U	0.3	U	0.3	U	NA		1.00 U	1.00 U
40	34	Bromoform	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
41	35	Toluene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
42	36	Ethylbenzene	NA		NA		1	U	**1.18**	J	1	U	1	U	NA		1.00 U	1.00 U
43	37	Styrene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
44	38	m,p-Xylene	NA		NA		2	U	2	U	2	U	2	U	NA		2.00 U	2.00 U
45	39	o-Xylene	NA		NA		**2.79**		**3.76**	J	1	U	**1.3**		NA		1.00 U	**1.52**
46	40	1,3,5-Trimethylbenzene	NA		NA		**3.24**		**7.29**	J	1	U	1	U	NA		1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	NA		NA		**27.3**		**54.2**	J	**13.2**		**2.68**		NA		1.00 U	**9.1**
48	42	Isopropylbenzene	NA		NA		**1.23**		**1.62**	J	**1.4**		1	U	NA		2.00 U	**2.19**
49	43	n-Propylbenzene	NA		NA		**1.85**		**3.26**	J	1	U	1	U	NA		1.00 U	**2.14**
50	44	tert-Butylbenzene	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
51	45	sec-Butylbenzene	NA		NA		**1.4**		**3.37**	J	1	U	**2.77**		NA		**1.29**	**3.51**
52	46	4-Isopropyltoluene	NA		NA		1	U	**1.42**	J	1	U	1	U	NA		2.00 U	2.00 U
53	47	n-Butylbenzene	NA		NA		1	U	**1.25**	J	1	U	1	U	NA		5.00 U	5.00 U
54	48	Naphthalene	NA		NA		**4.59**		**4.89**	J	1	U	1	U	NA		2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
56	49																	
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																
58	51	**Method OR-DEQ**																
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA	NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA	NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA	NA
62	55																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S	OX7S
4			FY72C		0402086-03		0406074-07		0408026-08		0411066-05		0502070-05		P5F0342-03		P5H1000-07	P5K0699-13
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
63	56	**PRIORITY POLLUTANT**																
64	57	**METALS (mg/L)**																
65	58	Arsenic (7060)	NA		NA		**0.011**		**0.014**		**0.0178**		**0.02**		**0.00602**		**0.00417**	**0.00294**
66	59	Chromium (6010)	NA		NA		**0.0162**		**0.0139**		0.005	U	**0.0085**		0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	NA		NA		0.01	U	0.01	U	0.01	U	**0.0121**		**0.00671**		**0.00246**	**0.00288**
68	61	Lead (7421)	NA		NA		0.0001	U	0.0001	U	**0.001**		**0.00184**		0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	NA		NA		0.005	U	0.005	U	**0.169**		**0.0689**		**0.0674**		**0.118**	**0.0806**
70	63	Zinc (6010)	NA		NA		0.01	U	0.01	U	**0.0295**		**0.0304**		**0.0167**		**0.0266**	**0.00788**
71	64																	
72	65	**MAJOR IONS AND CONVENTIONALS**																
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		**315**		**241**		**355**		**290**		NA		NA	NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		**2.88**		**2.91**		**3.76**		**2.11**		NA		NA	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S	OX7S
4			FY72C		0402086-03		0406074-07		0408026-08		0411066-05		0502070-05		P5F0342-03		P5H1000-07	P5K0699-13
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
87	80	**FIELD PARAMETERS**																
88	81	pH (avg)	6.60		6.57		6.3		5.88		6.6		6.44		6.02		5.95	7.03
89	82	Temperature (° C) (avg)	16.1		13.8		14.2		15.7		16		14.9		14.0		15.7	16.0
90	83	Conductivity (um/hos)	326		393		370		489		416		238		500		418	334
91	84	Dissolved oxygen (mg/L) (avg)	1.76		2.2		3.02		3.6		0.72		1.06		3.93		NM	3.65
92	85																	
93	86	**DIOXINS AND FURANS (ng/L)**																
94	87	**Method 8290**																
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
120																		
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA	NA
122																		

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		
3			OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S		OX7S	OX7S
4			FY72C		0402086-03		0406074-07		0408026-08		0411066-05		0502070-05		P5F0342-03		P5H1000-07	P5K0699-13
5			10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
123		**PAHs (µg/L)**																
124		**EPA Method SW8270 SIM**																
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA	NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	NA		NA		NA		1	U	NA		NA		NA		NA	NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA	NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA	NA
130		Anthracene	NA		NA		NA		1	U	NA		NA		NA		NA	NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2					Dup of OX8S															
3			OX8S		Y		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S	OX8S
4			FY72E		FY72D		0402086-04		0406074-08		0408026-09		0411066-06		0502070-06		P5F0342-08		P5H1000-05	P5K0699-11
5			10/22/03		10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
6																				
7	1	**CHLORINATED PHENOLS (µg/L)**																		
8	2	**EPA Method SW8040**																		
9	3	Pentachlorophenol	**260**		**300**		**56.4**		NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																			
17	11	**SEMIVOLATILES (µg/L)**																		
18	12	**EPA Method SW8270**																		
19	13	Phenol	NA		NA		NA		1.97	U	2	U	1.93	U	1.96	U	5.00	U	5.00 U	2.00 UJ
20	14	4-Methylphenol	NA		NA		NA		9.84	U	10	U	9.64	U	9.81	U	5.00	U	5.00 U	1.00 U
21	15	Isophorone	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	5.00	U	5.00 U	1.00 U
22	16	2,4-Dimethylphenol	NA		NA		NA		2.95	U	3	U	2.89	U	2.94	U	10.00	U	10.0 U	3.00 U
23	17	Benzoic Acid	NA		NA		NA		19.7	U	20	U	19.3	U	19.6	U	50.0	U	50.0 U	50.0 U
24	18	Naphthalene	NA		NA		NA		**3.38**		**1.09**		0.964	U	0.981	U	5.00	U	5.00 U	**1.27**
25	19	2-Methylnaphthalene	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	5.00	U	5.00 U	1.00 U
26	20	2,4,6-Trichlorophenol	NA		NA		NA		4.92	U	5	U	4.82	U	4.91	U	5.00	U	5.00 U	5.00 U
27	21	2,4,5-Trichlorophenol	NA		NA		NA		4.92	U	5	U	4.82	U	4.91	U	5.00	U	5.00 U	5.00 U
28	22	Acenaphthene	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	5.00	U	5.00 U	1.00 U
29	23	Dibenzofuran	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	5.00	U	5.00 U	1.00 U
30	24	Fluorene	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	5.00	U	5.00 U	1.00 U
31	25	Pentachlorophenol	NA		NA		NA		**206**		**76.8**		**55**		**95.9**		**59.6**		**19.2**	**377**
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		0.984	U	1	U	0.964	U	0.981	U	10.00	U	10.0 U	10.0 U
33	27																			
34	28	**VOLATILES (µg/L)**																		
35	29	**EPA Method SW8260**																		
36	30	Acetone	NA		NA		NA		50	U	50	U	50	U	50	U	NA		25.0 U	25.0 U
37	31	Carbon Disulfide	NA		NA		NA		2	U	2	U	2	U	2	U	NA		10.0 U	10.0 U
38	32	2-Butanone	NA		NA		NA		10	U	10	U	10	U	10	U	NA		10.0 U	10.0 U
39	33	Benzene	NA		NA		NA		0.3	U	0.3	U	0.3	U	0.3	U	NA		1.00 U	1.00 U
40	34	Bromoform	NA		NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
41	35	Toluene	NA		NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
42	36	Ethylbenzene	NA		NA		NA		**3.06**		**4.15**	J	**6**		**4.38**		NA		1.00 U	**5.64**
43	37	Styrene	NA		NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
44	38	m,p-Xylene	NA		NA		NA		2	U	**2.84**	J	**2.19**		2	U	NA		2.00 U	**4.65**
45	39	o-Xylene	NA		NA		NA		**12.4**		**18.8**	J	**20.1**		**6.23**		NA		**1.54**	**20.1**
46	40	1,3,5-Trimethylbenzene	NA		NA		NA		**32**		**33.6**	J	**8.28**		**2.28**		NA		**1.37**	**22.2**
47	41	1,2,4-Trimethylbenzene	NA		NA		NA		**109**		**101**	J	**107**		**55.2**		NA		**10.3**	**146**
48	42	Isopropylbenzene	NA		NA		NA		**10.6**		**12.4**	J	**11.8**		**10.7**		NA		2.00 U	**17.3**
49	43	n-Propylbenzene	NA		NA		NA		**19.6**		**15.3**	J	**14.8**		**23.3**		NA		**2.65**	**23.2**
50	44	tert-Butylbenzene	NA		NA		NA		**2.14**		**2.12**	J	**1.53**		**3.34**		NA		1.00 U	**3.01**
51	45	sec-Butylbenzene	NA		NA		NA		**20.1**		**19.2**	J	**10.1**		**14.2**		NA		**2.78**	**17.7**
52	46	4-Isopropyltoluene	NA		NA		NA		**4.03**		**4.85**	J	**1.55**		**3.44**		NA		2.00 U	**6.02**
53	47	n-Butylbenzene	NA		NA		NA		**3.89**		**4.94**	J	**2.13**		**6.17**		NA		5.00 U	**9.01**
54	48	Naphthalene	NA		NA		NA		**6.04**		**6.53**	J	1	U	**2.52**		NA		2.00 U	**4.64**
55	48.5	Methyl tert-butyl ether	NA		NA		NA		1	U	1	U	1	U	1	U	NA		1.00 U	1.00 U
56	49																			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																		
58	51	**Method OR-DEQ**																		
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
62	55																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2					Dup of OX8S															
3			OX8S		Y		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S	OX8S
4			FY72E		FY72D		0402086-04		0406074-08		0408026-09		0411066-06		0502070-06		P5F0342-08		P5H1000-05	P5K0699-11
5			10/22/03		10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
63	56	**PRIORITY POLLUTANT**																		
64	57	**METALS (mg/L)**																		
65	58	Arsenic (7060)	NA		NA		NA		**0.012**		**0.0233**		**0.0259**		**0.0182**		**0.0219**		**0.021**	**0.027**
66	59	Chromium (6010)	NA		NA		NA		**0.0143**		**0.0123**		**0.0136**		0.005	U	**0.00127**		0.001 U	0.001 U
67	60	Copper (6010)	NA		NA		NA		0.01	U	0.01	U	0.01	U	0.01	U	**0.00782**		**0.00153**	0.002 U
68	61	Lead (7421)	NA		NA		NA		0.0001	U	0.0001	U	**0.00104**		**0.000603**		0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	NA		NA		NA		0.005	U	0.005	U	**0.0818**		**0.17**		**0.249**		**0.208**	**0.154**
70	63	Zinc (6010)	NA		NA		NA		0.01	U	0.01	U	**0.0139**		**0.0495**		**0.016**		**0.0123**	**0.0122**
71	64																			
72	65	**MAJOR IONS AND CONVENTIONALS**																		
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		**379**		**315**		**365**		**876**		NA		NA	NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		**4.22**		**4.12**		**3.76**		**3.51**		NA		NA	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2					Dup of OX8S															
3			OX8S		Y		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S	OX8S
4			FY72E		FY72D		0402086-04		0406074-08		0408026-09		0411066-06		0502070-06		P5F0342-08		P5H1000-05	P5K0699-11
5			10/22/03		10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
87	80	**FIELD PARAMETERS**																		
88	81	pH (avg)	6.65		6.65		6.65		6.33		5.94		6.59		6.49		6.31		6.17	7.20
89	82	Temperature (° C) (avg)	16.3		16.3		12.8		13.9		16.1		16.3		14.4		14.5		16.1	1.6
90	83	Conductivity (um/hos)	337		337		451		437		566		465		329		896		499	530
91	84	Dissolved oxygen (mg/L) (avg)	2.26		2.3		1.58		1.21		2.67		0.61		0.08		2.44		NM	2.97
92	85																			
93	86	**DIOXINS AND FURANS (ng/L)**																		
94	87	**Method 8290**																		
95	88	2,3,7,8-TCDF	3.8	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	3.8	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	3.5	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	3.5	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	2.8	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	2.6	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	2.6	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	3.2	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	3.2	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	2.3	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	2.1	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	2.3	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	2.5	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	**9.2**		NA		NA		NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	2.9	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	2.2	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	2.5	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	2.2	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	**7.5**	J	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	3.8	U	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	**34**		NA		NA		NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	**36**		NA		NA		NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	**57**		NA		NA		NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	**35**	J	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	**230**		NA		NA		NA		NA		NA		NA		NA		NA	NA
120																				
121		**ETHANOL (mg/L)**							NA		NA		NA		NA		NA		NA	NA
122																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2					Dup of OX8S															
3			OX8S		Y		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S		OX8S	OX8S
4			FY72E		FY72D		0402086-04		0406074-08		0408026-09		0411066-06		0502070-06		P5F0342-08		P5H1000-05	P5K0699-11
5			10/22/03		10/22/03		2/18/04		6/10/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05	11/16/05
123		**PAHs (µg/L)**																		
124		**EPA Method SW8270 SIM**																		
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	NA		NA		NA		NA		1	U	NA		NA		NA		NA	NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
130		Anthracene	NA		NA		NA		NA		1	U	NA		NA		NA		NA	NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			OX9S		OX9S		OX9S		OX9S	OX9S
4			0408035-02		0502070-07		P5F0553-01		P5H1000-02	P5K0699-08
5			8/05/04		2/16/05		6/13/05		08/23/05	11/15/05
6										
7	1	**CHLORINATED PHENOLS (µg/L)**								
8	2	**EPA Method SW8040**								
9	3	Pentachlorophenol	NA		4.94	U	0.526	U	0.500 U	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA	NA
16	10									
17	11	**SEMIVOLATILES (µg/L)**								
18	12	**EPA Method SW8270**								
19	13	Phenol	2	U	1.98	U	5.00	U	5.00 U	2.00 U
20	14	4-Methylphenol	10	U	9.88	U	5.00	U	5.00 U	1.00 U
21	15	Isophorone	1	U	0.988	U	5.00	U	5.00 U	1.00 U
22	16	2,4-Dimethylphenol	3	U	2.96	U	10.00	U	10.0 U	3.00 U
23	17	Benzoic Acid	20	U	19.8	U	50.0	U	50.0 U	50.0 U
24	18	Naphthalene	1	U	0.988	U	5.00	U	5.00 U	1.00 U
25	19	2-Methylnaphthalene	1	U	0.988	U	5.00	U	5.00 U	1.00 U
26	20	2,4,6-Trichlorophenol	5	U	4.94	U	5.00	U	5.00 U	5.00 U
27	21	2,4,5-Trichlorophenol	5	U	4.94	U	5.00	U	5.00 U	5.00 U
28	22	Acenaphthene	1	U	0.988	U	5.00	U	5.00 U	1.00 U
29	23	Dibenzofuran	1	U	0.988	U	5.00	U	5.00 U	1.00 U
30	24	Fluorene	1	U	0.988	U	5.00	U	5.00 U	1.00 U
31	25	Pentachlorophenol	5	U	NA		10.0	U	10.0 U	5.00 U
32	26	bis(2-Ethylhexyl)phthalate	1	U	0.988	U	10.00	U	10.0 U	10.0 U
33	27									
34	28	**VOLATILES (µg/L)**								
35	29	**EPA Method SW8260**								
36	30	Acetone	50	U	50	U	NA		25.0 U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	NA		10.0 U	10.0 U
38	32	2-Butanone	10	U	10	U	NA		10.0 U	10.0 U
39	33	Benzene	0.3	U	0.3	U	NA		1.00 U	1.00 U
40	34	Bromoform	1	U	1	U	NA		1.00 U	1.00 U
41	35	Toluene	1	U	1	U	NA		1.00 U	1.00 U
42	36	Ethylbenzene	1	U	1	U	NA		1.00 U	1.00 U
43	37	Styrene	1	U	1	U	NA		1.00 U	1.00 U
44	38	m,p-Xylene	2	U	2	U	NA		2.00 U	2.00 U
45	39	o-Xylene	1	U	1	U	NA		1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	NA		1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	NA		1.00 U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	NA		2.00 U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	NA		1.00 U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	NA		1.00 U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	NA		1.00 U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	NA		2.00 U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	NA		5.00 U	5.00 U
54	48	Naphthalene	1	U	1	U	NA		2.00 U	2.00 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	NA		1.00 U	1.00 U
56	49									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	51	**Method OR-DEQ**								
59	52	**TPH-Diesel**	NA		NA		NA		NA	NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA	NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA	NA
62	55									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			OX9S		OX9S		OX9S		OX9S	OX9S
4			0408035-02		0502070-07		P5F0553-01		P5H1000-02	P5K0699-08
5			8/05/04		2/16/05		6/13/05		08/23/05	11/15/05
63	56	**PRIORITY POLLUTANT**								
64	57	**METALS (mg/L)**								
65	58	Arsenic (7060)	**0.0044**		**0.00253**		**0.0011**		**0.00161**	**0.00235**
66	59	Chromium (6010)	**0.0156**		0.005	U	0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	0.001 U	0.002 U
68	61	Lead (7421)	0.0001	U	0.0001	U	0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	0.005	U	**0.0706**		**0.00928**		**0.0158**	**0.0145**
70	63	Zinc (6010)	0.01	U	0.01	U	0.005	U	0.01 U	0.005 U
71	64									
72	65	**MAJOR IONS AND CONVENTIONALS**								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**201**		**276**		NA		NA	NA
81	74	Chloride (mg/L) (EPA 325.2)	**3.56**		**4.55**		NA		NA	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA	NA
86	79									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			OX9S		OX9S		OX9S		OX9S	OX9S
4			0408035-02		0502070-07		P5F0553-01		P5H1000-02	P5K0699-08
5			8/05/04		2/16/05		6/13/05		08/23/05	11/15/05
87	80	**FIELD PARAMETERS**								
88	81	pH (avg)	5.83		6.56		5.53		5.55	6.91
89	82	Temperature (° C) (avg)	15.5		13.6		15.0		15.7	15.7
90	83	Conductivity (um/hos)	365		227		287		291	411
91	84	Dissolved oxygen (mg/L) (avg)	2.33		0.79		2.80		NM	3.27
92	85									
93	86	**DIOXINS AND FURANS (ng/L)**								
94	87	**Method 8290**								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA	NA
120										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA	NA
122										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			OX9S		OX9S		OX9S		OX9S	OX9S
4			0408035-02		0502070-07		P5F0553-01		P5H1000-02	P5K0699-08
5			8/05/04		2/16/05		6/13/05		08/23/05	11/15/05
123		**PAHs (µg/L)**								
124		**EPA Method SW8270 SIM**								
125		Naphthalene	NA		NA		NA		NA	NA
126		2-Methylnaphthalene	NA		NA		NA		NA	NA
127		Acenaphthylene	1	U	NA		NA		NA	NA
128		Acenaphthene	NA		NA		NA		NA	NA
129		Fluorene	NA		NA		NA		NA	NA
130		Anthracene	1	U	NA		NA		NA	NA
131		Dibenzofuran	NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			P		P		P	P
4			0502110-02		P5F0666-06		P5H1000-15	P5K0819-02
5			2/24/05		6/15/05		08/24/05	11/17/05
6								
7	1	**CHLORINATED PHENOLS (µg/L)**						
8	2	**EPA Method SW8040**						
9	3	Pentachlorophenol	4.92	U	NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA	NA
16	10							
17	11	**SEMIVOLATILES (µg/L)**						
18	12	**EPA Method SW8270**						
19	13	Phenol	**18.9**		**135**	J	**45.0**	**80.5 J**
20	14	4-Methylphenol	**81.8**		**445**		**87.6**	**48.9**
21	15	Isophorone	0.983	U	25.0	U	5.00 U	10.0 U
22	16	2,4-Dimethylphenol	2.95	U	50.0	U	10.0 U	30.0 U
23	17	Benzoic Acid	19.7	U	250	U	50.0 U	500 U
24	18	Naphthalene	0.983	U	25.0	U	5.00 U	10.0 U
25	19	2-Methylnaphthalene	0.983	U	25.0	U	**9.30**	10.0 U
26	20	2,4,6-Trichlorophenol	4.92	U	25.0	U	5.00 U	50.0 U
27	21	2,4,5-Trichlorophenol	4.92	U	25.0	U	5.00 U	50.0 U
28	22	Acenaphthene	0.983	U	25.0	U	5.00 U	10.0 U
29	23	Dibenzofuran	0.983	U	25.0	U	5.00 U	10.0 U
30	24	Fluorene	**2.19**		25.0	U	5.00 U	10.0 U
31	25	Pentachlorophenol	NA		50	U	5 UJ	50.0 U
32	26	bis(2-Ethylhexyl)phthalate	0.983	U	50.0	U	10.0 U	100 U
33	27							
34	28	**VOLATILES (µg/L)**						
35	29	**EPA Method SW8260**						
36	30	Acetone	50	U	500	U	500 U	500 U
37	31	Carbon Disulfide	2	U	200	U	200 U	200 U
38	32	2-Butanone	10	U	200	U	200 U	200 U
39	33	Benzene	**1480**		**2020**		**2780**	**2470**
40	34	Bromoform	1	U	20.0	U	20.0 U	20.0 U
41	35	Toluene	**4.78**		20.0	U	20.0 U	**64.2**
42	36	Ethylbenzene	**4.29**		20.0	U	20.0 U	**72.8**
43	37	Styrene	1	U	20.0	U	20.0 U	20.0 U
44	38	m,p-Xylene	**12.1**		**60.6**		**47.0**	**412**
45	39	o-Xylene	**22**		**58.6**		**32.2**	**221**
46	40	1,3,5-Trimethylbenzene	**62.3**		**68.0**		**60.6**	**67.4**
47	41	1,2,4-Trimethylbenzene	**39**		**46.8**		**42.6**	**96.2**
48	42	Isopropylbenzene	**7.45**		40.0	U	40.0 U	40.0 U
49	43	n-Propylbenzene	**10.9**		20.0	U	**20.8**	20.0 U
50	44	tert-Butylbenzene	1	U	20.0	U	20.0 U	20.0 U
51	45	sec-Butylbenzene	**1.52**		20.0	U	20.0 U	20.0 U
52	46	4-Isopropyltoluene	**3.13**		40.0	U	40.0 U	40.0 U
53	47	n-Butylbenzene	**5.32**		100	U	100 U	100 U
54	48	Naphthalene	**6.91**		40.0	U	40.0 U	40.0 U
55		Methyl tert-butyl ether	1	U	20.0	U	20.0 U	20.0 U
56	49							
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**						
58	51	**Method OR-DEQ**						
59	52	**TPH-Diesel**	**16.2**		**5.41**		**0.789 J**	**2.72**
60	53	**TPH-D Motor Oil**	0.499	U	0.5	U	0.500 UJ	0.500 U
61	54	**TPH-Gasoline**	**3.5**		**7.98**		**6.10**	**8560**
62	55							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			P		P		P	P
4			0502110-02		P5F0666-06		P5H1000-15	P5K0819-02
5			2/24/05		6/15/05		08/24/05	11/17/05
63	56	**PRIORITY POLLUTANT**						
64	57	**METALS (mg/L)**						
65	58	Arsenic (7060)	**0.0378**		**0.0328**		**0.0306**	**0.0359**
66	59	Chromium (6010)	0.005	U	0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01	U	**0.0123**		**0.00213**	**0.00281**
68	61	Lead (7421)	**0.0728**		**0.109**		**0.0245**	**0.026**
69	62	Nickel (6010)	0.005	U	**0.0109**		**0.00449**	**0.00398**
70	63	Zinc (6010)	**0.0133**		0.005	U	0.01 U	0.005 U
71	64							
72	65	**MAJOR IONS AND CONVENTIONALS**						
73	66	Calcium (mg/L) (6010)	NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**170**		**524**		**392**	NA
81	74	Chloride (mg/L) (EPA 325.2)	**0.8**		**1.94**		**2.37**	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		0.100 U	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		1.00 U	NA
86	79							

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			P		P		P	P
4			0502110-02		P5F0666-06		P5H1000-15	P5K0819-02
5			2/24/05		6/15/05		08/24/05	11/17/05
87	80	**FIELD PARAMETERS**						
88	81	pH (avg)	6.61		6.29		6.90	6.64
89	82	Temperature (° C) (avg)	13		14.4		14.4	12.8
90	83	Conductivity (um/hos)	233		309		441	253
91	84	Dissolved oxygen (mg/L) (avg)	0		NA		NM	0.71
92	85							
93	86	**DIOXINS AND FURANS (ng/L)**						
94	87	**Method 8290**						
95	88	2,3,7,8-TCDF	NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA	NA
118	111	OCDF	NA		NA		NA	NA
119	112	OCDD	NA		NA		NA	NA
120								
121			NA		NA		NA	NA
122								

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H
1								
2								
3			P		P		P	P
4			0502110-02		P5F0666-06		P5H1000-15	P5K0819-02
5			2/24/05		6/15/05		08/24/05	11/17/05
123		**PAHs (µg/L)**						
124		**EPA Method SW8270 SIM**						
125		Naphthalene	**1.15**		3.5	U	4.00 U	7.43 U
126		2-Methylnaphthalene	NA		NA		NA	NA
127		Acenaphthylene	**0.0688**		1.00	U	2.00 U	0.990 U
128		Acenaphthene	**1.74**		**2.94**		**4.00**	**5.55**
129		Fluorene	**1.45**		**3.46**		**4.59**	**6.44**
130		Anthracene	**0.118**		0.500	U	2.00 U	**0.786**
131		Dibenzofuran	NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			PZ1		PZ1	
4			EM65E		FF48K	
5			6/24/02		2/10/03	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	NA		**700**	
10	4	2,4,6-Trichlorophenol	NA		NA	
11	5	2,3,6-Trichlorophenol	NA		NA	
12	6	2,4,5-Trichlorophenol	NA		NA	
13	7	2,3,4-Trichlorophenol	NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		NA	
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	NA		NA	
20	14	4-Methylphenol	NA		NA	
21	15	Isophorone	NA		NA	
22	16	2,4-Dimethylphenol	NA		NA	
23	17	Benzoic Acid	NA		NA	
24	18	Naphthalene	NA		NA	
25	19	2-Methylnaphthalene	NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA	
28	22	Acenaphthene	NA		NA	
29	23	Dibenzofuran	NA		NA	
30	24	Fluorene	NA		NA	
31	25	Pentachlorophenol	NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA	
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	250	U	NA	
37	31	Carbon Disulfide	50	U	NA	
38	32	2-Butanone	250	U	NA	
39	33	Benzene	50	U	NA	
40	34	Bromoform	50	U	NA	
41	35	Toluene	**80**		NA	
42	36	Ethylbenzene	**470**		NA	
43	37	Styrene	50	U	NA	
44	38	m,p-Xylene	**1000**		NA	
45	39	o-Xylene	**710**		NA	
46	40	1,3,5-Trimethylbenzene	**290**		NA	
47	41	1,2,4-Trimethylbenzene	**870**		NA	
48	42	Isopropylbenzene	**120**		NA	
49	43	n-Propylbenzene	**170**		NA	
50	44	tert-Butylbenzene	50	U	NA	
51	45	sec-Butylbenzene	50	U	NA	
52	46	4-Isopropyltoluene	50	U	NA	
53	47	n-Butylbenzene	50	U	NA	
54	48	Naphthalene	250	U	NA	
55	48.5	Methyl tert-butyl ether	NA		NA	
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA	
61	54	**TPH-Gasoline**	NA		NA	
62	55					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			PZ1		PZ1	
4			EM65E		FF48K	
5			6/24/02		2/10/03	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	**0.005**		NA	
66	59	Chromium (6010)	**0.035**		NA	
67	60	Copper (6010)	**0.011**		NA	
68	61	Lead (7421)	**0.001**		NA	
69	62	Nickel (6010)	**0.04**		NA	
70	63	Zinc (6010)	**0.087**		NA	
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	**42.3**		NA	
74	67	Magnesium (mg/L) (6010)	**13.6**		NA	
75	68	Potassium (mg/L) (6010)	**3.3**		NA	
76	69	Sodium (mg/L) (6010)	**5.25**		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**180**		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**180**		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**250**		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			PZ1		PZ1	
4			EM65E		FF48K	
5			6/24/02		2/10/03	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.02		6.61	
89	82	Temperature (° C) (avg)	15.3		14.9	
90	83	Conductivity (um/hos)	278		376	
91	84	Dissolved oxygen (mg/L) (avg)	5.09		1.01	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121		**ETHANOL (mg/L)**	NA		NA	
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			PZ1		PZ1	
4			EM65E		FF48K	
5			6/24/02		2/10/03	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	NA		NA	
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	NA		NA	
128		Acenaphthene	NA		NA	
129		Fluorene	NA		NA	
130		Anthracene	NA		NA	
131		Dibenzofuran	NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ2	
4			FF48J	
5			2/10/03	
6				
7	1	**CHLORINATED PHENOLS (µg/L)**		
8	2	**EPA Method SW8040**		
9	3	Pentachlorophenol	**590**	
10	4	2,4,6-Trichlorophenol	NA	
11	5	2,3,6-Trichlorophenol	NA	
12	6	2,4,5-Trichlorophenol	NA	
13	7	2,3,4-Trichlorophenol	NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA	
15	9	2,3,4,5-Tetrachlorophenol	NA	
16	10			
17	11	**SEMIVOLATILES (µg/L)**		
18	12	**EPA Method SW8270**		
19	13	Phenol	NA	
20	14	4-Methylphenol	NA	
21	15	Isophorone	NA	
22	16	2,4-Dimethylphenol	NA	
23	17	Benzoic Acid	NA	
24	18	Naphthalene	NA	
25	19	2-Methylnaphthalene	NA	
26	20	2,4,6-Trichlorophenol	NA	
27	21	2,4,5-Trichlorophenol	NA	
28	22	Acenaphthene	NA	
29	23	Dibenzofuran	NA	
30	24	Fluorene	NA	
31	25	Pentachlorophenol	NA	
32	26	bis(2-Ethylhexyl)phthalate	NA	
33	27			
34	28	**VOLATILES (µg/L)**		
35	29	**EPA Method SW8260**		
36	30	Acetone	NA	
37	31	Carbon Disulfide	NA	
38	32	2-Butanone	NA	
39	33	Benzene	NA	
40	34	Bromoform	NA	
41	35	Toluene	NA	
42	36	Ethylbenzene	NA	
43	37	Styrene	NA	
44	38	m,p-Xylene	NA	
45	39	o-Xylene	NA	
46	40	1,3,5-Trimethylbenzene	NA	
47	41	1,2,4-Trimethylbenzene	NA	
48	42	Isopropylbenzene	NA	
49	43	n-Propylbenzene	NA	
50	44	tert-Butylbenzene	NA	
51	45	sec-Butylbenzene	NA	
52	46	4-Isopropyltoluene	NA	
53	47	n-Butylbenzene	NA	
54	48	Naphthalene	NA	
55	48.5	Methyl tert-butyl ether	NA	
56	49			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**		
58	51	**Method OR-DEQ**		
59	52	**TPH-Diesel**	NA	
60	53	**TPH-D Motor Oil**	NA	
61	54	**TPH-Gasoline**	NA	
62	55			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ2	
4			FF48J	
5			2/10/03	
63	56	**PRIORITY POLLUTANT**		
64	57	**METALS (mg/L)**		
65	58	Arsenic (7060)	NA	
66	59	Chromium (6010)	NA	
67	60	Copper (6010)	NA	
68	61	Lead (7421)	NA	
69	62	Nickel (6010)	NA	
70	63	Zinc (6010)	NA	
71	64			
72	65	**MAJOR IONS AND CONVENTIONALS**		
73	66	Calcium (mg/L) (6010)	NA	
74	67	Magnesium (mg/L) (6010)	NA	
75	68	Potassium (mg/L) (6010)	NA	
76	69	Sodium (mg/L) (6010)	NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA	
86	79			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ2	
4			FF48J	
5			2/10/03	
87	80	**FIELD PARAMETERS**		
88	81	pH (avg)	6.46	
89	82	Temperature (° C) (avg)	15.2	
90	83	Conductivity (um/hos)	483	
91	84	Dissolved oxygen (mg/L) (avg)	0.89	
92	85			
93	86	**DIOXINS AND FURANS (ng/L)**		
94	87	**Method 8290**		
95	88	2,3,7,8-TCDF	NA	
96	89	Total TCDF	NA	
97	90	2,3,7,8-TCDD	NA	
98	91	Total TCDD	NA	
99	92	1,2,3,7,8-PeCDF	NA	
100	93	2,3,4,7,8-PeCDF	NA	
101	94	Total PeCDF	NA	
102	95	1,2,3,7,8-PeCDD	NA	
103	96	Total PeCDD	NA	
104	97	1,2,3,4,7,8-HxCDF	NA	
105	98	1,2,3,6,7,8-HxCDF	NA	
106	99	2,3,4,6,7,8-HxCDF	NA	
107	100	1,2,3,7,8,9-HxCDF	NA	
108	101	Total HxCDF	NA	
109	102	1,2,3,4,7,8-HxCDD	NA	
110	103	1,2,3,6,7,8-HxCDD	NA	
111	104	1,2,3,7,8,9-HxCDD	NA	
112	105	Total HxCDD	NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA	
115	108	Total HpCDF	NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA	
117	110	Total HpCDD	NA	
118	111	OCDF	NA	
119	112	OCDD	NA	
120				
121		**ETHANOL (mg/L)**	NA	
122				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ2	
4			FF48J	
5			2/10/03	
123		**PAHs (µg/L)**		
124		**EPA Method SW8270 SIM**		
125		Naphthalene	NA	
126		2-Methylnaphthalene	NA	
127		Acenaphthylene	NA	
128		Acenaphthene	NA	
129		Fluorene	NA	
130		Anthracene	NA	
131		Dibenzofuran	NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ3	
4			FF65B	
5			2/11/03	
6				
7	1	**CHLORINATED PHENOLS (µg/L)**		
8	2	**EPA Method SW8040**		
9	3	Pentachlorophenol	1.2	U
10	4	2,4,6-Trichlorophenol	NA	
11	5	2,3,6-Trichlorophenol	NA	
12	6	2,4,5-Trichlorophenol	NA	
13	7	2,3,4-Trichlorophenol	NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA	
15	9	2,3,4,5-Tetrachlorophenol	NA	
16	10			
17	11	**SEMIVOLATILES (µg/L)**		
18	12	**EPA Method SW8270**		
19	13	Phenol	NA	
20	14	4-Methylphenol	NA	
21	15	Isophorone	NA	
22	16	2,4-Dimethylphenol	NA	
23	17	Benzoic Acid	NA	
24	18	Naphthalene	NA	
25	19	2-Methylnaphthalene	NA	
26	20	2,4,6-Trichlorophenol	NA	
27	21	2,4,5-Trichlorophenol	NA	
28	22	Acenaphthene	NA	
29	23	Dibenzofuran	NA	
30	24	Fluorene	NA	
31	25	Pentachlorophenol	NA	
32	26	bis(2-Ethylhexyl)phthalate	NA	
33	27			
34	28	**VOLATILES (µg/L)**		
35	29	**EPA Method SW8260**		
36	30	Acetone	NA	
37	31	Carbon Disulfide	NA	
38	32	2-Butanone	NA	
39	33	Benzene	NA	
40	34	Bromoform	NA	
41	35	Toluene	NA	
42	36	Ethylbenzene	NA	
43	37	Styrene	NA	
44	38	m,p-Xylene	NA	
45	39	o-Xylene	NA	
46	40	1,3,5-Trimethylbenzene	NA	
47	41	1,2,4-Trimethylbenzene	NA	
48	42	Isopropylbenzene	NA	
49	43	n-Propylbenzene	NA	
50	44	tert-Butylbenzene	NA	
51	45	sec-Butylbenzene	NA	
52	46	4-Isopropyltoluene	NA	
53	47	n-Butylbenzene	NA	
54	48	Naphthalene	NA	
55	48.5	Methyl tert-butyl ether	NA	
56	49			
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**		
58	51	**Method OR-DEQ**		
59	52	**TPH-Diesel**	NA	
60	53	**TPH-D Motor Oil**	NA	
61	54	**TPH-Gasoline**	NA	
62	55			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ3	
4			FF65B	
5			2/11/03	
63	56	**PRIORITY POLLUTANT**		
64	57	**METALS (mg/L)**		
65	58	Arsenic (7060)	NA	
66	59	Chromium (6010)	NA	
67	60	Copper (6010)	NA	
68	61	Lead (7421)	NA	
69	62	Nickel (6010)	NA	
70	63	Zinc (6010)	NA	
71	64			
72	65	**MAJOR IONS AND CONVENTIONALS**		
73	66	Calcium (mg/L) (6010)	NA	
74	67	Magnesium (mg/L) (6010)	NA	
75	68	Potassium (mg/L) (6010)	NA	
76	69	Sodium (mg/L) (6010)	NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA	
86	79			

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ3	
4			FF65B	
5			2/11/03	
87	80	**FIELD PARAMETERS**		
88	81	pH (avg)	5.24	
89	82	Temperature (° C) (avg)	15.7	
90	83	Conductivity (um/hos)	62	
91	84	Dissolved oxygen (mg/L) (avg)	1.66	
92	85			
93	86	**DIOXINS AND FURANS (ng/L)**		
94	87	**Method 8290**		
95	88	2,3,7,8-TCDF	NA	
96	89	Total TCDF	NA	
97	90	2,3,7,8-TCDD	NA	
98	91	Total TCDD	NA	
99	92	1,2,3,7,8-PeCDF	NA	
100	93	2,3,4,7,8-PeCDF	NA	
101	94	Total PeCDF	NA	
102	95	1,2,3,7,8-PeCDD	NA	
103	96	Total PeCDD	NA	
104	97	1,2,3,4,7,8-HxCDF	NA	
105	98	1,2,3,6,7,8-HxCDF	NA	
106	99	2,3,4,6,7,8-HxCDF	NA	
107	100	1,2,3,7,8,9-HxCDF	NA	
108	101	Total HxCDF	NA	
109	102	1,2,3,4,7,8-HxCDD	NA	
110	103	1,2,3,6,7,8-HxCDD	NA	
111	104	1,2,3,7,8,9-HxCDD	NA	
112	105	Total HxCDD	NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA	
115	108	Total HpCDF	NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA	
117	110	Total HpCDD	NA	
118	111	OCDF	NA	
119	112	OCDD	NA	
120				
121		**ETHANOL (mg/L)**	NA	
122				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D
1				
2				
3			PZ3	
4			FF65B	
5			2/11/03	
123		**PAHs (µg/L)**		
124		**EPA Method SW8270 SIM**		
125		Naphthalene	NA	
126		2-Methylnaphthalene	NA	
127		Acenaphthylene	NA	
128		Acenaphthene	NA	
129		Fluorene	NA	
130		Anthracene	NA	
131		Dibenzofuran	NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			Q		Q		Q		Q	Q
4			0408056-05		0502110-03		P5F0666-07		P5H1000-16	P5K0819-01
5			8/09/04		2/24/05		6/15/05		08/24/05	11/17/05
7	1	**CHLORINATED PHENOLS (µg/L)**								
8	2	**EPA Method SW8040**								
9	3	Pentachlorophenol	NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA	NA
16	10									
17	11	**SEMIVOLATILES (µg/L)**								
18	12	**EPA Method SW8270**								
19	13	Phenol	**10.7**		**4.03**		**74.6**	J	**19.4**	7.77 UJ
20	14	4-Methylphenol	10.3	U	**14.4**		**28.0**		**29.6**	3.88 U
21	15	Isophorone	1.03	U	1.01	U	5.00	U	5.00 U	3.88 U
22	16	2,4-Dimethylphenol	3.09	U	3.02	U	10.00	U	10.0 U	11.7 U
23	17	Benzoic Acid	20.6	U	20.1	U	50.0	U	50.0 U	194 U
24	18	Naphthalene	1.03	U	1.01	U	5.00	U	5.00 U	3.88 U
25	19	2-Methylnaphthalene	**19.8**		1.01	U	5.00	U	5.00 U	3.88 U
26	20	2,4,6-Trichlorophenol	5.15	U	5.03	U	5.00	U	5.00 U	19.4 U
27	21	2,4,5-Trichlorophenol	5.15	U	5.03	U	5.00	U	5.00 U	19.4 U
28	22	Acenaphthene	**6.46**		**5.91**		**10.6**		**9.18**	**6.17**
29	23	Dibenzofuran	**3.79**		**4.10**		**5.31**		**6.24**	**4.19**
30	24	Fluorene	**4.97**		**5.26**		**9.01**		**8.70**	**5.48**
31	25	Pentachlorophenol	5.15	U	5.03	U	10	U	5 UJ	19.4 U
32	26	bis(2-Ethylhexyl)phthalate	1.03	U	1.01	U	10.00	U	10.0 U	38.8 U
33	27									
34	28	**VOLATILES (µg/L)**								
35	29	**EPA Method SW8260**								
36	30	Acetone	50	U	50	U	125	U	125 U	125 U
37	31	Carbon Disulfide	2	U	2	U	50.0	U	50.0 U	50.0 U
38	32	2-Butanone	10	U	10	U	50.0	U	50.0 U	50.0 U
39	33	Benzene	**1030**		**259**		**909**		**706**	**220**
40	34	Bromoform	1	U	1	U	5.00	U	5.00 U	5.00 U
41	35	Toluene	**21.2**		**11.4**		**13.4**		**13.9**	**12.6**
42	36	Ethylbenzene	**12.1**		**5.28**		**5.55**		**7.10**	**6.5**
43	37	Styrene	1	U	1	U	5.00	U	5.00 U	5.00 U
44	38	m,p-Xylene	**27.4**		**18.4**		**12.6**		**14.2**	**12.1**
45	39	o-Xylene	**8.17**		**7.62**		5.00	U	5.00 U	5.00 U
46	40	1,3,5-Trimethylbenzene	**3.73**		**7.33**		5.00	U	5.00 U	5.00 U
47	41	1,2,4-Trimethylbenzene	**3.47**		**6.55**		5.00	U	5.00 U	5.00 U
48	42	Isopropylbenzene	**78.4**		**47.3**		**42.8**		**47.8**	**52.5**
49	43	n-Propylbenzene	**116**		**86.6**		**84.1**		**93.2**	**96.6**
50	44	tert-Butylbenzene	1	U	1	U	5.00	U	5.00 U	5.00 U
51	45	sec-Butylbenzene	**8.81**		**5.91**		**5.10**		**5.75**	**5.8**
52	46	4-Isopropyltoluene	1	U	1	U	10.00	U	10.0 U	10.0 U
53	47	n-Butylbenzene	**9.01**		**10.9**		25.0	U	25.0 U	25.0 U
54	48	Naphthalene	1	U	**2.61**		10.00	U	10.0 U	10.0 U
55	48.5	Methyl tert-butyl ether	1	U	1	U	5.00	U	5.00 U	5.00 U
56	49									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	51	**Method OR-DEQ**								
59	52	**TPH-Diesel**	**5.56**		**3.22**		**1.81**		**1.26**	**1.48**
60	53	**TPH-D Motor Oil**	0.495	U	0.489	U	0.5	U	0.500 U	0.500 U
61	54	**TPH-Gasoline**	**2.88**		**2.28**		**2.56**		**3.46**	**1530 J**
62	55									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			Q		Q		Q		Q	Q
4			0408056-05		0502110-03		P5F0666-07		P5H1000-16	P5K0819-01
5			8/09/04		2/24/05		6/15/05		08/24/05	11/17/05
63	56	**PRIORITY POLLUTANT**								
64	57	**METALS (mg/L)**								
65	58	Arsenic (7060)	**0.034**		**0.038**		**0.0389**		**0.0338**	**0.0411**
66	59	Chromium (6010)	**0.017**		**0.0059**		0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	0.001 U	0.002 U
68	61	Lead (7421)	**0.00735**		**0.0104**		**0.0135**		**0.00814**	**0.0124**
69	62	Nickel (6010)	0.005	U	0.005	U	**0.00255**		**0.00212**	**0.00211**
70	63	Zinc (6010)	0.01	U	0.01	U	0.005	U	0.01 U	0.005 U
71	64									
72	65	**MAJOR IONS AND CONVENTIONALS**								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**338**		**455**		**365**		**418**	NA
81	74	Chloride (mg/L) (EPA 325.2)	**2.1**		**2.73**		**2.20**		**2.41**	NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.100 U	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		1.00 U	NA
86	79									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			Q		Q		Q		Q	Q
4			0408056-05		0502110-03		P5F0666-07		P5H1000-16	P5K0819-01
5			8/09/04		2/24/05		6/15/05		08/24/05	11/17/05
87	80	**FIELD PARAMETERS**								
88	81	pH (avg)	6.06		6.79		6.72		6.96	7.47
89	82	Temperature (° C) (avg)	15.8		13		14.3		14.2	14.7
90	83	Conductivity (um/hos)	866		206		297		413	632
91	84	Dissolved oxygen (mg/L) (avg)	1.9		0.43		NA		NM	2.43
92	85									
93	86	**DIOXINS AND FURANS (ng/L)**								
94	87	**Method 8290**								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA	NA
120										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA	NA
122										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			Q		Q		Q		Q	Q
4			0408056-05		0502110-03		P5F0666-07		P5H1000-16	P5K0819-01
5			8/09/04		2/24/05		6/15/05		08/24/05	11/17/05
123		**PAHs (µg/L)**								
124		**EPA Method SW8270 SIM**								
125		Naphthalene	**0.398**		**0.837**		2.50	U	2.00 U	1.29 U
126		2-Methylnaphthalene	NA		NA		NA		NA	NA
127		Acenaphthylene	**0.239**		**0.167**		1.00	U	2.00 U	0.297 U
128		Acenaphthene	**5.04**		**4.71**		**6.70**		**5.73**	**3.88**
129		Fluorene	**3.81**		**5.13**		**6.88**		**5.15**	**3.49**
130		Anthracene	**0.259**		**0.266**		1.00	U	2.00 U	0.198 U
131		Dibenzofuran	NA		NA		NA		NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																	Dup of RW1						Dup of RW1					
3			RW1		RW1		RW1		RW1		RW1		RW1		RW1		W		RW1		RW1		W		RW1		RW1	
4			AH76F		AU36E		BC21U		BH96X		BR64O		CB68G		CK77B		CK77A		CT67K		DE87Q		DE87M		DM30G		DW37D	
5			5/20/99		9/21/99		12/7/99		2/16/00		5/25/00		8/30/00		11/7/00		11/7/00		2/15/01		6/6/01		6/6/01		8/13/01		11/28/01	
6																												
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	**130**		**3100**		**3400**		**6400**		**11000**		**6300**		**3400**		**3400**		**11000**	J	NA		NA		NA		NA	
10	4	2,4,6-Trichlorophenol	**0.22**	J1	**0.77**		**1.7**		**3.1**		**2.4**		**2.3**		**1.1**		**1.1**		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	**0.12**	J1	0.25	U	**0.33**		**0.54**		0.53	U	**0.53**		0.44	U	0.48	U	NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	3.1	U	14	U	20	U	3.0	U	6.2	U	22	U	30	U	32	U	NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.27	U	0.25	U	0.25	U	0.25	U	**0.79**		0.25	U	0.25	U	NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**48**		**250**		**620**		**530**		**580**		**1100**		**630**		**640**		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	**1.1**		**7.3**		**9.3**		**9.3**		**21**		**24**		**16**		**16**		NA		NA		NA		NA		NA	
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	**5.7**		**4.0**		**6.5**		2.0	U	**15**		**8.2**	J2	**14**	J2	**60**		**12**		**12**		**32**		**2.1**	
20	14	4-Methylphenol	1.0	U	**1.4**		2.0	U	**7.0**		1.0	U	**1.6**	M	1.0	U	1.0	U	**16**		**1.7**		**1.8**		**2.1**		1.0	U
21	15	Isophorone	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	6.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	20	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	50	U
24	18	Naphthalene	1.0	U	**2.5**		**4.2**		**2.8**		**12**		**12**		**7.1**		**5.8**		**13**		**9.3**		**9.8**		**2.7**		**13**	
25	19	2-Methylnaphthalene	1.0	U	1.0	U	2.0	U	1.0	U	**2.0**		**3.4**		**2.2**		**1.7**		**5.2**		**3.7**		**4.0**		1.0	U	**3.7**	
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	10	U	5.0	U	**6.2**		**6.8**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	**35**		5.0	U	5.0	U	5.0	U	**40**		**31**		**17**		**13**		**13**		**6.9**		5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	**150**		**3100**		**4100**		**2800**		**7300**		**5400**		**4000**		**3900**		**1400**	J	**1900**		**2000**		**410**		**17**	
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	**30**		5.0	U	**39**	M	30	U	**16**		**14**		**28**		**13**		**13**		**7.2**	M	**8.4**	
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	6.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	**7.9**		**29**		**47**		**80**		25	U	30	U	**7.4**	J2	**41**	J2	5.0	U	**5.7**		**6.4**		**5.6**		**30**	
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	6.0	U	**1.0**		1.0	U	**9.0**		**3.4**		**3.4**		**11**		**24**	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	6.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	**6.6**		**1.8**		**1.1**		**20**		**14**		**9.1**		**8.2**		**18**		**14**		**15**		**18**		**5.7**	
42	36	Ethylbenzene	**1.3**		**51**		**34**		**31**		**130**		**120**		**96**		**86**		**80**		**71**		**72**		**82**		**74**	
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	6.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	**1.6**		**52**		**23**		**32**		**170**		**150**		**92**		**82**		**160**		**140**		**140**		**200**		**270**	
45	39	o-Xylene	**1.6**		**130**		**71**		**73**		**250**		**240**		**160**		**150**		**110**		**100**		**100**		**120**		**87**	
46	40	1,3,5-Trimethylbenzene	1.0	U	**41**		**12**		**38**		**120**		**64**		**29**		**25**		**58**		**37**		**38**		**40**		**53**	
47	41	1,2,4-Trimethylbenzene	**2.2**		**160**		**75**		**170**		**500**		**320**		**240**		**250**		**160**		**160**		**160**		**150**		**200**	
48	42	Isopropylbenzene	**3.5**		**36**		**23**		**21**		**58**		**47**		**26**		**21**		**28**		**28**		**28**		**29**		**26**	
49	43	n-Propylbenzene	**1.5**		**37**		**24**		**35**		**82**		**61**		**36**		**31**		**45**		**34**		**36**		**36**		**32**	
50	44	tert-Butylbenzene	1.0	U	**2.6**		**1.6**		**2.0**	M	5.0	U	6.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	**3.2**		**17**		**8.6**		**14**		**21**		**16**		**11**		**10**		**10**		**7.7**		**7.8**		**6.8**		1.0	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	**1.6**		**7.2**		**13**		**8.6**		**5.2**		**4.6**		**5.9**		**4.1**		**4.2**		**3.8**		**5.5**	
53	47	n-Butylbenzene	1.0	U	**4.7**		2.3	U	**5.8**	M	5.0	U	7.7	U	**6.0**		**6.0**		**9.2**	M	6.0	U	6.2	U	4.8	U	**4.7**	M
54	48	Naphthalene	5.0	U	**7.1**		**7.3**		**8.9**		25	U	30	U	**11**		**12**		**29**		**25**		**28**		**14**		**24**	
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	**1.0**		**7.5**		**5.7**		**5.1**		**12**		**13**		**6.4**		**5.7**		**4.1**		**4.9**		**4.5**		**4.3**		**4.7**	
60	53	**TPH-D Motor Oil**	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	2.0	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	2.5	U	2.0	U
61	54	**TPH-Gasoline**	**0.63**		**6.6**		**5.1**		**4.5**		**29**		**26**		**9.7**		**9.9**		**7.1**		**5.4**		**5.3**		**7.7**		**5.2**	
62	55																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
2		Dup of RW1						Dup of RW1										Dup of RW1								Dup of RW1
3		X		RW1		RW1		X		RW1		RW1		RW1		RW1		X		RW1		RW1		RW1		W
4		DW37A		ED34A		EM66B		EM66A		ER93J		EZ17H		FF65D		FL41L		FL41P		FU50C		FY72J		0402086-10		0402113-05
5		11/28/01		2/28/02		6/24/02		6/24/02		08/27/02		11/13/02		2/11/03		5/7/03		5/7/03		8/29/03		10/22/03		2/18/04		2/23/04
7	**CHLORINATED PHENOLS (µg/L)**																									
8	**EPA Method SW8040**																									
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16																										
17	**SEMIVOLATILES (µg/L)**																									
18	**EPA Method SW8270**																									
19	Phenol	2.0	U	**66**		**57**	J	**76**	J	**16**		**10**		**8.9**		2.1	U	2	U	**24**		**3.7**	M	1.96	U	1.96
20	4-Methylphenol	1.0	U	**4.6**		**21**		**25**		**5.4**		1.2	U	**6.9**		1	U	1	U	**5.3**		1	U	9.8	U	9.78
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1	U	1	U	1	U	1	U	1	U	0.98	U	0.978
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	**53**		3.5	U	**3.8**		3.1	U	3.1	U	13	U	6.4	U	2.94	U	2.93
23	Benzoic Acid	50	U	50	U	50	U	50	U	54	U	58	U	50	U	52	U	51	U	50	U	10	U	19.6	U	19.6
24	Naphthalene	**12**		**6.9**		**11**	J	**15**	J	**16**		**8.6**		**14**		**3.7**		**3.7**		**9**		**5.1**		**15.6**		**3.63**
25	2-Methylnaphthalene	**3.3**		**2.3**		**5.1**		**6.1**		**6**		**4.4**		**6.5**		**1.6**		**1.6**		**2.8**		1	U	**6.33**		**10.4**
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U	5.8	U	5	U	5.2	U	5.1	U	**13**		5.1	U	**14.8**		4.89
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	**5.8**	M	**20**		5.8	U	**9.2**	M	5.2	U	5.1	U	**20**		**33**		4.9	U	4.89
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1	U	1	U	1	U	1	U	1	U	0.98	U	0.978
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1	U	1	U	1	U	1	U	1	U	0.98	U	0.978
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.2	U	1	U	1	U	1	U	1	U	1	U	0.98	U	0.978
31	Pentachlorophenol	**17**		**1200**		**880**	J	**1100**	J	**2600**		**5400**		**2800**		**1700**		**1600**		**1400**		**350**		**2630**		**8.69**
32	bis(2-Ethylhexyl)phthalate	4.0	U	4.0	U	4.0	U	4.0	U	4.3	U	4.7	U	1	U	**9.8**	J	**3.3**	J	1	U	1	U	0.98	U	0.978
33																										
34	**VOLATILES (µg/L)**																									
35	**EPA Method SW8260**																									
36	Acetone	**7.6**		**110**	J	50	U	48	U	15	U	5	U	**16**	M	**20**		**24**	M	**26**	MJ	**15**	M	50	U	50
37	Carbon Disulfide	1.0	U	1.0	U	3.0	U	1.0	U	3	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U	2
38	2-Butanone	**30**	M	**47**	J	15	U	**16**	J	**32**	M	5	U	5	U	5	U	5	U	5	U	**46**	M	10	U	10
39	Benzene	**23**		**1.9**	J	3.0	U	3.0	U	**4.8**		**22**		**12**		**1**		**2**		**4.9**	J	**4.9**		**7.42**		**5.96**
40	Bromoform	1.0	U	1.0	U	3.0	U	1.0	U	3	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1
41	Toluene	**5.3**		**12**	J	**16**		**14**	J	**15**		**13**		1	U	1	U	1	U	**3**	J	1	U	1	U	1
42	Ethylbenzene	**74**		**81**	J	**140**		**120**	J	**120**		**130**		**57**		**14**	J	**37**	J	**68**	J	**64**		**106**		**11.9**
43	Styrene	1.0	U	1.0	U	3.0	U	1.0	U	3	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1
44	m,p-Xylene	**280**		**97**	J	**310**		**250**	J	**230**		**160**		**41**		**12**	J	**34**	J	**90**	J	**62**		**45.6**		**5.89**
45	o-Xylene	**87**		**170**	J	**220**		**190**	J	**200**		**200**		**73**		**25**	J	**66**		**120**	J	**90**		**142**		**2.22**
46	1,3,5-Trimethylbenzene	**52**		**40**	J	**100**		**100**	J	**97**		**87**		**19**		**9.8**	J	**30**	J	**67**	J	**31**		**55.2**		**20.8**
47	1,2,4-Trimethylbenzene	**200**		**170**	J	**370**		**310**	J	**380**		**410**		**110**		**64**	J	**160**	J	**230**		**170**		**180**		**67.9**
48	Isopropylbenzene	**26**		**29**	J	**42**		**47**	J	**53**		**60**		**20**		**12**	J	**24**	J	**42**	J	**34**		**43.9**		**40.8**
49	n-Propylbenzene	**31**		**34**	J	**63**		**64**	J	**72**		**80**		**29**		**14**	J	**32**	J	**52**	J	**40**		**57.2**		**61.9**
50	tert-Butylbenzene	1.0	U	**1.8**	J	3.0	U	3.0	U	3	U	**3**		**1**		**1.7**		**2.3**		**3.1**	J	**2**		**1.15**		1
51	sec-Butylbenzene	1.0	U	**8.9**	J	3.0	U	3.0	U	3	U	**16**		**5.5**		**5.7**	J	**9.3**	J	**17**	J	**11**		**12.9**		**8.99**
52	4-Isopropyltoluene	**5.4**		4.5	U	**9.3**		**8.8**	J	**11**		**9.5**		**2.6**		**1.2**	J	**6.2**	J	**6.9**	J	**3.6**		**5.2**		**2.19**
53	n-Butylbenzene	**4.7**	M	**6.8**	J	10	U	8.2	U	**14**	M	**9**		**4**	M	**2.2**	MJ	**4.5**	J	**7.3**	MJ	**4.7**	M	**5.52**		**5.23**
54	Naphthalene	**22**		**21**	J	**19**		**20**	J	**45**		**19**		**19**		5	U	**10**		**19**	J	**13**		**27.6**		**4.49**
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1
56																										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	**Method OR-DEQ**																									
59	**TPH-Diesel**	**5.0**		**4.9**		**6.8**	J	**17**	J	**9.4**		**13**		**6.8**		**5.1**		**5.4**		**8.1**		**5.8**		**11.2**	J	**1.08**
60	**TPH-D Motor Oil**	0.50	U	0.50	U	0.50	U	0.50	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**1.22**	J	0.492
61	**TPH-Gasoline**	**5.3**		12		**13**		**14**		**14**		**18**		**6.9**		**5.2**	J	**6.7**	J	**8.2**		**7**		**6.3**		**2.4**
62																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2											Dup of RW1				Dup of RW1			Dup of RW1		Dup of RW1
3			RW1		RW1		RW1		RW1		W		RW1		W		RW1	W	RW1	W
4			0406074-10		0408025-01		0411066-11		0502087-04		0502087-05		P5F0668-05		P5F0668-06		P5H1257-02	P5H1257-01	P5K0820-02	P5K0820-01
5			6/10/04		8/04/04		11/11/04		2/17/05		2/17/05		6/15/05		6/15/05		08/30/05	08/30/05	11/17/05	11/17/05
6																				
7	**CHLORINATED PHENOLS (µg/L)**																			
8	**EPA Method SW8040**																			
9	Pentachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	0.481 U	**0.524**
10	2,4,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
11	2,3,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
12	2,4,5-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
13	2,3,4-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
16																				
17	**SEMIVOLATILES (µg/L)**																			
18	**EPA Method SW8270**																			
19	Phenol	U	1.9	U	2	U	2.01	U	1.95	U	1.95	U	5.00	U	5.00	U	5.00 U	5.00 U	9.71 UJ	9.62 UJ
20	4-Methylphenol	U	9.49	U	10	U	10.1	U	9.76	U	9.74	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
21	Isophorone	U	0.949	U	1	U	1.01	U	0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
22	2,4-Dimethylphenol	U	2.85	U	3	U	3.02	U	2.93	U	2.92	U	10.00	U	10.00	U	10.0 U	10.0 U	14.6 U	14.4 U
23	Benzoic Acid	U	19	U	20	U	20.1	U	19.5	U	19.5	U	50.0	U	50.0	U	50.0 U	50.0 U	243 U	240 U
24	Naphthalene		**8.1**		**7.35**		**3.61**		0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
25	2-Methylnaphthalene		**4.13**		**1.84**		**1.02**		0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
26	2,4,6-Trichlorophenol	U	4.74	U	**19.9**		**23.4**		4.88	U	4.87	U	5.00	U	5.00	U	5.00 U	5.00 U	24.3 U	24.0 U
27	2,4,5-Trichlorophenol	U	4.74	U	5	U	5.03	U	4.88	U	4.87	U	5.00	U	5.00	U	5.00 U	5.00 U	24.3 U	24.0 U
28	Acenaphthene	U	0.949	U	1	U	1.01	U	0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
29	Dibenzofuran	U	0.949	U	1	U	1.01	U	0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
30	Fluorene	U	0.949	U	1	U	1.01	U	0.976	U	0.974	U	5.00	U	5.00	U	5.00 U	5.00 U	4.85 U	4.81 U
31	Pentachlorophenol		**903**		**160**		**123**		**205**	J	**137**	J	**271**		**301**		**108**	**111**	24.3 U	24.0 U
32	bis(2-Ethylhexyl)phthalate	U	0.949	U	1	U	1.01	U	0.976	U	0.974	U	10.00	U	10.00	U	10.0 U	10.0 U	48.5 U	48.1 U
33																				
34	**VOLATILES (µg/L)**																			
35	**EPA Method SW8260**																			
36	Acetone	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0	U	25.0 U	25.0 U	25.0 U	25.0 U
37	Carbon Disulfide	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.00	U	10.0 U	10.0 U	10.0 U	10.0 U
38	2-Butanone	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.00	U	10.0 U	10.0 U	10.0 U	10.0 U
39	Benzene		**6.78**		**8.67**	J	**6.12**		**8.62**		**10**		**11.8**		**11.9**		**9.25**	**9.30**	**6.39**	**6.43**
40	Bromoform	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U	1.00 U	1.00 U
41	Toluene	U	1	U	**1.6**	J	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U	1.00 U	1.00 U
42	Ethylbenzene		**90.7**		**192**	J	**31.8**		**23.2**		**28.2**		**6.46**		**6.45**		**10.7**	**10.4**	**40.1**	**41.0**
43	Styrene	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U	1.00 U	1.00 U
44	m,p-Xylene		**110**		**299**	J	**40.3**		2	U	2	U	2.00	U	2.00	U	**6.30**	**5.75**	**39.5**	**41.5**
45	o-Xylene		**130**		**294**	J	**47.8**		**54.3**		**63.8**		**37.6**		**37.0**		**10.1**	**9.38**	**18.6**	**19.1**
46	1,3,5-Trimethylbenzene		**66.6**		**83.8**	J	**22.5**		**2.54**		**2.31**		1.00	U	1.00	U	**1.41**	**1.09**	**7.16**	**7.62**
47	1,2,4-Trimethylbenzene		**226**		**349**	J	**84.4**		**133**		**160**		**53.6**		**52.8**		**20.3**	**17.0**	**87.1**	**90.2**
48	Isopropylbenzene		**35.7**		**75.2**	J	**17**		**27.2**	J	**35.8**	J	**29.2**		**29.6**		**23.6**	**22.5**	**27.5**	**27.7**
49	n-Propylbenzene		**57.3**		**58**	J	**17.2**		**27.1**	J	**36.3**	J	**20.6**		**21.0**		**14.8**	**14.0**	**26.4**	**26.7**
50	tert-Butylbenzene	U	**1.95**		**2.29**	J	**1.8**		**3.4**		**3.94**		**1.67**		**1.83**		**1.78**	**1.82**	**1.5**	**1.59**
51	sec-Butylbenzene		**10.5**		**12.3**	J	**4.37**		**7.89**	J	**10.2**	J	**6.44**		**6.82**		**5.64**	**5.39**	**4.37**	**4.35**
52	4-Isopropyltoluene		**5.98**		**6.33**	J	**2.08**		1	U	1	U	2.00	U	2.00	U	2.00 U	2.00 U	**2.13**	**2.13**
53	n-Butylbenzene		**4.07**		**3.86**	J	**2**		**5.52**		**6.32**		5.00	U	5.00	U	5.00 U	5.00 U	5.00 U	5.00 U
54	Naphthalene		**16.7**		**17.6**	J	**13**		**6.78**		**8.21**		**2.08**		**2.18**		2.00 U	2.00 U	**10.4**	**10.2**
55	Methyl tert-butyl ether	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U	1.00 U	1.00 U	1.00 U
56																				
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																			
58	**Method OR-DEQ**																			
59	**TPH-Diesel**		NA		**6.12**		NA		**2.62**		**2.82**		**0.539**		**0.58**		**0.274**	**0.357**	**0.483**	**0.516**
60	**TPH-D Motor Oil**	U	NA		0.51	U	NA		0.494	U	0.498	U	0.556	U	0.5	U	0.500 U	0.500 U	0.481 U	0.481 U
61	**TPH-Gasoline**		NA		**5.48**		NA		**2.02**	J	**2.61**	J	**1.27**		**1.38**		**0.697**	**0.638**	**826 J**	**880 J**
62																				

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																	Dup of RW1						Dup of RW1					
3			RW1		RW1		RW1		RW1		RW1		RW1		RW1		W		RW1		RW1		W		RW1		RW1	
4			AH76F		AU36E		BC21U		BH96X		BR64O		CB68G		CK77B		CK77A		CT67K		DE87Q		DE87M		DM30G		DW37D	
5			5/20/99		9/21/99		12/7/99		2/16/00		5/25/00		8/30/00		11/7/00		11/7/00		2/15/01		6/6/01		6/6/01		8/13/01		11/28/01	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.002**		**0.005**		**0.006**		**0.004**		**0.004**		**0.006**		**0.006**		**0.006**		**0.007**		**0.007**		**0.007**		**0.008**		**0.009**	
66	59	Chromium (6010)	0.005	U	0.005	U	**0.007**		**0.011**		0.005	U	0.005	U	**0.015**		**0.010**		0.005	U	0.005	U	0.005	U	0.005	U	**0.008**	J
67	60	Copper (6010)	**0.018**		**0.003**		**0.013**		**0.024**		**0.005**		0.002	U	**0.020**	J2	**0.016**	J2	0.002	U	0.002	U	0.002	U	0.002	U	**0.008**	J
68	61	Lead (7421)	**0.003**		0.001	U	**0.004**		**0.005**		0.001	U	0.001	U	**0.006**		**0.004**		0.001	U	0.001	U	0.001	U	0.001	U	**0.002**	J
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	**0.02**		0.01	U	0.01	U	**0.01**		**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.020**		0.004	U	**0.028**		**0.046**		0.006	U	0.006	U	**0.054**		**0.048**		**0.017**		0.006	U	0.006	U	0.006	U	**0.026**	J
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**37.3**		NA		NA		NA		NA		NA		NA		NA		**49.1**		**36.1**		**37.3**		**45.3**		**58.7**	J
74	67	Magnesium (mg/L) (6010)	**11.7**		NA		NA		NA		NA		NA		NA		NA		**15.2**		**11.9**		**12.2**		**15.2**		**19.5**	J
75	68	Potassium (mg/L) (6010)	**4.0**		NA		NA		NA		NA		NA		NA		NA		**4.0**		**2.8**		**3.4**		**3.5**		**4.2**	
76	69	Sodium (mg/L) (6010)	**6.03**		NA		NA		NA		NA		NA		NA		NA		**6.67**		**6.01**		**5.59**		**6.62**		**8.18**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**140**		NA		NA		NA		NA		NA		NA		NA		**230**		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**140**		NA		NA		NA		NA		NA		NA		NA		**230**		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**180**		**210**		**170**		**200**		**350**		**240**		**220**		**230**		**320**		**220**	J	**220**	J	**220**	J	**290**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.9**		**3.8**		**6.7**		**12**		**4.2**		**13**		**7.3**		**6.2**		**5.9**	J	**4.7**		**5.1**		**7.6**		**8.4**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	NA		NA		NA		NA		NA		NA		NA		**0.023**	J	NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	0.010	U	NA		NA		NA		NA		NA		NA		NA		**0.030**		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**3.8**		NA		NA		NA		NA		NA		NA		NA		**3.0**		NA		NA		NA		NA	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																										
2		Dup of RW1						Dup of RW1										Dup of RW1								Dup of RW1
3		X		RW1		RW1		X		RW1		RW1		RW1		RW1		X		RW1		RW1		RW1		W
4		DW37A		ED34A		EM66B		EM66A		ER93J		EZ17H		FF65D		FL41L		FL41P		FU50C		FY72J		0402086-10		0402113-05
5		11/28/01		2/28/02		6/24/02		6/24/02		08/27/02		11/13/02		2/11/03		5/7/03		5/7/03		8/29/03		10/22/03		2/18/04		2/23/04
63	**PRIORITY POLLUTANT**																									
64	**METALS (mg/L)**																									
65	Arsenic (7060)	**0.008**		**0.008**		**0.006**		**0.006**		**0.008**		0.05	U	**0.004**		**0.005**		**0.005**		**0.006**		**0.005**		**0.004**		**0.021**
66	Chromium (6010)	**0.014**	J	**0.015**		0.005	U	0.005	U	0.005	U	**0.013**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0093**		**0.0077**
67	Copper (6010)	**0.013**	J	**0.028**		**0.005**		**0.006**		**0.004**		**0.018**		**0.006**		**0.004**		**0.005**		**0.003**		**0.005**		**0.0172**		0.01
68	Lead (7421)	**0.004**	J	**0.006**		**0.001**		0.001	U	**0.001**		0.02	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	**0.0005**		0.0001
69	Nickel (6010)	**0.01**		**0.02**		0.01	U	0.01	U	0.01	U	**0.02**		**0.11**		0.01	U	**0.01**		0.01	U	0.01	U	0.005	U	0.005
70	Zinc (6010)	**0.038**	J	**0.054**		**0.016**		**0.020**		0.006	U	**0.055**		**0.008**		**0.065**	J	**0.013**	J	**0.009**		**0.01**		0.01	U	0.01
71																										
72	**MAJOR IONS AND CONVENTIONALS**																									
73	Calcium (mg/L) (6010)	**65.4**	J	**152**		NA		NA		NA		NA		**31.7**		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	**21.8**	J	**51.9**		NA		NA		NA		NA		**10.6**		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	**5.1**		**6.7**		NA		NA		NA		NA		**3.6**		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	**9.48**		**12.0**		NA		NA		NA		NA		**7.9**		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		**480**		NA		NA		NA		NA		**130**		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		1.0	U	NA		NA		NA		NA		1	U	NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		**480**		NA		NA		NA		NA		**130**		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**280**		**1100**		**1900**		**2000**		**230**		**260**		**230**		**240**		**240**		**320**		**320**		**242**		**239**
81	Chloride (mg/L) (EPA 325.2)	**8.3**		**11**		**8.8**		**8.0**		**6.4**		**7.0**		**5.4**		**6**		**6**		**5.9**		**7.8**		**4.79**		**3.95**
82	N-Nitrate (mg-N/L) (Calculated)	NA		**0.044**		NA		NA		NA		NA		**0.043**		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		0.010	U	NA		NA		NA		NA		**0.043**		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		**0.044**		NA		NA		NA		NA		**0.086**		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		**5.7**		NA		NA		NA		NA		**46**		NA		NA		NA		NA		NA		NA
86																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2											Dup of RW1				Dup of RW1			Dup of RW1		Dup of RW1
3			RW1		RW1		RW1		RW1		W		RW1		W		RW1	W	RW1	W
4			0406074-10		0408025-01		0411066-11		0502087-04		0502087-05		P5F0668-05		P5F0668-06		P5H1257-02	P5H1257-01	P5K0820-02	P5K0820-01
5			6/10/04		8/04/04		11/11/04		2/17/05		2/17/05		6/15/05		6/15/05		08/30/05	08/30/05	11/17/05	11/17/05
63	**PRIORITY POLLUTANT**																			
64	**METALS (mg/L)**																			
65	Arsenic (7060)		**0.012**		**0.006**		**0.00526**		**0.00343**		**0.00345**		**0.00251**		**0.00254**		**0.00235 J**	**0.00342 J**	**0.00366**	**0.00376**
66	Chromium (6010)		**0.0382**		0.005	U	**0.0244**		0.005	U	**0.0075**		**0.00348**	J	**0.00542**	J	**0.00372**	**0.00425**	0.001 U	0.001 U
67	Copper (6010)	U	**0.0286**		0.01	U	0.01	U	0.01	U	0.01	U	**0.0191**		**0.0215**		**0.0185**	**0.0209**	**0.00262**	**0.00251**
68	Lead (7421)	U	**0.0082**		**0.000111**		**0.00434**		0.000331	U	0.000316	U	**0.00218**	J	**0.00302**	J	**0.00196**	**0.00227**	0.001 U	0.001 U
69	Nickel (6010)	U	**0.0199**		0.005	U	0.005	U	**0.0175**		**0.0173**		**0.0600**		**0.0644**		**0.025**	**0.0277**	**0.0876**	**0.0882**
70	Zinc (6010)	U	**0.102**		**0.0244**		**0.0394**		0.01	U	0.01	U	**0.0222**	J	**0.0286**	J	**0.0185**	**0.0204**	0.005 U	0.005 U
71																				
72	**MAJOR IONS AND CONVENTIONALS**																			
73	Calcium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
74	Magnesium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
75	Potassium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
76	Sodium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**472**		**495**		**437**		**268**		**265**		**366**		**382**		**347**	**347**	NA	NA
81	Chloride (mg/L) (EPA 325.2)		**6.59**		**4.89**		**5.55**		**6.92**		**6.49**		**4.05**		**4.15**		**3.21**	**3.40**	NA	NA
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
86																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																	Dup of RW1						Dup of RW1					
3			RW1		RW1		RW1		RW1		RW1		RW1		RW1		W		RW1		RW1		W		RW1		RW1	
4			AH76F		AU36E		BC21U		BH96X		BR64O		CB68G		CK77B		CK77A		CT67K		DE87Q		DE87M		DM30G		DW37D	
5			5/20/99		9/21/99		12/7/99		2/16/00		5/25/00		8/30/00		11/7/00		11/7/00		2/15/01		6/6/01		6/6/01		8/13/01		11/28/01	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.54		6.14		6.18		6.44		6.46		5.69		5.28		5.27		6.35		6.62		6.61		6.54		6.51	
89	82	Temperature (° C) (avg)	14.0		17.3		17.2		14.6		13.2		14.8		14.2		14.1		12.7		14.4		14.4		16.4		13.7	
90	83	Conductivity (um/hos)	244		271		273		211		440		314		305		303		506		377		377		389		584	
91	84	Dissolved oxygen (mg/L) (avg)	1.52		2.09		1.72		0.76		1.00		0.87		0.69		0.72		0.32		0.97		0.94		1.10		3.36	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		NA		NA	
122																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																										
2		Dup of RW1						Dup of RW1										Dup of RW1								Dup of RW1
3		X		RW1		RW1		X		RW1		RW1		RW1		RW1		X		RW1		RW1		RW1		W
4		DW37A		ED34A		EM66B		EM66A		ER93J		EZ17H		FF65D		FL41L		FL41P		FU50C		FY72J		0402086-10		0402113-05
5		11/28/01		2/28/02		6/24/02		6/24/02		08/27/02		11/13/02		2/11/03		5/7/03		5/7/03		8/29/03		10/22/03		2/18/04		2/23/04
87	**FIELD PARAMETERS**																									
88	pH (avg)	6.5		6.15		6.16		6.14		6.71		6.03		6.4		6.82		6.84		6.65		6.73		6.68		6.34
89	Temperature (° C) (avg)	13.5		12.8		15.6		15.6		15.6		17.3		15.3		14.2		14.2		15.4		17.5		13.8		14.3
90	Conductivity (um/hos)	583		878		803		805		291		394		366		308		308		430		415		343		345
91	Dissolved oxygen (mg/L) (avg)	3.43		7.27		3.86		3.54		0.00		0.00		0		1.79		1.75		1.59		2.65		1.35		1.32
92																										
93	**DIOXINS AND FURANS (ng/L)**																									
94	**Method 8290**																									
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		3.0	U	NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		3.0	U	NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		4.1	U	NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.4	U	NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.9	U	NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.7	U	NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.7	U	NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.9	U	NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**6.5**		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.2	U	NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1.9	U	NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.1	U	NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.3	U	NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**20.2**		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.8	U	NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		3.0	U	NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		2.4	U	NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**19.9**		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**18.1**	J	NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		4.3	U	NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**86**		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**125**		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**211**		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**119**		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**1226**		NA		NA
120																										
121	**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																										

BZTO104(e)027041

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2											Dup of RW1				Dup of RW1			Dup of RW1		Dup of RW1
3			RW1		RW1		RW1		RW1		W		RW1		W		RW1	W	RW1	W
4			0406074-10		0408025-01		0411066-11		0502087-04		0502087-05		P5F0668-05		P5F0668-06		P5H1257-02	P5H1257-01	P5K0820-02	P5K0820-01
5			6/10/04		8/04/04		11/11/04		2/17/05		2/17/05		6/15/05		6/15/05		08/30/05	08/30/05	11/17/05	11/17/05
87	**FIELD PARAMETERS**																			
88	pH (avg)		6.35		6.04		6.44		6.42		6.42		6.36		6.36		5.36	5.36	6.61	6.59
89	Temperature (° C) (avg)		16.3		17		16		14.6		14.6		16.3		16.2		16.2	16.2	15.9	15.9
90	Conductivity (um/hos)		575		750		546		198		198		391		389		1073	1073	234	233
91	Dissolved oxygen (mg/L) (avg)		2.42		2.29		1.53		0		0		2.46		2.45		1.28	1.28	1.88	1.07
92																				
93	**DIOXINS AND FURANS (ng/L)**																			
94	**Method 8290**																			
95	2,3,7,8-TCDF		0.001172	U	0.002108	U	0.000947	UJ	0.000455	U	NA		0.011	U	NA		0.015 U	NA	0.00988 U	NA
96	Total TCDF		**0.01243**		**0.016418**		**0.007227**		**0.001836**		NA		0.011	U	NA		0.015 U	NA	0.00988 U	NA
97	2,3,7,8-TCDD		0.001296	U	0.00189	U	0.000371	UJ	0.000208	U	NA		0.011	U	NA		0.015 U	NA	0.00988 U	NA
98	Total TCDD		0.001296	U	0.00189	U	**0.012783**		0.000208	U	NA		0.011	U	NA		0.015 U	NA	0.00988 U	NA
99	1,2,3,7,8-PeCDF		**0.002537**	J	0.005954	UJ	0.000584	U	0.00024	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
100	2,3,4,7,8-PeCDF		0.000886	U	0.001846	U	0.000546	U	0.000231	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
101	Total PeCDF		**0.008505**		**0.009166**		**0.013908**		**0.000754**		NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
102	1,2,3,7,8-PeCDD		0.001184	U	0.002557	U	0.000674	U	0.000549	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
103	Total PeCDD		0.001184	U	0.002557	U	**0.018875**		0.000549	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
104	1,2,3,4,7,8-HxCDF		0.000811	U	**0.005188**	J	0.00212	UJ	0.0015	UJ	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
105	1,2,3,6,7,8-HxCDF		0.000804	U	0.005326	UJ	0.001554	UJ	0.000474	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
106	2,3,4,6,7,8-HxCDF		0.000882	U	0.002058	U	**0.001781**	J	0.000506	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
107	1,2,3,7,8,9-HxCDF		0.000982	U	0.002386	U	0.000289	U	0.000583	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
108	Total HxCDF		0.000804	U	**0.018357**		**0.06799**		**0.01711**		NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
109	1,2,3,4,7,8-HxCDD		0.001465	U	0.002938	U	0.000437	U	0.000436	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
110	1,2,3,6,7,8-HxCDD		0.001233	U	0.002518	U	**0.006886**	J	0.001897	UJ	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
111	1,2,3,7,8,9-HxCDD		0.001245	U	0.002694	U	0.001768	UJ	0.000415	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
112	Total HxCDD		0.001233	U	**0.011911**		**0.099208**		**0.019999**		NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
113	1,2,3,4,6,7,8-HpCDF		0.001827	U	0.005138	UJ	**0.044978**		**0.015291**	J	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
114	1,2,3,4,7,8,9-HpCDF		0.002484	U	**0.011046**	J	**0.003391**	J	0.000732	U	NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
115	Total HpCDF		**0.001856**		**0.031417**		**0.19351**		**0.073902**		NA		0.055	U	NA		0.074 U	NA	0.0494 U	NA
116	1,2,3,4,6,7,8-HpCDD		**0.003583**	J	**0.031308**		**0.278831**	J	**0.115509**		NA		0.055	U	NA		**0.080**	NA	0.0494 U	NA
117	Total HpCDD		**0.006947**		**0.061732**		**0.493796**		**0.189293**		NA		0.055	U	NA		**0.080**	NA	0.0494 U	NA
118	OCDF		0.006121	UJ	**0.029711**	J	**0.237755**		**0.103526**		NA		0.11	U	NA		0.15 U	NA	0.0988 U	NA
119	OCDD		0.036956	U	**0.429978**		**2.58707**		**1.15**		NA		**0.33**		NA		**1.000 J**	NA	**0.254**	NA
120																				
121	**ETHANOL (mg/L)**		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
122																				

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																	Dup of RW1						Dup of RW1					
3			RW1		RW1		RW1		RW1		RW1		RW1		RW1		W		RW1		RW1		W		RW1		RW1	
4			AH76F		AU36E		BC21U		BH96X		BR64O		CB68G		CK77B		CK77A		CT67K		DE87Q		DE87M		DM30G		DW37D	
5			5/20/99		9/21/99		12/7/99		2/16/00		5/25/00		8/30/00		11/7/00		11/7/00		2/15/01		6/6/01		6/6/01		8/13/01		11/28/01	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																										
2		Dup of RW1						Dup of RW1										Dup of RW1								Dup of RW1
3		X		RW1		RW1		X		RW1		RW1		RW1		RW1		X		RW1		RW1		RW1		W
4		DW37A		ED34A		EM66B		EM66A		ER93J		EZ17H		FF65D		FL41L		FL41P		FU50C		FY72J		0402086-10		0402113-05
5		11/28/01		2/28/02		6/24/02		6/24/02		08/27/02		11/13/02		2/11/03		5/7/03		5/7/03		8/29/03		10/22/03		2/18/04		2/23/04
123	**PAHs (µg/L)**																									
124	**EPA Method SW8270 SIM**																									
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																				
2											Dup of RW1				Dup of RW1			Dup of RW1		Dup of RW1
3			RW1		RW1		RW1		RW1		W		RW1		W		RW1	W	RW1	W
4			0406074-10		0408025-01		0411066-11		0502087-04		0502087-05		P5F0668-05		P5F0668-06		P5H1257-02	P5H1257-01	P5K0820-02	P5K0820-01
5			6/10/04		8/04/04		11/11/04		2/17/05		2/17/05		6/15/05		6/15/05		08/30/05	08/30/05	11/17/05	11/17/05
123	**PAHs (µg/L)**																			
124	**EPA Method SW8270 SIM**																			
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		**1.21**	NA	NA	NA
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA
127	Acenaphthylene		NA		1	U	NA		NA		NA		NA		NA		1.00 U	NA	NA	NA
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		1.00 U	NA	NA	NA
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		1.00 U	NA	NA	NA
130	Anthracene		NA		1	U	NA		NA		NA		NA		NA		0.100 U	NA	NA	NA
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA	NA	NA	NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			RW3		RW3	
4			BC30H		9912050-07A	
5			12/8/99		12/8/1999 (d)	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	**590**		NA	
10	4	2,4,6-Trichlorophenol	**0.19**	J1	NA	
11	5	2,3,6-Trichlorophenol	**0.13**	J1	NA	
12	6	2,4,5-Trichlorophenol	0.25	U	NA	
13	7	2,3,4-Trichlorophenol	0.25	U	NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**110**		NA	
15	9	2,3,4,5-Tetrachlorophenol	**3.0**		NA	
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	2.0	U	NA	
20	14	4-Methylphenol	1.0	U	NA	
21	15	Isophorone	1.0	U	NA	
22	16	2,4-Dimethylphenol	3.0	U	NA	
23	17	Benzoic Acid	10	U	NA	
24	18	Naphthalene	**14**		NA	
25	19	2-Methylnaphthalene	1.0	U	NA	
26	20	2,4,6-Trichlorophenol	5.0	U	NA	
27	21	2,4,5-Trichlorophenol	5.0	U	NA	
28	22	Acenaphthene	1.0	U	NA	
29	23	Dibenzofuran	1.0	U	NA	
30	24	Fluorene	1.0	U	NA	
31	25	Pentachlorophenol	**720**		NA	
32	26	bis(2-Ethylhexyl)phthalate	**1.4**		NA	
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	5.0	U	NA	
37	31	Carbon Disulfide	1.0	U	NA	
38	32	2-Butanone	**9.1**		NA	
39	33	Benzene	1.0	U	NA	
40	34	Bromoform	1.0	U	NA	
41	35	Toluene	1.0	U	NA	
42	36	Ethylbenzene	**8.3**		NA	
43	37	Styrene	1.0	U	NA	
44	38	m,p-Xylene	**12**		NA	
45	39	o-Xylene	**34**		NA	
46	40	1,3,5-Trimethylbenzene	**57**		NA	
47	41	1,2,4-Trimethylbenzene	**160**		NA	
48	42	Isopropylbenzene	**10**		NA	
49	43	n-Propylbenzene	**19**		NA	
50	44	tert-Butylbenzene	1.0	U	NA	
51	45	sec-Butylbenzene	**9.2**		NA	
52	46	4-Isopropyltoluene	**9.8**		NA	
53	47	n-Butylbenzene	8.9	U	NA	
54	48	Naphthalene	**15**		NA	
55	48.5	Methyl tert-butyl ether	NA		NA	
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	**3.5**		NA	
60	53	**TPH-D Motor Oil**	0.50	U	NA	
61	54	**TPH-Gasoline**	**2.5**		NA	
62	55					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			RW3		RW3	
4			BC30H		9912050-07A	
5			12/8/99		12/8/1999 (d)	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	**0.014**		NA	
66	59	Chromium (6010)	0.005	U	NA	
67	60	Copper (6010)	0.002	U	NA	
68	61	Lead (7421)	0.001	U	NA	
69	62	Nickel (6010)	0.01	U	NA	
70	63	Zinc (6010)	0.006	U	NA	
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**150**		NA	
81	74	Chloride (mg/L) (EPA 325.2)	**3.9**		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			RW3		RW3	
4			BC30H		9912050-07A	
5			12/8/99		12/8/1999 (d)	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.52		NM	
89	82	Temperature (° C) (avg)	12.9		NM	
90	83	Conductivity (um/hos)	231		NM	
91	84	Dissolved oxygen (mg/L) (avg)	1.76		NM	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121		**ETHANOL (mg/L)**	5.0	U	10	U
122						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			RW3		RW3	
4			BC30H		9912050-07A	
5			12/8/99		12/8/1999 (d)	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	NA		NA	
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	NA		NA	
128		Acenaphthene	NA		NA	
129		Fluorene	NA		NA	
130		Anthracene	NA		NA	
131		Dibenzofuran	NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																							
2									Dup of LW2S														
3			LW2S		LW2S		LW2S		LW2D		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S
4			S177G		T176C		U235M		U235E		V224N		W391A		Y336G		Z225A		Z960Q		AH27F		AU22G
5			4/2/97		7/15/97		10/22/97		10/22/97		1/29/98		5/19/98		8/19/98		11/13/98		2/18/99		5/17/99		9/20/99
6																							
7	1	**CHLORINATED PHENOLS (µg/L)**																					
8	2	**EPA Method SW8040**																					
9	3	Pentachlorophenol	**2600**		**2900**		**4400**		**4800**		**7600**		**8500**		**5000**		**3800**		**6000**		**560**		**1500**
10	4	2,4,6-Trichlorophenol	**0.46**		0.43	U	0.34	U	0.38	U	**0.56**		**0.57**		**0.34**		**0.34**		0.46		0.25	U	**0.16**
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
12	6	2,4,5-Trichlorophenol	0.86	U	0.25	U	0.49	U	0.51	U	0.25	U	**0.57**		**0.61**		0.25	U	0.60	U	0.25	U	0.57
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.13**	J1	**0.18**	J1	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**150**		**150**		**190**		**190**		**290**		**370**		**180**		**130**		**300**		**20**		**47**
15	9	2,3,4,5-Tetrachlorophenol	**2.5**		**3.4**		**4.8**		**4.7**		**4.4**		**6.6**		**8.6**		**2.8**		**3.2**		**1.1**		**2.2**
16	10																						
17	11	**SEMIVOLATILES (µg/L)**																					
18	12	**EPA Method SW8270**																					
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	**5.5**		**2.3**		**20**		**17**		**13**		**10**	J2	**13**		**14**		**8.4**		1.0	U	**4.3**
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	**3900**		**3000**		**6000**		**7300**		**7900**		**7300**		**4200**		**4100**		**5400**		**500**		**1600**
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	**1.9**		1.0	U	1.0	U	**12**		1.0	U	1.0	U	**1.6**		**1.3**		1.0
33	27																						
34	28	**VOLATILES (µg/L)**																					
35	29	**EPA Method SW8260**																					
36	30	Acetone	10	U	5.0	U	6.9		45	U	5.0	U	**7.4**		5.0	U	**35**		15	U	5.0	U	5.0
37	31	Carbon Disulfide	2.0	U	1.0	U	1.0	U	9.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0
38	32	2-Butanone	10	U	5.0	U	5.0	U	45	U	5.0	U	5.0	U	5.0	U	**7.4**		15	U	**9.4**		**28**
39	33	Benzene	2.0	U	1.0	U	1.0	U	9.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0
40	34	Bromoform	2.0	U	1.0	U	1.0	U	9.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0
41	35	Toluene	2.0	U	**2.0**		**1.1**		9.0	U	1.0	U	1.0	U	**1.4**		**1.3**		3.0	U	1.0	U	1.0
42	36	Ethylbenzene	**5.7**		**11**		**32**		**32**		**17**		**5.1**		**9.7**		**12**		**11**		**2.0**		**6.3**
43	37	Styrene	2.0	U	1.0	U	1.0	U	9.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0
44	38	m,p-Xylene	**13**		**16**		**37**		**36**		**32**		**12**		**17**		**24**		**18**		**2.6**		**11**
45	39	o-Xylene	**23**		**35**		**91**		**92**		**63**		**23**		**39**		**61**		**42**		**6.9**		**29**
46	40	1,3,5-Trimethylbenzene	**53**		**49**		**130**		**110**		**80**		**34**		**54**		**62**		**93**		**8.7**		**45**
47	41	1,2,4-Trimethylbenzene	**210**		**200**		**640**	J2	**790**	J2	**490**		**160**		**180**		**280**		**330**		**44**		**120**
48	42	Isopropylbenzene	**7.5**		**14**		**62**	J2	**49**	J2	**19**		**6.4**		**10**		**12**		**16**		**2.2**		**7.0**
49	43	n-Propylbenzene	**16**		**26**		**110**		**90**		**38**		**15**		**21**		**22**		**35**		**4.8**		**15**
50	44	tert-Butylbenzene	2.0	U	**1.8**	MJ	**5.7**		9.0	U	**2.7**		1.0	U	1.0	U	1.0	U	3.0		1.0	U	1.0
51	45	sec-Butylbenzene	**7.6**		**11**		**40**	J2	**27**	J2	**22**		**8.2**		**12**	J2	**12**		**15**		**2.9**		**8.0**
52	46	4-Isopropyltoluene	**9.6**		**9.6**		**31**	J2	**22**	J2	**21**		**9.1**		**12**		**12**		**12**		**2.0**		**8.8**
53	47	n-Butylbenzene	**8.5**		**8.4**	M	**29**	J2	**18**	J2	**16**		**7.7**		**10**		**10**		**12**		**1.9**		**7.0**
54	48	Naphthalene	**12.0**		**14**		**75**	J2	**58**	J2	**31**		**14**		**19**		**18**		**22**		5.0	U	**16**
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																						
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																					
58	51	**Method OR-DEQ**																					
59	52	**TPH-Diesel**	**4.4**		**5.0**		**11**		**11**		**10**		**5.6**		**5.2**		**5.0**		**6.2**		**1.1**		**2.3**
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																						

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1																										
2																										
3			LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S	
4			BC27H		9912050-04A		BH75F		BR64C		CB49I		CK77I		CT55G		DE68C		DM52I		DW48K		ED23E		EM85F	
5			12/8/99		12/8/1999 (d)		2/15/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/26/02		6/26/02	
6																										
7	**CHLORINATED PHENOLS (µg/L)**																									
8	**EPA Method SW8040**																									
9	Pentachlorophenol		**1300**		NA		**2100**		**1000**		**720**		**1100**		**650**	J	NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol	J1	**0.12**	J1	NA		**0.42**		0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	U	0.33	U	NA		0.37	U	0.25	U	0.74	U	0.33	U	NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		**36**		NA		**84**		**28**		**28**		**47**		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol		**1.6**		NA		**2.2**		**2.1**		**1.0**		**1.5**		NA		NA		NA		NA		NA		NA	
16																										
17	**SEMIVOLATILES (µg/L)**																									
18	**EPA Method SW8270**																									
19	Phenol	U	2.0	U	NA		2.0	U	2.0	U	2.0	U	**2.4**	J2	2.0	U	2.0	U	2.0	U	**2.8**		2.0	U	2.0	U
20	4-Methylphenol	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.0**		1.0	U	1.0	U
21	Isophorone	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	2,4-Dimethylphenol	U	3.0	U	NA		3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	Benzoic Acid	U	10	U	NA		10	U	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U
24	Naphthalene		**36**		NA		**8.2**		**5.2**		**1.4**		**9.2**		**12**		**21**		**6.8**		**14**		1.0	U	**6.2**	
25	2-Methylnaphthalene	U	**1.2**		NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	2,4,6-Trichlorophenol	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	2,4,5-Trichlorophenol	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	Acenaphthene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	Dibenzofuran	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	Fluorene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	Pentachlorophenol		**1800**		NA		**2100**		**1300**	J2	**200**		**1500**		**1200**	J	**1300**		**700**		**8000**		**320**		**950**	
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	**1.4**		1.0	U	1.0	U	**1.5**		4.0	U	4.0	U
33																										
34	**VOLATILES (µg/L)**																									
35	**EPA Method SW8260**																									
36	Acetone	U	**29**		NA		5.0	U	5.0	U	5.0	U	**27**			R	**33**		**20**		**39**		5.0	U	**8.2**	
37	Carbon Disulfide	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	3.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	2-Butanone		**6.7**	M	NA		**32**		**22**		5.0	U	15	U	10	U	34	U	**32**		5.0	U	**5.2**		**13**	
39	Benzene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	3.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	Bromoform	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	3.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	Toluene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	3.0	U	2.0	U	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U
42	Ethylbenzene		**22**		NA		**11**		**5.3**		**1.6**		**11**		**9.7**		**26**		1.0	U	**15**		1.0	U	**4.7**	
43	Styrene	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	3.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	m,p-Xylene		**18**		NA		**18**		**9.9**		**3.0**		**15**		**18**		**36**		**14**		**35**		**1.2**		**7.3**	
45	o-Xylene		**97**		NA		**45**		**25**		**8.1**		**36**		**49**		**87**		**36**		**84**		**3.0**		**18**	
46	1,3,5-Trimethylbenzene		**80**		NA		**69**		**38**		**16**		**47**		**61**		**94**		**34**		**130**		**5.7**		**24**	
47	1,2,4-Trimethylbenzene		**540**		NA		**330**		**160**		**66**		**250**		**320**		**490**		**200**		**420**		**25**		**110**	
48	Isopropylbenzene		**38**		NA		**23**		**7.3**		**2.2**		**9.1**		**19**		**32**		**13**		**16**		1.0	U	**6.8**	
49	n-Propylbenzene		**60**		NA		**48**		**16**		**5.8**		**20**		**36**		**67**		**28**		**32**		**2.0**		**14**	
50	tert-Butylbenzene	U	1.0	U	NA		3.1	U	**1.2**		1.0	U	3.0	U	**3.2**		1.0	U	1.0	U	**68**		1.0	U	1.0	U
51	sec-Butylbenzene		**27**		NA		**24**		**8.2**		**3.9**		**9.3**		**20**		**30**		**15**		1.0	U	**1.4**		**7.5**	
52	4-Isopropyltoluene		**20**		NA		**15**		**7.4**		**3.8**		**8.5**		**17**		**25**		**13**		**22**		**1.5**		**6.6**	
53	n-Butylbenzene		15	U	NA		17	U	**6.5**	M	**3.7**	M	**9.5**		**15**	M	**21**		**12**	M	**18**		**1.2**		5.7	U
54	Naphthalene		**54**		NA		**26**		**10**		5.0	U	**27**		**23**		**60**		**28**		**54**		5.0	U	**11**	
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	**Method OR-DEQ**																									
59	**TPH-Diesel**		**9.4**		NA		**5.5**		**3.5**		**1.8**		**4.0**		**9.1**		**9.4**		**5.4**		10		**1.5**		**2.8**	
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																										

BZTO104(e)027051

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																							
2									Dup of LW2S														
3			LW2S		LW2S		LW2S		LW2D		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S
4			S177G		T176C		U235M		U235E		V224N		W391A		Y336G		Z225A		Z960Q		AH27F		AU22G
5			4/2/97		7/15/97		10/22/97		10/22/97		1/29/98		5/19/98		8/19/98		11/13/98		2/18/99		5/17/99		9/20/99
63	56	**PRIORITY POLLUTANT**																					
64	57	**METALS (mg/L)**																					
65	58	Arsenic (7060)	**0.008**		**0.012**		0.05	U	0.05	U	0.05	U	**0.011**		**0.011**		**0.017**		**0.007**		**0.005**		**0.008**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.006**		0.005	U	0.005
67	60	Copper (6010)	0.002	U	**0.002**		0.002	U	0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	**0.007**		0.002	U	0.002
68	61	Lead (7421)	0.001	U	**0.001**		0.02	U	0.02	U	0.02	U	0.001	U	**0.007**		0.001	U	**0.004**		0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	**0.004**		**0.006**	J2	**0.007**		**0.004**		**0.004**		**0.004**	J2	**0.098**		**0.006**		**0.026**		0.005	U	**0.008**
71	64																						
72	65	**MAJOR IONS AND CONVENTIONALS**																					
73	66	Calcium (mg/L) (6010)	NA		NA		**18.4**		**18.2**		**9.13**		NA		NA		NA		**7.23**		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		**5.15**		**5.12**		**2.30**		NA		NA		NA		**2.52**		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		**2.8**		**2.8**		**1.6**		NA		NA		NA		**1.9**		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		**4.77**		**4.74**		**2.54**		NA		NA		NA		**3.69**		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		**62**		**61**		**52**		NA		NA		NA		**25**		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		**62**		**61**		**52**		NA		NA		NA		**25**		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**170**	J2	**130**		**140**		**66**		160		140		220		**76**		**160**		**160**
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		**15**		**15**		**1.9**		3.9		4.6		26		**1.9**		**1.8**		**3.1**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		**0.023**		**0.017**		0.010	UJ	NA		NA		NA		**0.040**		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		0.010	U	0.010	U	0.010	UJ	NA		NA		NA		**0.016**		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		**0.023**		**0.017**		0.010	UJ	NA		NA		NA		**0.056**		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		**5.3**		**5.9**		**6.5**		NA		NA		NA		**9.4**		NA		NA
86	79																						

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1																										
2																										
3			LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S	
4			BC27H		9912050-04A		BH75F		BR64C		CB49I		CK77I		CT55G		DE68C		DM52I		DW48K		ED23E		EM85F	
5			12/8/99		12/8/1999 (d)		2/15/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/26/02		6/26/02	
63	**PRIORITY POLLUTANT**																									
64	**METALS (mg/L)**																									
65	Arsenic (7060)		**0.011**		NA		**0.011**		**0.011**		**0.011**		**0.017**		**0.013**		**0.018**		**0.019**		**0.013**		**0.015**		**0.014**	
66	Chromium (6010)	U	0.005	U	NA		0.005	U	0.005	U	**0.005**		0.005	U	0.005	U	0.05	U	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	U	**0.002**		NA		**0.003**		**0.003**		**0.007**		**0.005**	J2	0.002	U	0.002	U	**0.004**		0.004	U	**0.003**		0.002	U
68	Lead (7421)	U	0.001	U	NA		0.001	U	0.001	U	**0.003**		**0.003**		0.001	U	0.001	U	**0.001**		**0.004**		0.001	U	0.001	U
69	Nickel (6010)	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)		0.009	U	NA		**0.010**		**0.006**		**0.016**		**0.013**		**0.011**		0.006	U	**0.012**		**0.012**		**0.006**		**0.012**	
71																										
72	**MAJOR IONS AND CONVENTIONALS**																									
73	Calcium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**35.6**		**42.2**		**24.3**		**23.3**		**12.3**		NA	
74	Magnesium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**9.27**		**10.1**		**7.63**		**7.65**		**3.88**		NA	
75	Potassium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**2.7**		**3.4**		**3.1**		**2.9**		**2.0**		NA	
76	Sodium (mg/L) (6010)		NA		NA		NA		NA		NA		NA		**5.10**		**5.23**		**5.84**		**5.14**		**3.46**		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		**140**		NA		NA		NA		**67**		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		NA		NA		**140**		NA		NA		NA		**67**		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**170**		NA		**84**		**140**		**180**		**220**		**210**		**300**		**210**		**190**		**120**		**110**	
81	Chloride (mg/L) (EPA 325.2)		**7.5**		NA		**1.8**		**2.5**		**2.8**		**26**		**15**		**38**		**26**		**9.7**		**4.1**		**3.3**	
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA		NA		NA		**0.010**		NA		NA		NA		0.010	U	NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.026**		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA		NA		NA		**0.010**		NA		NA		NA		**0.033**	J	NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA		NA		NA		**5.7**		NA		NA		NA		**4.3**		NA	
86																										

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																							
2									Dup of LW2S														
3			LW2S		LW2S		LW2S		LW2D		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S
4			S177G		T176C		U235M		U235E		V224N		W391A		Y336G		Z225A		Z960Q		AH27F		AU22G
5			4/2/97		7/15/97		10/22/97		10/22/97		1/29/98		5/19/98		8/19/98		11/13/98		2/18/99		5/17/99		9/20/99
87	80	**FIELD PARAMETERS**																					
88	81	pH (avg)	6.69		6.62		6.77		6.78		6.83		6.19		6.18		5.9300		6.21		5.62		6.06
89	82	Temperature (° C) (avg)	10.0		15		15.7		15.7		10.8		12.6		14.4		14.7000		8.6		11.2		16.6
90	83	Conductivity (um/hos)	291		258		168		167		108		244		299		148.0000		57		221		221
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		2.71		1.43		1.31		1.47		3.08		1.58
92	85																						
93	86	**DIOXINS AND FURANS (ng/L)**																					
94	87	**Method 8290**																					
95	88	2,3,7,8-TCDF	**0.0040**		0.0045	U	**0.036**		NA		**0.0052**	(c)	**0.0045**	(c)	**0.012**	(c)	**0.0080**	(c)	**0.0079**	(c)	**0.0045**	(c)	**0.0060**
96	89	Total TCDF	**0.0180**		0.0016-0.0048	U	**0.310**		NA		**0.0190**		**0.0280**		**0.060**		**0.0370**		**0.0079**		**0.0230**		**0.0510**
97	90	2,3,7,8-TCDD	0.0042	U	0.0034	U	0.049	U	NA		0.0051	U	0.0025	U	0.0062	U	0.0044	U	**0.0280**		0.0035	U	0.0054
98	91	Total TCDD	0.0014-0.0042	U	0.0011-0.0036	U	**0.940**		NA		**0.0044**		0.0025	U	0.0062	U	0.0044	U	**0.3000**		**0.0025**		0.0054
99	92	1,2,3,7,8-PeCDF	0.0340	U	0.2600	U	0.075	U	NA		**0.0077**		**0.0150**		2.0000	U (b)	**0.0200**		3.00	U,E	**0.0130**		0.1800
100	93	2,3,4,7,8-PeCDF	**0.0120**		0.0190	U	**0.110**		NA		0.0160	U	**0.0110**		0.1200	U (b)	**0.0430**		**0.2600**		**0.0240**		**0.1100**
101	94	Total PeCDF	**0.2400**		**0.120**		**1.300**		NA		**0.2200**		**0.1900**		**0.470**		**0.3000**		**0.4200**		**0.1600**		**0.6700**
102	95	1,2,3,7,8-PeCDD	0.0120	U	0.0072	U	**0.360**		NA		0.0160	U	**0.0049**		**0.014**		**0.0110**		**0.2800**		0.0045	U	**0.0130**
103	96	Total PeCDD	0.0032-0.0077	U	0.0025-0.014	U	**3.000**		NA		0.0160	U	**0.0049**		**0.014**		**0.0110**		**1.5000**		**0.0019**		**0.0200**
104	97	1,2,3,4,7,8-HxCDF	**0.0590**		**0.019**		1.900	U	NA		0.1300	UE	0.1100	U	**0.180**		0.8400	U	0.50	U,E	**0.0280**		**0.1800**
105	98	1,2,3,6,7,8-HxCDF	**0.0300**		0.0160	U	**0.260**		NA		**0.0470**		**0.0260**		**0.120**		**0.0660**		**0.0870**		0.1900	U,E	**0.1200**
106	99	2,3,4,6,7,8-HxCDF	**0.0580**		**0.033**		**0.620**		NA		**0.0740**		**0.0610**	J2	**0.220**		**0.0840**		**0.5700**		**0.0430**		**0.1600**
107	100	1,2,3,7,8,9-HxCDF	**0.0280**		**0.013**		**0.260**		NA		**0.0340**		0.0220	U	**0.078**		**0.0380**		0.53	U,E	**0.0220**		**0.0950**
108	101	Total HxCDF	**0.8800**		**0.370**		**14.000**		NA		**0.9700**		**2.0000**	J2	**2.700**		**1.6000**		**14.0000**		**1.5000**		**14.0000**
109	102	1,2,3,4,7,8-HxCDD	**0.0120**		0.0110	U	**0.630**		NA		**0.0180**		**0.0170**		**0.045**		**0.0310**		**0.2600**		**0.0110**		**0.0620**
110	103	1,2,3,6,7,8-HxCDD	**0.3400**		**0.150**		**3.400**		NA		**0.4000**		**0.4000**	J2	**1.200**		**0.5900**		**3.0000**		**0.1800**		**1.2000**
111	104	1,2,3,7,8,9-HxCDD	**0.0280**		**0.012**		**0.960**		NA		**0.0410**		**0.0400**		**0.110**		**0.0540**		**0.4900**		**0.0170**		**0.1200**
112	105	Total HxCDD	**0.7900**		**0.350**		**14.000**		NA		**0.9500**		**1.0000**	J2	**2.800**		**1.5000**		**10.0000**		**0.4200**		**2.8000**
113	106	1,2,3,4,6,7,8-HpCDF	**1.5000**		**0.600**		**9.700**		NA		**1.5000**		**1.4000**		**4.500**		**2.6000**		**11.0000**		**0.4800**		**4.8000**
114	107	1,2,3,4,7,8,9-HpCDF	**0.0980**		**0.039**		**0.990**		NA		**0.1000**		**0.0990**		**0.340**		**0.1800**		**0.8300**		**0.0440**		**0.3300**
115	108	Total HpCDF	**6.7000**		**0.640**		**43.000**		NA		**4.8000**		**6.3000**		**4.800**		**13.0000**		**65.0000**		**2.8000**		**5.1000**
116	109	1,2,3,4,6,7,8-HpCDD	**10.0000**		**3.800**		**54.000**		NA		**9.9000**		**8.4000**		**28.000**	J2	**17.0000**		**56.0000**		**4.0000**		**30.0000**
117	110	Total HpCDD	**15.0000**		**5.700**		**82.000**		NA		**15.0000**		**13.0000**		**39.000**	J2	**26.0000**		**84.0000**		**5.6000**		**45.0000**
118	111	OCDF	**8.8000**		**2.600**		**40.000**		NA		**7.0000**		**6.9000**		**20.000**		**12.0000**		**43.0000**		**3.1000**		**29.0000**
119	112	OCDD	**76.0000**		**25.000**		**350.000**		NA		**65.0000**		**58.0000**	J2	**190.000**	J2	**110.0000**		**320.0000**		**25.0000**		**210.0000**
120																							
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
122																							

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1																										
2																										
3			LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S	
4			BC27H		9912050-04A		BH75F		BR64C		CB49I		CK77I		CT55G		DE68C		DM52I		DW48K		ED23E		EM85F	
5			12/8/99		12/8/1999 (d)		2/15/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/26/02		6/26/02	
87	**FIELD PARAMETERS**																									
88	pH (avg)		6.25		NM		6.42		6.23		6.59		5.58		6.01		6.33		6.54		6.22		4.96		6.39	
89	Temperature (° C) (avg)		12.6		NM		10.8		12.8		15.5		15.3		11.3		12.7		15.5		14.5		11.1		15.2	
90	Conductivity (um/hos)		267		NM		91		267		268		302		305		427		299		321		124		150	
91	Dissolved oxygen (mg/L) (avg)		2.34		NM		0.95		1.22		1.73		0.98		0.59		1.32		3.04		3.76		7.98		3.67	
92																										
93	**DIOXINS AND FURANS (ng/L)**																									
94	**Method 8290**																									
95	2,3,7,8-TCDF	(c)	0.00330	U	NA		0.086	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		**0.0280**		NA		**0.0540**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	U	0.00079	U	NA		0.0047	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	U	0.00079	U	NA		0.0047	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	UE	0.00170	U	NA		2.400	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		**0.0160**	J1	NA		**0.0260**	J1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		**0.1000**		NA		**0.1200**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		**0.0049**	J1	NA		**0.0068**	J1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		**0.0074**	J1	NA		**0.0110**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		**0.0690**		NA		0.860	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		0.720	U	NA		0.0460	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		**0.0330**	J1	NA		**0.0420**	J1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		0.011	U	NA		0.0100	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		**2.1000**		NA		**2.9000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		0.020	U	NA		0.012	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		**0.4800**		NA		**0.4400**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		**0.0410**	J1	NA		**0.0290**	J1	NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		**1.1000**		NA		**1.2000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		**2.2000**		NA		**1.7000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		**0.1200**		NA		**0.1200**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		**10.0000**		NA		**9.2000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		**14.0000**		NA		**11.0000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		**20.0000**		NA		**17.0000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		**11.0000**		NA		**9.0000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		**100.0000**	N2	NA		**76.0000**		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121	**ETHANOL (mg/L)**		NA		10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																							
2									Dup of LW2S														
3			LW2S		LW2S		LW2S		LW2D		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S
4			S177G		T176C		U235M		U235E		V224N		W391A		Y336G		Z225A		Z960Q		AH27F		AU22G
5			4/2/97		7/15/97		10/22/97		10/22/97		1/29/98		5/19/98		8/19/98		11/13/98		2/18/99		5/17/99		9/20/99
123		**PAHs (µg/L)**																					
124		**EPA Method SW8270 SIM**																					
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		**8.2**		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		**0.41**		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		**0.11**	M	NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1																										
2																										
3			LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S		LW2S	
4			BC27H		9912050-04A		BH75F		BR64C		CB49I		CK77I		CT55G		DE68C		DM52I		DW48K		ED23E		EM85F	
5			12/8/99		12/8/1999 (d)		2/15/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/26/02		6/26/02	
123	**PAHs (µg/L)**																									
124	**EPA Method SW8270 SIM**																									
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z				
1																														
2																														
3			LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S					
4			S167C		T160D		U235C		V208B		W371C		Z960T		AH76M		BH75A		CT37J		ED16C		EM75C		FF48D					
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03					
6																														
7	1	**CHLORINATED PHENOLS (µg/L)**																												
8	2	**EPA Method SW8040**																												
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	**0.86**		0.25	U	0.25	U						
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA					
16	10																													
17	11	**SEMIVOLATILES (µg/L)**																												
18	12	**EPA Method SW8270**																												
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	NA		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	NA		2	U				
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	NA		3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	NA		3	U				
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		10	U	10	U	10	U	10	U	50	U	NA		50	U				
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U				
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U				
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U				
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	NA		1	U				
33	27																													
34	28	**VOLATILES (µg/L)**																												
35	29	**EPA Method SW8260**																												
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	14	U	5.0	U	NA		5	U				
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	**5.7**		NA		5	U				
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U				
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U				
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA					
56	49																													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	51	**Method OR-DEQ**																												
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U				
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA					
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA					
62	55																													

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S	
4			S167C		T160D		U235C		V208B		W371C		Z960T		AH76M		BH75A		CT37J		ED16C		EM75C		FF48D	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
63	56	**PRIORITY POLLUTANT**																								
64	57	**METALS (mg/L)**																								
65	58	Arsenic (7060)	**0.001**		**0.002**		0.05	U	0.05	U	**0.002**		0.001	U	0.001	U	0.001	U	**0.002**		**0.005**		NA		0.001	U
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U
67	60	Copper (6010)	**0.002**		**0.002**		0.002	U	**0.003**		**0.004**		**0.002**		**0.003**		**0.003**		0.002	U	**0.008**		NA		**0.005**	
68	61	Lead (7421)	**0.001**		**0.002**		0.02	U	0.02	U	**0.002**		0.001	U	**0.001**		**0.001**		0.001	U	**0.002**		NA		**0.001**	
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U
70	63	Zinc (6010)	**0.006**		**0.012**		**0.004**		**0.007**		**0.012**	J2	**0.017**	J	**0.010**		**0.006**		0.006	U	**0.017**		NA		**0.011**	
71	64																									
72	65	**MAJOR IONS AND CONVENTIONALS**																								
73	66	Calcium (mg/L) (6010)	**12.5**		**12.8**		**12.0**		**5.13**		NA		NA		NA		NA		NA		**7.22**		NA		**2.58**	
74	67	Magnesium (mg/L) (6010)	**3.83**		**3.71**		**2.94**		**1.64**		NA		NA		NA		NA		NA		**2.44**		NA		**1.03**	
75	68	Potassium (mg/L) (6010)	**2.2**		**3.0**		**3.1**		**1.4**		NA		NA		NA		NA		NA		**1.7**		NA		**0.8**	
76	69	Sodium (mg/L) (6010)	**7.77**		**4.6**		**4.80**		**4.86**		NA		NA		NA		NA		NA		**7.44**		NA		**7**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**46**		**39**		**34**		**28**		NA		NA		NA		NA		NA		**38**		NA		**15**	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		1.0	U	NA		1	U
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**46**		**39**		**34**		**28**		NA		NA		NA		NA		NA		**38**		NA		**15**	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**110**		**94**		**61**	J2	NA		NA		**75**		**67**		**100**		**72**		NA		**84**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.1**	J	**2.1**		**1.2**		**1.0**		NA		NA		**1.7**		**1.6**		**1.8**		**1.0**		NA		**1.6**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**1.3**	J	**2.2**		**1.8**		**0.17**		NA		NA		NA		NA		NA		**0.098**		NA		**0.91**	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.016**	J	**0.021**		0.010	U	**0.013**		NA		NA		NA		NA		NA		0.010	U	NA		**0.017**	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**1.3**	J	**2.2**		**1.8**		**0.18**		NA		NA		NA		NA		NA		**0.098**		NA		**0.93**	
85	78	Sulfate (mg/L) (EPA 375.2)	**19**	J	**14**		**14**		**3.4**		NA		NA		NA		NA		NA		**5.2**		NA		**6.2**	
86	79																									

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PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

			LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S	
			S167C		T160D		U235C		V208B		W371C		Z960T		AH76M		BH75A		CT37J		ED16C		EM75C		FF48D	
			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
87	80	**FIELD PARAMETERS**																								
88	81	pH (avg)	6.75		6.44		6.52		6.89		5.89		6.61		5.91		6.69		6.36		6.00		5.43		6.64	
89	82	Temperature (° C) (avg)	10.5		18.4		16.1		9.5		11.9		8.6		13.1		9.8		10.6		9.0		13.6		10.8	
90	83	Conductivity (um/hos)	138		147		115		0.63		93		78		64		66		133		73		174		41	
91	84	Dissolved oxygen (mg/L) (avg)									4.88		5.21		3.12		4.83		3.47		5.49		4.62		4.71	
92	85																									
93	86	**DIOXINS AND FURANS (ng/L)**																								
94	87	**Method 8290**																								
95	88	2,3,7,8-TCDF	**0.0088**		0.0025	U	0.0066	U	0.0017	U	NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	0.0044-0.016	U	0.0011-0.0037	U	0.0025-0.0081	U	0.0017	U	NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	0.0160	U	0.0023	U	0.0074	U	0.0023	U	NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	0.0032-0.025	U	0.0012-0.0052	U	0.0018-0.0099	U	**0.0035**		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	0.0083	U	0.0058	U	**0.0100**		0.0015	U	NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	0.0120	U	0.0021	U	0.0062	U	0.0017	U	NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	0.0026-0.018	U	0.0015-0.0064	U	**0.0960**		0.0016	U	NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	0.0260	U	0.0100	U	0.0120	U	0.0030	U	NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	0.010-0.034	U	0.0020-0.0100	U	0.0056-0.013	U	0.0030	U	NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	0.0044	U	0.0017	U	0.0083	U	0.0018	U	NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	0.0057	U	0.0034	U	0.0049	U	0.0021	U	NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	0.0080	U	0.0076	U	0.0064	U	0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	0.0160	U	0.0045	U	0.0068	U	0.0020	U	NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	0.0048-0.017	U	0.0017-0.0076	U	0.0270	U	0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	0.0250	U	0.0078	U	0.0080	U	0.0025	U	NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	0.0180	U	0.0072	U	**0.0089**		0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	0.0160	U	0.0032	U	0.0120	U	0.0030	U	NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	0.011-0.031	U	0.0025-0.0078	U	**0.0230**		0.0032	U	NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	0.0160	U	0.0046	U	**0.0240**		0.0130	U	NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	0.0280	U	0.0057	U	0.0039	U	0.0035	U	NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	0.012-0.028	U	0.0014-0.0058	U	0.0280	U	0.0083	U	NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	0.0230	U	0.0068	U	**0.3000**		0.0064	U	NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	0.013-0.038	U	0.0021-0.0080	U	**0.4400**		0.0064	U	NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	0.0520	U	0.0079	U	**0.1800**		0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	0.0500	U	0.0300	U	**1.2000**		0.0210	U	NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S		LW101S	
4			S167C		T160D		U235C		V208B		W371C		Z960T		AH76M		BH75A		CT37J		ED16C		EM75C		FF48D	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
123		**PAHs (µg/L)**																								
124		**EPA Method SW8270 SIM**																								
125		Naphthalene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S	
4			S167D		T160E		U235B		V211B		W371B		Z960S		AH76L		BH75B		CT37H		ED16B		EM75B		FF48C	
5			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
6																										
7	1	**CHLORINATED PHENOLS (µg/L)**																								
8	2	**EPA Method SW8040**																								
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		**0.66**		**0.31**		0.25	U	**0.28**		0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
16	10																									
17	11	**SEMIVOLATILES (µg/L)**																								
18	12	**EPA Method SW8270**																								
19	13	Phenol	2.0	U	2.0	U	2.0	UJ	2.0	U	NA		NA		2.0	U	2.0	U	2.0	U	2.0	U	NA		2	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	**3.5**		1.0	U	NA		**6.8**	
21	15	Isophorone	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	UJ	3.0	U	NA		NA		3.0	U	3.0	U	3.0	U	3.0	U	NA		3	U
23	17	Benzoic Acid	10	U	10	U	10	UJ	10	U	NA		NA		10	U	10	U	10	U	50	U	NA		50	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	UJ	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	UJ	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
30	24	Fluorene	1.0	U	1.0	U	1.0	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	UJ	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.3	UJ	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	4.0	U	NA		1	U
33	27																									
34	28	**VOLATILES (µg/L)**																								
35	29	**EPA Method SW8260**																								
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	160	U	**7.9**		NA		**15**	
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	51	**Method OR-DEQ**																								
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S	
4			S167D		T160E		U235B		V211B		W371B		Z960S		AH76L		BH75B		CT37H		ED16B		EM75B		FF48C	
5			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
63	56	**PRIORITY POLLUTANT**																								
64	57	**METALS (mg/L)**																								
65	58	Arsenic (7060)	0.001	U	**0.002**		0.05	U	0.05	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	NA		0.001	U
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U
67	60	Copper (6010)	**0.003**		**0.002**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	0.002	U	NA		**0.005**	
68	61	Lead (7421)	0.001	U	**0.002**		0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NA		0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U
70	63	Zinc (6010)	**0.008**		**0.009**		0.004	U	0.004	U	**0.014**	J2	**0.008**	J	0.004	U	0.006	U	0.006	U	0.006	U	NA		0.006	U
71	64																									
72	65	**MAJOR IONS AND CONVENTIONALS**																								
73	66	Calcium (mg/L) (6010)	**14.6**		**14.1**		**12.6**		**18.5**		NA		NA		NA		NA		NA		**8.93**		NA		**9.42**	
74	67	Magnesium (mg/L) (6010)	**5.39**		**5.64**		**4.87**		**6.76**		NA		NA		NA		NA		NA		**3.65**		NA		**3.85**	
75	68	Potassium (mg/L) (6010)	**2.4**		**2.6**		**2.5**		**2.0**		NA		NA		NA		NA		NA		**1.6**		NA		**1.5**	
76	69	Sodium (mg/L) (6010)	**6.16**		**5.94**		**6.18**		**7.92**		NA		NA		NA		NA		NA		**5.36**		NA		**5.2**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**62**		**67**		**61**		**110**		NA		NA		NA		NA		NA		**46**		NA		**47**	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		1.0	U	NA		1	U
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**62**		**67**		**61**		**110**		NA		NA		NA		NA		NA		**46**		NA		**47**	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**110**		**120**		**120**		NA		NA		**83**		**72**		**120**		**80**		NA		**84**	
81	74	Chloride (mg/L) (EPA 325.2)	**4.2**	J	**3.0**		**1.9**		**4.4**		NA		NA		**1.6**		**1.5**		**1.3**		**2.5**		NA		**2.2**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.12**	J	**0.083**		**0.023**		**0.78**	J2	NA		NA		NA		NA		NA		**0.21**		NA		**0.66**	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	0.010	UJ	NA		NA		NA		NA		NA		0.010	U	NA		0.01	U
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.12**	J	**0.083**		**0.023**		**0.78**	J2	NA		NA		NA		NA		NA		**0.21**		NA		**0.66**	
85	78	Sulfate (mg/L) (EPA 375.2)	**4.5**	J	**4.7**		**3.2**		**6.0**		NA		NA		NA		NA		NA		**5.1**		NA		**6.1**	
86	79																									

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

			LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S	
			S167D		T160E		U235B		V211B		W371B		Z960S		AH76L		BH75B		CT37H		ED16B		EM75B		FF48C	
			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
87	80	**FIELD PARAMETERS**																								
88	81	pH (avg)	6.63		6.60		6.76		6.60		6.06		6.71		6.04		6.59		5.63		6.13		5.24		6.74	
89	82	Temperature (° C) (avg)	10.6		19.0		16.8		9.8		14.4		9.3		13.5		10.0		9.5		9.1		14.5		11	
90	83	Conductivity (um/hos)	136		158		133		188		129		100		87		94		127		90		91		104	
91	84	Dissolved oxygen (mg/L) (avg)									2.82		5.70		3.14		3.51		1.74		7.06		4.96		2.17	
92	85																									
93	86	**DIOXINS AND FURANS (ng/L)**																								
94	87	**Method 8290**																								
95	88	2,3,7,8-TCDF	0.0026	U	0.0011	U	0.0024	U	0.0018	U	NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	0.0013-0.0048	U	0.0006-0.0058	U	0.0012-0.0052	U	0.0018	U	NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	0.0033	U	0.0023	U	0.0055	U	0.0037	U	NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	0.0023-0.0075	U	0.008-0.0068	U	0.0018-0.0090	U	0.0037	U	NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	0.0027	U	0.0045	U	0.0020	U	0.0018	U	NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	0.0025	U	0.0031	U	0.0021	U	0.0024	U	NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	0.0013-0.0078	U	0.0014-0.0088	U	0.0015-0.0068	U	0.0021	U	NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	0.0061	U	0.0077	U	0.0040	U	0.0057	U	NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	0.0030-0.011	U	0.0023-0.0093	U	0.0016-0.0092	U	0.0057	U	NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	0.0031	U	0.0034	U	0.0067	U	0.0021	U	NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	0.0043	U	0.0031	U	0.0048	U	0.0019	U	NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	0.0053	U	0.0031	U	0.0048	U	0.0036	U	NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	0.0049	U	0.0049	U	0.0020	U	0.0031	U	NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	0.0053	U	0.0020-0.0066	U	0.0048	U	0.0057	U	NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	0.0054	U	0.0030	U	0.0073	U	0.0034	U	NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	0.0068	U	0.0056	U	0.0084	U	0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	0.0073	U	0.0084	U	0.0039	U	0.0019	U	NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	0.0030-0.010	U	0.0023-0.0084	U	0.0029-0.013	U	0.0031	U	NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	0.0044	U	**0.0016**		0.0047	U	0.0160	U	NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	0.0073	U	0.0063	U	0.0077	U	0.0052	U	NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	**0.0062**		**0.0043**		0.0150	U	0.0106	U	NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	0.0110	U	0.0065	U	**0.0180**		0.0070	U	NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	0.0170	U	0.0024-0.0092	U	**0.0310**		0.0070	U	NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	**0.0100**		**0.0062**		0.0170	U	**0.0074**		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	0.0710	U	0.0280	U	**0.1200**		0.0390	U	NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																										

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S		LW102S	
4			S167D		T160E		U235B		V211B		W371B		Z960S		AH76L		BH75B		CT37H		ED16B		EM75B		FF48C	
5			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
123		**PAHs (µg/L)**																								
124		**EPA Method SW8270 SIM**																								
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																									Dup of LW103S			
2			LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW13D		LW103S	
3			S167B		T160C		U235D		V211A		W371D		Z960U		AH76N		BH75C		CT37K		ED16D		EM75D		EM75I		FF48E	
4			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		6/25/02		2/10/03	
5																												
6	1	**CHLORINATED PHENOLS (µg/L)**																										
7	2	**EPA Method SW8040**																										
8	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	**0.58**		0.25	U	0.25	U	0.25	U
9	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
10	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
11	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
12	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
13	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
14	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA		NA	
15	10																											
16	11	**SEMIVOLATILES (µg/L)**																										
17	12	**EPA Method SW8270**																										
18	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	NA		NA		2.0	U	2.0	U	2.0	U	2.0	U	NA		NA		2	U
19	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
20	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
21	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	NA		NA		3.0	U	3.0	U	3.0	U	3.0	U	NA		NA		3	U
22	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		NA		10	U	10	U	10	U	50	U	NA		NA		50	U
23	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
24	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
25	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5	U
26	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5	U
27	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
28	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
29	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
30	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5	U
31	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	4.0	U	NA		NA		1	U
32	27																											
33	28	**VOLATILES (µg/L)**																										
34	29	**EPA Method SW8260**																										
35	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	9.1	U	5.0	U	NA		NA		5	U
36	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
37	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5	U
38	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
39	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
40	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
41	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
42	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
43	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
44	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
45	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
46	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
47	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
48	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
49	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
50	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
51	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
52	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1	U
53	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5	U
54	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55	49																											
56	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
57	51	**Method OR-DEQ**																										
58	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U
59	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	55																											

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																									Dup of LW103S			
3			LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW13D		LW103S	
4			S167B		T160C		U235D		V211A		W371D		Z960U		AH76N		BH75C		CT37K		ED16D		EM75D		EM75I		FF48E	
5			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		6/25/02		2/10/03	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.007**		**0.011**		0.05	U	0.05	U	**0.010**		**0.009**		**0.011**		**0.019**		**0.008**		**0.013**		NA		NA		**0.008**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		NA		0.005	U
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.007**		0.002	U	**0.003**		NA		NA		0.002	U
68	61	Lead (7421)	0.001	U	**0.001**		0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	**0.003**		0.001	U	0.001	U	NA		NA		0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		NA		0.01	U
70	63	Zinc (6010)	**0.005**		**0.008**		**0.004**		**0.005**		**0.006**	J2	**0.007**	J	0.004	U	**0.010**		0.006	U	0.006	U	NA		NA		0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**13.5**		**19**		**15.6**		**16.0**		NA		NA		NA		NA		NA		**17.0**		NA		NA		**15.4**	
74	67	Magnesium (mg/L) (6010)	**5.02**		**6.95**		**5.65**		**5.89**		NA		NA		NA		NA		NA		**6.51**		NA		NA		**5.89**	
75	68	Potassium (mg/L) (6010)	**1.8**		**2.0**		**2.0**		**1.3**		NA		NA		NA		NA		NA		**1.7**		NA		NA		**1.4**	
76	69	Sodium (mg/L) (6010)	**4.93**		**5.35**		**5.11**		**5.99**		NA		NA		NA		NA		NA		**5.57**		NA		NA		**6.7**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**95**		**84**		**71**		**84**		NA		NA		NA		NA		NA		**83**		NA		NA		**100**	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		1.0	U	NA		NA		1	U
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**95**		**84**		**71**		**84**		NA		NA		NA		NA		NA		**83**		NA		NA		**100**	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**130**		**100**		**110**		NA		NA		**110**		**97**		**130**		**110**		NA		NA		**110**	
81	74	Chloride (mg/L) (EPA 325.2)	**2.2**	J	**2.5**		**1.7**		**1.3**		NA		NA		**1.7**		**2.3**		**2.5**		**2.3**		NA		NA		**2.8**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	**0.036**		**0.057**	J2	NA		NA		NA		NA		NA		**0.093**		NA		NA		**0.2**	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	**0.017**		**0.016**		0.010	UJ	NA		NA		NA		NA		NA		0.010	U	NA		NA		0.01	U
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	0.010	U	0.010	U	**0.052**		**0.057**	J2	NA		NA		NA		NA		NA		**0.093**		NA		NA		**0.2**	
85	78	Sulfate (mg/L) (EPA 375.2)	**5.5**	J	**4.6**		**2.6**		2.5	U	NA		NA		NA		NA		NA		**2.9**		NA		NA		**8.6**	
86	79																											

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																									Dup of LW103S			
2			LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW13D		LW103S	
3			S167B		T160C		U235D		V211A		W371D		Z960U		AH76N		BH75C		CT37K		ED16D		EM75D		EM75I		FF48E	
4			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		6/25/02		2/10/03	
5																												
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.74		6.75		6.77		6.73		6.37		7.02		6.14		6.74		6.52		6.17		6.47		6.47		7.12	
89	82	Temperature (° C) (avg)	10.9		14.6		14.7		12.2		13.2		10.8		12.4		11.0		11.5		10.7		13.5		13.5		12.2	
90	83	Conductivity (um/hos)	157		222		180		198		214		128		174		135		160		170		187		188		184	
91	84	Dissolved oxygen (mg/L) (avg)									1.47		2.98		2.79		2.56		3.55		5.73		5.70		5.74		1.79	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																												

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TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																									Dup of LW103S			
3			LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW103S		LW13D		LW103S	
4			S167B		T160C		U235D		V211A		W371D		Z960U		AH76N		BH75C		CT37K		ED16D		EM75D		EM75I		FF48E	
5			3/31/97		7/14/97		10/21/97		1/27/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		6/25/02		2/10/03	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S	
4			S167A		T160B		U235A		V208A		W371A		Z960R		AH76K		BH75D		CT37G		ED16A		EM75A		FF48B	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
6																										
7	1	**CHLORINATED PHENOLS (µg/L)**																								
8	2	**EPA Method SW8040**																								
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	0.25	U	**0.77**		0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	NA		NA		NA		NA	
16	10																									
17	11	**SEMIVOLATILES (µg/L)**																								
18	12	**EPA Method SW8270**																								
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	NA		NA		2.0	U	2.0	U	2.0	U	2.0	U	NA		2	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	NA		NA		3.0	U	3.0	U	3.0	U	3.0	U	NA		3	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	NA		NA		10	U	10	U	10	U	50	U	NA		50	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	**2.0**		**10**		NA		1	U
33	27																									
34	28	**VOLATILES (µg/L)**																								
35	29	**EPA Method SW8260**																								
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	8.9	U	5.0	U	NA		5	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	NA		1	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	NA		NA		5.0	U	5.0	U	5.0	U	5.0	U	NA		5	U
55	48.5	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	51	**Method OR-DEQ**																								
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		0.25	U	0.25	U	**0.32**		0.25	U	NA		0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S	
4			S167A		T160B		U235A		V208A		W371A		Z960R		AH76K		BH75D		CT37G		ED16A		EM75A		FF48B	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
63	56	**PRIORITY POLLUTANT**																								
64	57	**METALS (mg/L)**																								
65	58	Arsenic (7060)	**0.002**		**0.003**		0.05	U	0.05	U	**0.002**		**0.002**		**0.001**		**0.002**		**0.002**		**0.002**		NA		**0.002**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NA		**0.028**	
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NA		0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U
70	63	Zinc (6010)	0.004	U	**0.005**		0.004	U	0.004	U	0.004	U	**0.019**	J	0.004	U	**0.008**		0.006	U	0.006	U	NA		**0.018**	
71	64																									
72	65	**MAJOR IONS AND CONVENTIONALS**																								
73	66	Calcium (mg/L) (6010)	**17.6**		**16.1**		**20.9**		**13.0**		NA		NA		NA		NA		NA		**9.25**		NA		**15.7**	
74	67	Magnesium (mg/L) (6010)	**4.63**		**4.26**		**5.48**		**3.66**		NA		NA		NA		NA		NA		**2.88**		NA		**4.9**	
75	68	Potassium (mg/L) (6010)	**2.5**		**2.8**		**3.4**		**1.8**		NA		NA		NA		NA		NA		**1.8**		NA		**2.3**	
76	69	Sodium (mg/L) (6010)	**11.4**		**12.1**		**12.6**		**9.60**		NA		NA		NA		NA		NA		**7.09**		NA		**9.5**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**92**		**86**		**100**		**81**		NA		NA		NA		NA		NA		**53**		NA		**88**	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		1.0	U	NA		1	U
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**92**		**86**		**100**		**81**		NA		NA		NA		NA		NA		**53**		NA		**88**	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**140**		**160**	J2	**110**		NA		NA		**110**		**83**		**160**		**99**		NA		**120**	
81	74	Chloride (mg/L) (EPA 325.2)	**3.8**	J	**2.8**		**2.5**		**2.2**		NA		NA		**2.1**		**1.9**		**1.4**		**2.8**		NA		**3.3**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	**0.031**		**0.011**		NA		NA		NA		NA		NA		0.010	U	NA		**0.021**	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	**0.019**		0.010	U	0.010	U	NA		NA		NA		NA		NA		0.010	U	NA		0.01	U
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	0.010	U	**0.011**		**0.031**		**0.011**		NA		NA		NA		NA		NA		0.010	U	NA		**0.021**	
85	78	Sulfate (mg/L) (EPA 375.2)	**4.2**	J	**5.7**		2.5	U	**8.0**		NA		NA		NA		NA		NA		**9.3**		NA		**9.3**	
86	79																									

TABLE F-10
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SHALLOW WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S	
4			S167A		T160B		U235A		V208A		W371A		Z960R		AH76K		BH75D		CT37G		ED16A		EM75A		FF48B	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
87	80	**FIELD PARAMETERS**																								
88	81	pH (avg)	6.75		6.80		6.77		6.85		6.39		7.19		6.32		6.88		6.05		6.15		5.43		7.28	
89	82	Temperature (° C) (avg)	9.7		15.1		15.9		11.9		12.1		10.7		12.4		10.5		11.4		11.1		13.8		12.3	
90	83	Conductivity (um/hos)	198		223		228		185		197		131		167		99		238		111		123		196	
91	84	Dissolved oxygen (mg/L) (avg)									1.75		1.45		1.45		2.00		1.48		5.18		4.26		1.67	
92	85																									
93	86	**DIOXINS AND FURANS (ng/L)**																								
94	87	**Method 8290**																								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121		**ETHANOL (mg/L)**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
122																										

TABLE F-10
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DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3			LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S		LW104S	
4			S167A		T160B		U235A		V208A		W371A		Z960R		AH76K		BH75D		CT37G		ED16A		EM75A		FF48B	
5			3/31/97		7/14/97		10/21/97		1/28/98		5/18/98		2/16/99		5/19/99		2/15/00		2/13/01		2/25/02		6/25/02		2/10/03	
123		**PAHs (µg/L)**																								
124		**EPA Method SW8270 SIM**																								
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

LANDAU ASSOCIATES

RECEIVED JAN 12 2006

January 9, 2005

Mr. Tom Roick
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, OR 97201-4987

RE: TIME OIL NORTHWEST TERMINAL
PORTLAND, OREGON

Dear Mr. Roick:

On behalf of Time Oil, attached is the October, November, and December 2005 quarterly report for Time Oil Northwest Terminal RI/FS.

LANDAU ASSOCIATES, INC.

Rebekah Brooks
Project Manager

RB/tam
1/9/06 \\Edmdata\wproc\231\TRANSMIT.FAX\Quarterly Rpt_Ltr.doc
Enclosure

cc: Mr. Mark Chandler, Time Oil Co.
Ms. Patricia Dost, Schwabe Williamson & Wyatt
Mr. Mike Tischuk, Beazer East, Inc.

QUARTERLY REPORT TO DEQ
TIME OIL - NORTHWEST TERMINAL
October through December, 2005

SUMMARY OF WORK PERFORMED

- Prepared and submitted the April – September 2005 quarterly report to DEQ.
- Continued operation of the groundwater interim action in the lower zone at RW-2 at an average flow rate of 7.4 gpm.
- Continued operation of groundwater recovery in the upper zone at the groundwater intercept system at the east-west trending storm drain line (SDM-1) at an average flow rate of 0.8 gpm.
- Conducted intermittent operation of groundwater recovery in the upper zone from horizontal recovery well (HRW-1) at an average flow rate of 0.01 gpm. Due to low groundwater elevation conditions, no groundwater was recovered from HRW-1 in October 2005.
- A total of approximately 22.76 million gallons of groundwater have been treated and discharged from the interim action system, with a total of about 0.77 million gallons treated during this quarter.
- Continued review of the system operations performance for the groundwater interim action system at RW-2 and HRW-1, the groundwater intercept system at SDM-1, and the onsite wastewater treatment plant (WWTP).
- Collected effluent samples from the WWTP throughout the quarter to evaluate the treatment system efficiency. Laboratory analysis of the effluent samples collected indicated that the system was operating within the established permit limitations.
- Collected treated stormwater effluent samples in accordance with NPDES permit issued by the City of Portland in December 2005. The effluent sample results were within permit limits, however the benchmark established for zinc [0.6 milligrams per liter (mg/L)] was exceeded with a reported concentration of 1.33 mg/L. In response to the exceedance, the stormwater pollution control plan will be reviewed and modified, if necessary.
- Provided a technical memorandum to DEQ requesting a reduction in monitoring frequency requirements for future quarterly groundwater monitoring events. Received approval from DEQ on the memorandum for the fourth quarter 2005, with addition of two wells associated with the PCP plume in the upper zone and performance of a single monitoring event for wells in the Bell Terminal to be coordinated with a monitoring event on the Schnitzer site.
- Completed preparation of the *Second Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report*, and submitted to DEQ.
- Prepared the *Third Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Report.*
- Conducted the fourth quarter 2005 groundwater monitoring event, November 14-17, 2005, and began receiving and validating the fourth quarter 2005 (November 2005) groundwater monitoring data.
- Received approval of the final Phase III RI report from DEQ with a request for revisions to the report. Prepared a response to comment letter and provided to DEQ with revisions to the report.

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- Continued passive product recovery in wells LW-21S and LW-27S using passive bailers. The product is temporarily being stored in a 55-gallon drum in a designated location at the terminal pending disposal. Product socks were not reinstalled at any of the wells in the Main Tank Farm area during the fourth quarter 2005 monitoring event, because product was not observed at any of the other wells. The spent product socks are being temporarily stored in a 55-gallon drum in a designated location at the terminal pending disposal.

- Completed preparation of a work plan for performance of the terminal-wide human health and ecological risk assessments and provided to DEQ.

- Received approval from DEQ for a proposal for conducting a monitored natural attenuation (MNA) evaluation as part of a source control evaluation approach for the Terminal. Began implementation of the MNA evaluation and the source control evaluation.

- Measured natural attenuation (MNA) parameters (e.g., pre-purge, down-hole, dissolved oxygen and oxidation reduction potential measurements) monthly during the fourth quarter 2005 for use in preparation of a source control evaluation approach.

- Conducted measurements of water levels using data loggers and transducers for a 1-week period as part of the MNA evaluation.

RESULTS COLLECTED

- Influent/effluent samples from the WWTP for October, November, and December 2005. The analytical results from the sampling events indicated that the WWTP was operating within the established permit limits. The data results will be presented in the *Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report.*

- Treated stormwater effluent sample was collected in December 2005 which indicated that permit limits were achieved; however, the reported zinc concentration (1.33 mg/L) exceeded the established benchmark (0.6 mg/L).

- A portion of the final groundwater data for the fourth quarter 2005 groundwater sampling events. Data results will be presented in the *Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report.*

PROBLEMS ENCOUNTERED AND STEPS TO RESOLVE

- In November 2005, untreated water spilled within the WWTP building and was contained completely within the spill containment system. Time Oil and Landau Associates personnel were notified of the spill condition by an automated alarm system and the spill was addressed and the cause investigated. The spilled water was returned to the WWTP and the cause of the spill was determined to be an inlet valve seat which had been compromised by grit. After the valve seat was repaired, the WWTP was returned to operation.

- In November 2005, the stormwater intercept pump in SDM-1 was evaluated due to reported stagnating totalizer readings. The evaluation determined that the discharge line for the pump was becoming blocked with biosludge material as the line begins its vertical orientation near Tank 16804. It was determined that the pump in SDM-1 lacked the discharge head to overcome the accumulation

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of biosludge, so the pump was temporarily replaced with a pump with a larger discharge head capability and 3-phase power. The 3-phase electrical service to the pump is currently being provided by a mobile generator. A permanent pump and 3-phase power are scheduled to be installed for SDM-1 during the first quarter of 2006.

- On November 10, 2005, another pipeline leak in the old buried pipe between Tank 16804 and the treatment system was reported by Time Oil personnel. The leak was repaired by a contractor on November 11 and operation of the WWTP resumed on November 14, 2005. A similar leak occurred at a different location on the pipeline during the third quarter of 2005. The entire pipeline is scheduled to be replaced in the first quarter of 2006.

WORK TO BE PERFORMED NEXT QUARTER

- Prepare and submit quarterly report to DEQ.
- Continue implementation of the groundwater interim action in the lower zone at RW-2. Continue to operate the groundwater intercept system at the storm drain (SDM-1). Continue groundwater treatment and discharge to POTW. Continue review of the system operations performance for the groundwater interim action system at RW-2, HRW-1, SDM-1 and the onsite wastewater treatment system.
- Continue to monitor the effluent from the WWTP.
- Complete preparation of the *Third Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Report* and submit to DEQ.
- Prepare the *Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Report.*
- Continue passive product recovery in wells in the Main Tank Farm Area, as appropriate.
- Conduct the first quarter 2006 groundwater monitoring event in February 2006. As part of this event, we will make a final attempt to sample two wells located on the Port of Portland property to define the locality of facility at the north side of the Terminal property. If we are unable to sample the wells because of lack of water, we will provide DEQ with an alternative method for determining the locality of facility in this area.
- Conduct a third full-scale *in situ* chemical oxidation injection event to treat the PCP-impacted groundwater in the upper zone and associated monitoring.
- Receive and respond to comments from DEQ on the risk assessment work plan.
- Conduct a site visit with DEQ to orient new project staff at DEQ.
- Continue performance of the MNA evaluation, prepare the source control evaluation document, and submit source control evaluation to DEQ, currently scheduled for March 2005.

BZTO104(e)027077

From: Terry McGourty <TMcGourty@landauinc.com>
Sent: Friday, February 24, 2006 2:01 PM
To: mchandler@timeoil.com; pdost@schwabe.com; Tischuk, Mike (Pittsburgh) NA <tischuk@hgm.com>
Cc: Rebekah Brooks <RBrooks@landauinc.com>; Evalyn Albright <ealbright@landauinc.com>
Subject: TIME OIL 4Q05 DRAFT REPORT
Attach: 4Q05 GW Rpt.doc

Attached is a Word version of the draft 4Q05 report text for your use. A CD containing pdf copies of the complete report through Appendix D was mailed to your attention on February 23.

<<4Q05 GW Rpt.doc>>

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24	Gasoline-Range Hydrocarbons, Selected Upper Zone Wells, Main Terminal Tank Farm Area
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26	Gasoline-Range Hydrocarbons, Selected Lower Zone Wells, Main Terminal Tank Farm Area
27	Selected Constituents, Well LW-8S, Upper Zone, Main Terminal Tank Farm Area
28	Selected Constituents, Well LW-23D, Lower Zone, Main Terminal Tank Farm Area
29	Selected Constituents, Well LW-25D, Lower Zone, Main Terminal Tank Farm Area

1.0 INTRODUCTION

This report provides the results of the fourth quarter 2005 groundwater monitoring event conducted as part of the ongoing Phase II and III remedial investigation (RI) activities at the Time Oil Northwest Terminal (terminal) in Portland, Oregon. This report also provides performance and status information for the Phase II groundwater interim action currently ongoing at the terminal.

The terminal is a former bulk petroleum storage and transfer facility owned by Time Oil Co. (Time Oil) that is located in the industrialized Rivergate area of north Portland, Oregon (Figure 1). Time Oil ceased operations at the terminal on October 31, 2001. Groundwater monitoring is conducted in accordance with the *Phase I/II Remedial Investigation/Feasibility Study (RI/FS)* work plan (Landau Associates 1996), and the Phase III RI work plan (Landau Associates 2001). The groundwater monitoring locations at the terminal are shown on Figure 2. Prior to the fourth quarter 2003 event, groundwater monitoring was focused on wells drilled for the Phase II RI at locations within and downgradient of the former pentachlorophenol (PCP) mixing area. Quarterly groundwater monitoring of the Phase II wells has been ongoing at the terminal since April 1997. Starting with the fourth quarter 2003 event, collection of groundwater monitoring data began at wells installed as part of the Phase III RI within the Main Terminal tank farm and Bell Terminal tank farm areas, and other areas of the terminal not covered under previous investigations. Also, quarterly groundwater monitoring for 12 additional monitoring wells, installed in October-November 2004, began during the fourth quarter 2004 event, including four wells located along the shoreline of the Willamette River. Specifically, the data presented in this report include the results for the following:

- Phase II wells used for monitoring of the groundwater interim action
- Phase II wells used for monitoring groundwater concentrations in the upper zone PCP plume area where the *in situ* chemical oxidation (ISCO) technique was applied in February and June 2005
- Phase III wells used for monitoring groundwater concentrations in the Main Terminal tank farm area. As noted in Section 2.0, the Phase III wells in the Bell Terminal were not sampled during the fourth quarter 2005 event.

This was the fifth sampling event for the wells installed in fall 2004.

Sampling of two wells located on the Port of Portland property to the north of the terminal was attempted again this quarter to assist in defining the locality of facility boundary to the north. (Two previous attempts were also conducted during the second and third quarter 2005 events). The wells were all dry again. A fourth attempt to sample these wells will be made during the first quarter 2006 event. If the wells are still dry, Time Oil will provide a recommendation to the Oregon Department of Environmental Quality (DEQ) on an alternative methodology to define the locality of facility in this area.

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The fourth quarter 2005 groundwater monitoring event was conducted from November 14 through November 18, 2005. This report summarizes groundwater elevation and groundwater quality data for the fourth quarter 2005, transmits analytical laboratory data packages and the associated data validation report, and presents an evaluation of data collected during the fourth quarter 2005 (October 1 through December 31, 2005) for the groundwater interim action in the upper and lower water-bearing zones relative to compliance with defined performance criteria. Data from this and previous quarterly monitoring events are used to assess contaminant distribution and groundwater level trends across the terminal. Additional discussion of the Phase III RI activities through the fourth quarter 2004 sampling event is included in the final Phase III RI report (Landau Associates 2005a). The chemical analyses conducted during this monitoring event for each groundwater sampling location are summarized in Appendix A, Table A-1. Groundwater level measurements collected at the terminal for the fourth quarter 2005 event and for the previous RI quarterly events since March 1997 are provided in Appendix A, Table A-2. Groundwater quality data for the fourth quarter 2005 event are provided in Tables A-3 and A-4 for the upper zone wells and Tables A-5 and A-6 for the lower zone wells. Table A-7 is a summary of detected analytes in the nearshore wells, and Table A-8 is a summary of total and dissolved metals in the shoreline wells. A summary of the fourth quarter 2005 groundwater interim action recovery data is provided in Appendix B. Procedures for collection of water level measurements and groundwater samples and methods for evaluation are provided in Appendix C. A summary of modifications to the Phase II and Phase III groundwater quality sampling and analysis requirements, as approved by DEQ, is included in Appendix D. The data validation report for the fourth quarter 2005 data is provided in Appendix E. Laboratory data packages for these data are provided in Appendix F.

As requested by DEQ, a summary of the quarterly water quality data (detected constituents) since March 1997 for the upper and lower zone wells is being provided electronically to DEQ on CD. These tables will continue to be updated following each quarterly event.

2.0 FOURTH QUARTER 2005 GROUNDWATER MONITORING EVENT

The fourth quarter 2005 groundwater monitoring event was conducted from November 14 through November 18, 2005. The quarterly event included measurement of water levels at groundwater monitoring wells, well points, and recovery wells, and at a river gauge established on the south side of the dock extending into the Willamette River (Figure 2); measurement of product thickness in all terminal wells, if observed; and collection of groundwater quality samples. The fourth quarter 2005 event included sampling of the routine Phase II monitoring locations for performance of the groundwater interim action (HRW-1, LW-6D, LW-9D, LW-10S, LW-10D, LW-11D, RW-2 and SDM-1); selected monitoring wells associated with the Phase II ISCO activities (B1, J1, OX-1S, OX-3S, OX-5S through OX-9S, LW-4S, LW-8S, LW-11S, and RW-1); and selected Phase III monitoring wells in the Main Terminal tank farm area (LW-19S, LW-21S, LW-22D through LW-25D, LW-27S, LW-35D through LW-40D, LW-40S, LW-45D, N, P, and Q). The group of wells sampled this quarter was modified from previous quarters as described in the Landau Associates' letter to DEQ dated October 19 (Landau Associates 2005b) and as approved by DEQ in its letter dated October 31 (DEQ 2005). These letters are contained in Appendix D.

Because the Phase II and Phase III wells were installed to monitor groundwater quality in different areas of the terminal with different historical uses, the Phase II and Phase III groundwater quality data are discussed in separate sections (Sections 2.2 and 2.3, respectively). For discussion purposes, Phase II refers to monitoring locations within and downgradient of the former PCP mixing area and warehouse, and Phase III refers to monitoring locations within and downgradient of the Main Terminal tank farm area and associated petroleum storage operation areas.

For reference, the monitoring wells, well points, recovery wells, and monitoring points are grouped as follows:

- Phase II: B1, B2, D, G1A, H, HRW-1, J1, J2, J3, L, LW-1S/1D, LW-3D, LW-4S/4DR, LW-5S, LW-6D, LW-8S, LW-9S/9D, LW-10S/10D, LW-11S/11D, LW-13S, LW-14D, LW-15D, LW-16D, LW-17D, LW-18D, OX-1S through OX-7S, OX-8S/8D, OX-9S, PZ-1 through PZ-4, RW-1, RW-2, SDM-1, and river outfall.
- Phase III: K, N, P, Q, O, R, LW-7S, LW-19S, LW-20S/20D, LW-21S, LW-22D, LW-23D, LW-24D, LW-25D, LW-26D, LW-27S/27D, LW-28S, LW-29S/29D, LW-30S/30D, LW-31S, LW-32S/32D, LW-33S, LW-34S, LW-35D, LW-36D, LW-37D, LW-38D, LW-39D, LW-40S/40D, LW-41S, LW-42S, LW-43S, LW-44S, and LW-45D.

A summary of the analyses conducted at each sample location included in the fourth quarter 2005 event is provided in Table A-1. Section 2.1 presents a summary of the results for the groundwater level measurements for the monitoring locations at the terminal. The groundwater quality data and evaluations

of groundwater flow and contaminant occurrence and trends for the Phase II wells and the Phase III wells are presented in Sections 2.2 and 2.3, respectively. The performance and status of the groundwater recovery interim action are discussed in Section 3.0.

2.1 GROUNDWATER LEVEL AND PRODUCT MEASUREMENTS

Groundwater levels were measured at each well for the fourth quarter 2005 event on November 14, 2005. Each well was also checked for the presence of product. The measurement and evaluation results are presented in the following sections. The measurement and evaluation procedures are provided in Appendix C. The groundwater measurement locations are shown on Figure 2. Groundwater level measurements conducted for the quarterly groundwater sampling events since March 1997 are provided in Table A-2. Historical (pre-Phase II RI) groundwater level measurements conducted from 1993 through 1996 were provided in the Phase II RI report (Landau Associates 2000a).

2.1.1 PRODUCT MEASUREMENTS AND PRODUCT RECOVERY

During the fourth quarter 2005 event, measurable product (0.07 ft) was observed in Phase II well OX-2S, which is located downgradient of the former PCP mixing area. Product was last observed in well OX-2S during the third quarter 2005 sampling event at a thickness of 0.23 ft. Measurable product (0.04 ft) was also observed at Phase III well LW-21S, located within the Main Terminal tank farm area. Product was last observed in well LW-21S during the third quarter 2005 sampling event at a thickness of 0.16 ft. During past groundwater monitoring events, measurable product has also been observed in well LW-27S; however, no product was observed in this well during fourth quarter 2005. Wells LW-21S and LW-27S were installed in September 2003; measurable product was first observed in these wells in the first quarter of 2004. Keck passive product recovery bailers were installed at LW-21S and LW-27S in March 2004. Approximately 0.75 liters of product were removed from the passive bailer in well LW-21S during fourth quarter 2005. The recovered product is temporarily contained in a 55-gal drum onsite pending appropriate offsite disposal. Monitoring wells at the terminal will continue to be monitored for the presence of product during future quarterly monitoring events. A record of product observations and thicknesses is provided in Table A-2.

2.1.2 UPPER WATER-BEARING ZONE

Groundwater elevations measured in the upper water-bearing zone (upper zone) wells were used to estimate groundwater flow. Groundwater elevation contours for the upper zone are presented on

Figure 3. Groundwater elevations measured during the fourth quarter 2005 indicate that groundwater flow in the upper zone is generally to the west-southwest toward the Willamette River across the Main Terminal and Bell Terminal tank farm areas. The localized southward shift in groundwater flow, which has historically been apparent within and downgradient of the former PCP mixing area, appears to be due to the influence of the east-west trending storm drain located about 170 ft north of the southern property boundary (Figure 2). Groundwater elevations measured at Phase III wells located along the confining unit boundary in the western portion of the terminal reflect the change from two water-bearing zones (upper and lower) to a single unconfined water-bearing zone. For example, wells LW-9S and LW-10S and piezometers PZ-3 and PZ-4, located near or beyond the extent of the confining unit, are typically dry during summer and fall months. During the wetter winter and spring months, groundwater is typically observed within the upper zone along this boundary. At well LW-27S where the confining unit is observed but is thin, the water level appears to represent an intermediate groundwater elevation between the upper zone and lower zone, thereby, indicating the edge of the confining unit and the transition from two groundwater zones to one in this area. The groundwater flow patterns in this area mirror the western extent of the confining unit boundary and groundwater gradients increase sharply where the upper and lower zones converge. In the Bell Terminal tank farm area, well LW-41S, which is located where the confining unit is thin and likely discontinuous, is intermittently dry, but had water during the fourth quarter 2005 event.

Overall, the data collected to date show that the upper zone groundwater levels are influenced by seasonal variations in precipitation, but the groundwater flow patterns do not appear to vary significantly with the seasons.

2.1.3 LOWER WATER-BEARING ZONE

Groundwater elevations measured in the lower water-bearing zone (lower zone) wells were used to estimate groundwater flow in the lower zone and in the area where the confining zone is absent. Groundwater elevation contours for the lower zone are presented on Figure 4. The groundwater flow pattern in the lower zone likely represents the combined influence of two factors: 1) upper zone groundwater flow over the confining unit boundary, and 2) the resulting hydrostatic pressure change when transitioning between confined-semiconfined conditions to unconfined conditions west of the confining unit boundary.

Groundwater recovery well RW-2 pumped continuously during the fourth quarter 2005 for the groundwater interim action, except for periodic shutdowns for system maintenance. The contours indicate that pumping of recovery well RW-2 has modified groundwater flow in the lower zone in

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proximity to the pumping well. Groundwater flow outside the well RW-2 capture zone is generally west/southwest toward the Willamette River.

2.2 PHASE II GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase II wells are used to evaluate groundwater quality within and downgradient of the former PCP mixing area and warehouse. The contaminants associated with historical operations in these areas include, predominantly, PCP and associated carrier compounds. For this monitoring event, the analytical results for groundwater samples collected from selected Phase II wells were used to evaluate the performance of the groundwater interim action and to assess long-term contaminant concentrations and trends in the Phase II wells in conjunction with sampling conducted within the Phase III areas of the terminal. For the fourth quarter 2005 event, groundwater from 14 upper zone Phase II wells and 5 lower zone Phase II wells was sampled and analyzed. Discussion of the groundwater interim action is provided in Section 3.0.

Phase II groundwater samples were analyzed for some or all of the following constituents, as shown in Table A-1:

- Semivolatile organic compounds [SVOCs; U.S. Environmental Protection Agency (EPA) Method 8270]
- Volatile organic compounds (VOCs; EPA Method 8260) including methyl tert-butyl ether (MTBE) at select wells
- PCP (EPA Method 8270 SIM) on samples where PCP was not detected above the reporting limit using EPA Method 8270
- Diesel-range and motor oil-range TPH (NWTPH-Dx) and gasoline-range TPH (NWTPH-Gx) with silica gel cleanup
- Twelve priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, and zinc; EPA Methods 6020/7470A series)
- Selenium (EPA Method 6020)
- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature)
- Ferrous iron (using a Hach field kit).
- Dioxins and furans (EPA Method SW8290) for groundwater samples from wells OX-1S, OX-6S, and RW-1

The laboratory analyses were conducted by North Creek Analytical, in Beaverton, Oregon, except for dioxin/furan analyses, which was performed by Pace Analytical Services, Inc., in Minneapolis, Minnesota.

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Analytical results for the Phase II monitoring wells for the fourth quarter 2005 event are provided in Table A-3 for the upper zone wells and in Table A-5 for the lower zone wells. A summary of the Phase II results is provided in the following sections.

2.2.1 UPPER WATER-BEARING ZONE

The fourth quarter 2005 analytical results for the Phase II upper zone wells indicate the following:

- Samples from six wells contained concentrations of PCP greater than the laboratory reporting limits (Figure 5). The highest concentrations were detected in the samples from wells OX-7S and OX-8S [2,060 and 377 micrograms per liter (µg/L), respectively], located within and downgradient of the former PCP mixing area. During the previous quarterly event, PCP concentrations were highest in samples from wells OX-6S (2,030 µg/L) and LW-4S (1,960 µg/L), indicating that PCP concentrations have decreased in OX-6S and increased in OX-7S since the third quarter 2005 event. OX-2S was not sampled during fourth quarter 2005 due to the presence of product in the well. In addition to PCP, 2,3,4,6-tetrachlorophenol (breakdown by-product of PCP) was detected at a concentration of 38.8 µg/L in well OX-7S.

- Other SVOCs were detected at low concentrations; however, none were greater than 24.6 µg/L (naphthalene at LW-8S).

- VOCs, including benzene, n-butylbenzene, ethylbenzene, isopropylbenzene, 4-isopropyltoluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, sec-butlybenzene, tert-butlybenzene, n-propylbenzene, naphthalene, and xylenes, were detected in some combination in samples collected from all Phase II wells (with the exception of LW-4S, OX-5S, and OX-9S) at concentrations ranging from 1.5 µg/L to 267 µg/L. Benzene and ethylbenzene concentrations exceeding preliminary screening levels were observed near wells N, P, and Q. Ethylbenzene concentrations exceeding the screening levels were also observed in the southwestern portion of the Main Terminal tank farm area. Benzene and ethylbenzene concentrations are shown on Figures 13 and 14.

- The highest concentrations of diesel-range TPH and gasoline-range TPH were observed at well LW-8S at concentrations of 1,390 µg/L and 2,860 µg/L, respectively.

- Arsenic concentrations detected in samples from the upper zone Phase II wells ranged from less than the laboratory reporting limit (i.e., nondetect) to 30.4 µg/L (LW-8S). Chromium concentrations were nondetect in all samples except OX-5S (9.72 µg/L); copper concentrations ranged from nondetect to 13 µg/L (OX-5S); lead concentrations were nondetect in all samples except OX-5S (4.78 µg/L); mercury concentrations were nondetect in all samples except OX-5S (0.355 µg/L); nickel concentrations ranged from 8.77 µg/L (LW-8S) to 154 µg/L (OX-8S); and zinc concentrations ranged from nondetect to 37.8 µg/L (OX-5S). Antimony, beryllium, cadmium, selenium, silver, and thallium were not detected in any of the samples analyzed. Chromium and copper concentrations are presented on Figure 6.

- Dioxin and furan analyses were performed on samples from wells OX-1S, OX-6S, and RW-1, which are located within and downgradient of the former PCP mixing area. Results

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from these analyses indicated concentrations, as total equivalency quotient (TEQ), ranging from 0.000254 nanograms per liter (ng/L) (RW-1) to 0.019481 ng/L (OX-6S).

2.2.2 LOWER WATER-BEARING ZONE

During fourth quarter 2005, PCP was not detected above the laboratory reporting limit in groundwater from any of the lower zone wells, as shown on Figure 7. No other SVOCs were detected above laboratory reporting limits in groundwater from the lower zone wells, with the exception of bis(2-ethylhexyl)phthalate (13.6 µg/L in well LW-10D) and 2-methylnaphthalene (2.02 µg/L in well RW-2). The highest number of VOCs were detected in the sample collected from well RW-2; however, none of the detected concentrations were greater than 37.3 µg/L (isopropylbenzene). The highest detected concentration of VOCs was detected in the sample collected from well LW-6D (acetone at a concentration of 47.5 µg/L). The highest detected concentrations of diesel-range TPH (an estimated 452 µg/L) and gasoline-range TPH (371 µg/L) were observed at wells LW-6D and RW-2, respectively. Arsenic concentrations in the samples from the lower zone Phase II wells ranged from 6.96 µg/L (LW-11D) to 32.6 µg/L (LW-9D); chromium concentrations ranged from nondetect to 27.8 µg/L (LW-11D); copper concentrations ranged from nondetect to 37.3 µg/L (LW-11D); lead concentrations ranged from nondetect to 15.1 µg/L (LW 11D); nickel concentrations ranged from nondetect to 70.6 µg/L (LW-11D); and zinc concentrations ranged from nondetect to 85.1 µg/L (LW-11D). Antimony, beryllium, cadmium, mercury, selenium, silver, and thallium were not detected in any of the samples analyzed.

2.2.3 WATER LEVEL AND CONTAMINANT TRENDS

The fourth quarter 2005 data from the Phase II wells were used to evaluate long-term groundwater level and contaminant trends for groundwater impacted by former PCP-related operations at the terminal. PCP concentrations were evaluated by generating time versus groundwater elevation and time versus concentration plots for the period covered by the Phase II RI quarterly sampling events (April 1997, or first available, through the current quarterly event). Plots of PCP concentrations (maximum concentrations of EPA Methods 8270 and 8040 for events prior to the second quarter 2001 event) versus time for selected upper zone wells (LW-4S, LW-11S, and RW-1) and selected lower zone wells (LW-6D, LW-4DR, LW-11D, and RW-2) are provided on Figures 8 and 9, respectively. Plots of groundwater elevations and PCP concentrations for upper zone wells LW-4S and LW-11S are shown on Figures 10 and 11. Figure 12 shows groundwater elevations and PCP concentrations at lower zone well LW-11D plotted with the Willamette River stage through the previous quarterly event as mentioned earlier. In

addition, PCP concentrations from the fourth quarter 2005 event for the upper and lower water-bearing zones are shown on Figures 5 and 7, respectively, and discussed above.

As shown on Figure 8, the PCP concentrations at the selected upper zone wells show variable concentration trends over time. PCP concentrations at RW-1 decreased throughout 2004, increased slightly during the first and second quarters of 2005, and decreased during third and fourth quarter 2005 to below laboratory reporting limits in fourth quarter 2005 (from 108 µg/L in third quarter 2005). PCP concentrations at well LW-11S decreased from February 2004 through first quarter 2005 (from 2,130 to 178 µg/L), increased in the second and third quarters of 2005 to concentrations of 545 µg/L and 687 µg/L, respectively, and decreased during fourth quarter 2005 to a concentration of 236 µg/L. Historically, PCP concentrations detected at well LW-11S appear to reflect a response to seasonal groundwater fluctuations, as shown on Figure 11. PCP concentrations decreased in well LW-4S from 1,960 µg/L in third quarter 2005 to 50.4 µg/L in fourth quarter 2005. PCP concentrations at well LW-4S appear to reflect seasonal changes in groundwater elevation and resulting changes in PCP concentrations at upgradient locations (Figure 10).

PCP was not detected in Phase II lower zone wells during the fourth quarter 2005 event. PCP was last detected in well LW-4DR at a concentration of 1.08 µg/L during fourth quarter 2004. As shown on Figure 9, the PCP concentration in the lower zone at RW-2 has continued to decrease since the May 2004 event (from a concentration of 46.7 µg/L) and PCP was not detected at RW-2 during fourth quarter 2005. Historically, sporadic detections of PCP have been observed in both LW-11D and G1A; however, during this quarterly event, PCP was not detected in well LW-11D (well G1A is no longer sampled). PCP has been detected in LW-6D five times historically, at concentrations ranging from 0.42 µg/L to 1.1 µg/L, but has not been detected since first quarter 2005.

Fluctuations in groundwater elevations in the upper zone reflect typical seasonal variability with seasonal lows during the fall months (October-November) and seasonal highs during the winter and early spring months (January-March) since monitoring began in March 1997. The groundwater levels during the past year are similar to those observed during previous years. Trends in PCP concentrations correlate with groundwater elevations at some locations. Figure 10 shows that there appears to be a historical correlation between the water level and PCP concentration in the upper zone at well LW-4S since the first quarter of 2002. Figure 11 shows that the PCP concentration in the upper zone at well LW-11S typically follows the water level trends in that zone over time. In the lower zone, groundwater levels show trends similar to the seasonal fluctuations in the Willamette River, as shown by the plot of groundwater elevations at LW-11D with river stage on Figure 12. However, there appears to be no correlation between PCP concentrations and groundwater/river stage elevations at LW-11D.

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Concentration contours for the upper and lower water-bearing zones (Figure 5 and 7, respectively) indicate that the overall areal extent of the PCP plume has decreased since third quarter 2005 in the upper and lower water-bearing zones. PCP concentrations are lower in most upper water-bearing zone wells than in the previous quarter, with the exception of wells OX-7S and OX-8S. At well OX-2S, product was observed during both third and fourth quarter 2005, and the well was not sampled. The fluctuations in PCP concentrations at most wells appear to be due to seasonal changes in groundwater elevations. Increases in PCP concentrations in wells OX-7S and OX-8S may also be a result of rebound since the February 2005 ISCO injection event.

Contaminant and groundwater level trends will continue to be evaluated and discussed as part of future quarterly events.

2.3 PHASE III GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase III wells are used to evaluate groundwater quality in the former petroleum operations areas of the terminal, mainly focusing on the Main Terminal tank farm. As noted above, samples were not collected during fourth quarter 2005 in the Bell Terminal tank farm area. The contaminants associated with historical operations in the Main Terminal tank farm area predominantly include petroleum hydrocarbons (gasoline and diesel range); VOCs [e.g., benzene, toluene, ethylbenzene, and xylenes (BTEX)]; polycyclic aromatic hydrocarbons (PAHs); and other petroleum-related compounds. For the fourth quarter 2005 event, groundwater from 5 upper zone Phase III wells and 11 lower zone Phase III wells was sampled and analyzed. These wells are identified in Table A-1. Monitoring well LW-21S was not sampled due to the presence of product at this well location. The fourth quarter 2005 sampling event is the ninth consecutive quarterly monitoring event for the Phase III wells that were installed in September 2003 and the fifth sampling event for the 12 monitoring wells installed in October 2004, as discussed previously.

Except as shown in Table A-1, all groundwater samples were analyzed for the following constituents:

- SVOCs (EPA Method 8270)
- VOCs (EPA Method 8260) including MTBE
- PAHs (EPA Method 8270 SIM)
- Diesel-range, motor oil-range, and gasoline-range TPH (NWTPH-Dx and NWTPH-Gx) with silica gel cleanup
- Twelve priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, and zinc; EPA Methods 6020/7470A series)

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- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature).

The Phase III laboratory analyses were conducted by North Creek Analytical in Beaverton, Oregon.

The groundwater analytical results were contoured using preliminary screening levels. Since the primary groundwater transport pathway of concern at the terminal is from groundwater to surface water, the preliminary screening levels were based on the most conservative published value from the EPA National Recommended Water Quality Criteria (organism only; EPA 2002); DEQ ecological risk screening level values (SLVs; DEQ 2001); Oregon Ambient Water Quality Criteria for Freshwater (fish consumption only; DEQ 2004); and DEQ generic risk-based concentrations for petroleum constituents and total petroleum hydrocarbons (DEQ 2003).

Analytical results for the fourth quarter 2005 event are provided in Table A-4 for the upper zone wells and Table A-6 for the lower zone wells. A summary of the Phase III results is provided in the following sections.

2.3.1 UPPER WATER-BEARING ZONE

The fourth quarter 2005 results for the Phase III monitoring wells installed in the upper zone indicate the following:

- SVOCs (acenapththene, dibenzofuran, fluorene, 2-methylnapthalene, 3-4-methylphenol, naphthalene, and/or phenol) were detected at Phase III monitoring wells N, P, and Q. SVOCs ranged from nondetect to an estimated 80.5 µg/L [phenol at well P].
- VOCs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, isopropylbenzene, m,p-xylene, naphthalene, n-propylbenzene, o-xylene, sec-butylbenzene, and/or toluene) were detected in some combination at all wells sampled, with the exception of well LW-27S. The detected VOC concentrations ranged from 5.25 µg/L (sec-butylbenzene) at well LW-19S to 2,470 µg/L (benzene) at well P. The highest ethylbenzene concentration (131 µg/L), toluene concentration (64.2 µg/L), and total xylenes concentration (633 µg/L) were detected at wells N, P, and P, respectively. MTBE was not detected above the laboratory reporting limit in any of the upper zone well samples analyzed. Benzene and ethylbenzene concentrations at the upper zone monitoring locations are shown on Figures 13 and 14, respectively.
- Diesel-range and gasoline-range TPH were detected at all five of the sampled upper zone Phase III well locations within the Main Terminal tank farm area. The highest diesel-range TPH concentration was detected at well N (3,410 µg/L) and the highest gasoline-range TPH concentration was detected at well P (8,560 µg/L). Diesel-range TPH and gasoline-range TPH concentrations at the upper zone monitoring locations are shown on Figures 15 and 16, respectively.
- For the samples from the Phase III upper zone well locations, arsenic concentrations ranged from 35.9 µg/L (P) to 59.6 µg/L (LW-27S); lead concentrations ranged from nondetect to

26 µg/L (P); nickel concentrations ranged from nondetect to 5.35 µg/L (LW-27S); and zinc concentrations ranged from nondetect to 6.17 µg/L (LW-19S). Preliminary screening levels were not exceeded at any of the Phase III upper monitoring locations for chromium and copper, except for chromium at OX-5S (9.72 µg/L). Chromium and copper concentrations at the upper zone monitoring locations are shown on Figure 6. Antimony, beryllium, cadmium, mercury, selenium, silver, and thallium were not detected above laboratory reporting limits in any of the samples analyzed.

2.3.2 LOWER WATER-BEARING ZONE

The fourth quarter 2005 results for the Phase III monitoring wells installed in the lower zone indicate the following:

- PAHs [acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, and/or pyrene] were detected in six Phase III lower zone wells, with individual concentrations ranging from 0.099 µg/L [pyrene at well LW-22D] to 2.69 µg/L (fluorene at well LW-24D). No other SVOCs were detected, with the exception of di-n-butyl phthalate in well LW-25D at a concentration of 1.24 µg/L.
- Concentrations of VOCs (benzene, isopropylbenzene, n-propylbenzene, and/or sec-butylbenzene) were detected in 4 of the 11 wells sampled, at concentrations ranging from 1.63 µg/L (sec-butylbenzene; LW-45D) to 10.8 µg/L (isopropylbenzene; LW-45D). MTBE was detected in one Phase III lower zone well (LW-23D) at a concentration of 16.4 µg/L. Benzene (one detection) and ethylbenzene (no detections) concentrations at the lower zone monitoring locations are shown on Figures 17 and 18, respectively.
- Diesel-range TPH was detected in one of the lower zone Phase III wells that were sampled (LW-24D) at a concentration of 591 µg/L. Gasoline-range TPH was detected in three of the lower zone Phase III wells that were sampled. The sample from monitoring well LW-24D contained the highest concentration of gasoline-range TPH (387 µg/L). Diesel-range TPH and gasoline-range TPH concentrations at the lower zone monitoring locations are shown on Figures 19 and 20, respectively.
- Total arsenic was detected in 9 of the 11 Phase III lower zone wells sampled at concentrations ranging from 1.64 µg/L at well LW-38D to 55.4 µg/L at well LW-23D. Five or more priority pollutant metals (arsenic, chromium, copper, lead, nickel, and/or zinc) were detected at 7 of the 11 lower zone wells. Chromium and copper concentrations at the lower zone monitoring locations are shown on Figure 21. Concentrations of chromium and copper exceeding preliminary screening levels were observed in an area extending from the central portion of the Main Terminal tank farm area toward the north property boundary at LW-11D and at LW-10D (for copper only).

2.3.3 WATER LEVEL AND CONTAMINANT TRENDS

The nine quarters of data collected from the Phase III wells between November 2003 and November 2005 were used to evaluate contaminant trends within areas of the terminal historically used for petroleum operations. The analytes detected in the Phase III wells during the fourth quarter 2005 and previous quarters are predominantly constituents commonly associated with petroleum products. This

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contaminant trend discussion focuses on total petroleum hydrocarbons (gasoline- and diesel-range) and VOCs (benzene and ethylbenzene) because these constituents are related to former petroleum operations at the terminal and are indicative of the nature and extent of contamination for petroleum-related compounds. Other constituents were detected as described in the previous sections. The benzene, ethylbenzene, and diesel-range and gasoline-range TPH concentrations for the upper and lower water-bearing zones for the fourth quarter 2005 are shown on Figures 13 through 20.

As shown in Table A-7 and on Figure 22, the analytical results indicate that concentrations for most of the constituents analyzed for the nearshore wells were nondetect and none of the concentrations were greater than the preliminary screening levels. Concentrations in the four wells nearest the river (i.e., the shoreline wells) were nondetect for all constituents, with exception of total arsenic, nickel, and zinc and dissolved arsenic, copper, and nickel. None of the detected concentrations were greater than the preliminary screening levels. This information confirms the previous quarterly results that there is not currently a complete contaminant transport pathway to receptors in the river via groundwater.

Trends of TPH and associated petroleum-related VOC concentrations were also evaluated using time versus groundwater elevation and time versus concentration plots for the period covered by the Phase III RI quarterly sampling events (October 2003 through the latest quarterly event) and quarterly events since February 1999 for well LW-8S. Plots of diesel-range and gasoline-range TPH concentrations for selected upper zone and lower zone wells in the Main Terminal tank farm area are shown on Figures 23 through 26. Plots of TPH (diesel- and gasoline-range), benzene, and ethylbenzene including groundwater elevation and Willamette River stage (lower zone wells only) for one upper zone well (LW-8S) and selected lower zone wells (LW-23D and LW-25D) in the Main Terminal tank farm area are provided on Figures 27 through 29 (note the logarithmic scale on these figures).

Concentrations of diesel- and gasoline-range TPH in the samples from the upper and lower zone Phase III wells generally decreased or were similar to those detected during the previous quarter, except at LW-8S (Figures 23 to 26). Upper zone well LW-27S located within the Main Terminal tank farm area has contained product during six of the last eight quarters ranging in thickness from 0.69 ft in February 2004 to 0.02 ft in November 2004 and February 2005. No product was observed in well LW-27S in November 2005; therefore, a groundwater sample was collected for the fourth quarter 2005 event. During the last eight quarters, measurable product was observed at LW-21S at thicknesses ranging from 1.03 ft in February 2004 to 0.02 ft in February 2005. A thickness of 0.04 ft was observed in well LW-21S in November 2005. Based on information collected for the Phase III RI, the potential sources of product within the Main Terminal tank farm area include a diesel spill resulting from the rupture of Tank 29508 in 1975; an unleaded gasoline spill in the vicinity of wells N, P, and Q in 1994; and, to a lesser extent,

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incidental leakage along conveyance pipelines. Based on the available information, the diesel-range concentrations in the upper and lower zones (Figures 15 and 19) and the ethylbenzene concentrations in the upper zone (Figure 14) within and near the southeast corner of the Main Terminal tank farm area represent groundwater concentrations associated with separate historic activities conducted at the terminal. The plumes to the west, including upper zone monitoring location LW-8S and the other Main Terminal tank farm area wells, are likely associated with spills related to former petroleum operations within the Main Terminal tank farm area. The plumes to the east, including around monitoring locations RW-1 and LW-11S in the upper zone, are likely associated with carrier fluids used with PCP during wood treatment formulation activities within the former PCP mixing area. This interpretation is supported by the results for the product sample collected from well LW-11S in November 2000, which contained 3.2 percent PCP in addition to other petroleum constituents, versus the results for the product samples collected from wells LW-21S and LW-27S in April 2004, which contained only petroleum constituents (e.g., gasoline-, diesel-, and motor oil-range TPH). The plumes in the area around well LW-8S are considered to be associated with the former petroleum operations in the Main Terminal tank farm area because upper zone groundwater flow in this area appears to be to the south-southwest (Figure 3) and constituents originating in the former PCP mixing area (e.g., PCP) have not been observed at well LW-8S.

The diesel-range TPH concentrations in the upper zone within the Main Terminal tank farm area have historically ranged between about 3,000 to 12,000 µg/L (Figure 23), and the maximum concentration observed during the fourth quarter 2005 was 3,410 µg/L (well N; Figure 15). Gasoline-range TPH concentrations in the upper zone within the Main Terminal tank farm area are consistently greatest at well LW-8S with concentrations over time ranging from greater than 2,000 to 15,000 µg/L since this well was first sampled in May 1999 (Figures 24 and 27); the lowest concentration at this well was recorded during third quarter 2005 (1,180 µg/L). A slight increase was observed from third quarter 2005 in gasoline-range TPH concentrations in LW-8S during the fourth quarter 2005 (2,860 µg/L).

Overall, the diesel-range concentrations at the lower zone wells in the Main Terminal tank farm area were similar to third quarter 2005 concentrations and have shown significant decreases over time since the August 2004 event (Figure 25). The gasoline-range concentrations for the lower zone wells in the Main Terminal tank farm area showed similar overall trends to the diesel-range concentrations, with decreases in concentrations since third quarter 2005 (Figure 26). The maximum concentrations of diesel-range TPH (591 µg/L) and gasoline-range TPH (387 µg/L) observed in the lower zone wells during fourth quarter 2005 were observed in well LW-24D. Diesel-range TPH concentrations in the lower zone within the Main Terminal tank farm area tend to be significantly greater than gasoline-range TPH concentrations

at the same locations over time (Figures 25 and 26), but less overall than the upper zone concentrations for these constituents (Figures 23 and 24). Also, TPH concentrations in groundwater from lower zone wells located beyond the extent of the confining unit in the Main Terminal tank farm area tend to be greater than from wells farther to the east where the confining unit is present. This is likely the result of upper zone groundwater with higher TPH concentrations mixing with lower zone groundwater downgradient of the confining unit boundary. The highest concentration of diesel-range TPH detected since quarterly monitoring began was at well LW-25D in February 2004 (6,700 µg/L). Diesel-range TPH was not detected above laboratory reporting limits at LW-25D this quarter (Figure 29).

Comparison of the diesel- and gasoline-range TPH, benzene, and ethylbenzene concentrations with groundwater elevations at selected well locations in the Main Terminal tank farm area indicates that groundwater concentrations in upper zone wells are likely influenced by seasonal fluctuations in groundwater levels, as demonstrated by the long-term monitoring data from well LW-8S (Figure 27). At well LW-8S, the overall benzene and ethylbenzene concentrations are decreasing, and gasoline-range and diesel-range TPH concentrations have been relatively consistent since about February 2002 with some overall decrease in 2005. At lower zone wells LW-23D and LW-25D (Figures 28 and 29), groundwater elevations generally correlate with river stage fluctuations, as expected; however, any trend in groundwater concentrations in response to fluctuations in groundwater level or river stage is not apparent from the available data.

Benzene and ethylbenzene concentrations are presented on Figures 13 and 14 for the upper zone, and on Figures 17 and 18 for the lower zone. In general, the overall distribution of these compounds has remained unchanged over the previous eight quarters. Benzene concentrations at lower zone monitoring location LW-23D located on the riverbank to the west of the Main Terminal tank farm area decreased from 120 µg/L third quarter 2005 to 8.03 µg/L this quarter. Benzene was not detected in any other lower zone wells during the fourth quarter 2005. Ethylbenzene was not detected in any lower zone wells during the fourth quarter 2005.

Concentrations of total chromium and copper in Phase III wells exceeded the preliminary screening level in multiple lower zone wells and wells located beyond the confining unit boundary in the Main Terminal tank farm area. However, none of the total metals concentrations in the nearest wells to the river (i.e., shoreline wells LW-36D through LW-39D) or in the upper zone Phase III wells, exceeded the preliminary screening levels.

Samples collected from the shoreline wells were analyzed for both total and dissolved metals during the fourth quarter 2005. The dissolved metals results were used to continue to assess whether the presence of total chromium and copper observed in groundwater at concentrations exceeding preliminary

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screening levels during the fourth quarter 2004 event was the result of suspended material present in the samples from the shoreline wells. The fourth quarter 2005 data indicate that dissolved arsenic was detected in two shoreline wells (LW-38D and LW-39D), dissolved copper was detected in one shoreline well (LW-38D), and dissolved nickel was detected in one shoreline well (LW-39D). None of the total or dissolved metals concentrations in the shoreline wells for the fourth quarter 2005 event exceeded the preliminary screening levels, as shown in Table A-8. Comparison of the dissolved and total metals concentrations indicate that the dissolved concentration of arsenic in LW-38D was slightly less than the total metals concentration. Dissolved arsenic in well LW-39D, dissolved copper in well LW-38D, and dissolved nickel in well LW-39D were slightly more than the total metals concentration. However, the concentrations do not vary by more than 2.73 µg/L at any one location.

Long-term trends in the upper and lower zones will continue to be evaluated as part of the quarterly monitoring events.

3.0 GROUNDWATER RECOVERY INTERIM ACTION

This section presents a summary of the performance and status of the groundwater interim action system at the terminal for the fourth quarter of 2005 (October 1 through December 31, 2005). System operation data for the groundwater interim action were evaluated in accordance with the startup monitoring plan (Landau Associates 2000b) to determine compliance with performance criteria for the upper zone and the lower zone at the terminal. Specific performance criteria include: 1) groundwater recovery from an upper zone recovery well (HRW-1) when the pump is operating or when sufficient groundwater is present in the upper zone; 2) continuous pumping from a lower zone recovery well (RW-2), except for brief periods of system maintenance; 3) groundwater flow toward HRW-1 and RW-2 from the downgradient and upgradient directions; 4) reversal of the lower zone groundwater flow direction at the leading edge of the PCP plume; 5) chemical confirmation that continued migration of PCP in groundwater downgradient of RW-2 and HRW-1 is not occurring; and 6) compliance with the requirements of the existing discharge permit. In addition to the six criteria listed above, information is also presented in this section regarding the operation of an upper zone groundwater intercept system located in a storm drain (SDM-1) at the site.

Specific operational information for the fourth quarter 2005, as it relates to the criteria identified above, is as follows:

- As discussed in Section 2.1, groundwater elevation data were collected from the upper zone monitoring wells on November 14, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 3.
- During the fourth quarter 2005, groundwater was extracted from the upper zone recovery well (HRW-1) when sufficient water was present in the extraction well. A total of approximately 1,200 gallons of groundwater was recorded as being recovered from HRW-1 during the fourth quarter of 2005 at an estimated rate of 0.04 gallon per minute (gpm). Extracted water is discharged into Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal, and is subsequently discharged to the sanitary sewer under a permit with the City of Portland. A sample of the discharge water was collected on November 16, 2005 and analyzed for PCP. The concentration of PCP in the sample was 0.852 µg/L. A summary of groundwater recovery data for HRW-1 is included in Appendix B, Table B-1.
- With the exception of periodic shutdowns for system maintenance, groundwater was extracted continuously from the lower zone during the period from October 1 through December 31, 2005 by operating the groundwater recovery pump in RW-2. A total of approximately 812,900 gallons of groundwater was recorded as being recovered from RW-2 during the fourth quarter of 2005 at an estimated average rate of 7.33 gpm. The recovery pump in RW-2 discharged water to Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal and subsequent discharge to the sanitary sewer under a permit with the City of Portland. A sample of the discharge water was collected on November 15, 2005 and analyzed for PCP. PCP was not detected above the

laboratory reporting limit in the discharge sample from RW-2. A summary of the groundwater recovery data for RW-2 is included in Appendix B, Table B-1.

- As discussed in Section 2.1, groundwater elevation data were collected from the lower zone wells on November 14, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 4. Based on the groundwater elevation data collected, the groundwater flow direction was reversed locally downgradient of the leading edge of the PCP plume in the lower zone when RW-2 was in operation during this quarter.
- As previously discussed in Section 2.2, groundwater samples were collected at the terminal on November 14 through November 18, 2005. Historically, the extent of groundwater impact has been estimated based on the extent of dissolved-phase PCP. The extent of PCP in the upper and lower zones is depicted on Figures 5 and 7, based on data collected during the November 2005 groundwater sampling event. The lateral extent of PCP from north to south in the upper zone is consistent with previous quarterly events. The lateral extent of PCP from east to west in the upper zone appears to be slightly smaller in comparison to the third quarter 2005 event. The fourth quarter lower zone analytical data indicate that monitoring wells LW-9D and LW-10D, located south and west of RW-2, did not contain concentrations of PCP greater than the laboratory reporting limit for this sampling event. In addition, RW-2 did not contain concentrations of PCP greater than the laboratory reporting limit.
- Between October 1 and December 31, 2005, 85,800 gallons of groundwater were recorded as being pumped by the groundwater intercept system at storm drain manhole SDM-1 and transferred to Tank 16804 for temporary storage and subsequent treatment by the onsite wastewater treatment system. During operation, the pump extracted water from SDM-1 at a rate of approximately 0.82 gpm. During the fourth quarter 2005 sampling event, the Willamette River level was above the elevation of the outfall of the storm drain line; therefore, no water quality sample was collected for PCP analysis during this sampling event.

The industrial wastewater discharge permit (City of Portland Permit No. 400.121) for discharge of the extracted groundwater following treatment at the terminal's wastewater treatment plant includes the following discharge limitations:

Parameter	Permitted Limit
PCP	40 µg/L
Benzene	50 µg/L
BTEX (1)	750 µg/L
pH	5 to 11.5

(1) Sum of detected concentrations of Benzene, Toluene, Ethylbenzene, Xylenes (BTEX).

Samples of the treated groundwater discharge were collected on October 5, 2005, November 10, 2005, and November 29, 2005, and analyzed for PCP. In addition, the pH of the discharge was monitored throughout the quarter. Sampling results indicate that concentrations of PCP ranged from 0.49 µg/L to 1.00 µg/L and pH ranged from 8.3 to 8.7 during fourth quarter 2005. Currently, Landau Associates and Time Oil Co. are monitoring the discharge concentration of PCP on a monthly basis and pH readings are

collected at least twice a month. Samples collected on October 5, 2005 and November 29, 2005 indicate that no BTEX constituents were detected. The PCP analytical results for the treatment system discharge are provided in Appendix B, Table B-1.

4.0 FUTURE GROUNDWATER TASKS

4.1 GROUNDWATER MONITORING

The first quarter 2006 groundwater sampling event is scheduled to take place during the week of February 20, 2006. The groundwater monitoring and analytical program for the first quarter 2006 event includes the following: 1) monitoring at Phase II quarterly well locations per the approved modifications outlined in Appendix D; 2) monitoring of ISCO injection monitoring wells per the ISCO work plan (Landau Associates 2004a); and 3) monitoring of Phase III RI monitoring wells per the approved modifications outlined in Appendix D. In October 2005, Landau Associates requested a reduction in sampling frequency at a select number of Phase II and Phase III wells (Landau Associates 2005b). DEQ approved the request, with the incorporation of additional wells adjacent to the PCP plume area and in the Bell Terminal for a single sampling event associated with groundwater sampling on the adjacent Schnitzer property (DEQ 2005). Both letters are included in Appendix D. The results for the Phase II and Phase III first quarter 2006 groundwater monitoring event, the first quarter groundwater interim action status, and a summary of the ISCO groundwater injection event will be provided in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

4.2 GROUNDWATER RECOVERY INTERIM ACTION

The groundwater recovery interim action system appears to exhibit continued effectiveness at limiting further migration of impacted groundwater in the upper and lower zones. The groundwater recovery system will continue to be operated in the first quarter of 2006. The effectiveness of the current onsite treatment system methodology will be evaluated relative to the potential effectiveness of a granular activated carbon (GAC) treatment system. A cost-benefit analysis will be conducted to assess the potential replacement of the current treatment system with a GAC system.

4.3 ISCO GROUNDWATER INTERIM ACTION

The ISCO interim action appears to be beneficial in the reduction of PCP concentrations in the upper zone groundwater; therefore, a third full-scale ISCO injection event was conducted January 31 through February 3, 2006. The results of this event will be reported in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

5.0 USE OF THIS REPORT

This quarterly groundwater report has been prepared by Landau Associates for the exclusive use of Time Oil Co. for specific application to the Northwest Terminal. Services for this project were conducted in accordance with the Environmental Services Contract between Time Oil Co. and Landau Associates, Inc. Landau Associates has performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by Time Oil Co. or others in connection with any site other than the Northwest Terminal without Landau Associates' written permission shall be at the sole risk of Time Oil Co. and without liability to Landau Associates.

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Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report Time Oil Northwest Terminal Portland, Oregon

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1.0 INTRODUCTION

This report provides the results of the fourth quarter 2005 groundwater monitoring event conducted as part of the ongoing Phase II and III remedial investigation (RI) activities at the Time Oil Northwest Terminal (terminal) in Portland, Oregon. This report also provides performance and status information for the Phase II groundwater interim action currently ongoing at the terminal.

The terminal is a former bulk petroleum storage and transfer facility owned by Time Oil Co. (Time Oil) that is located in the industrialized Rivergate area of north Portland, Oregon (Figure 1). Time Oil ceased operations at the terminal on October 31, 2001. Groundwater monitoring is conducted in accordance with the *Phase I/II Remedial Investigation/Feasibility Study (RI/FS)* work plan (Landau Associates 1996), and the Phase III RI work plan (Landau Associates 2001). The groundwater monitoring locations at the terminal are shown on Figure 2. Prior to the fourth quarter 2003 event, groundwater monitoring was focused on wells drilled for the Phase II RI at locations within and downgradient of the former pentachlorophenol (PCP) mixing area. Quarterly groundwater monitoring of the Phase II wells has been ongoing at the terminal since April 1997. Starting with the fourth quarter 2003 event, collection of groundwater monitoring data began at wells installed as part of the Phase III RI within the Main Terminal tank farm and Bell Terminal tank farm areas, and other areas of the terminal not covered under previous investigations. Also, quarterly groundwater monitoring for 12 additional monitoring wells, installed in October-November 2004, began during the fourth quarter 2004 event, including four wells located along the shoreline of the Willamette River. Specifically, the data presented in this report include the results for the following:

- Phase II wells used for monitoring of the groundwater interim action
- Phase II wells used for monitoring groundwater concentrations in the upper zone PCP plume area where the *in situ* chemical oxidation (ISCO) technique was applied in February and June 2005
- Phase III wells used for monitoring groundwater concentrations in the Main Terminal tank farm area. As noted in Section 2.0, the Phase III wells in the Bell Terminal were not sampled during the fourth quarter 2005 event.

This was the fifth sampling event for the wells installed in fall 2004.

Sampling of two wells located on the Port of Portland property to the north of the terminal was attempted again this quarter to assist in defining the locality of facility boundary to the north. (Two previous attempts were also conducted during the second and third quarter 2005 events). The wells were all dry again. A fourth attempt to sample these wells will be made during the first quarter 2006 event. If the wells are still dry, Time Oil will provide a recommendation to the Oregon Department of Environmental Quality (DEQ) on an alternative methodology to define the locality of facility in this area.

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The fourth quarter 2005 groundwater monitoring event was conducted from November 14 through November 18, 2005. This report summarizes groundwater elevation and groundwater quality data for the fourth quarter 2005, transmits analytical laboratory data packages and the associated data validation report, and presents an evaluation of data collected during the fourth quarter 2005 (October 1 through December 31, 2005) for the groundwater interim action in the upper and lower water-bearing zones relative to compliance with defined performance criteria. Data from this and previous quarterly monitoring events are used to assess contaminant distribution and groundwater level trends across the terminal. Additional discussion of the Phase III RI activities through the fourth quarter 2004 sampling event is included in the final Phase III RI report (Landau Associates 2005a). The chemical analyses conducted during this monitoring event for each groundwater sampling location are summarized in Appendix A, Table A-1. Groundwater level measurements collected at the terminal for the fourth quarter 2005 event and for the previous RI quarterly events since March 1997 are provided in Appendix A, Table A-2. Groundwater quality data for the fourth quarter 2005 event are provided in Tables A-3 and A-4 for the upper zone wells and Tables A-5 and A-6 for the lower zone wells. Table A-7 is a summary of detected analytes in the nearshore wells, and Table A-8 is a summary of total and dissolved metals in the shoreline wells. A summary of the fourth quarter 2005 groundwater interim action recovery data is provided in Appendix B. Procedures for collection of water level measurements and groundwater samples and methods for evaluation are provided in Appendix C. A summary of modifications to the Phase II and Phase III groundwater quality sampling and analysis requirements, as approved by DEQ, is included in Appendix D. The data validation report for the fourth quarter 2005 data is provided in Appendix E. Laboratory data packages for these data are provided in Appendix F.

As requested by DEQ, a summary of the quarterly water quality data (detected constituents) since March 1997 for the upper and lower zone wells is being provided electronically to DEQ on CD. These tables will continue to be updated following each quarterly event.

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2.0 FOURTH QUARTER 2005 GROUNDWATER MONITORING EVENT

The fourth quarter 2005 groundwater monitoring event was conducted from November 14 through November 18, 2005. The quarterly event included measurement of water levels at groundwater monitoring wells, well points, and recovery wells, and at a river gauge established on the south side of the dock extending into the Willamette River (Figure 2); measurement of product thickness in all terminal wells, if observed; and collection of groundwater quality samples. The fourth quarter 2005 event included sampling of the routine Phase II monitoring locations for performance of the groundwater interim action (HRW-1, LW-6D, LW-9D, LW-10S, LW-10D, LW-11D, RW-2 and SDM-1); selected monitoring wells associated with the Phase II ISCO activities (B1, J1, OX-1S, OX-3S, OX-5S through OX-9S, LW-4S, LW-8S, LW-11S, and RW-1); and selected Phase III monitoring wells in the Main Terminal tank farm area (LW-19S, LW-21S, LW-22D through LW-25D, LW-27S, LW-35D through LW-40D, LW-40S, LW-45D, N, P, and Q). The group of wells sampled this quarter was modified from previous quarters as described in the Landau Associates' letter to DEQ dated October 19 (Landau Associates 2005b) and as approved by DEQ in its letter dated October 31 (DEQ 2005). These letters are contained in Appendix D.

Because the Phase II and Phase III wells were installed to monitor groundwater quality in different areas of the terminal with different historical uses, the Phase II and Phase III groundwater quality data are discussed in separate sections (Sections 2.2 and 2.3, respectively). For discussion purposes, Phase II refers to monitoring locations within and downgradient of the former PCP mixing area and warehouse, and Phase III refers to monitoring locations within and downgradient of the Main Terminal tank farm area and associated petroleum storage operation areas.

For reference, the monitoring wells, well points, recovery wells, and monitoring points are grouped as follows:

- Phase II: B1, B2, D, G1A, H, HRW-1, J1, J2, J3, L, LW-1S/1D, LW-3D, LW-4S/4DR, LW-5S, LW-6D, LW-8S, LW-9S/9D, LW-10S/10D, LW-11S/11D, LW-13S, LW-14D, LW-15D, LW-16D, LW-17D, LW-18D, OX-1S through OX-7S, OX-8S/8D, OX-9S, PZ-1 through PZ-4, RW-1, RW-2, SDM-1, and river outfall.
- Phase III: K, N, P, Q, O, R, LW-7S, LW-19S, LW-20S/20D, LW-21S, LW-22D, LW-23D, LW-24D, LW-25D, LW-26D, LW-27S/27D, LW-28S, LW-29S/29D, LW-30S/30D, LW-31S, LW-32S/32D, LW-33S, LW-34S, LW-35D, LW-36D, LW-37D, LW-38D, LW-39D, LW-40S/40D, LW-41S, LW-42S, LW-43S, LW-44S, and LW-45D.

A summary of the analyses conducted at each sample location included in the fourth quarter 2005 event is provided in Table A-1. Section 2.1 presents a summary of the results for the groundwater level measurements for the monitoring locations at the terminal. The groundwater quality data and evaluations of groundwater flow and contaminant occurrence and trends for the Phase II wells and the Phase III wells

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are presented in Sections 2.2 and 2.3, respectively. The performance and status of the groundwater recovery interim action are discussed in Section 3.0.

2.1 GROUNDWATER LEVEL AND PRODUCT MEASUREMENTS

Groundwater levels were measured at each well for the fourth quarter 2005 event on November 14, 2005. Each well was also checked for the presence of product. The measurement and evaluation results are presented in the following sections. The measurement and evaluation procedures are provided in Appendix C. The groundwater measurement locations are shown on Figure 2. Groundwater level measurements conducted for the quarterly groundwater sampling events since March 1997 are provided in Table A-2. Historical (pre-Phase II RI) groundwater level measurements conducted from 1993 through 1996 were provided in the Phase II RI report (Landau Associates 2000a).

2.1.1 PRODUCT MEASUREMENTS AND PRODUCT RECOVERY

During the fourth quarter 2005 event, measurable product (0.07 ft) was observed in Phase II well OX-2S, which is located downgradient of the former PCP mixing area. Product was last observed in well OX-2S during the third quarter 2005 sampling event at a thickness of 0.23 ft. Measurable product (0.04 ft) was also observed at Phase III well LW-21S, located within the Main Terminal tank farm area. Product was last observed in well LW-21S during the third quarter 2005 sampling event at a thickness of 0.16 ft. During past groundwater monitoring events, measurable product has also been observed in well LW-27S; however, no product was observed in this well during fourth quarter 2005. Wells LW-21S and LW-27S were installed in September 2003; measurable product was first observed in these wells in the first quarter of 2004. Keck passive product recovery bailers were installed at LW-21S and LW-27S in March 2004. Approximately 0.75 liters of product were removed from the passive bailer in well LW-21S during fourth quarter 2005. The recovered product is temporarily contained in a 55-gal drum onsite pending appropriate offsite disposal. Monitoring wells at the terminal will continue to be monitored for the presence of product during future quarterly monitoring events. A record of product observations and thicknesses is provided in Table A-2.

2.1.2 UPPER WATER-BEARING ZONE

Groundwater elevations measured in the upper water-bearing zone (upper zone) wells were used to estimate groundwater flow. Groundwater elevation contours for the upper zone are presented on Figure 3. Groundwater elevations measured during the fourth quarter 2005 indicate that groundwater flow in the upper zone is generally to the west-southwest toward the Willamette River across the Main

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Terminal and Bell Terminal tank farm areas. The localized southward shift in groundwater flow, which has historically been apparent within and downgradient of the former PCP mixing area, appears to be due to the influence of the east-west trending storm drain located about 170 ft north of the southern property boundary (Figure 2). Groundwater elevations measured at Phase III wells located along the confining unit boundary in the western portion of the terminal reflect the change from two water-bearing zones (upper and lower) to a single unconfined water-bearing zone. For example, wells LW-9S and LW-10S and piezometers PZ-3 and PZ-4, located near or beyond the extent of the confining unit, are typically dry during summer and fall months. During the wetter winter and spring months, groundwater is typically observed within the upper zone along this boundary. At well LW-27S where the confining unit is observed but is thin, the water level appears to represent an intermediate groundwater elevation between the upper zone and lower zone, thereby, indicating the edge of the confining unit and the transition from two groundwater zones to one in this area. The groundwater flow patterns in this area mirror the western extent of the confining unit boundary and groundwater gradients increase sharply where the upper and lower zones converge. In the Bell Terminal tank farm area, well LW-41S, which is located where the confining unit is thin and likely discontinuous, is intermittently dry, but had water during the fourth quarter 2005 event.

Overall, the data collected to date show that the upper zone groundwater levels are influenced by seasonal variations in precipitation, but the groundwater flow patterns do not appear to vary significantly with the seasons.

2.1.3 LOWER WATER-BEARING ZONE

Groundwater elevations measured in the lower water-bearing zone (lower zone) wells were used to estimate groundwater flow in the lower zone and in the area where the confining zone is absent. Groundwater elevation contours for the lower zone are presented on Figure 4. The groundwater flow pattern in the lower zone likely represents the combined influence of two factors: 1) upper zone groundwater flow over the confining unit boundary, and 2) the resulting hydrostatic pressure change when transitioning between confined-semiconfined conditions to unconfined conditions west of the confining unit boundary.

Groundwater recovery well RW-2 pumped continuously during the fourth quarter 2005 for the groundwater interim action, except for periodic shutdowns for system maintenance. The contours indicate that pumping of recovery well RW-2 has modified groundwater flow in the lower zone in proximity to the pumping well. Groundwater flow outside the well RW-2 capture zone is generally west/southwest toward the Willamette River.

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2.2 PHASE II GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase II wells are used to evaluate groundwater quality within and downgradient of the former PCP mixing area and warehouse. The contaminants associated with historical operations in these areas include, predominantly, PCP and associated carrier compounds. For this monitoring event, the analytical results for groundwater samples collected from selected Phase II wells were used to evaluate the performance of the groundwater interim action and to assess long-term contaminant concentrations and trends in the Phase II wells in conjunction with sampling conducted within the Phase III areas of the terminal. For the fourth quarter 2005 event, groundwater from 14 upper zone Phase II wells and 5 lower zone Phase II wells was sampled and analyzed. Discussion of the groundwater interim action is provided in Section 3.0.

Phase II groundwater samples were analyzed for some or all of the following constituents, as shown in Table A-1:

- Semivolatile organic compounds [SVOCs; U.S. Environmental Protection Agency (EPA) Method 8270]
- Volatile organic compounds (VOCs; EPA Method 8260) including methyl tert-butyl ether (MTBE) at select wells
- PCP (EPA Method 8270 SIM) on samples where PCP was not detected above the reporting limit using EPA Method 8270
- Diesel-range and motor oil-range TPH (NWTPH-Dx) and gasoline-range TPH (NWTPH-Gx) with silica gel cleanup
- Twelve priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, and zinc; EPA Methods 6020/7470A series)
- Selenium (EPA Method 6020)
- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature)
- Ferrous iron (using a Hach field kit).
- Dioxins and furans (EPA Method SW8290) for groundwater samples from wells OX-1S, OX-6S, and RW-1

The laboratory analyses were conducted by North Creek Analytical, in Beaverton, Oregon, except for dioxin/furan analyses, which was performed by Pace Analytical Services, Inc., in Minneapolis, Minnesota.

Analytical results for the Phase II monitoring wells for the fourth quarter 2005 event are provided in Table A-3 for the upper zone wells and in Table A-5 for the lower zone wells. A summary of the Phase II results is provided in the following sections.

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2.2.1 UPPER WATER-BEARING ZONE

The fourth quarter 2005 analytical results for the Phase II upper zone wells indicate the following:

- Samples from six wells contained concentrations of PCP greater than the laboratory reporting limits (Figure 5). The highest concentrations were detected in the samples from wells OX-7S and OX-8S [2,060 and 377 micrograms per liter (µg/L), respectively], located within and downgradient of the former PCP mixing area. During the previous quarterly event, PCP concentrations were highest in samples from wells OX-6S (2,030 µg/L) and LW-4S (1,960 µg/L), indicating that PCP concentrations have decreased in OX-6S and increased in OX-7S since the third quarter 2005 event. OX-2S was not sampled during fourth quarter 2005 due to the presence of product in the well. In addition to PCP, 2,3,4,6-tetrachlorophenol (breakdown by-product of PCP) was detected at a concentration of 38.8 µg/L in well OX-7S.

- Other SVOCs were detected at low concentrations; however, none were greater than 24.6 µg/L (naphthalene at LW-8S).

- VOCs, including benzene, n-butylbenzene, ethylbenzene, isopropylbenzene, 4-isopropyltoluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, sec-butlybenzene, tert-butlybenzene, n-propylbenzene, naphthalene, and xylenes, were detected in some combination in samples collected from all Phase II wells (with the exception of LW-4S, OX-5S, and OX-9S) at concentrations ranging from 1.5 µg/L to 267 µg/L. Benzene and ethylbenzene concentrations exceeding preliminary screening levels were observed near wells N, P, and Q. Ethylbenzene concentrations exceeding the screening levels were also observed in the southwestern portion of the Main Terminal tank farm area. Benzene and ethylbenzene concentrations are shown on Figures 13 and 14.

- The highest concentrations of diesel-range TPH and gasoline-range TPH were observed at well LW-8S at concentrations of 1,390 µg/L and 2,860 µg/L, respectively.

- Arsenic concentrations detected in samples from the upper zone Phase II wells ranged from less than the laboratory reporting limit (i.e., nondetect) to 30.4 µg/L (LW-8S). Chromium concentrations were nondetect in all samples except OX-5S (9.72 µg/L); copper concentrations ranged from nondetect to 13 µg/L (OX-5S); lead concentrations were nondetect in all samples except OX-5S (4.78 µg/L); mercury concentrations were nondetect in all samples except OX-5S (0.355 µg/L); nickel concentrations ranged from 8.77 µg/L (LW-8S) to 154 µg/L (OX-8S); and zinc concentrations ranged from nondetect to 37.8 µg/L (OX-5S). Antimony, beryllium, cadmium, selenium, silver, and thallium were not detected in any of the samples analyzed. Chromium and copper concentrations are presented on Figure 6.

- Dioxin and furan analyses were performed on samples from wells OX-1S, OX-6S, and RW-1, which are located within and downgradient of the former PCP mixing area. Results from these analyses indicated concentrations, as total equivalency quotient (TEQ), ranging from 0.000254 nanograms per liter (ng/L) (RW-1) to 0.019481 ng/L (OX-6S).

2.2.2 LOWER WATER-BEARING ZONE

During fourth quarter 2005, PCP was not detected above the laboratory reporting limit in groundwater from any of the lower zone wells, as shown on Figure 7. No other SVOCs were detected

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above laboratory reporting limits in groundwater from the lower zone wells, with the exception of bis(2-ethylhexyl)phthalate (13.6 µg/L in well LW-10D) and 2-methylnaphthalene (2.02 µg/L in well RW-2). The highest number of VOCs were detected in the sample collected from well RW-2; however, none of the detected concentrations were greater than 37.3 µg/L (isopropylbenzene). The highest detected concentration of VOCs was detected in the sample collected from well LW-6D (acetone at a concentration of 47.5 µg/L). The highest detected concentrations of diesel-range TPH (an estimated 452 µg/L) and gasoline-range TPH (371 µg/L) were observed at wells LW-6D and RW-2, respectively. Arsenic concentrations in the samples from the lower zone Phase II wells ranged from 6.96 µg/L (LW-11D) to 32.6 µg/L (LW-9D); chromium concentrations ranged from nondetect to 27.8 µg/L (LW-11D); copper concentrations ranged from nondetect to 37.3 µg/L (LW-11D); lead concentrations ranged from nondetect to 15.1 µg/L (LW 11D); nickel concentrations ranged from nondetect to 70.6 µg/L (LW-11D); and zinc concentrations ranged from nondetect to 85.1 µg/L (LW-11D). Antimony, beryllium, cadmium, mercury, selenium, silver, and thallium were not detected in any of the samples analyzed.

2.2.3 WATER LEVEL AND CONTAMINANT TRENDS

The fourth quarter 2005 data from the Phase II wells were used to evaluate long-term groundwater level and contaminant trends for groundwater impacted by former PCP-related operations at the terminal. PCP concentrations were evaluated by generating time versus groundwater elevation and time versus concentration plots for the period covered by the Phase II RI quarterly sampling events (April 1997, or first available, through the current quarterly event). Plots of PCP concentrations (maximum concentrations of EPA Methods 8270 and 8040 for events prior to the second quarter 2001 event) versus time for selected upper zone wells (LW-4S, LW-11S, and RW-1) and selected lower zone wells (LW-6D, LW-4DR, LW-11D, and RW-2) are provided on Figures 8 and 9, respectively. Plots of groundwater elevations and PCP concentrations for upper zone wells LW-4S and LW-11S are shown on Figures 10 and 11. Figure 12 shows groundwater elevations and PCP concentrations at lower zone well LW-11D plotted with the Willamette River stage through the previous quarterly event as mentioned earlier. In addition, PCP concentrations from the fourth quarter 2005 event for the upper and lower water-bearing zones are shown on Figures 5 and 7, respectively, and discussed above.

As shown on Figure 8, the PCP concentrations at the selected upper zone wells show variable concentration trends over time. PCP concentrations at RW-1 decreased throughout 2004, increased slightly during the first and second quarters of 2005, and decreased during third and fourth quarter 2005 to below laboratory reporting limits in fourth quarter 2005 (from 108 µg/L in third quarter 2005). PCP concentrations at well LW-11S decreased from February 2004 through first quarter 2005 (from 2,130 to

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178 µg/L), increased in the second and third quarters of 2005 to concentrations of 545 µg/L and 687 µg/L, respectively, and decreased during fourth quarter 2005 to a concentration of 236 µg/L. Historically, PCP concentrations detected at well LW-11S appear to reflect a response to seasonal groundwater fluctuations, as shown on Figure 11. PCP concentrations decreased in well LW-4S from 1,960 µg/L in third quarter 2005 to 50.4 µg/L in fourth quarter 2005. PCP concentrations at well LW-4S appear to reflect seasonal changes in groundwater elevation and resulting changes in PCP concentrations at upgradient locations (Figure 10).

PCP was not detected in Phase II lower zone wells during the fourth quarter 2005 event. PCP was last detected in well LW-4DR at a concentration of 1.08 µg/L during fourth quarter 2004. As shown on Figure 9, the PCP concentration in the lower zone at RW-2 has continued to decrease since the May 2004 event (from a concentration of 46.7 µg/L) and PCP was not detected at RW-2 during fourth quarter 2005. Historically, sporadic detections of PCP have been observed in both LW-11D and G1A; however, during this quarterly event, PCP was not detected in well LW-11D (well G1A is no longer sampled). PCP has been detected in LW-6D five times historically, at concentrations ranging from 0.42 µg/L to 1.1 µg/L, but has not been detected since first quarter 2005.

Fluctuations in groundwater elevations in the upper zone reflect typical seasonal variability with seasonal lows during the fall months (October-November) and seasonal highs during the winter and early spring months (January-March) since monitoring began in March 1997. The groundwater levels during the past year are similar to those observed during previous years. Trends in PCP concentrations correlate with groundwater elevations at some locations. Figure 10 shows that there appears to be a historical correlation between the water level and PCP concentration in the upper zone at well LW-4S since the first quarter of 2002. Figure 11 shows that the PCP concentration in the upper zone at well LW-11S typically follows the water level trends in that zone over time. In the lower zone, groundwater levels show trends similar to the seasonal fluctuations in the Willamette River, as shown by the plot of groundwater elevations at LW-11D with river stage on Figure 12. However, there appears to be no correlation between PCP concentrations and groundwater/river stage elevations at LW-11D.

Concentration contours for the upper and lower water-bearing zones (Figure 5 and 7, respectively) indicate that the overall areal extent of the PCP plume has decreased since third quarter 2005 in the upper and lower water-bearing zones. PCP concentrations are lower in most upper water-bearing zone wells than in the previous quarter, with the exception of wells OX-7S and OX-8S. At well OX-2S, product was observed during both third and fourth quarter 2005, and the well was not sampled. The fluctuations in PCP concentrations at most wells appear to be due to seasonal changes in groundwater elevations. Increases in PCP concentrations in wells OX-7S and OX-8S may also be a result of rebound since the February 2005 ISCO injection event.

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Contaminant and groundwater level trends will continue to be evaluated and discussed as part of future quarterly events.

2.3 PHASE III GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase III wells are used to evaluate groundwater quality in the former petroleum operations areas of the terminal, mainly focusing on the Main Terminal tank farm. As noted above, samples were not collected during fourth quarter 2005 in the Bell Terminal tank farm area. The contaminants associated with historical operations in the Main Terminal tank farm area predominantly include petroleum hydrocarbons (gasoline and diesel range); VOCs [e.g., benzene, toluene, ethylbenzene, and xylenes (BTEX)]; polycyclic aromatic hydrocarbons (PAHs); and other petroleum-related compounds. For the fourth quarter 2005 event, groundwater from 5 upper zone Phase III wells and 11 lower zone Phase III wells was sampled and analyzed. These wells are identified in Table A-1. Monitoring well LW-21S was not sampled due to the presence of product at this well location. The fourth quarter 2005 sampling event is the ninth consecutive quarterly monitoring event for the Phase III wells that were installed in September 2003 and the fifth sampling event for the 12 monitoring wells installed in October 2004, as discussed previously.

Except as shown in Table A-1, all groundwater samples were analyzed for the following constituents:

- SVOCs (EPA Method 8270)
- VOCs (EPA Method 8260) including MTBE
- PAHs (EPA Method 8270 SIM)
- Diesel-range, motor oil-range, and gasoline-range TPH (NWTPH-Dx and NWTPH-Gx) with silica gel cleanup
- Twelve priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, and zinc; EPA Methods 6020/7470A series)
- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature).

The Phase III laboratory analyses were conducted by North Creek Analytical in Beaverton, Oregon.

The groundwater analytical results were contoured using preliminary screening levels. Since the primary groundwater transport pathway of concern at the terminal is from groundwater to surface water, the preliminary screening levels were based on the most conservative published value from the EPA National Recommended Water Quality Criteria (organism only; EPA 2002); DEQ ecological risk screening level values (SLVs; DEQ 2001); Oregon Ambient Water Quality Criteria for Freshwater (fish

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consumption only; DEQ 2004); and DEQ generic risk-based concentrations for petroleum constituents and total petroleum hydrocarbons (DEQ 2003).

Analytical results for the fourth quarter 2005 event are provided in Table A-4 for the upper zone wells and Table A-6 for the lower zone wells. A summary of the Phase III results is provided in the following sections.

2.3.1 Upper Water-Bearing Zone

The fourth quarter 2005 results for the Phase III monitoring wells installed in the upper zone indicate the following:

- SVOCs (acenapththene, dibenzofuran, fluorene, 2-methylnapthalene, 3-4-methylphenol, naphthalene, and/or phenol) were detected at Phase III monitoring wells N, P, and Q. SVOCs ranged from nondetect to an estimated 80.5 µg/L [phenol at well P].
- VOCs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, isopropylbenzene, m,p-xylene, naphthalene, n-propylbenzene, o-xylene, sec-butylbenzene, and/or toluene) were detected in some combination at all wells sampled, with the exception of well LW-27S. The detected VOC concentrations ranged from 5.25 µg/L (sec-butylbenzene) at well LW-19S to 2,470 µg/L (benzene) at well P. The highest ethylbenzene concentration (131 µg/L), toluene concentration (64.2 µg/L), and total xylenes concentration (633 µg/L) were detected at wells N, P, and P, respectively. MTBE was not detected above the laboratory reporting limit in any of the upper zone well samples analyzed. Benzene and ethylbenzene concentrations at the upper zone monitoring locations are shown on Figures 13 and 14, respectively.
- Diesel-range and gasoline-range TPH were detected at all five of the sampled upper zone Phase III well locations within the Main Terminal tank farm area. The highest diesel-range TPH concentration was detected at well N (3,410 µg/L) and the highest gasoline-range TPH concentration was detected at well P (8,560 µg/L). Diesel-range TPH and gasoline-range TPH concentrations at the upper zone monitoring locations are shown on Figures 15 and 16, respectively.
- For the samples from the Phase III upper zone well locations, arsenic concentrations ranged from 35.9 µg/L (P) to 59.6 µg/L (LW-27S); lead concentrations ranged from nondetect to 26 µg/L (P); nickel concentrations ranged from nondetect to 5.35 µg/L (LW-27S); and zinc concentrations ranged from nondetect to 6.17 µg/L (LW-19S). Preliminary screening levels were not exceeded at any of the Phase III upper monitoring locations for chromium and copper, except for chromium at OX-5S (9.72 µg/L). Chromium and copper concentrations at the upper zone monitoring locations are shown on Figure 6. Antimony, beryllium, cadmium, mercury, selenium, silver, and thallium were not detected above laboratory reporting limits in any of the samples analyzed.

2.3.2 Lower Water-Bearing Zone

The fourth quarter 2005 results for the Phase III monitoring wells installed in the lower zone indicate the following:

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- PAHs [acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, and/or pyrene] were detected in six Phase III lower zone wells, with individual concentrations ranging from 0.099 µg/L [pyrene at well LW-22D] to 2.69 µg/L (fluorene at well LW-24D). No other SVOCs were detected, with the exception of di-n-butyl phthalate in well LW-25D at a concentration of 1.24 µg/L.
- Concentrations of VOCs (benzene, isopropylbenzene, n-propylbenzene, and/or sec-butylbenzene) were detected in 4 of the 11 wells sampled, at concentrations ranging from 1.63 µg/L (sec-butylbenzene; LW-45D) to 10.8 µg/L (isopropylbenzene; LW-45D). MTBE was detected in one Phase III lower zone well (LW-23D) at a concentration of 16.4 µg/L. Benzene (one detection) and ethylbenzene (no detections) concentrations at the lower zone monitoring locations are shown on Figures 17 and 18, respectively.
- Diesel-range TPH was detected in one of the lower zone Phase III wells that were sampled (LW-24D) at a concentration of 591 µg/L. Gasoline-range TPH was detected in three of the lower zone Phase III wells that were sampled. The sample from monitoring well LW-24D contained the highest concentration of gasoline-range TPH (387 µg/L). Diesel-range TPH and gasoline-range TPH concentrations at the lower zone monitoring locations are shown on Figures 19 and 20, respectively.
- Total arsenic was detected in 9 of the 11 Phase III lower zone wells sampled at concentrations ranging from 1.64 µg/L at well LW-38D to 55.4 µg/L at well LW-23D. Five or more priority pollutant metals (arsenic, chromium, copper, lead, nickel, and/or zinc) were detected at 7 of the 11 lower zone wells. Chromium and copper concentrations at the lower zone monitoring locations are shown on Figure 21. Concentrations of chromium and copper exceeding preliminary screening levels were observed in an area extending from the central portion of the Main Terminal tank farm area toward the north property boundary at LW-11D and at LW-10D (for copper only).

2.3.3 WATER LEVEL AND CONTAMINANT TRENDS

The nine quarters of data collected from the Phase III wells between November 2003 and November 2005 were used to evaluate contaminant trends within areas of the terminal historically used for petroleum operations. The analytes detected in the Phase III wells during the fourth quarter 2005 and previous quarters are predominantly constituents commonly associated with petroleum products. This contaminant trend discussion focuses on total petroleum hydrocarbons (gasoline- and diesel-range) and VOCs (benzene and ethylbenzene) because these constituents are related to former petroleum operations at the terminal and are indicative of the nature and extent of contamination for petroleum-related compounds. Other constituents were detected as described in the previous sections. The benzene, ethylbenzene, and diesel-range and gasoline-range TPH concentrations for the upper and lower water-bearing zones for the fourth quarter 2005 are shown on Figures 13 through 20.

As shown in Table A-7 and on Figure 22, the analytical results indicate that concentrations for most of the constituents analyzed for the nearshore wells were nondetect and none of the concentrations were greater than the preliminary screening levels. Concentrations in the four wells nearest the river (i.e., the shoreline wells) were nondetect for all constituents, with exception of total arsenic, nickel, and

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zinc and dissolved arsenic, copper, and nickel. None of the detected concentrations were greater than the preliminary screening levels. This information confirms the previous quarterly results that there is not currently a complete contaminant transport pathway to receptors in the river via groundwater.

Trends of TPH and associated petroleum-related VOC concentrations were also evaluated using time versus groundwater elevation and time versus concentration plots for the period covered by the Phase III RI quarterly sampling events (October 2003 through the latest quarterly event) and quarterly events since February 1999 for well LW-8S. Plots of diesel-range and gasoline-range TPH concentrations for selected upper zone and lower zone wells in the Main Terminal tank farm area are shown on Figures 23 through 26. Plots of TPH (diesel- and gasoline-range), benzene, and ethylbenzene including groundwater elevation and Willamette River stage (lower zone wells only) for one upper zone well (LW-8S) and selected lower zone wells (LW-23D and LW-25D) in the Main Terminal tank farm area are provided on Figures 27 through 29 (note the logarithmic scale on these figures).

Concentrations of diesel- and gasoline-range TPH in the samples from the upper and lower zone Phase III wells generally decreased or were similar to those detected during the previous quarter, except at LW-8S (Figures 23 to 26). Upper zone well LW-27S located within the Main Terminal tank farm area has contained product during six of the last eight quarters ranging in thickness from 0.69 ft in February 2004 to 0.02 ft in November 2004 and February 2005. No product was observed in well LW-27S in November 2005; therefore, a groundwater sample was collected for the fourth quarter 2005 event. During the last eight quarters, measurable product was observed at LW-21S at thicknesses ranging from 1.03 ft in February 2004 to 0.02 ft in February 2005. A thickness of 0.04 ft was observed in well LW-21S in November 2005. Based on information collected for the Phase III RI, the potential sources of product within the Main Terminal tank farm area include a diesel spill resulting from the rupture of Tank 29508 in 1975; an unleaded gasoline spill in the vicinity of wells N, P, and Q in 1994; and, to a lesser extent, incidental leakage along conveyance pipelines. Based on the available information, the diesel-range concentrations in the upper and lower zones (Figures 15 and 19) and the ethylbenzene concentrations in the upper zone (Figure 14) within and near the southeast corner of the Main Terminal tank farm area represent groundwater concentrations associated with separate historic activities conducted at the terminal. The plumes to the west, including upper zone monitoring location LW-8S and the other Main Terminal tank farm area wells, are likely associated with spills related to former petroleum operations within the Main Terminal tank farm area. The plumes to the east, including around monitoring locations RW-1 and LW-11S in the upper zone, are likely associated with carrier fluids used with PCP during wood treatment formulation activities within the former PCP mixing area. This interpretation is supported by the results for the product sample collected from well LW-11S in November 2000, which contained 3.2 percent PCP in addition to other petroleum constituents, versus the results for the product samples

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collected from wells LW-21S and LW-27S in April 2004, which contained only petroleum constituents (e.g., gasoline-, diesel-, and motor oil-range TPH). The plumes in the area around well LW-8S are considered to be associated with the former petroleum operations in the Main Terminal tank farm area because upper zone groundwater flow in this area appears to be to the south-southwest (Figure 3) and constituents originating in the former PCP mixing area (e.g., PCP) have not been observed at well LW-8S.

The diesel-range TPH concentrations in the upper zone within the Main Terminal tank farm area have historically ranged between about 3,000 to 12,000 µg/L (Figure 23), and the maximum concentration observed during the fourth quarter 2005 was 3,410 µg/L (well N; Figure 15). Gasoline-range TPH concentrations in the upper zone within the Main Terminal tank farm area are consistently greatest at well LW-8S with concentrations over time ranging from greater than 2,000 to 15,000 µg/L since this well was first sampled in May 1999 (Figures 24 and 27); the lowest concentration at this well was recorded during third quarter 2005 (1,180 µg/L). A slight increase was observed from third quarter 2005 in gasoline-range TPH concentrations in LW-8S during the fourth quarter 2005 (2,860 µg/L).

Overall, the diesel-range concentrations at the lower zone wells in the Main Terminal tank farm area were similar to third quarter 2005 concentrations and have shown significant decreases over time since the August 2004 event (Figure 25). The gasoline-range concentrations for the lower zone wells in the Main Terminal tank farm area showed similar overall trends to the diesel-range concentrations, with decreases in concentrations since third quarter 2005 (Figure 26). The maximum concentrations of diesel-range TPH (591 µg/L) and gasoline-range TPH (387 µg/L) observed in the lower zone wells during fourth quarter 2005 were observed in well LW-24D. Diesel-range TPH concentrations in the lower zone within the Main Terminal tank farm area tend to be significantly greater than gasoline-range TPH concentrations at the same locations over time (Figures 25 and 26), but less overall than the upper zone concentrations for these constituents (Figures 23 and 24). Also, TPH concentrations in groundwater from lower zone wells located beyond the extent of the confining unit in the Main Terminal tank farm area tend to be greater than from wells farther to the east where the confining unit is present. This is likely the result of upper zone groundwater with higher TPH concentrations mixing with lower zone groundwater downgradient of the confining unit boundary. The highest concentration of diesel-range TPH detected since quarterly monitoring began was at well LW-25D in February 2004 (6,700 µg/L). Diesel-range TPH was not detected above laboratory reporting limits at LW-25D this quarter (Figure 29).

Comparison of the diesel- and gasoline-range TPH, benzene, and ethylbenzene concentrations with groundwater elevations at selected well locations in the Main Terminal tank farm area indicates that groundwater concentrations in upper zone wells are likely influenced by seasonal fluctuations in groundwater levels, as demonstrated by the long-term monitoring data from well LW-8S (Figure 27). At

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well LW-8S, the overall benzene and ethylbenzene concentrations are decreasing, and gasoline-range and diesel-range TPH concentrations have been relatively consistent since about February 2002 with some overall decrease in 2005. At lower zone wells LW-23D and LW-25D (Figures 28 and 29), groundwater elevations generally correlate with river stage fluctuations, as expected; however, any trend in groundwater concentrations in response to fluctuations in groundwater level or river stage is not apparent from the available data.

Benzene and ethylbenzene concentrations are presented on Figures 13 and 14 for the upper zone, and on Figures 17 and 18 for the lower zone. In general, the overall distribution of these compounds has remained unchanged over the previous eight quarters. Benzene concentrations at lower zone monitoring location LW-23D located on the riverbank to the west of the Main Terminal tank farm area decreased from 120 µg/L third quarter 2005 to 8.03 µg/L this quarter. Benzene was not detected in any other lower zone wells during the fourth quarter 2005. Ethylbenzene was not detected in any lower zone wells during the fourth quarter 2005.

Concentrations of total chromium and copper in Phase III wells exceeded the preliminary screening level in multiple lower zone wells and wells located beyond the confining unit boundary in the Main Terminal tank farm area. However, none of the total metals concentrations in the nearest wells to the river (i.e., shoreline wells LW-36D through LW-39D) or in the upper zone Phase III wells, exceeded the preliminary screening levels.

Samples collected from the shoreline wells were analyzed for both total and dissolved metals during the fourth quarter 2005. The dissolved metals results were used to continue to assess whether the presence of total chromium and copper observed in groundwater at concentrations exceeding preliminary screening levels during the fourth quarter 2004 event was the result of suspended material present in the samples from the shoreline wells. The fourth quarter 2005 data indicate that dissolved arsenic was detected in two shoreline wells (LW-38D and LW-39D), dissolved copper was detected in one shoreline well (LW-38D), and dissolved nickel was detected in one shoreline well (LW-39D). None of the total or dissolved metals concentrations in the shoreline wells for the fourth quarter 2005 event exceeded the preliminary screening levels, as shown in Table A-8. Comparison of the dissolved and total metals concentrations indicate that the dissolved concentration of arsenic in LW-38D was slightly less than the total metals concentration. Dissolved arsenic in well LW-39D, dissolved copper in well LW-38D, and dissolved nickel in well LW-39D were slightly more than the total metals concentration. However, the concentrations do not vary by more than 2.73 µg/L at any one location.

Long-term trends in the upper and lower zones will continue to be evaluated as part of the quarterly monitoring events.

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3.0 GROUNDWATER RECOVERY INTERIM ACTION

This section presents a summary of the performance and status of the groundwater interim action system at the terminal for the fourth quarter of 2005 (October 1 through December 31, 2005). System operation data for the groundwater interim action were evaluated in accordance with the startup monitoring plan (Landau Associates 2000b) to determine compliance with performance criteria for the upper zone and the lower zone at the terminal. Specific performance criteria include: 1) groundwater recovery from an upper zone recovery well (HRW-1) when the pump is operating or when sufficient groundwater is present in the upper zone; 2) continuous pumping from a lower zone recovery well (RW-2), except for brief periods of system maintenance; 3) groundwater flow toward HRW-1 and RW-2 from the downgradient and upgradient directions; 4) reversal of the lower zone groundwater flow direction at the leading edge of the PCP plume; 5) chemical confirmation that continued migration of PCP in groundwater downgradient of RW-2 and HRW-1 is not occurring; and 6) compliance with the requirements of the existing discharge permit. In addition to the six criteria listed above, information is also presented in this section regarding the operation of an upper zone groundwater intercept system located in a storm drain (SDM-1) at the site.

Specific operational information for the fourth quarter 2005, as it relates to the criteria identified above, is as follows:

- As discussed in Section 2.1, groundwater elevation data were collected from the upper zone monitoring wells on November 14, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 3.
- During the fourth quarter 2005, groundwater was extracted from the upper zone recovery well (HRW-1) when sufficient water was present in the extraction well. A total of approximately 1,200 gallons of groundwater was recorded as being recovered from HRW-1 during the fourth quarter of 2005 at an estimated rate of 0.04 gallon per minute (gpm). Extracted water is discharged into Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal, and is subsequently discharged to the sanitary sewer under a permit with the City of Portland. A sample of the discharge water was collected on November 16, 2005 and analyzed for PCP. The concentration of PCP in the sample was 0.852 µg/L. A summary of groundwater recovery data for HRW-1 is included in Appendix B, Table B-1.
- With the exception of periodic shutdowns for system maintenance, groundwater was extracted continuously from the lower zone during the period from October 1 through December 31, 2005 by operating the groundwater recovery pump in RW-2. A total of approximately 812,900 gallons of groundwater was recorded as being recovered from RW-2 during the fourth quarter of 2005 at an estimated average rate of 7.33 gpm. The recovery pump in RW-2 discharged water to Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal and subsequent discharge to the sanitary sewer under a permit with the City of Portland. A sample of the discharge water was collected on November 15, 2005 and analyzed for PCP. PCP was not detected above the

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laboratory reporting limit in the discharge sample from RW-2. A summary of the groundwater recovery data for RW-2 is included in Appendix B, Table B-1.

- As discussed in Section 2.1, groundwater elevation data were collected from the lower zone wells on November 14, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 4. Based on the groundwater elevation data collected, the groundwater flow direction was reversed locally downgradient of the leading edge of the PCP plume in the lower zone when RW-2 was in operation during this quarter.
- As previously discussed in Section 2.2, groundwater samples were collected at the terminal on November 14 through November 18, 2005. Historically, the extent of groundwater impact has been estimated based on the extent of dissolved-phase PCP. The extent of PCP in the upper and lower zones is depicted on Figures 5 and 7, based on data collected during the November 2005 groundwater sampling event. The lateral extent of PCP from north to south in the upper zone is consistent with previous quarterly events. The lateral extent of PCP from east to west in the upper zone appears to be slightly smaller in comparison to the third quarter 2005 event. The fourth quarter lower zone analytical data indicate that monitoring wells LW-9D and LW-10D, located south and west of RW-2, did not contain concentrations of PCP greater than the laboratory reporting limit for this sampling event. In addition, RW-2 did not contain concentrations of PCP greater than the laboratory reporting limit.
- Between October 1 and December 31, 2005, 85,800 gallons of groundwater were recorded as being pumped by the groundwater intercept system at storm drain manhole SDM-1 and transferred to Tank 16804 for temporary storage and subsequent treatment by the onsite wastewater treatment system. During operation, the pump extracted water from SDM-1 at a rate of approximately 0.82 gpm. During the fourth quarter 2005 sampling event, the Willamette River level was above the elevation of the outfall of the storm drain line; therefore, no water quality sample was collected for PCP analysis during this sampling event.

The industrial wastewater discharge permit (City of Portland Permit No. 400.121) for discharge of the extracted groundwater following treatment at the terminal's wastewater treatment plant includes the following discharge limitations:

Parameter	Permitted Limit
PCP	40 µg/L
Benzene	50 µg/L
BTEX (1)	750 µg/L
pH	5 to 11.5

(1) Sum of detected concentrations of Benzene, Toluene, Ethylbenzene, Xylenes (BTEX).

Samples of the treated groundwater discharge were collected on October 5, 2005, November 10, 2005, and November 29, 2005, and analyzed for PCP. In addition, the pH of the discharge was monitored throughout the quarter. Sampling results indicate that concentrations of PCP ranged from 0.49 µg/L to 1.00 µg/L and pH ranged from 8.3 to 8.7 during fourth quarter 2005. Currently, Landau Associates and Time Oil Co. are monitoring the discharge concentration of PCP on a monthly basis and pH readings are

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collected at least twice a month. Samples collected on October 5, 2005 and November 29, 2005 indicate that no BTEX constituents were detected. The PCP analytical results for the treatment system discharge are provided in Appendix B, Table B-1.

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4.0 FUTURE GROUNDWATER TASKS

4.1 GROUNDWATER MONITORING

The first quarter 2006 groundwater sampling event is scheduled to take place during the week of February 20, 2006. The groundwater monitoring and analytical program for the first quarter 2006 event includes the following: 1) monitoring at Phase II quarterly well locations per the approved modifications outlined in Appendix D; 2) monitoring of ISCO injection monitoring wells per the ISCO work plan (Landau Associates 2004a); and 3) monitoring of Phase III RI monitoring wells per the approved modifications outlined in Appendix D. In October 2005, Landau Associates requested a reduction in sampling frequency at a select number of Phase II and Phase III wells (Landau Associates 2005b). DEQ approved the request, with the incorporation of additional wells adjacent to the PCP plume area and in the Bell Terminal for a single sampling event associated with groundwater sampling on the adjacent Schnitzer property (DEQ 2005). Both letters are included in Appendix D. The results for the Phase II and Phase III first quarter 2006 groundwater monitoring event, the first quarter groundwater interim action status, and a summary of the ISCO groundwater injection event will be provided in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

4.2 GROUNDWATER RECOVERY INTERIM ACTION

The groundwater recovery interim action system appears to exhibit continued effectiveness at limiting further migration of impacted groundwater in the upper and lower zones. The groundwater recovery system will continue to be operated in the first quarter of 2006. The effectiveness of the current onsite treatment system methodology will be evaluated relative to the potential effectiveness of a granular activated carbon (GAC) treatment system. A cost-benefit analysis will be conducted to assess the potential replacement of the current treatment system with a GAC system.

4.3 ISCO GROUNDWATER INTERIM ACTION

The ISCO interim action appears to be beneficial in the reduction of PCP concentrations in the upper zone groundwater; therefore, a third full-scale ISCO injection event was conducted January 31 through February 3, 2006. The results of this event will be reported in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

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5.0 USE OF THIS REPORT

This quarterly groundwater report has been prepared by Landau Associates for the exclusive use of Time Oil Co. for specific application to the Northwest Terminal. Services for this project were conducted in accordance with the Environmental Services Contract between Time Oil Co. and Landau Associates, Inc. Landau Associates has performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by Time Oil Co. or others in connection with any site other than the Northwest Terminal without Landau Associates' written permission shall be at the sole risk of Time Oil Co. and without liability to Landau Associates.

This document was prepared under the supervision and direction of the following key staff.

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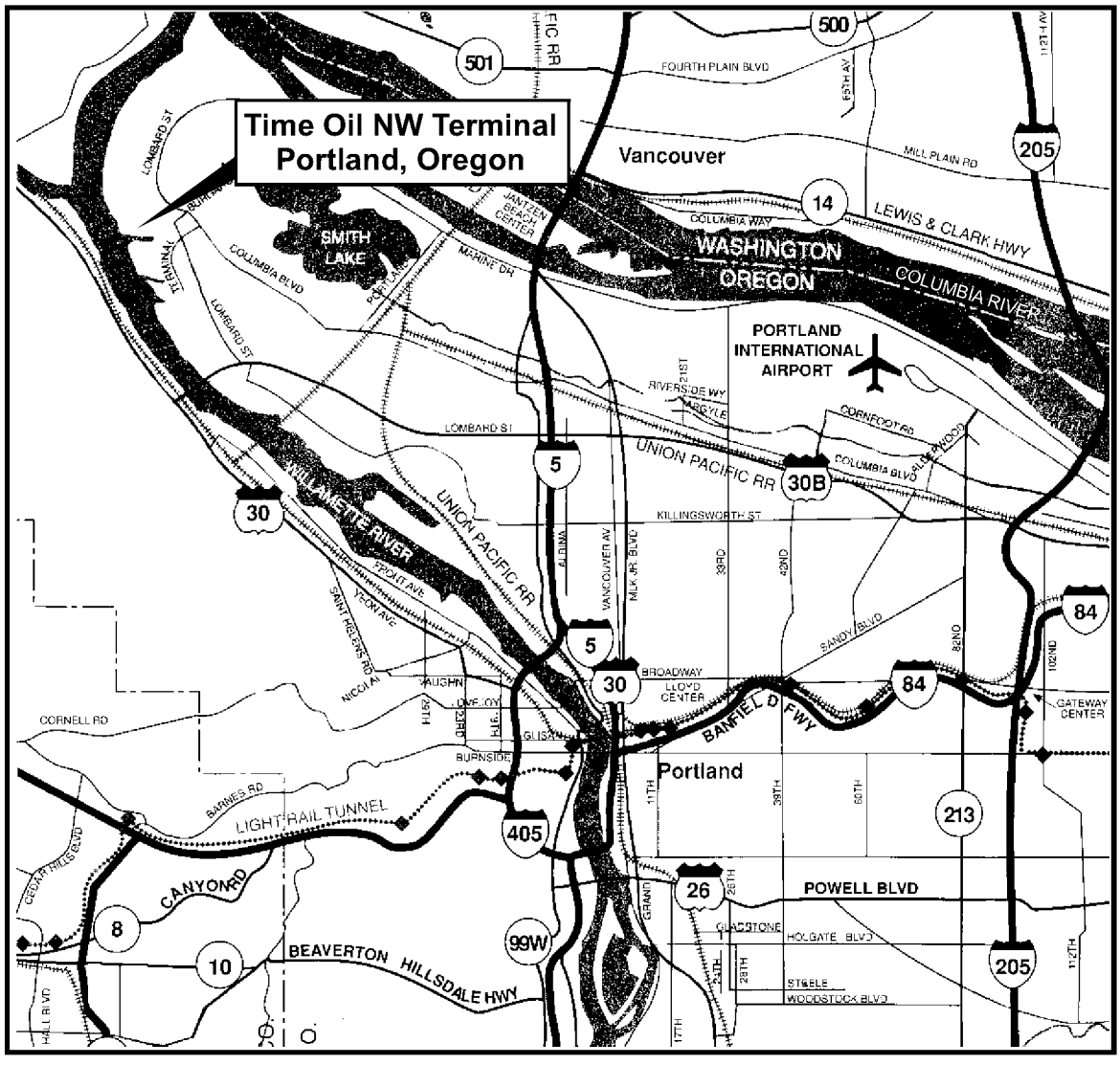
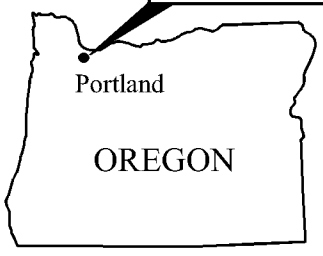


Map from MetroAmerica 1995

SITE LOCATION
(see enlarged map area above)



0 2 4
Approximate Scale in Miles

Time Oil | T:\231\001\Vicinity Map.cdr (C) 05/10/2002

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Time Oil NW Terminal Portland, Oregon	**Vicinity Map**	Figure 1

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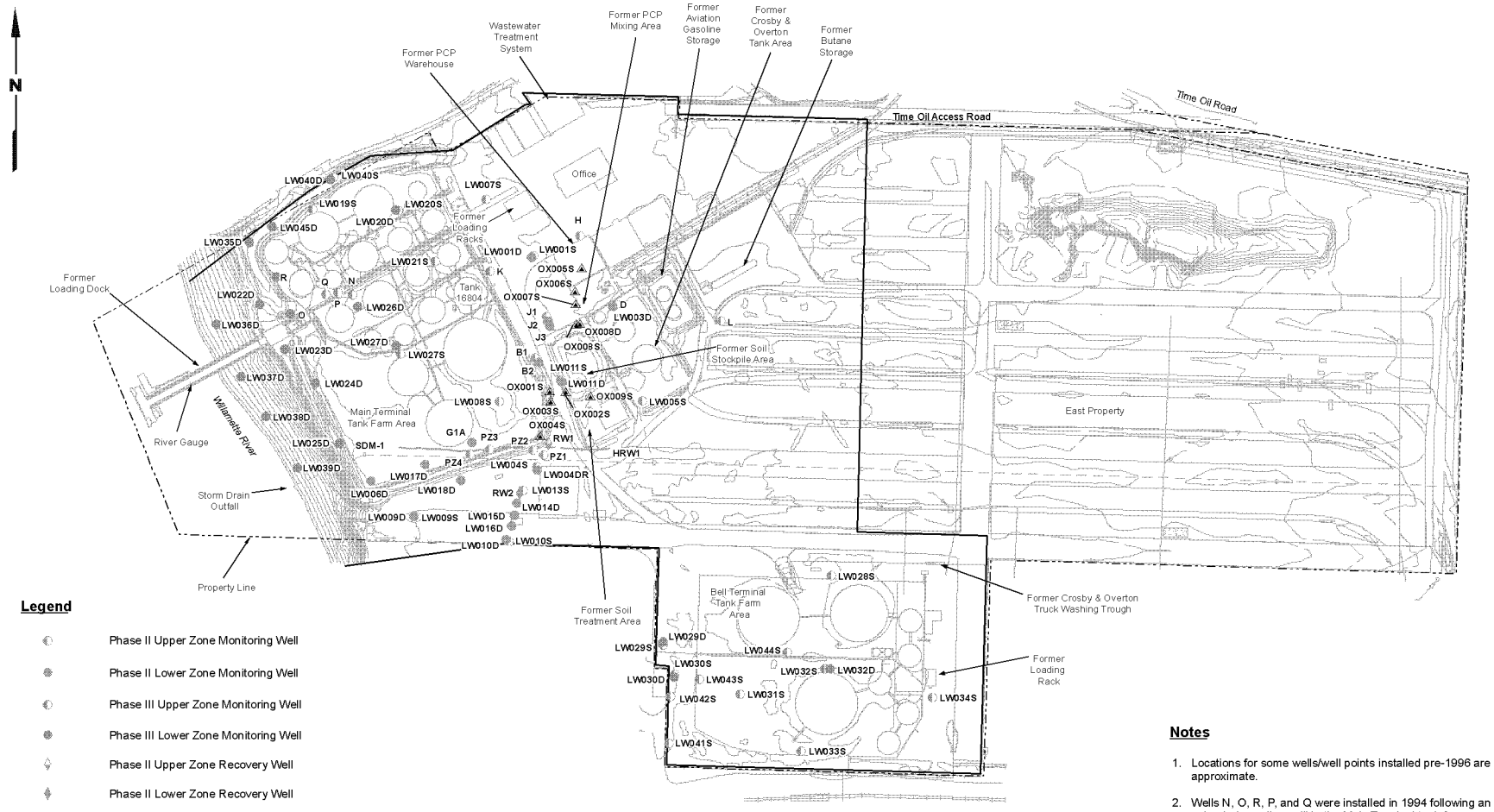

Legend

- Phase II Upper Zone Monitoring Well
- Phase II Lower Zone Monitoring Well
- Phase III Upper Zone Monitoring Well
- Phase III Lower Zone Monitoring Well
- Phase II Upper Zone Recovery Well
- Phase II Lower Zone Recovery Well
- Phase II ISCO Observation Well
- HRW1 — Phase II Upper Zone Horizontal Recovery Well (Dashes Denote Screened Interval)
- Phase III Study Area Boundary
- Storm Drain
- Manhole

Notes

1. Locations for some wells/well points installed pre-1996 are approximate.
2. Wells N, O, R, P, and Q were installed in 1994 following an unleaded gasoline spill in the Main Terminal tank farm area; wells are designated as Phase III because of location.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 200 400
Scale in Feet

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Time Oil NW Terminal Portland, Oregon	**Well Locations**	Figure 2

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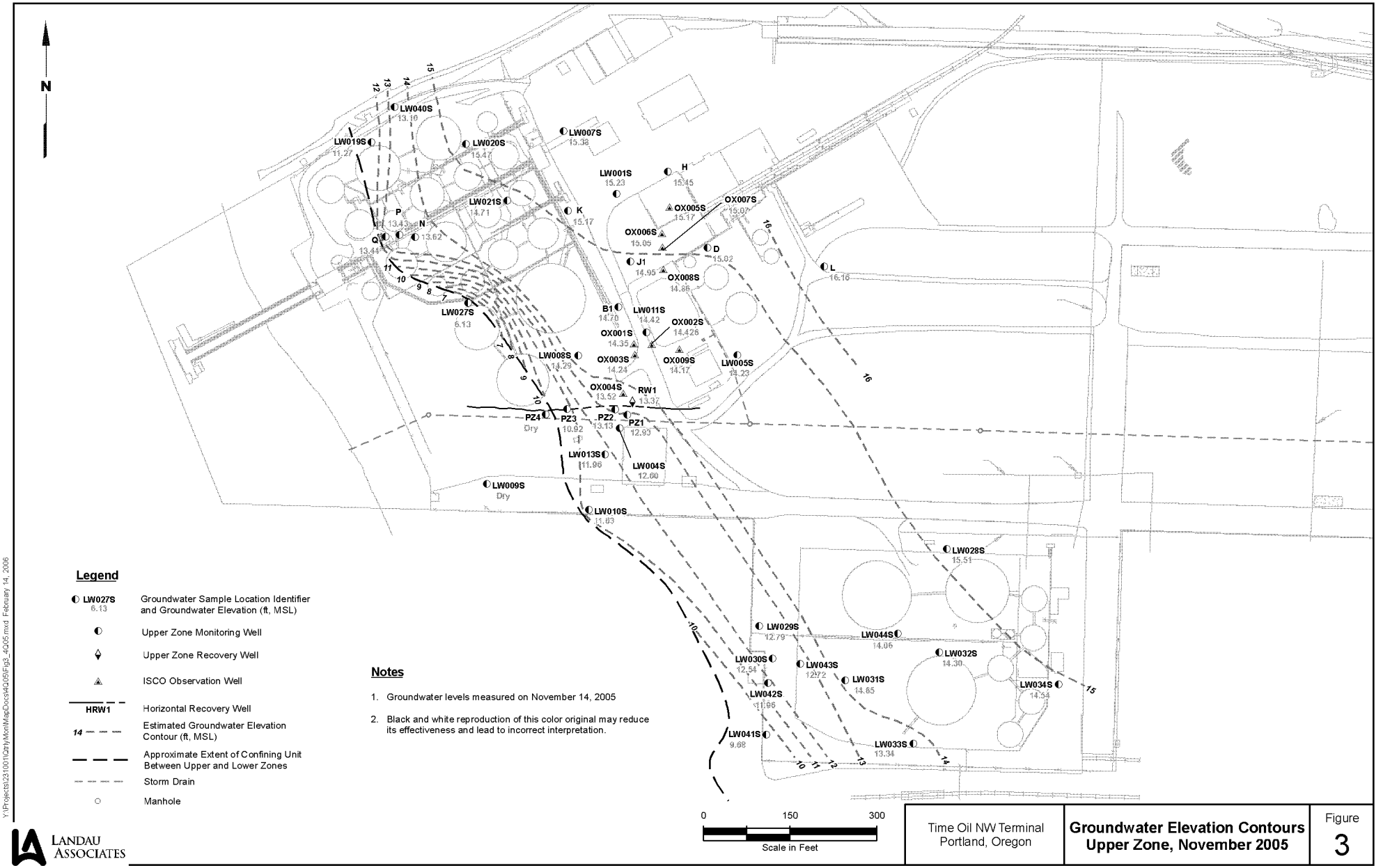

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Time Oil NW Terminal Portland, Oregon	**Groundwater Elevation Contours Upper Zone, November 2005**	Figure 3

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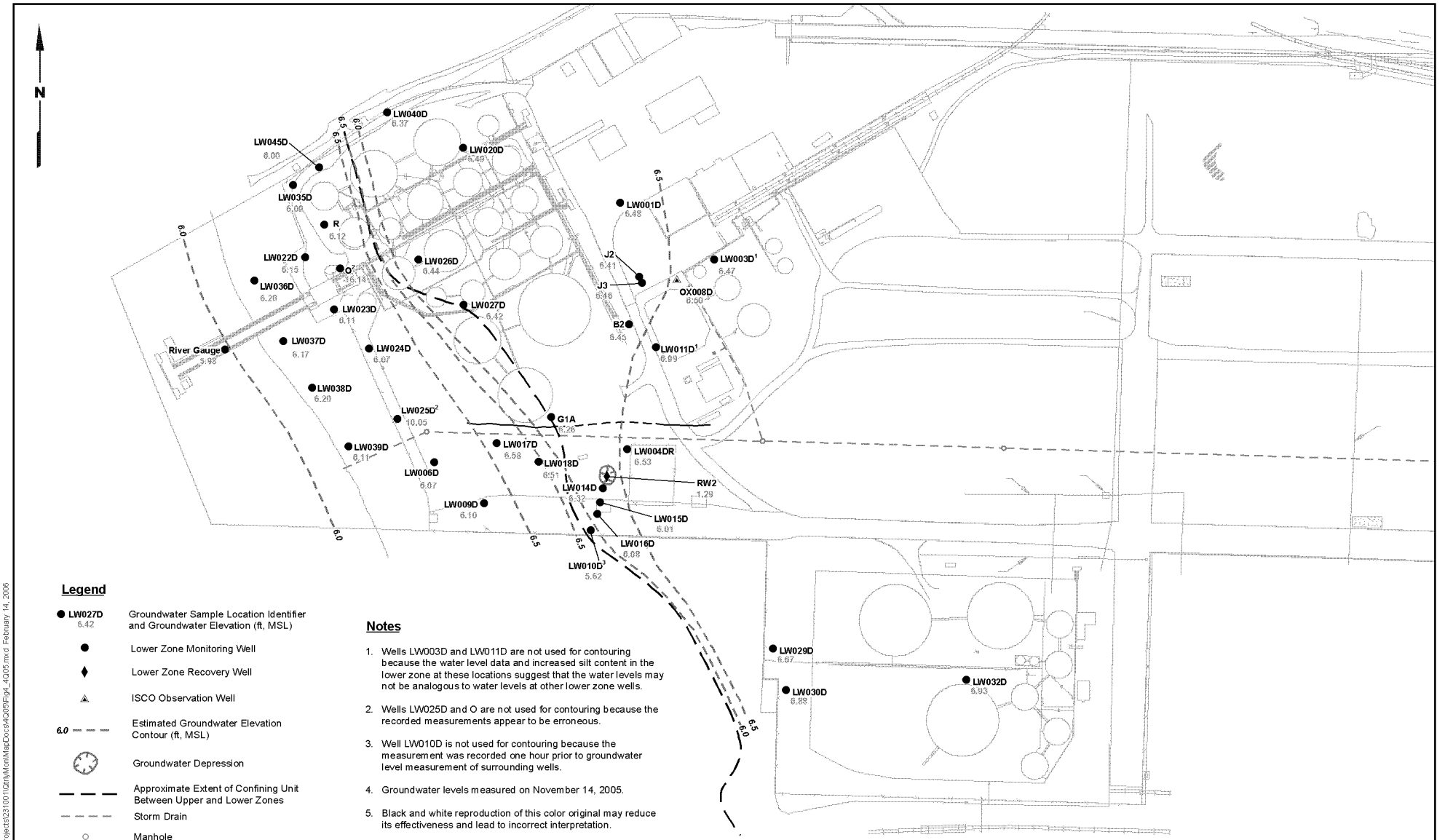

Legend

- LW027D 6.42 — Groundwater Sample Location Identifier and Groundwater Elevation (ft, MSL)
- Lower Zone Monitoring Well
- Lower Zone Recovery Well
- ISCO Observation Well
- 6.0 — Estimated Groundwater Elevation Contour (ft, MSL)
- Groundwater Depression
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole

Notes

1. Wells LW003D and LW011D are not used for contouring because the water level data and increased silt content in the lower zone at these locations suggest that the water levels may not be analogous to water levels at other lower zone wells.
2. Wells LW025D and O are not used for contouring because the recorded measurements appear to be erroneous.
3. Well LW010D is not used for contouring because the measurement was recorded one hour prior to groundwater level measurement of surrounding wells.
4. Groundwater levels measured on November 14, 2005.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Time Oil NW Terminal Portland, Oregon	**Groundwater Elevation Contours Lower Zone, November 2005**	Figure 4

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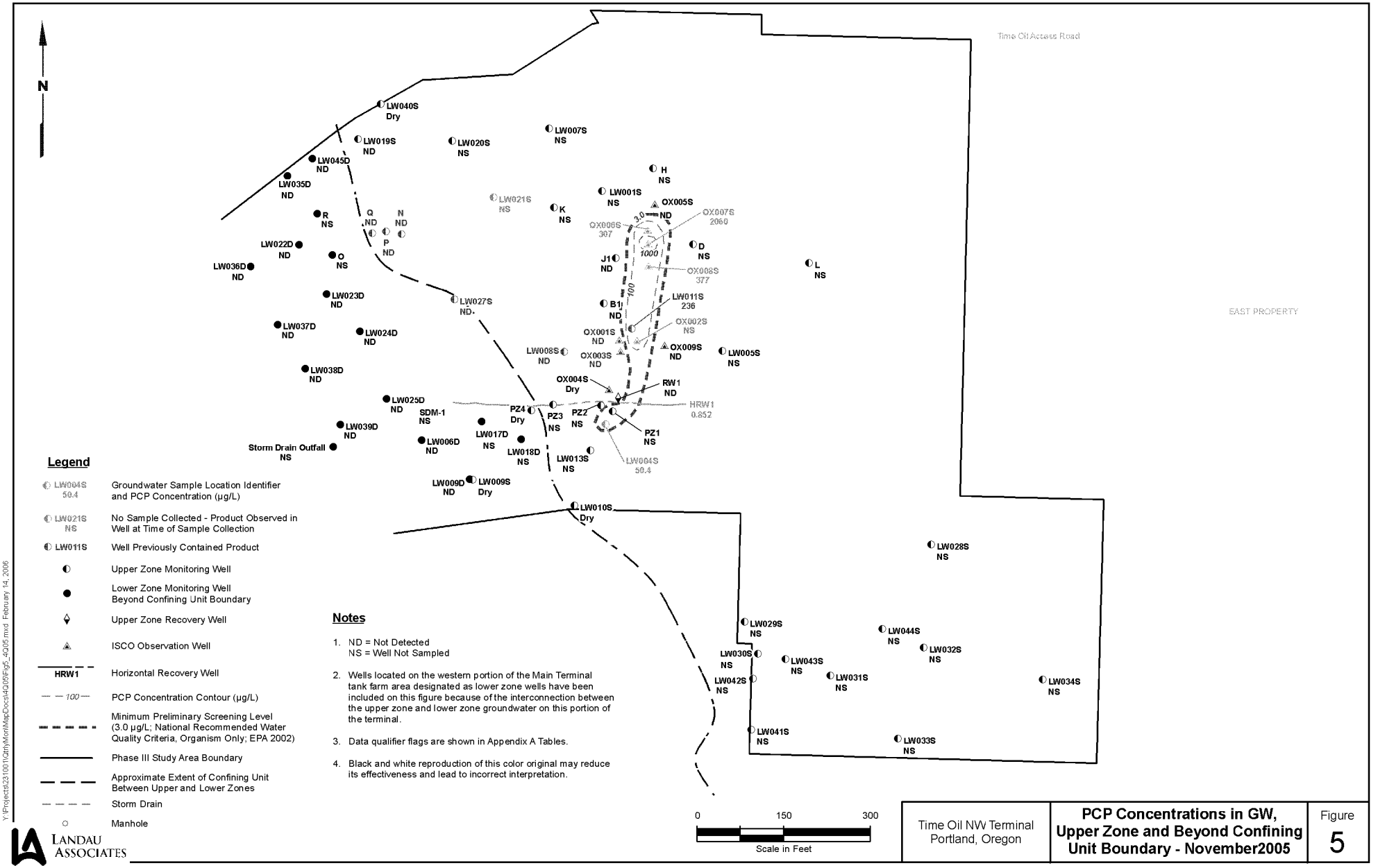

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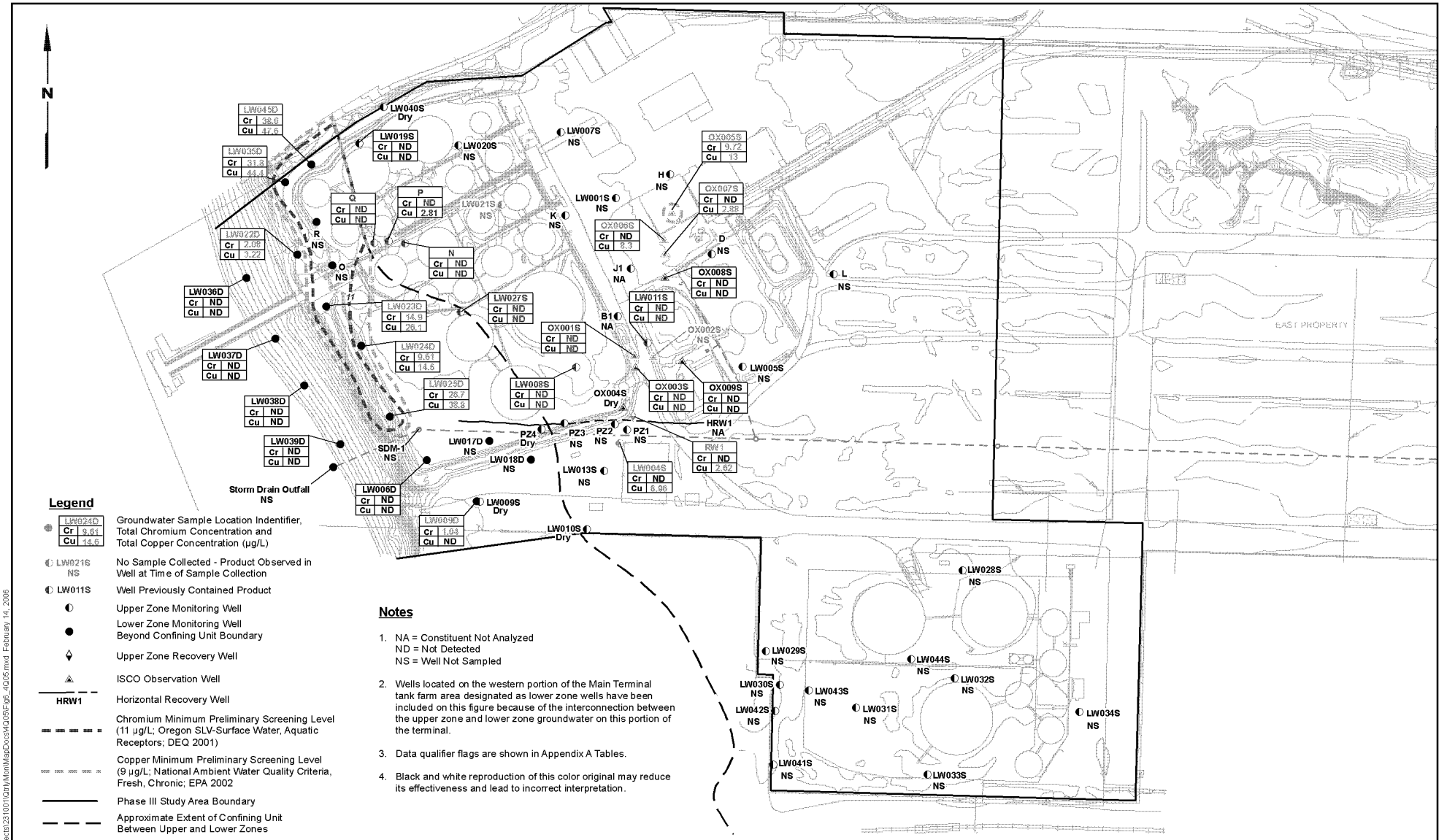

Legend

- LW024D Cr 9.61 Cu 14.6 — Groundwater Sample Location Indentifier, Total Chromium Concentration and Total Copper Concentration (µg/L)
- LW021S NS — No Sample Collected - Product Observed in Well at Time of Sample Collection
- LW011S — Well Previously Contained Product
- Upper Zone Monitoring Well
- Lower Zone Monitoring Well Beyond Confining Unit Boundary
- Upper Zone Recovery Well
- ISCO Observation Well
- HRW1 — Horizontal Recovery Well
- Chromium Minimum Preliminary Screening Level (11 µg/L; Oregon SLV-Surface Water, Aquatic Receptors; DEQ 2001)
- Copper Minimum Preliminary Screening Level (9 µg/L; National Ambient Water Quality Criteria, Fresh, Chronic; EPA 2002
- Phase III Study Area Boundary
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole

Notes

1. NA = Constituent Not Analyzed
   ND = Not Detected
   NS = Well Not Sampled
2. Wells located on the western portion of the Main Terminal tank farm area designated as lower zone wells have been included on this figure because of the interconnection between the upper zone and lower zone groundwater on this portion of the terminal.
3. Data qualifier flags are shown in Appendix A Tables.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Time Oil NW Terminal
Portland, Oregon

Total Chromium and Copper in GW, Upper Zone and Beyond Confining Unit Boundary - November 2005

Figure 6

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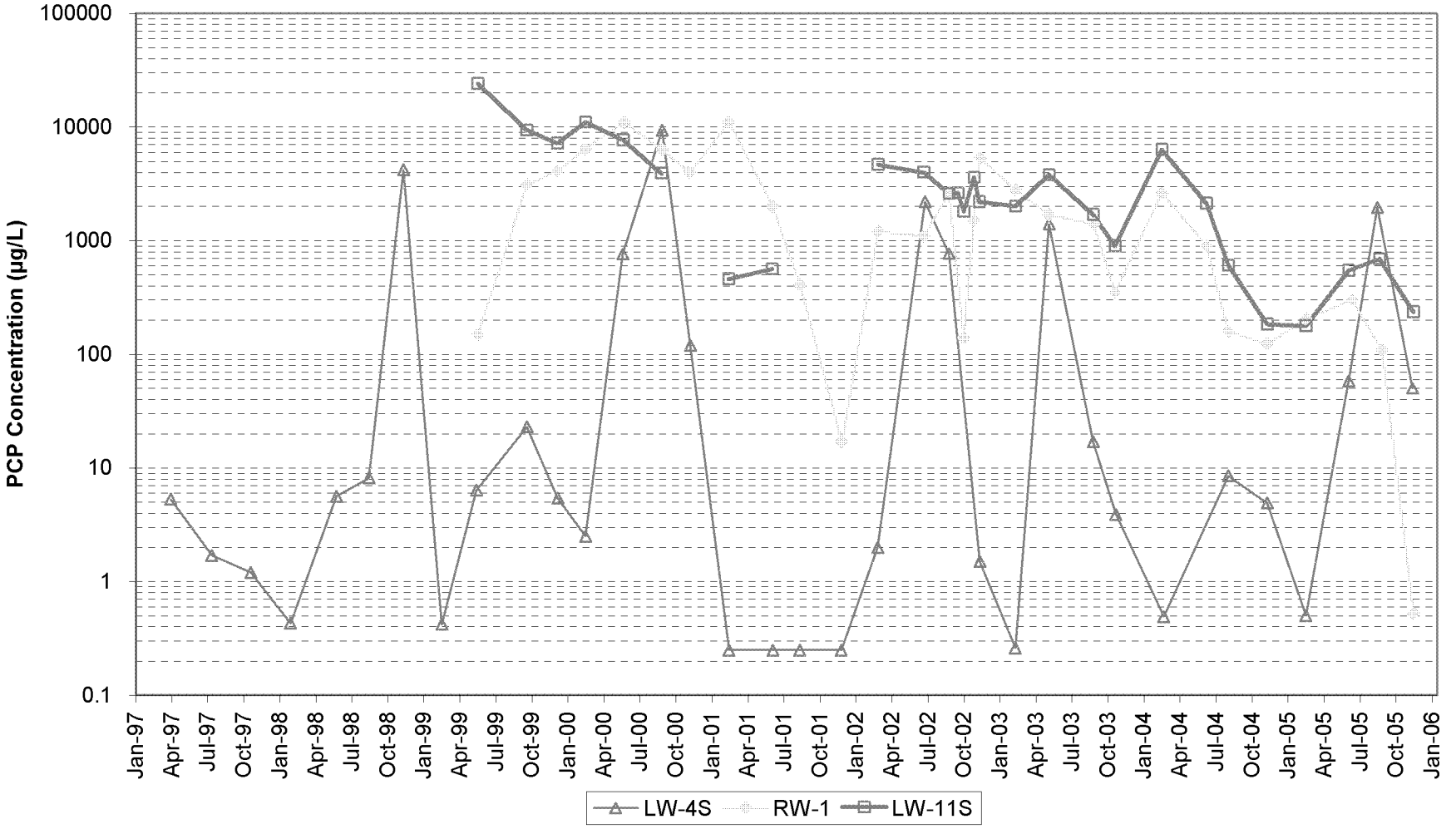

Nondetect values are plotted at the laboratory reporting limit value.

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Time Oil NW Terminal Portland, Oregon	**PCP Concentrations, Selected Upper Zone Wells April 1997 – November 2005**	Figure 8

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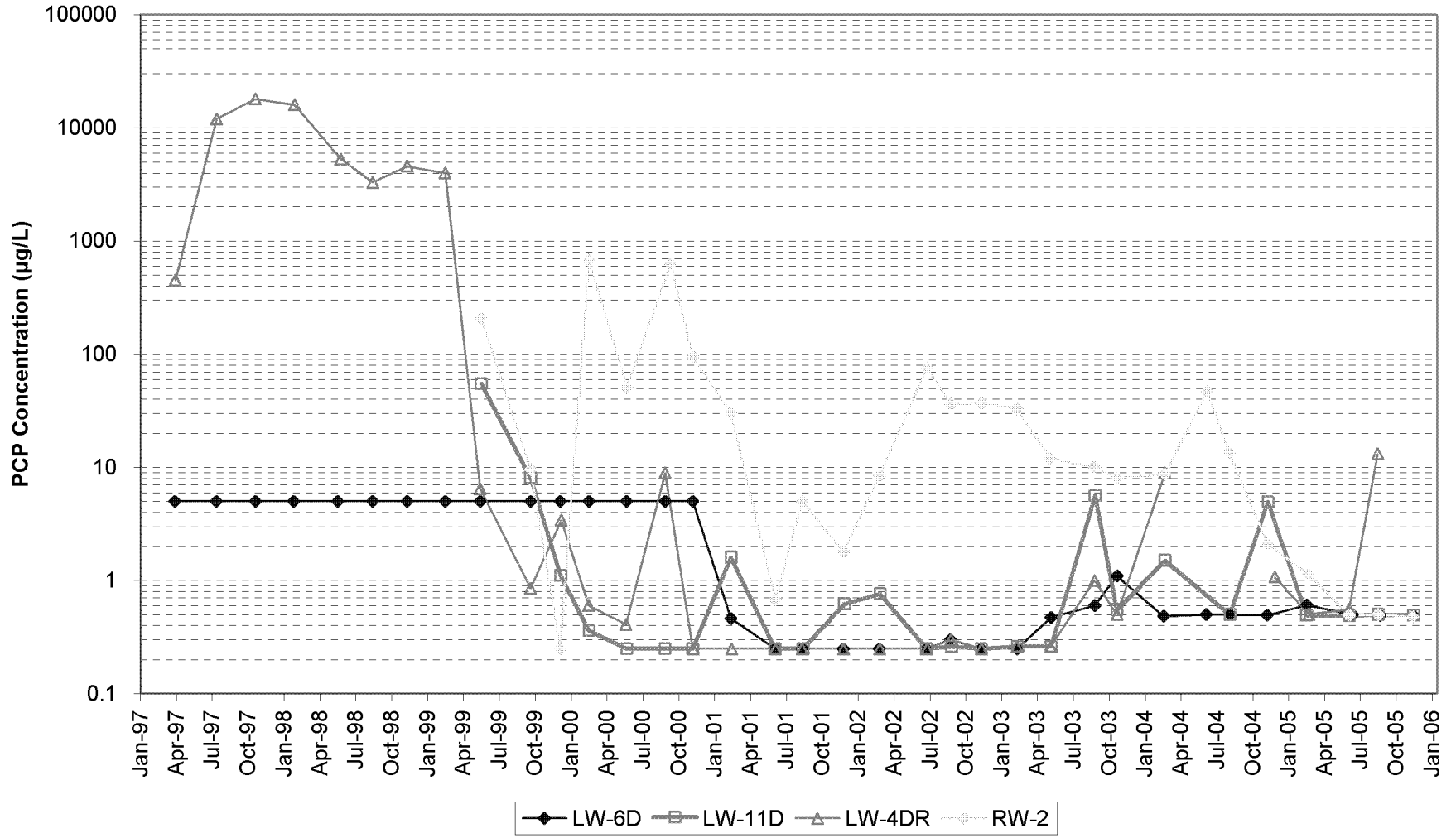

Note: LW-4DR was installed 11/19/04 to replace the damaged LW-4D. Nondetect values are plotted at the laboratory reporting limit value.

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Time Oil NW Terminal Portland, Oregon	**PCP Concentrations, Selected Lower Zone Wells April 1997 – November 2005**	Figure 9

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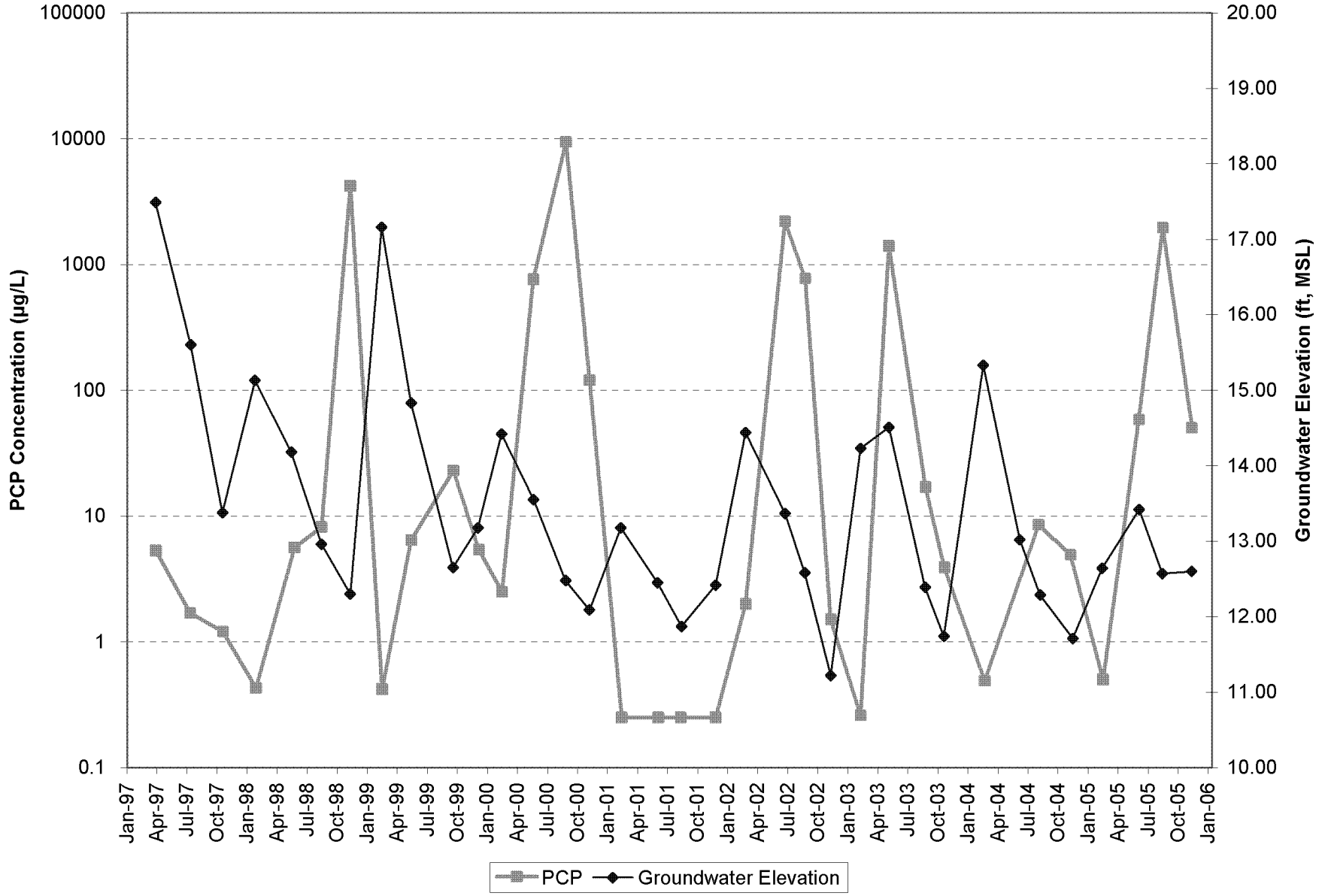

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Time Oil NW Terminal
Portland, Oregon

PCP Concentrations and Groundwater Elevations, LW-4S
April 1997 – August 2005

Figure
10

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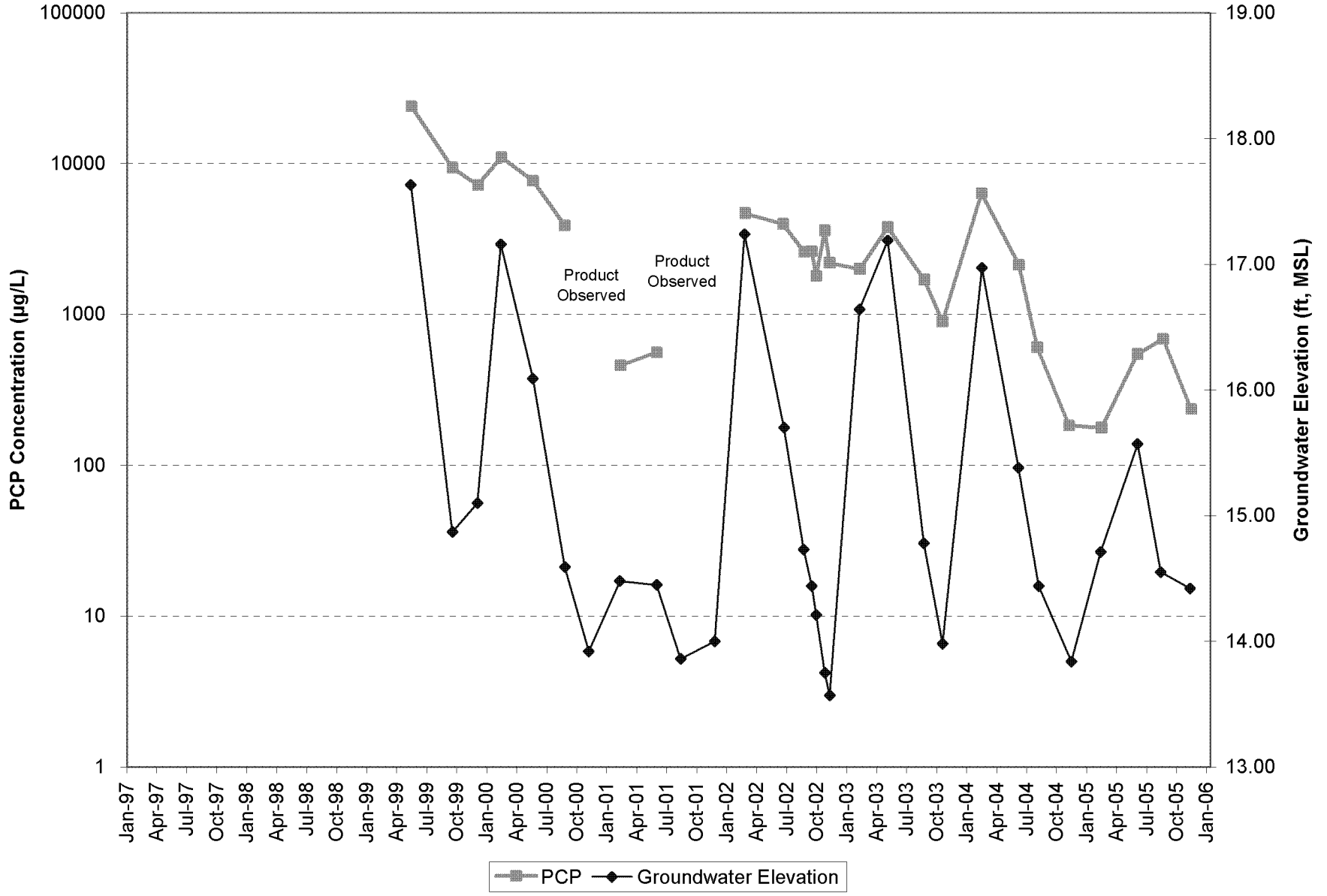

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Time Oil NW Terminal
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PCP Concentrations and Groundwater Elevations, LW-11S
April 1997 – November 2005

Figure
11

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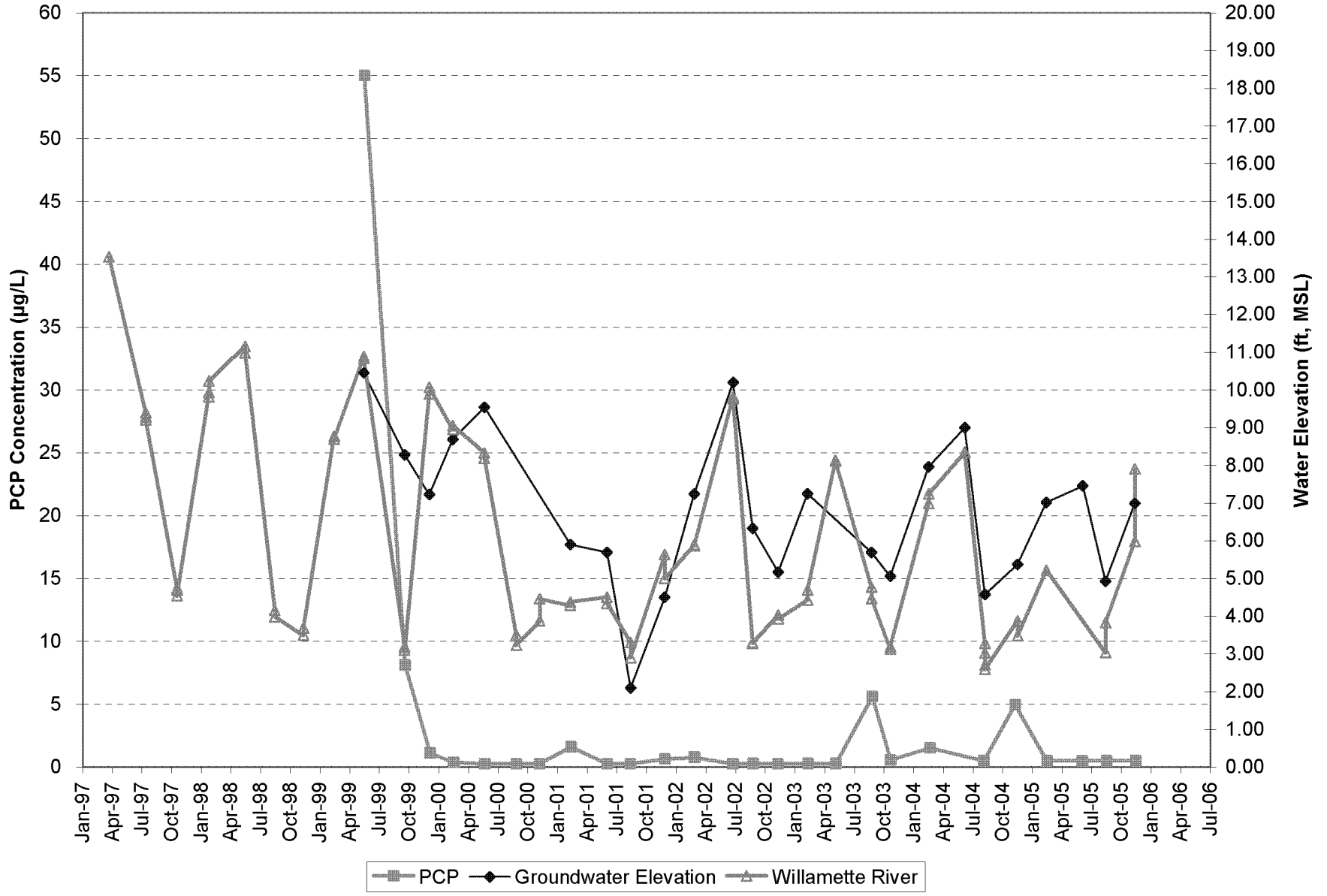

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Time Oil NW Terminal
Portland, Oregon

PCP Concentrations, Groundwater Elevations, and River Stage, LW-11D
April 1997 – November 2005

Figure
12

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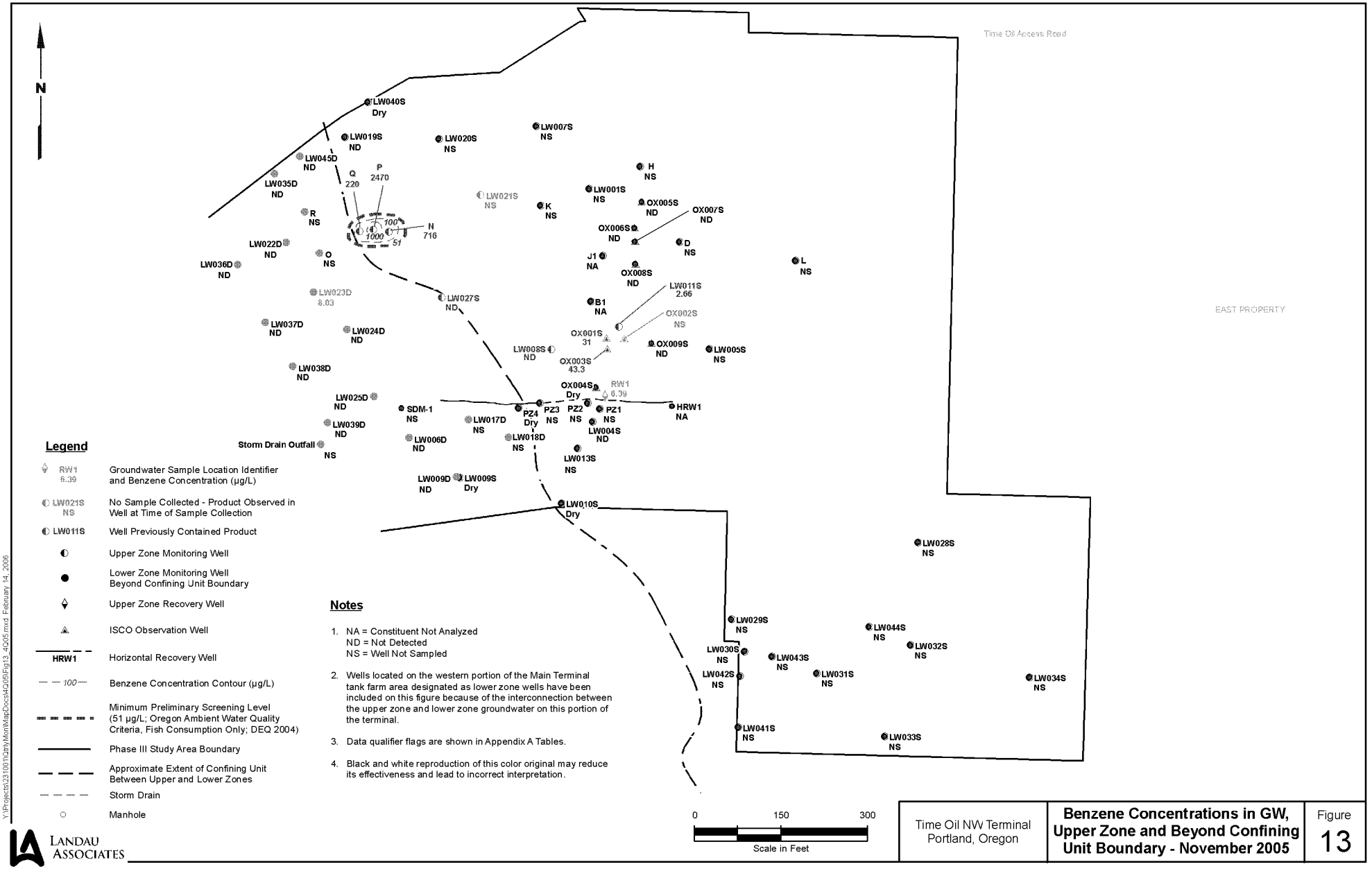

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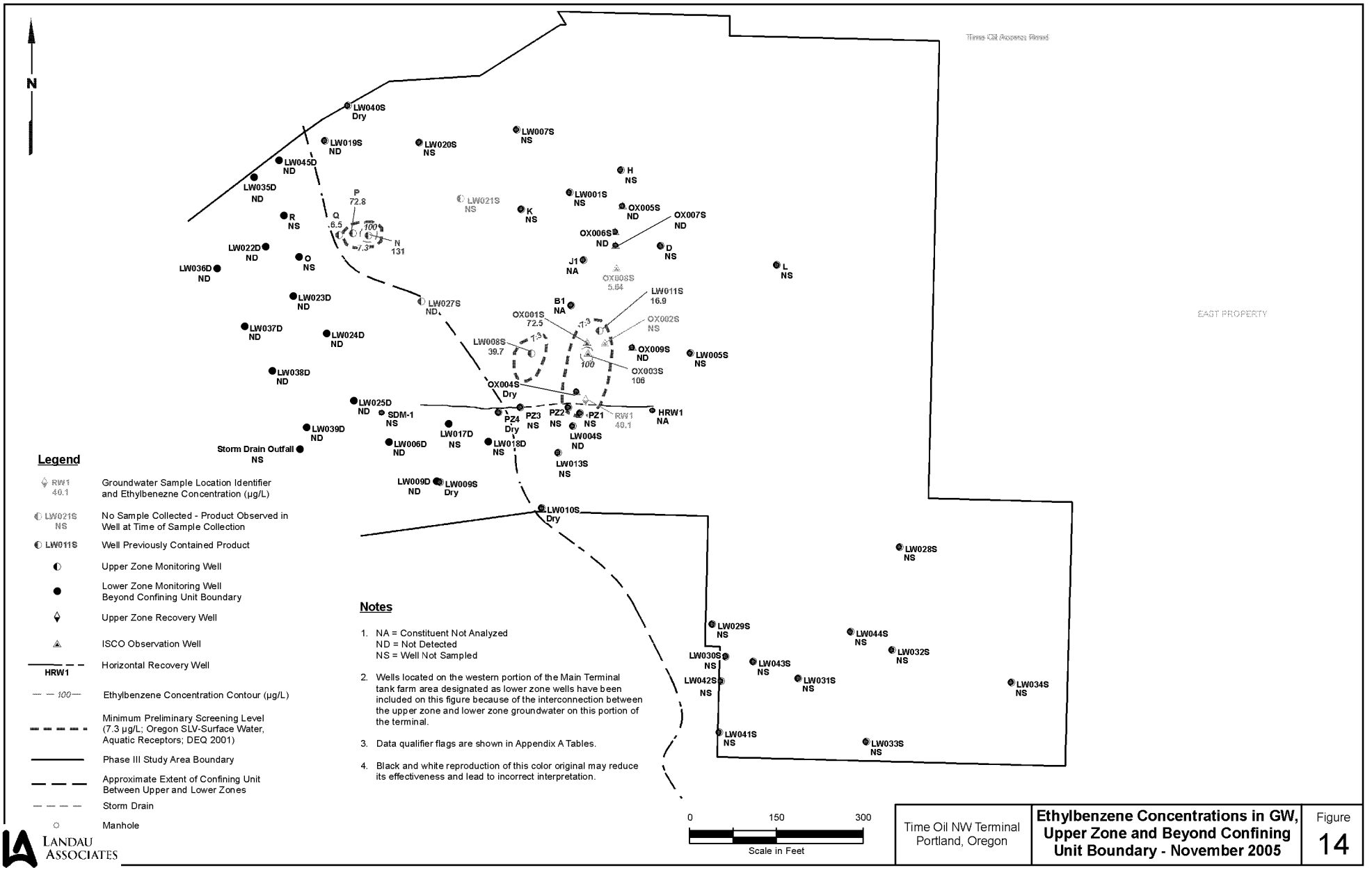

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Time Oil NW Terminal Portland, Oregon	**Ethylbenzene Concentrations in GW, Upper Zone and Beyond Confining Unit Boundary - November 2005**	Figure 14

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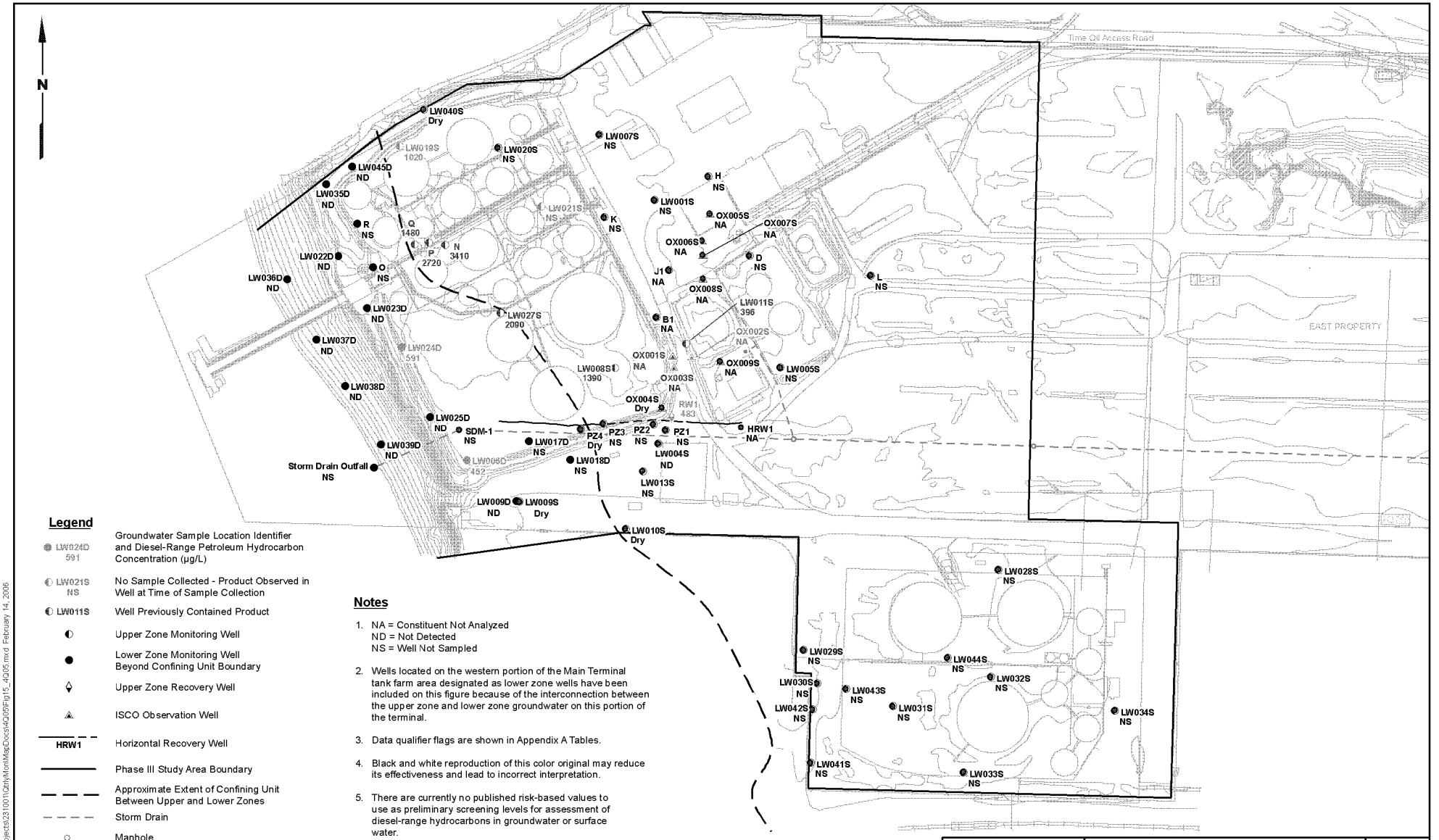

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Time Oil NW Terminal Portland, Oregon	**Diesel-Range Hydrocarbons in GW, Upper Zone and Beyond Confining Unit Boundary - November 2005**	Figure 15

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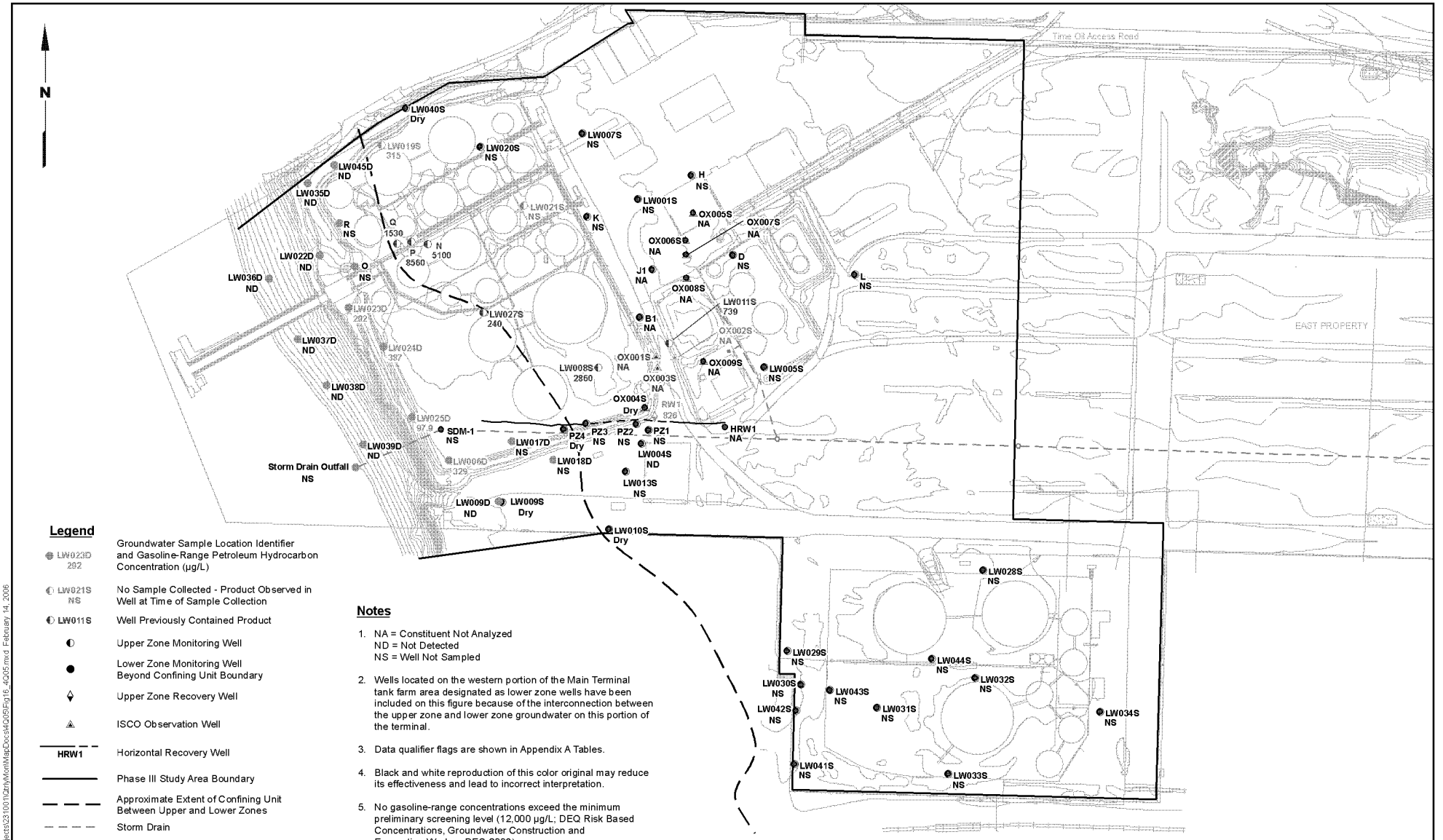

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Time Oil NW Terminal
Portland, Oregon

Gasoline-Range Hydrocarbons in GW, Upper Zone and Beyond Confining Unit Boundary - November 2005

Figure 16

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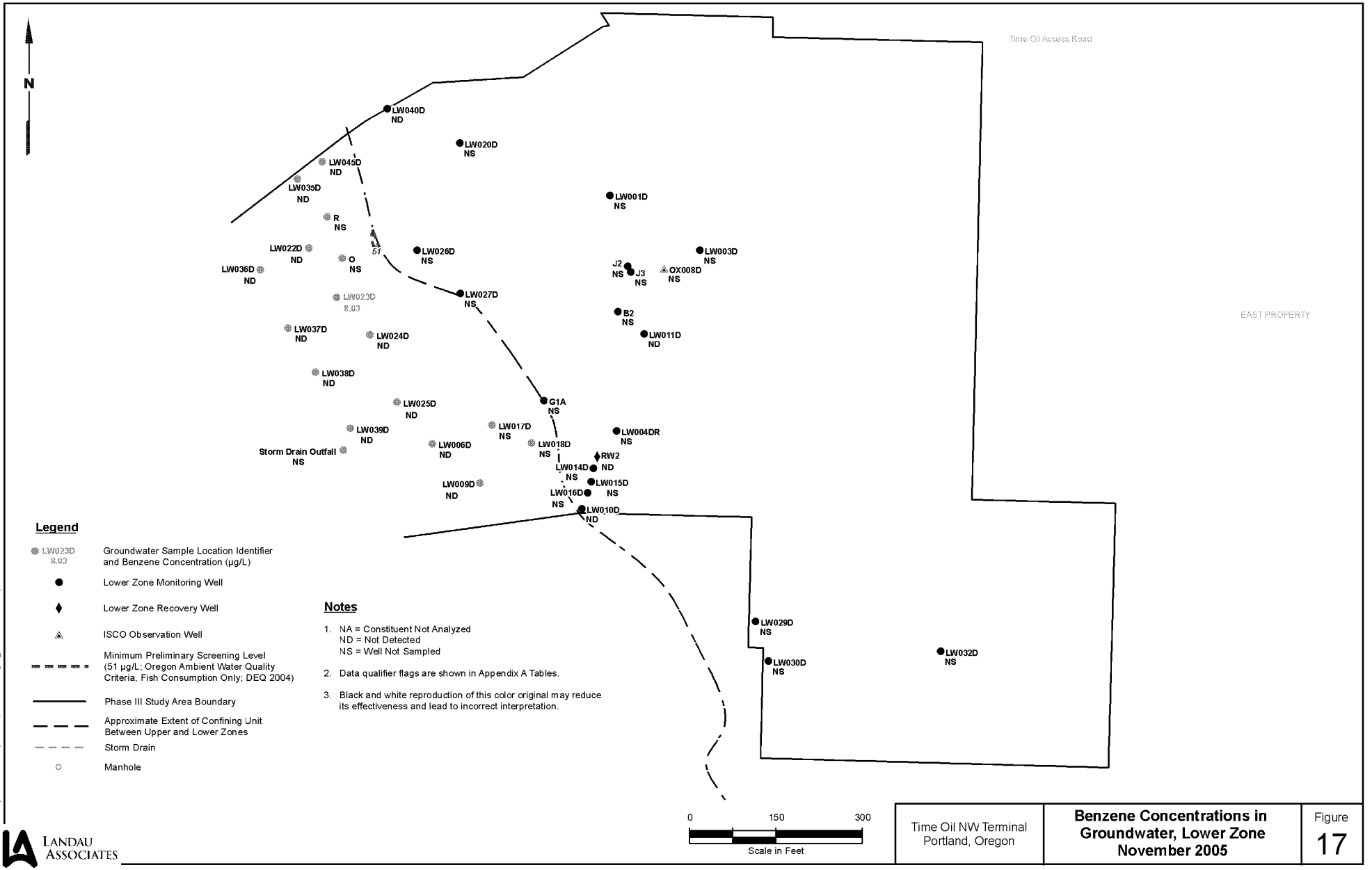

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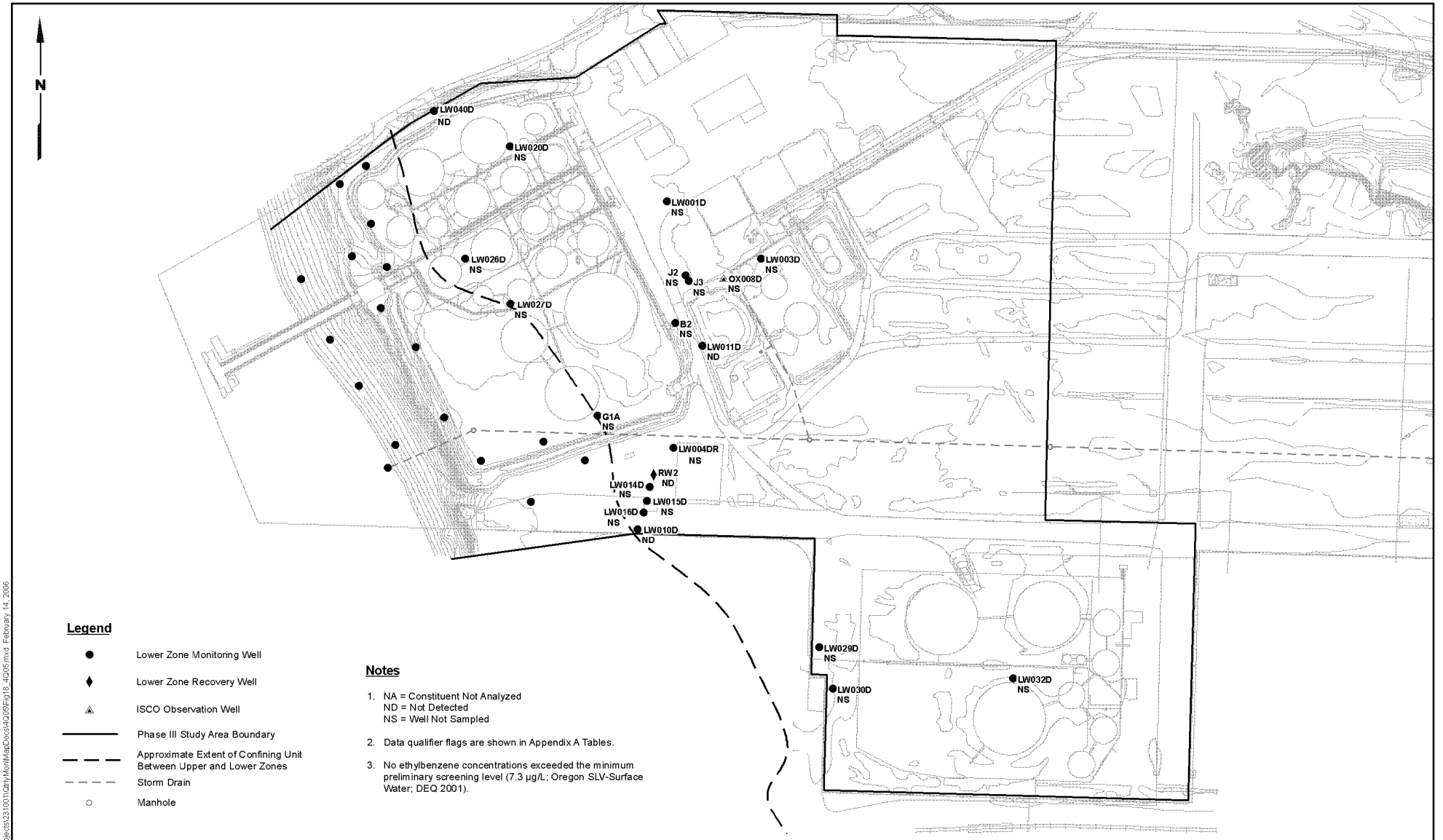

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Time Oil NW Terminal
Portland, Oregon

Ethylbenzene Concentrations in Groundwater, Lower Zone November 2005

Figure 18

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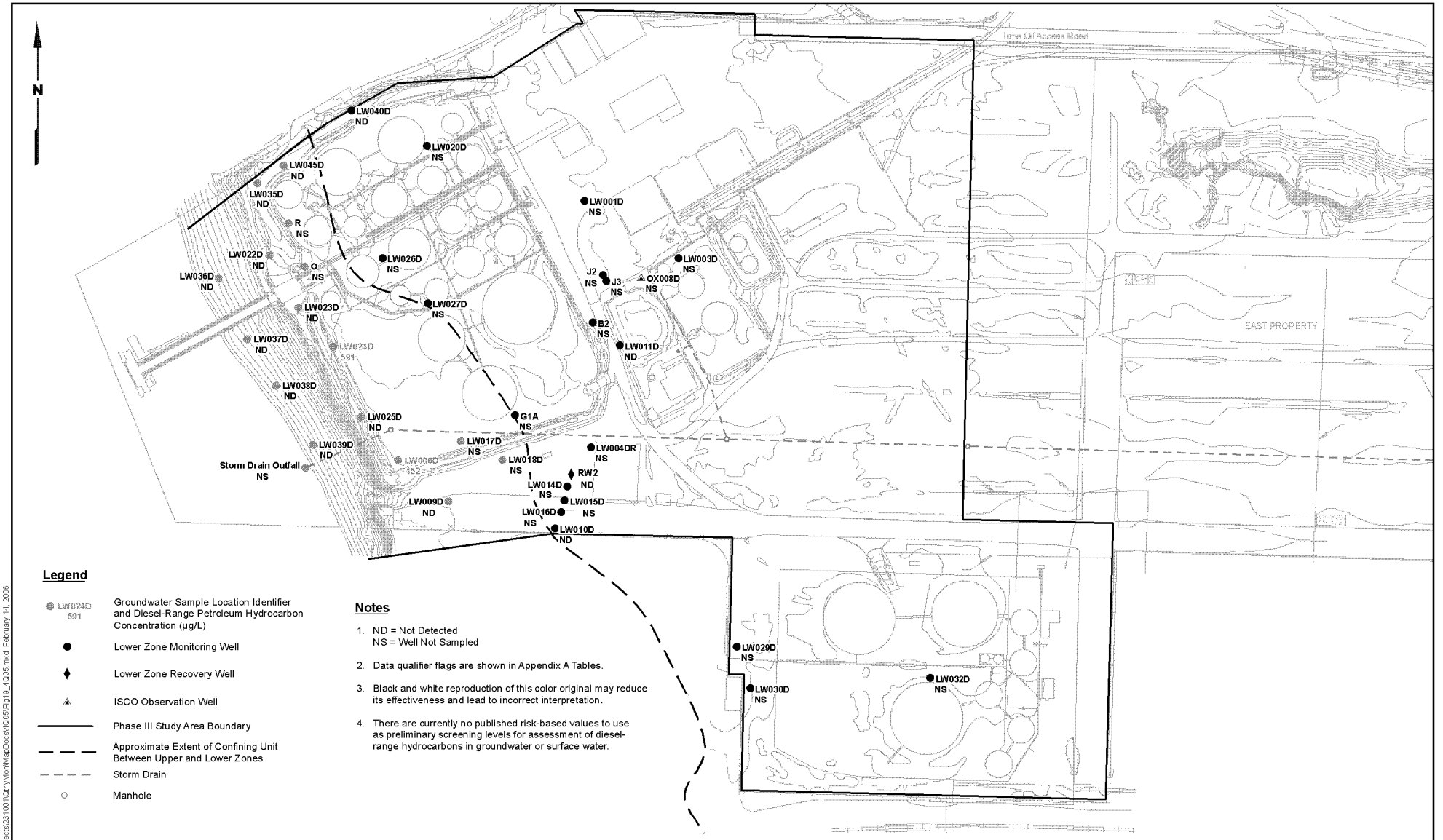

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Time Oil NW Terminal
Portland, Oregon

Diesel-Range Petroleum Hydrocarbons in Groundwater, Lower Zone, November 2005

Figure 19

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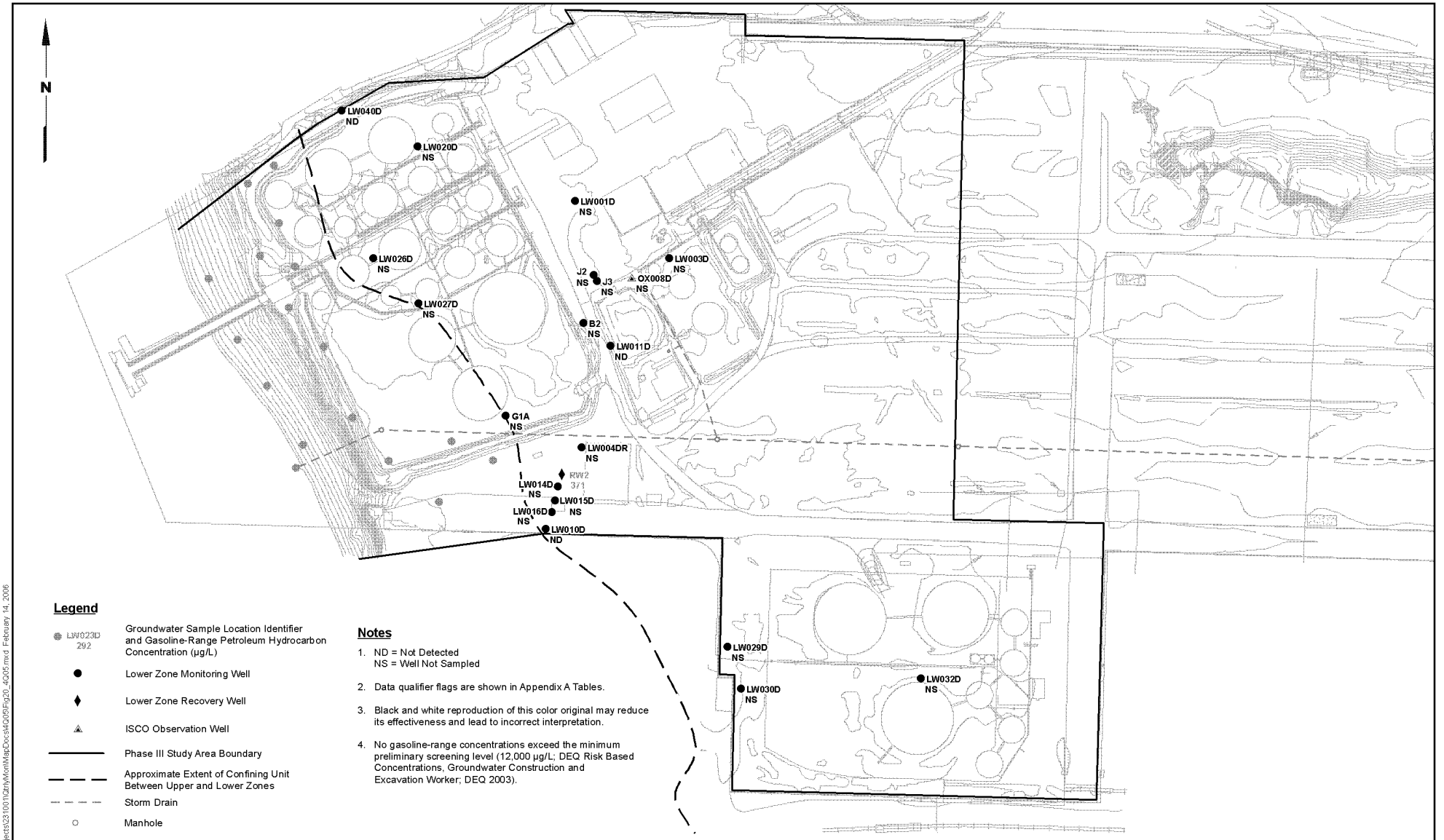

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Time Oil NW Terminal
Portland, Oregon

Gasoline-Range Petroleum Hydrocarbons in Groundwater, Lower Zone, November 2005

Figure 20

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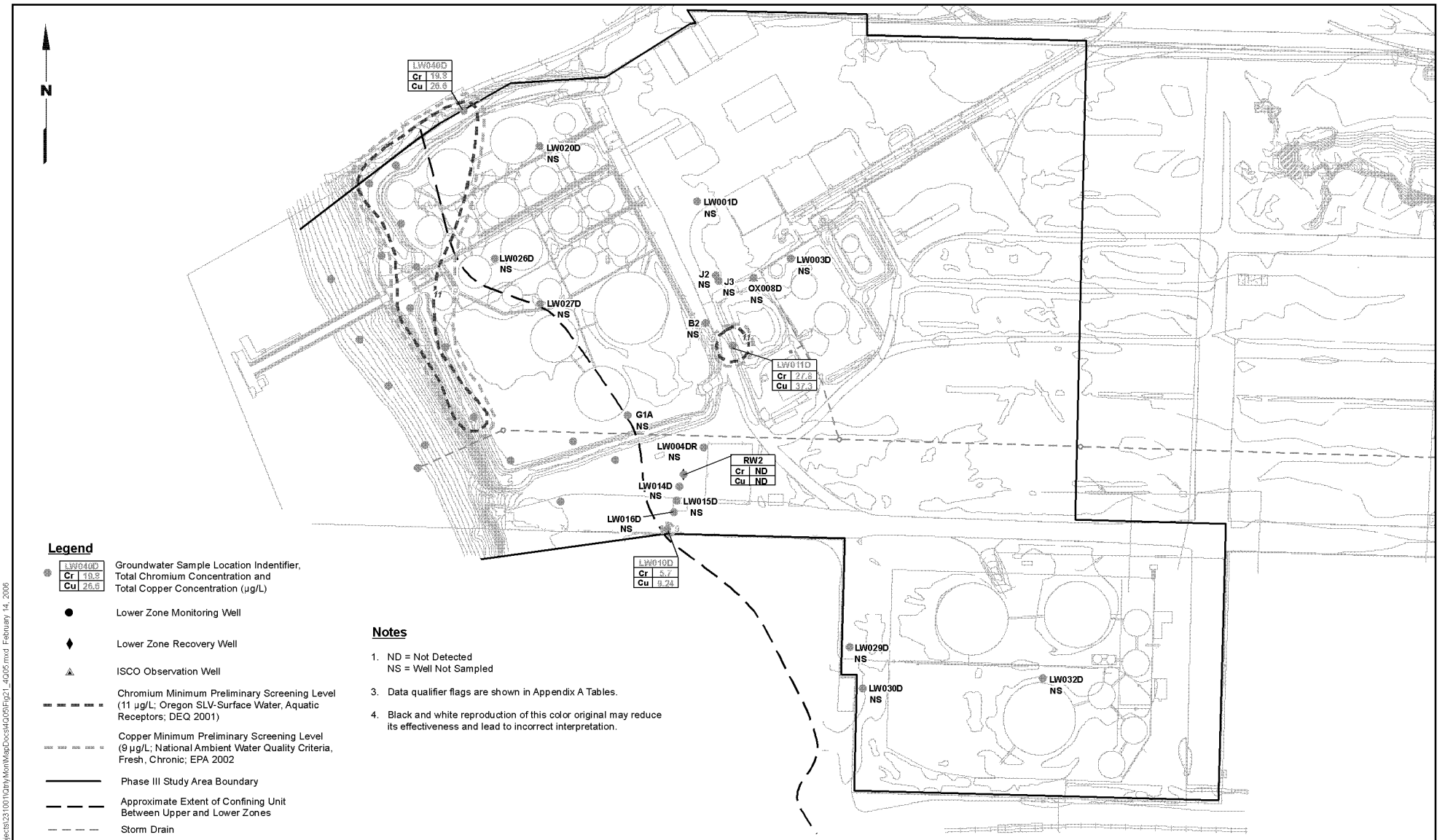

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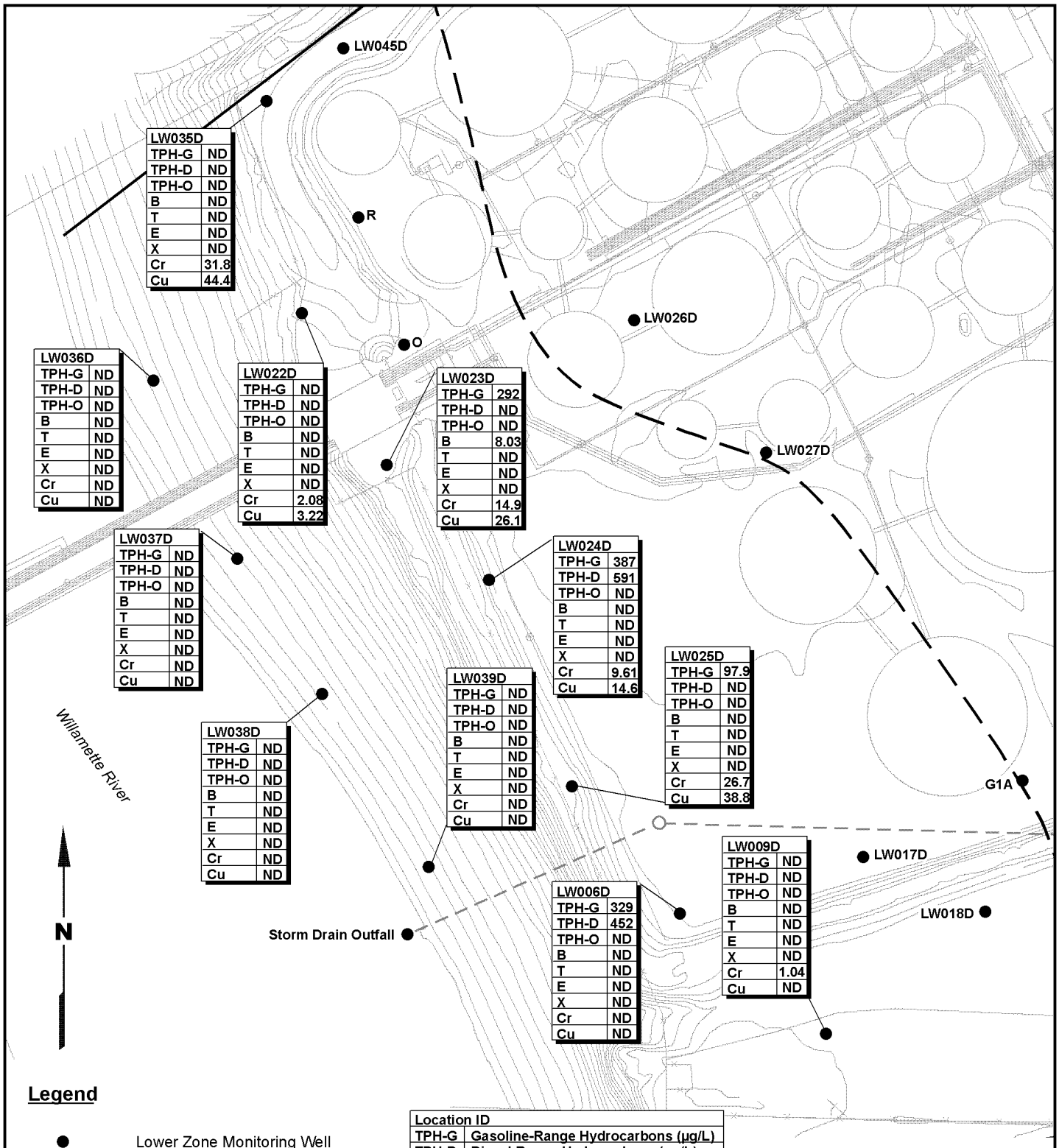


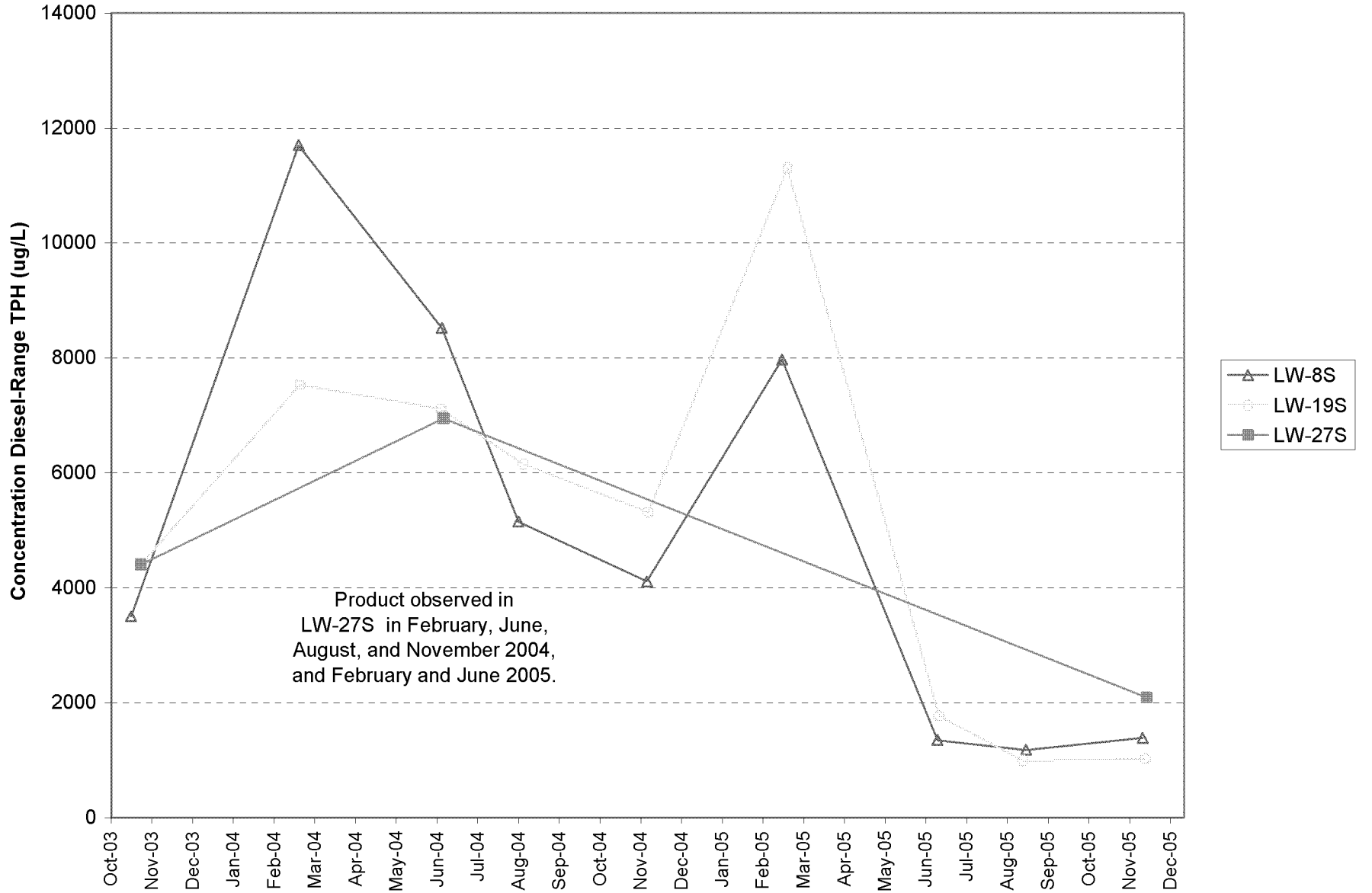
Y:\Projects\231001\QtrlyMonMapDocs\4Q05\Fig22_4Q05.mxd February 14, 2006

LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Groundwater Concentrations, Nearshore Wells, Selected Analytes November 2005

Figure 22



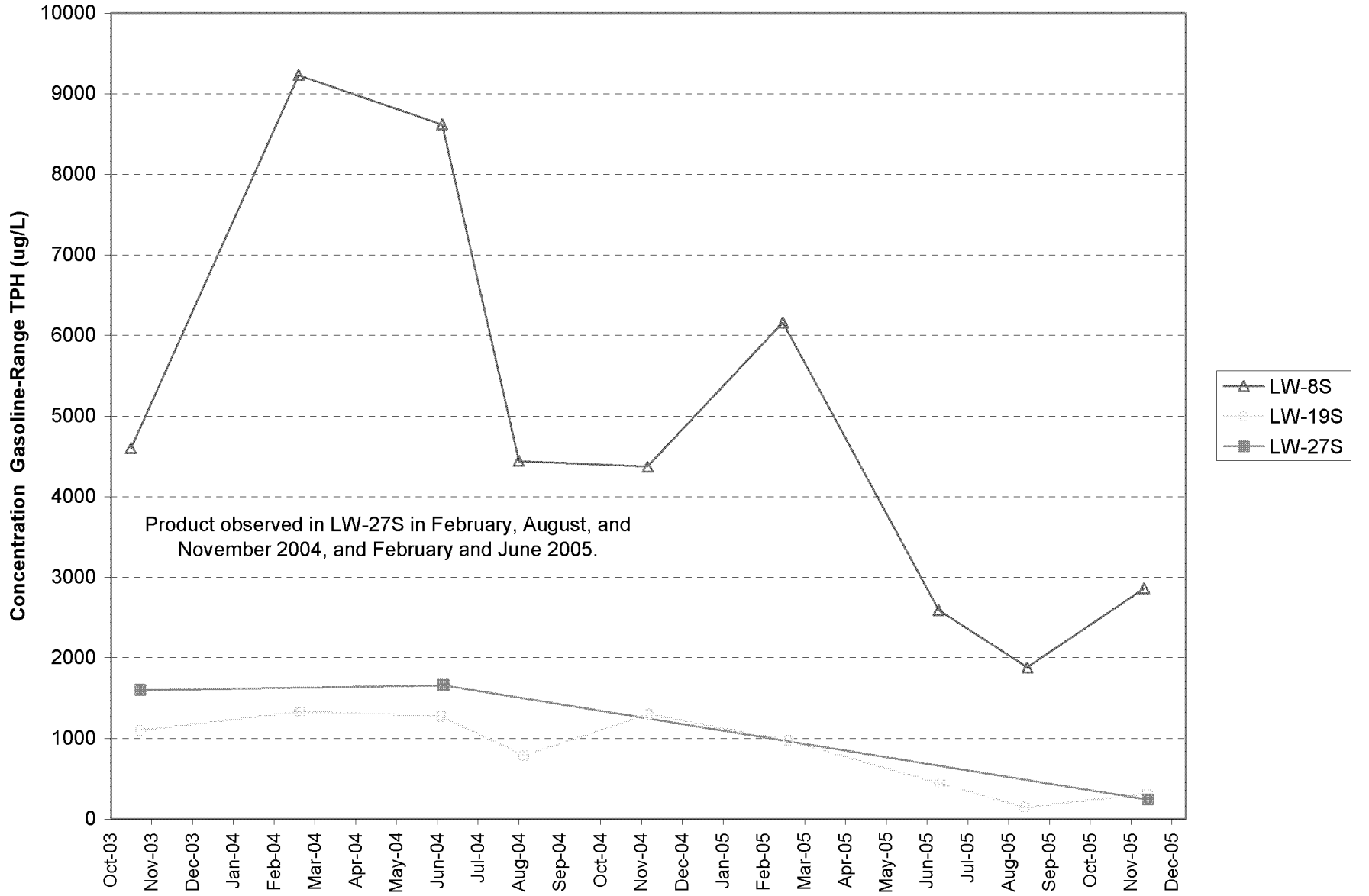
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Diesel-Range Hydrocarbons
Selected Upper Zone Wells
Main Tank Farm Area

Figure
23

BZTO104(e)027148



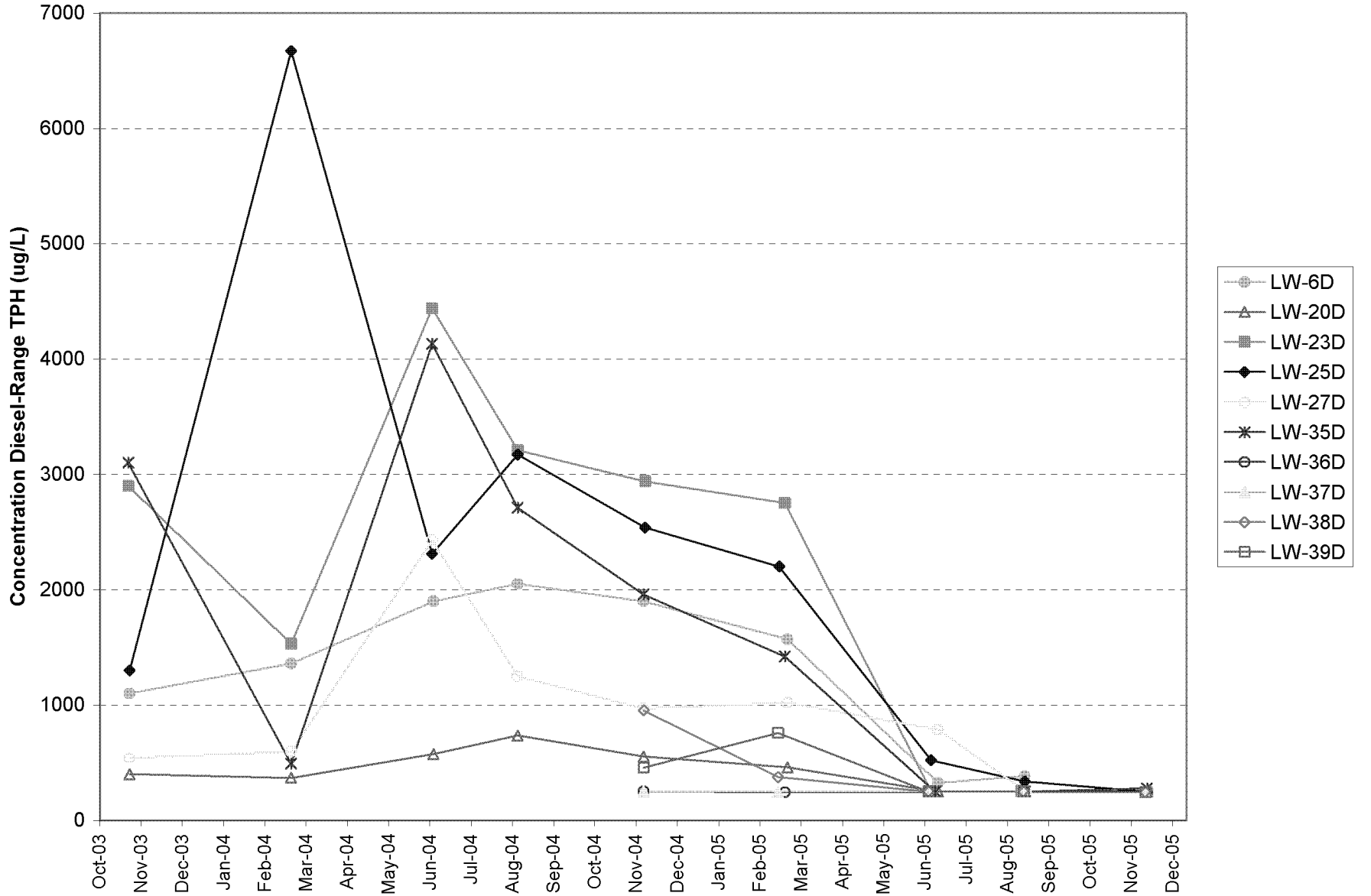
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Gasoline-Range Hydrocarbons
Selected Upper Zone Wells
Main Tank Farm Area

Figure
24

BZTO104(e)027149



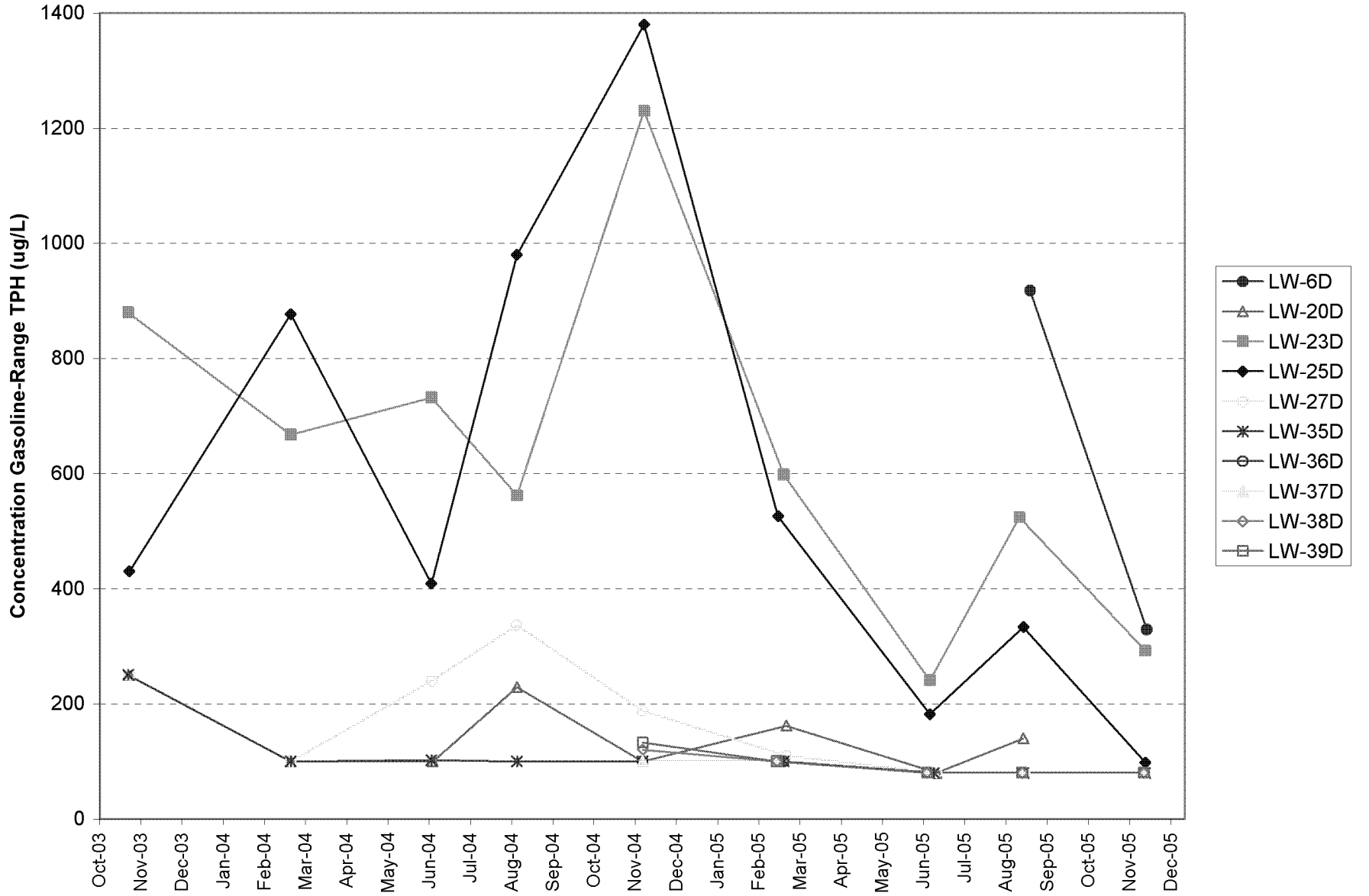
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Diesel-Range Hydrocarbons
Selected Lower Zone Wells
Main Tank Farm Area

Figure
25

BZTO104(e)027150



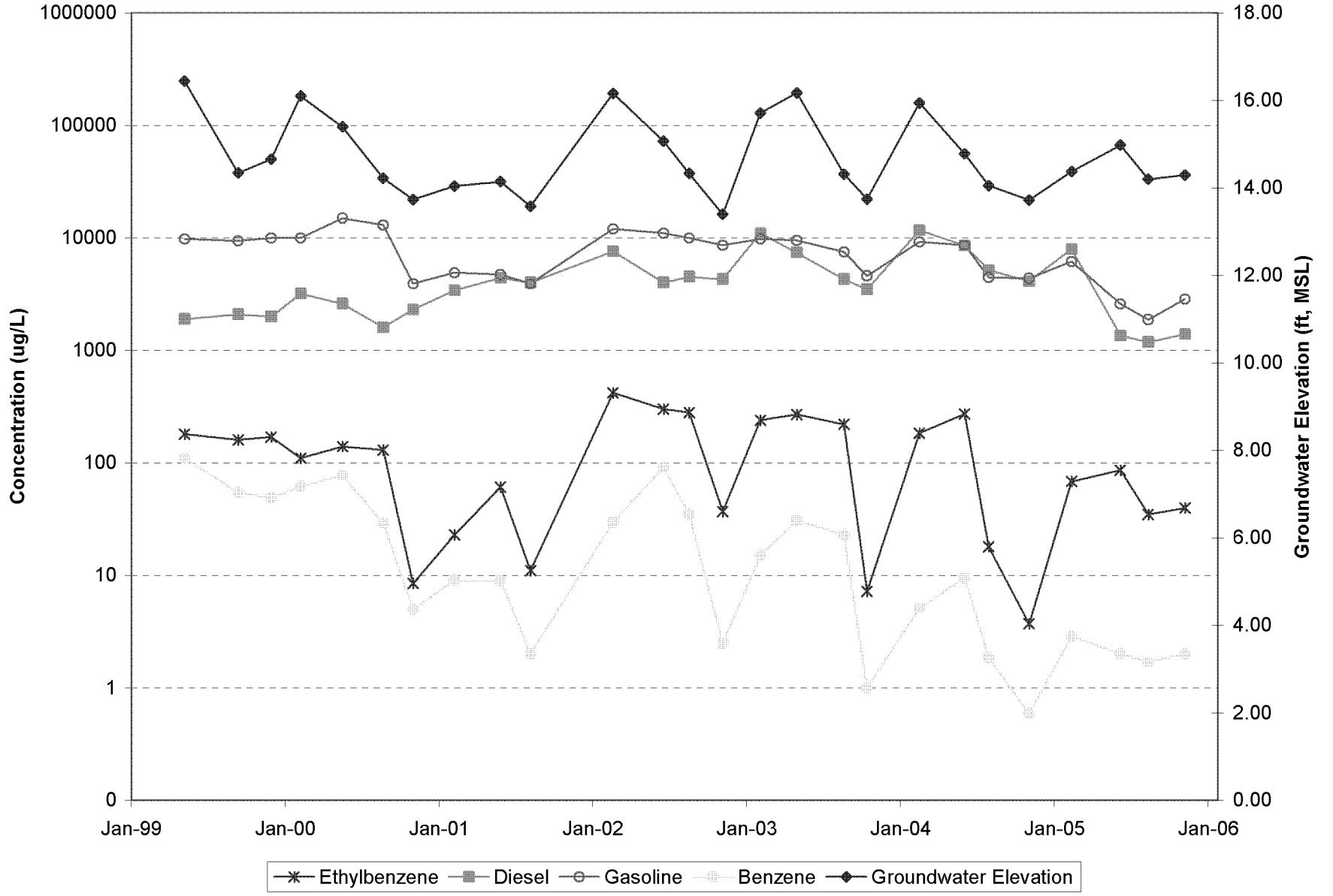
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Gasoline-Range Hydrocarbons
Selected Lower Zone Wells
Main Tank Farm Area

Figure
26

BZTO104(e)027151



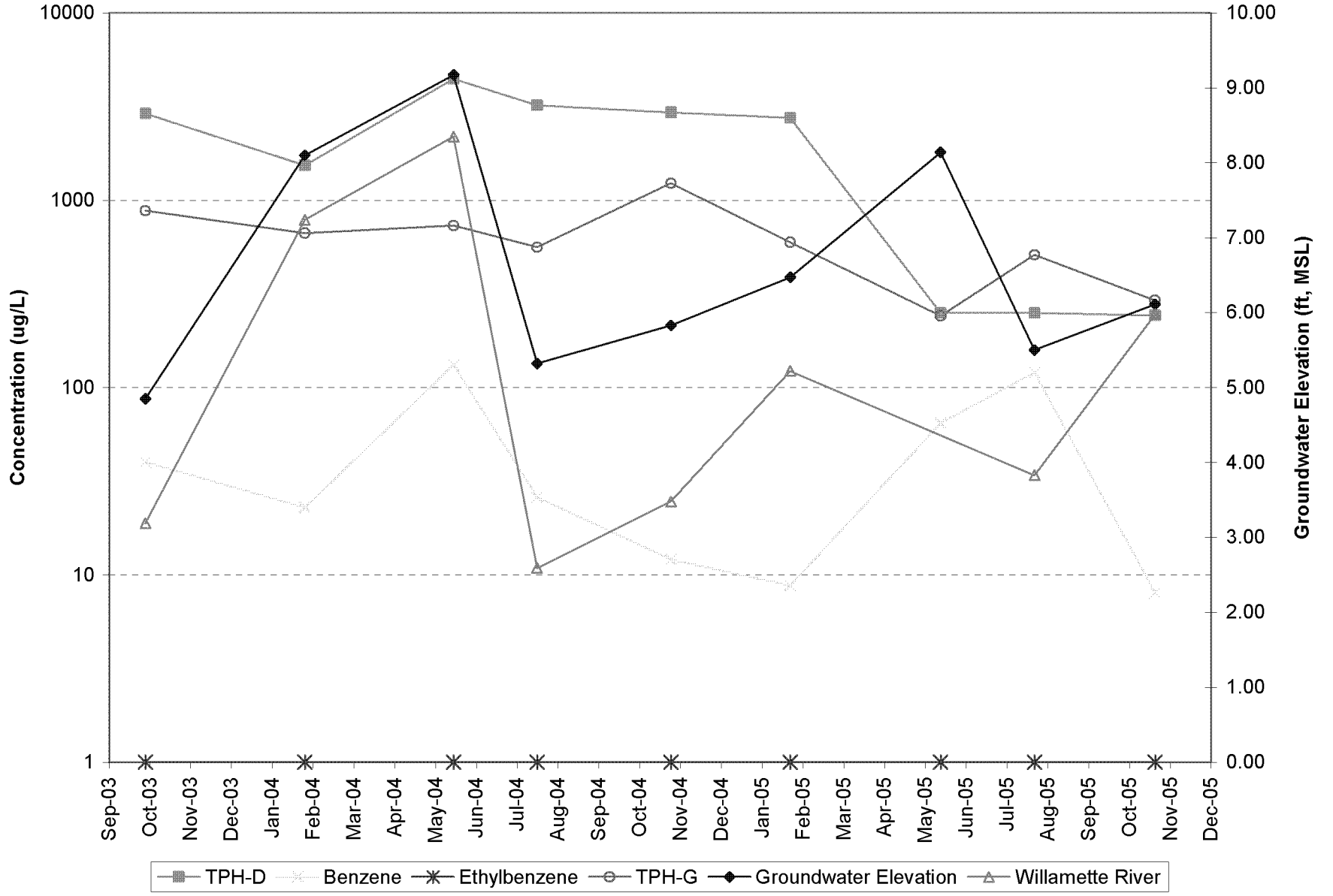
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Diesel-Range Hydrocarbons
Upper Zone Wells
Bell Terminal

Figure
27

BZTO104(e)027152



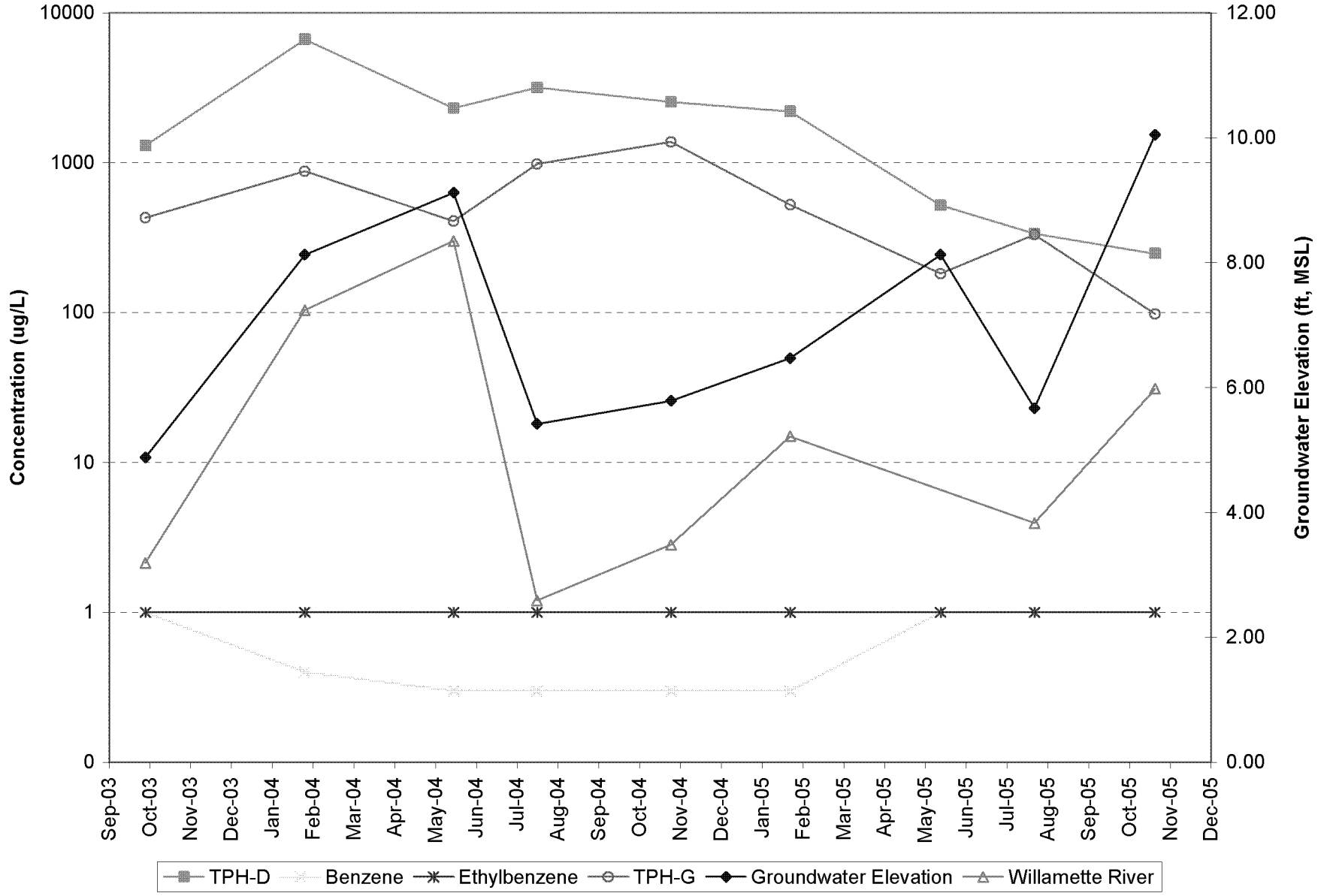
LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Gasoline-Range Hydrocarbons
Upper Zone Wells
Bell Terminal

Figure
28

BZTO104(e)027153



LANDAU ASSOCIATES

Time Oil NW Terminal Portland, Oregon	**Selected Constituents Well LW-8S, Upper Zone Main Tank Farm Area**	Figure 29

BZTO104(e)027154

APPENDIX A

Groundwater Level Measurements and Quality Data

TABLE A-1
GROUNDWATER MONITORING LOCATIONS AND ANALYTICAL METHODS
FOURTH QUARTER EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Semivolatiles (8270)	Volatiles (8260)	BTEX (8260)	PCP (8270 SIM)	PAH (8270 SIM)	TPH-Dx (NWTPH-Dx)	TPH-Gx (NWTPH-G)	PP Metals (a) (6020/7470A)	Dissolved Metals (6020/7470A)	Selenium (6010)	TDS (160.1)	Chloride (325.2)	Dioxin/Furans (8290)	TOC (415.1/5301C)	Major Ions (b) (300.0/376.2)	Methane (GC FID)	Ferrous Iron (Hatch Kit)
Phase II wells:																	
B1				X													X
B2 (c)																	
D (c)																	
G1A																	
H (c)																	
J1				X													X
J2 (c)																	
J3 (c)																	
L (c)																	
O (c)																	
R (c)																	
LW-1S (c)																	
LW-1D (c)																	
LW-3D (c)																	
LW-4S	X	X				X	X	X		X							
LW-4DR																	
LW-5S (c)																	
LW-6D	X	X		X	X	X	X	X		X							
LW-8S	X	X		X		X	X	X		X							
LW-9S (d)																	
LW9D	X	X		X	X	X	X	X		X							
LW-10S (d)																	
LW-10D	X	X		X		X	X	X		X							
LW-11S	X	X			X	X	X	X		X							X
LW-11D	X	X		X		X	X	X		X							
LW-13S (c)																	
LW-14D (e)																	
LW-15D (e)																	
LW-16D (e)																	
LW-17D																	
LW-18D																	
RW1	X	X		X		X	X	X		X			X				X
W (Dup RW-1)	X	X		X		X	X	X		X							X
RW2	X	X		X		X	X	X		X							
PZ-1 (c)																	
PZ-2 (c)																	
PZ-3 (c)																	
PZ-4 (c)																	
OX-1S	X	X						X		X			X				X
OX-2S (f)																	
OX-3S	X	X						X		X							X
OX-4S (d)																	
OX-5S	X	X						X		X						X	X
OX-6S	X	X						X		X			X				X
OX-7S	X	X						X		X							X
OX-8S	X	X						X		X							X
OX-8D (c)																	
OX-9S	X	X						X		X							
HRW-1				X													
SDM-1				X													
River-Outfall (g)																	

BZTO104(e)027156

TABLE A-1
GROUNDWATER MONITORING LOCATIONS AND ANALYTICAL METHODS
FOURTH QUARTER EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Semivolatiles (8270)	Volatiles (8260)	BTEX (8260)	PCP (8270 SIM)	PAH (8270 SIM)	TPH-Dx (NWTPH-Dx)	TPH-Gx (NWTPH-G)	PP Metals (a) (6020/7470A)	Dissolved Metals (6020/7470A)	Selenium (6010)	TDS (160.1)	Chloride (325.2)	Dioxin/Furans (8290)	TOC (415.1/5301C)	Major Ions (b) (300.0/376.2)	Methane (GC FID)	Ferrous Iron (Hatch Kit)
Phase III wells:																	
K (c)																	
N	X	X			X	X	X	X		X				X	X		
P	X	X			X	X	X	X		X							
Q	X	X			X	X	X	X		X							
LW-7S (c)																	
LW-19S	X	X			X	X	X	X		X							
LW-20S (c)																	
LW-20D (c)																	
LW-21S (f)																	
LW-22D	X	X			X	X	X	X		X							
LW-23D	X	X			X	X	X	X		X							
LW-24D	X	X			X	X	X	X		X							
LW-25D	X	X			X	X	X	X		X							
LW-26D	X	X			X	X	X	X		X							
LW-27S	X	X			X	X	X	X		X							
LW-27D (c)																	
LW-28S (d)																	
LW-29S (c)																	
LW-29D (c)																	
LW-30S (c)																	
LW-30D (c)																	
LW-31S (c)																	
LW-32S (c)																	
LW-32D (c)																	
LW-33S (c)																	
LW-34S (c)																	
LW-35D	X	X			X	X	X	X		X							
LW-36D	X	X			X	X	X	X	X	X							
LW-37D	X	X			X	X	X	X	X	X							
LW-38D	X	X			X	X	X	X	X	X							
Y (Dup of LW-38D)	X	X			X	X	X	X	X	X							
LW-39D	X	X			X	X	X	X	X	X							
LW-40S (d)																	
LW-40D	X	X			X	X	X	X		X							
LW-41S (d)																	
LW-42S (c)																	
Z (Dup of LW-42S) (c)																	
LW-43S (c)																	
LW-44S (c)																	
LW-45D	X	X			X	X	X	X									

(a) Metals analyzed include: arsenic, chromium, copper, lead, nickel, and zinc.
(b) Major Ions analyzed include: nitrate (300.0), sulfate (300.0), sulfide (376.2).
(c) Wells not part of the quarterly monitoring program per the modifications outlined in Appendix D.
(d) Well dry and not sampled.
(e) Well not required to be sampled per the Groundwater Interim Action Startup Plan dated July 14, 2000.
(f) Well contained product and not sampled.
(g) River outfall not exposed during this quarterly groundwater sampling event.

BZTO104(e)027157

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
Shallow Wells:							
B	03/25/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	03/31/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	07/16/1997	08:30	29.04	11.02	18.02	----	
B	10/21/1997	16:35	29.04	13.39	15.65	----	
B	01/27/1998	12:15	29.04	11.53	17.51	----	
B	05/18/1998	17:56	29.04	12.51	16.53	----	
B	08/17/1998	11:02	29.04	14.40	14.64	----	
B	11/13/1998	10:24	29.04	14.38	14.66	----	
B	02/16/1999	13:36	29.04	9.69	19.35	----	
B	05/18/1999	15:52	29.04	11.72	17.32	----	
B	09/21/1999	12:21	29.04	15.18	13.86	----	
B	12/06/1999	14:37	29.04	13.00	16.04	----	
B	02/16/2000	10:57	29.04	11.84	17.20	----	
B	05/23/2000	17:31	29.04	13.22	15.82	----	
B	08/29/2000	14:23	29.04	15.32	13.72	----	
B	11/09/2000	13:31	29.04	15.29	13.75	----	
B	02/12/2001	15:25	29.04	13.68	15.36	----	
B	06/04/2001	12:49	29.04	14.18	14.86	----	
B	08/16/2001	11:54	29.04	15.80	13.24	----	
B	11/28/2001	12:44	29.04	13.80	15.24	----	
B	02/27/2002	14:33	29.04	12.27	16.77	----	
B	06/27/2002	15:05	29.04	13.38	15.66	----	
B	08/26/2002	16:59	29.04	14.02	15.02	----	
B	11/13/2002	09:01	29.04	13.90	15.14	----	
B	02/11/2003	10:13	29.04	12.85	16.19	----	
B	05/08/2003	08:11	29.04	12.27	16.77	----	
B	08/27/2003	15:30	29.04	14.70	14.34	----	
B1	03/25/1997	10:48	29.74	----	----	----	Couldn't remove cap
B1	03/31/1997	----	29.74	----	----	----	Couldn't remove cap
B1	07/16/1997	07:49	29.74	11.01	18.73	----	
B1	10/21/1997	16:33	29.74	13.56	16.18	----	
B1	01/27/1998	12:10	29.74	11.68	18.06	----	
B1	05/18/1998	17:55	29.74	12.76	16.98	----	
B1	08/17/1998	11:04	29.74	14.15	15.59	----	
B1	11/13/1998	10:21	29.74	15.05	14.69	----	
B1	02/16/1999	13:33	29.74	9.59	20.15	----	
B1	05/18/1999	15:51	29.74	11.79	17.95	----	
B1	09/21/1999	12:19	29.74	14.63	15.11	----	
B1	12/06/1999	14:38	29.74	14.25	15.49	----	
B1	02/16/2000	10:55	29.74	12.20	17.54	----	
B1	05/23/2000	17:32	29.74	13.25	16.49	----	
B1	08/29/2000	14:22	29.74	14.93	14.81	----	
B1	11/09/2000	13:30	29.74	15.56	14.18	----	
B1	02/12/2001	15:26	29.74	15.19	14.55	----	
B1	06/04/2001	12:50	29.74	15.06	14.68	----	
B1	08/16/2001	11:55	29.74	15.72	14.02	----	
B1	11/28/2001	12:45	29.74	15.47	14.27	----	
B1	02/27/2002	14:34	29.74	12.15	17.59	----	
B1	03/05/2002	11:06	29.74	12.28	17.46	----	
B1	04/05/2002	08:42	29.74	12.40	17.34	----	
B1	05/29/2002	00:00	29.74	13.20	16.54	----	
B1	06/27/2002	15:06	29.74	13.77	15.97	----	
B1	08/26/2002	17:00	29.74	14.79	14.95	----	
B1	11/13/2002	09:02	29.74	16.00	13.74	----	
B1	02/11/2003	10:15	29.74	12.86	16.88	----	
B1	05/08/2003	08:12	29.74	12.25	17.49	----	
B1	08/27/2003	15:31	29.74	14.79	14.95	----	
B1	10/23/2003	14:07	29.74	15.61	14.13	----	
B1	02/19/2004	14:13	29.74	12.39	17.35	----	
B1	06/09/2004	09:01	29.74	14.10	15.64	----	
B1	08/10/2004	12:21	29.74	15.18	14.56	----	
B1	11/18/2004	09:04	29.74	15.70	14.04	----	
B1	02/15/2005	10:04	29.74	14.83	14.91	----	Slight product odor
B1	06/07/2005	19:35	29.74	13.95	15.79	----	
B1	08/16/2005	17:14	29.74	14.98	14.76	----	
B1	11/14/2005	08:42	29.74	15.04	14.70	----	
C	03/25/1997	12:32	28.89	5.56	23.33	----	
C	03/31/1997	11:38	28.89	6.16	22.73	----	
C	07/16/1997	08:47	28.89	8.28	20.61	----	
C	10/21/1997	15:15	28.89	10.00	18.89	----	
C	01/27/1998	13:41	28.89	7.98	20.91	----	
C	05/18/1998	18:08	28.89	9.54	19.35	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
C	08/17/1998	11:11	28.89	dry	----	----	
C	11/13/1998	10:36	28.89	10.36	18.53	----	
C	02/16/1999	13:58	28.89	5.91	22.98	----	
C	05/18/1999	16:04	28.89	7.90	20.99	----	
C	09/21/1999	12:44	28.89	dry	----	----	
C	12/06/1999	14:50	28.89	9.82	----	----	Water in endcap
C	02/16/2000	09:51	28.89	8.78	20.11	----	
C	05/23/2000	17:55	28.89	dry	----	----	
C	08/29/2000	14:33	28.89	dry	----	----	
C	11/09/2000	13:47	28.89	9.94	18.95	----	Dry?
C	02/12/2001	15:08	28.89	dry	----	----	
C	06/04/2001	13:25	28.89	dry	----	----	
C	08/16/2001	12:11	28.89	dry	----	----	
C	11/28/2001	13:03	28.89	dry	----	----	
C	02/27/2002	14:44	28.89	8.94	19.95	----	
C	06/27/2002	15:36	28.89	dry	----	----	
C	08/26/2002	17:31	28.89	dry	----	----	
C	11/13/2002	09:25	28.89	dry	----	----	
C	02/11/2003	10:46	28.89	dry	----	----	1" water
C	05/08/2003	08:35	28.89	8.53	20.36	----	
C	08/27/2003	15:08	28.89	dry	----	----	
D	03/25/1997	12:25	30.04	8.32	21.72	----	
D	03/31/1997	11:31	30.04	8.66	21.38	----	
D	07/16/1997	08:35	30.04	10.45	19.59	----	
D	10/21/1997	17:10	30.04	13.27	16.77	----	
D	01/27/1998	13:31	30.04	10.72	19.32	----	
D	05/18/1998	17:36	30.04	12.23	17.81	----	
D	08/17/1998	10:57	30.04	13.83	16.21	----	
D	11/13/1998	09:05	30.04	15.01	15.03	----	
D	02/16/1999	13:45	30.04	8.50	21.54	----	
D	05/18/1999	15:59	30.04	11.00	19.04	----	
D	09/21/1999	12:37	30.04	14.41	15.63	----	
D	12/06/1999	14:46	30.04	14.04	16.00	----	
D	02/16/2000	09:55	30.04	11.50	18.54	----	
D	05/23/2000	12:56	30.04	12.74	17.30	----	
D	08/29/2000	14:35	30.04	14.70	15.34	----	
D	11/09/2000	13:43	30.04	15.49	14.55	----	
D	02/12/2001	15:12	30.04	14.99	15.05	----	
D	06/04/2001	12:35	30.04	14.95	15.09	----	
D	08/16/2001	11:46	30.04	15.64	14.40	----	
D	11/28/2001	12:43	30.04	15.45	14.59	----	
D	02/27/2002	14:21	30.04	11.37	18.67	----	
D	03/05/2002	11:00	30.04	11.51	18.53	----	
D	04/05/2002	08:45	30.04	11.65	18.39	----	
D	05/29/2002	00:00	30.04	12.73	17.31	----	
D	06/27/2002	15:00	30.04	13.43	16.61	----	
D	08/26/2002	17:04	30.04	14.68	15.36	----	
D	11/13/2002	09:19	30.04	15.96	14.08	----	
D	02/11/2003	10:41	30.04	12.10	17.94	----	
D	05/08/2003	08:30	30.04	11.48	18.56	----	
D	08/27/2003	15:03	30.04	14.60	15.44	----	
D	10/23/2003	13:50	30.04	15.54	14.50	----	
D	02/19/2004	14:22	30.04	11.83	18.21	----	
D	06/09/2004	09:28	30.04	13.78	16.26	----	
D	08/10/2004	12:13	30.04	15.02	15.02	----	
D	11/18/2004	09:30	30.04	15.69	14.35	----	
D	02/15/2005	09:42	30.04	14.62	15.42	----	
D	06/07/2005	19:28	30.04	13.58	16.46	----	
D	08/16/2005	17:30	30.04	14.80	15.24	----	
D	11/14/2005	08:20	30.04	15.02	15.02	----	
F	08/18/1998	08:10	NA	14.77	NA		
F							Abandoned August 2003
G	03/25/1997	11:57	30.24	14.49	15.75	----	
G	03/31/1997	09:13	30.24	14.01	16.23	----	
G	07/16/1997	07:37	30.24	14.30	15.94	----	
G	10/21/1997	16:20	30.24	dry	----	----	
G	01/27/1998	11:49	30.24	dry	----	----	
G	05/18/1998	17:30	30.24	dry	----	----	
G	08/17/1998	11:06	30.24	dry	----	----	
G	11/13/1998	09:53	30.24	dry	----	----	
G	02/16/1999	13:14	30.24	dry	----	----	
G	05/18/1999	14:50	30.24	dry	----	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
G	09/21/1999	11:30	30.24	dry	----	----	
G	12/06/1999	14:07	30.24	dry	----	----	
G	02/16/2000	10:19	30.24	dry	----	----	
G	05/23/2000	16:33	30.24	dry	----	----	
G	08/29/2000	13:18	30.24	dry	----	----	
G	11/09/2000	12:30	30.24	dry	----	----	
G	02/12/2001	16:02	30.24	dry	----	----	
G	06/04/2001	11:41	30.24	dry	----	----	
G	08/16/2001	10:50	30.24	dry	----	----	
G	11/28/2001	11:33	30.24	dry	----	----	
G	02/27/2002	13:38	30.24	dry	----	----	
G	06/27/2002	14:13	30.24	dry	----	----	
G	08/26/2002	16:05	30.24	dry	----	----	
G	11/13/2002	07:37	30.24	dry	----	----	
G	02/11/2003	08:58	30.24	dry	----	----	
G	05/08/2003	06:57	30.24	dry	----	----	
G	08/27/2003	13:38	30.24	dry	----	----	
G	10/23/2003	12:38	30.24	dry	----	----	
G	02/19/2004	12:58	30.24	dry	----	----	
G	06/09/2004	07:54	30.24	dry	----	----	
G	08/10/2004	12:01	30.24	dry	----	----	
G	11/18/2004	09:16	30.24	dry	----	----	
H	03/31/1997	11:51	27.08	5.42	21.66	----	
H	07/16/1997	08:44	27.08	7.29	19.79	----	
H	10/21/1997	17:45	27.08	10.08	17.00	----	
H	01/27/1998	13:45	27.08	7.56	19.52	----	
H	05/18/1998	17:50	27.08	9.06	18.02	----	
H	08/17/1998	09:15	27.08	10.68	16.40	----	
H	11/13/1998	10:54	27.08	11.84	15.24	----	
H	02/16/1999	13:50	27.08	5.35	21.73	----	
H	05/18/1999	15:41	27.08	7.78	19.30	----	
H	09/21/1999	12:15	27.08	11.23	15.85	----	
H	12/06/1999	15:13	27.08	10.91	16.17	----	
H	02/16/2000	10:52	27.08	8.28	18.80	----	
H	05/23/2000	17:20	27.08	9.48	17.60	----	
H	08/29/2000	14:06	27.08	11.55	15.53	----	
H	11/09/2000	13:23	27.08	12.34	14.74	----	
H	02/12/2001	15:36	27.08	11.88	15.20	----	
H	06/04/2001	12:27	27.08	11.81	15.27	----	
H	08/16/2001	11:41	27.08	12.57	14.51	----	
H	11/28/2001	12:34	27.08	12.39	14.69	----	
H	02/27/2002	14:18	27.08	8.14	18.94	----	
H	03/05/2002	10:58	27.08	8.28	18.80	----	
H	04/05/2002	09:10	27.08	8.45	18.63	----	
H	05/29/2002	00:00	27.08	9.38	17.70	----	
H	06/27/2002	14:51	27.08	10.25	16.83	----	
H	08/26/2002	17:00	27.08	11.54	15.54	----	
H	11/13/2002	09:12	27.08	12.83	14.25	----	
H	02/11/2003	10:33	27.08	8.96	18.12	----	
H	05/08/2003	08:24	27.08	8.24	18.84	----	
H	08/27/2003	15:02	27.08	11.48	15.60	----	
H	10/23/2003	13:42	27.08	12.41	14.67	----	
H	02/19/2004	14:35	27.08	9.71	17.37	----	
H	06/09/2004	09:16	27.08	10.61	16.47	----	
H	08/10/2004	11:33	27.08	11.93	15.15	----	
H	11/18/2004	09:36	27.08	12.54	14.54	----	
H	06/09/2005	16:10	27.08	10.42	16.66	----	
H	08/16/2004	17:25	27.08	11.42	15.66	----	
H	11/14/2005	09:08	27.08	11.63	15.45	----	
J1	03/25/1997	12:15	29.70	8.78	20.92	----	Orange/brown algae
J1	03/31/1997	11:19	29.70	9.02	20.68	----	
J1	07/16/1997	08:22	29.70	10.49	19.21	----	
J1	10/21/1997	16:58	29.70	13.10	16.60	----	
J1	01/27/1998	13:15	29.70	11.03	18.67	----	
J1	05/18/1998	18:01	29.70	12.27	17.43	----	
J1	08/17/1998	11:00	29.70	13.78	15.92	----	
J1	11/13/1998	10:30	29.70	14.77	14.93	----	
J1	02/16/1999	13:37	29.70	8.91	20.79	----	
J1	05/18/1999	15:46	29.70	11.19	18.51	----	
J1	09/21/1999	12:28	29.70	14.36	15.34	----	
J1	12/06/1999	15:07	29.70	13.95	15.75	----	
J1	02/16/2000	11:05	29.70	11.67	18.03	----	
J1	05/23/2000	17:27	29.70	12.78	16.92	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
J1	08/29/2000	14:14	29.70	14.58	15.12	----	
J1	11/09/2000	13:25	29.70	15.30	14.40	----	
J1	02/12/2001	15:22	29.70	14.87	14.83	----	
J1	06/04/2001	12:39	29.70	14.83	14.87	----	
J1	08/16/2001	11:52	29.70	15.48	14.22	----	
J1	11/28/2001	12:35	29.70	15.23	14.47	----	
J1	02/27/2002	14:30	29.70	11.62	18.08	----	
J1	03/05/2002	11:04	29.70	11.76	17.94	----	
J1	04/05/2002	08:40	29.70	11.87	17.83	----	
J1	05/29/2002	00:00	29.70	12.77	16.93	----	
J1	06/27/2002	15:02	29.70	13.40	16.30	----	
J1	08/26/2002	16:54	29.70	14.51	15.19	----	
J1	11/13/2002	09:00	29.70	15.71	13.99	----	
J1	02/11/2003	10:18	29.70	12.33	17.37	----	
J1	05/08/2003	08:14	29.70	11.65	18.05	----	
J1	08/27/2003	14:47	29.70	14.46	15.24	----	
J1	10/23/2003	13:52	29.70	15.31	14.39	----	
J1	02/19/2004	14:18	29.70	11.88	17.82	----	
J1	06/09/2004	09:08	29.70	13.71	15.99	----	
J1	08/10/2004	12:20	29.70	14.86	14.84	----	On 8/03, DTW was 14.75; 8/10/04 reading changed from 15.86 to 14.86
J1	11/18/2004	09:03	29.70	15.45	14.25	----	
J1	02/15/2005	09:50	29.70	14.53	15.17	----	
J1	06/07/2005	19:17	29.70	13.56	16.14	----	
J1	08/16/2005	17:06	29.70	14.65	15.05	----	
J1	11/14/2005	08:26	29.70	14.75	14.95	----	
K	03/25/1997	12:08	29.42	8.20	21.22	----	
K	03/31/1997	09:32	29.42	8.46	20.96	----	
K	07/16/1997	08:00	29.42	10.03	19.39	----	
K	10/21/1997	16:45	29.42	12.71	16.71	----	
K	01/27/1998	12:37	29.42	10.46	18.96	----	
K	05/18/1998	17:52	29.42	11.77	17.65	----	
K	08/17/1998	10:50	29.42	13.34	16.08	----	
K	11/13/1998	10:14	29.42	14.30	15.12	----	
K	02/16/1999	13:55	29.42	8.41	21.01	----	
K	05/18/1999	15:30	29.42	10.68	18.74	----	
K	09/21/1999	12:08	29.42	13.91	15.51	----	
K	12/06/1999	14:32	29.42	13.44	15.98	----	
K	02/16/2000	10:48	29.42	11.15	18.27	----	
K	05/23/2000	17:12	29.42	12.25	17.17	----	
K	08/29/2000	13:56	29.42	14.16	15.26	----	
K	11/09/2000	13:16	29.42	14.84	14.58	----	
K	02/12/2001	15:41	29.42	14.35	15.07	----	
K	06/04/2001	12:20	29.42	14.22	15.20	----	
K	08/16/2001	11:35	29.42	15.12	14.30	----	
K	11/28/2001	12:26	29.42	14.68	14.74	----	
K	02/27/2002	14:17	29.42	11.05	18.37	----	
K	03/05/2002	10:55	29.42	11.25	18.17	----	
K	04/05/2002	08:55	29.42	11.30	18.12	----	
K	05/29/2002	00:00	29.42	12.22	17.20	----	
K	06/27/2002	14:47	29.42	12.92	16.50	----	
K	08/26/2002	17:17	29.42	14.12	15.30	----	
K	11/13/2002	09:11	29.42	15.18	14.24	----	
K	02/11/2003	10:29	29.42	11.80	17.62	----	
K	05/08/2003	08:21	29.42	11.14	18.28	----	
K	08/27/2003	14:52	29.42	14.08	15.34	----	
K	10/23/2003	13:40	29.42	14.91	14.51	----	
K	02/19/2004	14:39	29.42	11.41	18.01	----	
K	06/09/2004	09:23	29.42	13.26	16.16	----	
K	08/10/2004	11:28	29.42	14.35	15.07	----	
K	11/18/2004	09:31	29.42	15.01	14.41	----	
K	06/07/2005	19:20	29.42	13.07	16.35	----	
K	08/16/2005	16:45	29.42	14.23	15.19	----	
K	11/14/2005	11:06	29.42	14.25	15.17	----	
L	03/25/1997	12:35	28.10	4.98	23.12	----	
L	03/31/1997	11:40	28.10	5.24	22.86	----	
L	07/16/1997	08:49	28.10	7.50	20.60	----	
L	10/21/1997	15:18	28.10	9.55	18.55	----	
L	01/27/1998	13:39	28.10	6.45	21.65	----	
L	05/18/1998	18:07	28.10	9.21	18.89	----	
L	08/17/1998	11:10	28.10	11.59	16.51	----	
L	11/13/1998	10:35	28.10	13.02	15.08	----	
L	02/16/1999	13:57	28.10	4.78	23.32	----	
L	05/18/1999	16:03	28.10	7.62	20.48	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
L	09/21/1999	12:43	28.10	12.30	15.80	----	
L	12/06/1999	14:49	28.10	9.51	18.59	----	
L	02/16/2000	09:49	28.10	7.13	20.97	----	
L	05/23/2000	17:54	28.10	9.11	18.99	----	
L	08/29/2000	14:32	28.10	12.66	15.44	----	
L	11/09/2000	13:46	28.10	13.56	14.54	----	
L	02/12/2001	15:07	28.10	13.04	15.06	----	
L	06/04/2001	13:24	28.10	12.78	15.32	----	
L	08/16/2001	12:10	28.10	13.66	14.44	----	
L	11/28/2001	13:02	28.10	12.34	15.76	----	
L	02/27/2002	14:42	28.10	7.16	20.94	----	
L	03/05/2002	11:12	28.10	7.39	20.71	----	
L	04/05/2002	08:39	28.10	7.63	20.47	----	
L	05/29/2002	00:00	28.10	9.09	19.01	----	
L	06/27/2002	10:38	28.10	10.11	17.99	----	
L	08/26/2002	17:30	28.10	12.56	15.54	----	
L	11/13/2002	09:26	28.10	14.00	14.10	----	
L	02/11/2003	10:47	28.10	7.17	20.93	----	
L	05/08/2003	08:34	28.10	7.01	21.09	----	
L	08/27/2003	15:09	28.10	15.20	12.90	----	
L	10/23/2003	14:20	28.10	13.56	14.54	----	
L	02/19/2004	13:57	28.10	6.84	21.26	----	
L	06/09/2004	09:35	28.10	11.10	17.00	----	
L	08/10/2004	12:27	28.10	13.00	15.10	----	
L	11/18/2004	09:42	28.10	13.77	14.33	----	
L	06/07/2005	19:22	28.10	9.51	18.59	----	
L	08/16/2005	16:22	28.10	13.72	14.38	----	
L	11/14/2005	08:51	28.10	11.94	16.16	----	
N	03/25/1997	11:48	31.40	14.05	17.35	----	
N	03/31/1997	08:59	31.40	14.26	17.14	----	Hydrocarbon odor, product
N	07/16/1997	07:20	31.40	16.03	16.33	1.20	Light brown color; thick coating on probe
N	10/21/1997	16:09	31.40	16.46	14.94	----	No product - strong petroleum odor
N	10/23/1997	17:20	31.40	16.48	14.92	----	No product - strong petroleum odor
N	01/27/1998	11:13	31.40	15.01	16.41	0.02	
N	05/18/1998	17:20	31.40	16.39	15.06	0.06	
N	08/17/1998	10:40	31.40	17.16	14.26	0.02	Thin coat of thick product
N	11/13/1998	09:48	31.40	17.83	13.58	0.01	
N	02/16/1999	12:55	31.40	14.09	17.53	0.27	Strong petroleum odor
N	05/18/1999	14:47	31.40	15.79	15.64	0.04	
N	09/21/1999	11:23	31.40	17.39	14.02	0.01	
N	12/06/1999	14:00	31.40	16.57	14.83	----	
N	02/16/2000	10:10	31.40	15.69	15.71	----	
N	05/23/2000	16:24	31.40	16.42	14.98	----	Strong petroleum odor, no product
N	08/29/2000	13:07	31.40	17.61	13.79	----	
N	11/09/2000	12:26	31.40	18.23	13.19	0.03	
N	02/12/2001	15:49	31.40	17.64	13.76	----	
N	06/04/2001	11:31	31.40	17.58	13.82	----	
N	08/16/2001	10:29	31.40	18.08	13.32	----	Trace product
N	11/28/2001	11:27	31.40	18.06	13.34	----	Trace product
N	02/27/2002	13:25	31.40	15.76	15.64	----	
N	04/05/2002	08:09	31.40	15.88	15.52	----	
N	05/29/2002	00:00	31.40	16.42	14.98	----	
N	06/27/2002	14:12	31.40	16.80	14.60	----	
N	08/26/2002	15:56	31.40	17.51	13.89	----	
N	11/13/2002	07:27	31.40	18.44	12.98	0.03	Product present
N	02/11/2003	08:49	31.40	15.33	16.07	----	
N	05/08/2003	06:51	31.40	15.71	15.69	----	
N	08/27/2003	13:33	31.40	17.54	13.86	----	
N	10/23/2003	12:08	31.40	18.18	13.22	----	
N	02/19/2004	12:21	31.40	15.79	15.61	----	
N	06/09/2004	07:36	31.40	17.04	14.36	----	
N	08/10/2004	10:55	31.40	17.72	13.68	----	
N	11/18/2004	08:38	31.40	dry	----	----	
N	02/15/2005	10:38	31.40	17.40	14.00	----	Slight product odor
N	06/07/2005	19:15	31.40	16.54	14.86	----	
N	08/16/2005	16:27	31.40	17.45	13.95	----	
N	11/14/2005	10:05	31.40	17.78	13.62	----	
P	03/25/1997	11:45	29.96	12.88	17.08	----	
P	03/31/1997	08:55	29.96	12.94	17.02	----	Hydrocarbon odor, product
P	07/16/1997	07:15	29.96	14.02	16.08	0.17	Light coating on probe; light brown color
P	10/21/1997	16:05	29.96	15.23	14.73	----	No product - strong petroleum odor
P	10/23/1997	17:25	29.96	15.21	14.75	----	No product - strong petroleum odor
P	01/27/1998	11:09	29.96	13.87	16.09	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
P	05/18/1998	17:18	29.96	13.08	16.88	----	Trace of product on probe
P	08/17/1998	10:37	29.96	15.82	14.15	0.01	Sheen on probe, strong petroleum odor
P	11/13/1998	09:46	29.96	16.63	13.37	0.05	Strong gasoline odor
P	02/16/1999	12:52	29.96	12.91	17.10	0.06	Strong petroleum odor
P	05/18/1999	14:43	29.96	14.68	15.38	0.13	
P	09/21/1999	11:20	29.96	16.08	13.89	0.01	
P	12/06/1999	13:55	29.96	15.41	14.55	----	
P	02/16/2000	10:08	29.96	14.51	15.45	----	
P	05/23/2000	16:21	29.96	15.15	14.81	----	Trace of product on surface
P	08/29/2000	13:04	29.96	16.26	13.71	0.01	
P	11/09/2000	12:24	29.96	16.98	13.00	0.03	
P	02/12/2001	15:46	29.96	16.31	13.65	----	
P	06/04/2001	11:27	29.96	16.26	13.70	----	Trace product
P	08/16/2001	10:28	29.96	16.75	13.21	----	
P	11/28/2001	11:24	29.96	17.01	12.95	----	
P	02/27/2002	13:22	29.96	14.60	15.44	0.10	Strong ethanol-like odor
P	04/05/2002	08:07	29.96	14.70	15.34	0.10	
P	05/29/2002	00:00	29.96	15.00	14.96	----	Trace product
P	06/27/2002	14:11	29.96	15.49	14.47	----	
P	08/26/2002	15:54	29.96	16.15	13.81	----	
P	11/13/2002	07:25	29.96	16.99	13.00	0.04	Product present
P	02/11/2003	08:44	29.96	14.13	15.84	0.01	Product present
P	05/08/2003	06:47	29.96	15.53	14.44	0.01	Product barely present
P	08/27/2003	13:30	29.96	16.19	13.77	----	
P	10/23/2003	12:05	29.96	16.60	13.38	0.02	Trace product
P	02/19/2004	12:19	29.96	14.56	15.40	----	
P	06/09/2004	07:35	29.98	15.70	14.28	----	New reference elevation July 2004
P	08/10/2004	10:53	29.98	16.40	13.58	----	
P	11/18/2004	08:37	29.98	dry	----	----	
P	02/15/2005	10:43	29.98	16.08	13.90	----	Slight product odor
P	06/07/2005	19:20	29.98	15.65	14.33	----	
P	08/16/2005	16:23	29.98	16.10	13.88	----	Strong petro odor
P	11/14/2005	10:08	29.98	16.55	13.43	----	
Q	03/25/1997	11:42	30.36	13.55	16.81	----	
Q	03/31/1997	08:52	30.36	13.54	16.82	----	Hydrocarbon odor
Q	07/16/1997	07:10	30.36	14.55	15.83	0.02	Light coating on probe; light brown color
Q	10/21/1997	16:04	30.36	15.70	14.66	----	No product - strong petroleum odor
Q	10/23/1997	17:29	30.36	15.69	14.67	----	No product - strong petroleum odor
Q	01/27/1998	11:05	30.36	14.48	15.88	----	
Q	05/18/1998	17:16	30.36	15.58	14.78	----	
Q	08/17/1998	10:35	30.36	16.27	14.09	----	Slight sheen on probe; no product, strong petroleum odor
Q	11/13/1998	09:44	30.36	17.01	13.36	0.01	Strong gasoline odor
Q	02/16/1999	12:49	30.36	13.61	16.76	0.01	Strong petroleum odor
Q	05/18/1999	14:40	30.36	15.13	15.23	----	Strong odor when cap removed
Q	09/21/1999	11:17	30.36	16.51	13.85	----	
Q	12/06/1999	13:53	30.36	15.88	14.48	----	
Q	02/16/2000	10:06	30.36	15.02	15.34	----	Film of product
Q	05/23/2000	16:19	30.36	15.64	14.72	----	Strong petroleum odor, no product
Q	08/29/2000	13:01	30.36	16.69	13.67	----	
Q	11/09/2000	12:23	30.36	17.50	12.86	----	Trace of product
Q	02/12/2001	15:45	30.36	16.71	13.65	----	
Q	06/04/2001	11:25	30.36	16.66	13.70	----	
Q	08/16/2001	10:26	30.36	17.15	13.21	----	Trace product
Q	11/28/2001	11:21	30.36	17.76	12.94	0.42	
Q	02/27/2002	13:20	30.36	15.07	15.29	----	Strong petroleum odor, no product
Q	04/05/2002	08:05	30.36	15.23	15.13	----	Trace product
Q	05/29/2002	00:00	30.36	15.53	14.83	----	Trace product
Q	06/27/2002	14:10	30.36	15.95	14.41	----	Trace product
Q	08/26/2002	15:52	30.36	16.60	13.76	----	
Q	11/13/2002	07:30	30.36	17.50	12.87	0.01	Product present
Q	02/11/2003	08:47	30.36	14.67	15.69	----	
Q	05/08/2003	06:48	30.36	15.00	15.54	0.22	
Q	08/27/2003	13:28	30.36	16.60	13.76	----	
Q	10/23/2003	12:03	30.36	17.50	13.05	0.24	
Q	02/19/2004	12:17	30.36	15.07	15.29	----	Trace product
Q	06/09/2004	07:34	30.36	16.15	14.21	----	
Q	08/10/2004	10:52	30.36	16.81	13.55	----	
Q	11/18/2004	08:35	30.36	17.55	13.01	0.25	
Q	02/15/2005	10:46	30.36	16.50	13.86	----	Strong product odor
Q	06/07/2005	19:25	30.36	15.70	14.66	----	
Q	08/16/2005	16:20	30.36	16.51	13.85	----	Strong petro odor
Q	11/14/2005	10:10	30.36	16.92	13.44	----	
LW001S	03/31/1997	11:12	27.96	6.65	21.31		

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW001S	07/16/1997	08:15	27.96	8.34	19.62	----	
LW001S	10/21/1997	16:53	27.96	11.02	16.94	----	
LW001S	01/27/1998	13:00	27.96	8.75	19.21	----	
LW001S	05/18/1998	17:40	27.96	9.15	18.81	----	
LW001S	08/17/1998	10:54	27.96	11.67	16.29	----	
LW001S	11/13/1998	10:02	27.96	12.76	15.20	----	
LW001S	02/16/1999	13:24	27.96	6.60	21.36	----	
LW001S	05/18/1999	15:38	27.96	8.92	19.04	----	
LW001S	09/21/1999	12:10	27.96	12.20	15.76	----	
LW001S	12/06/1999	14:33	27.96	11.86	16.10	----	
LW001S	02/16/2000	10:50	27.96	9.42	18.54	----	
LW001S	05/23/2000	17:18	27.96	10.52	17.44	----	
LW001S	08/29/2000	13:58	27.96	12.51	15.45	----	
LW001S	11/09/2000	13:17	27.96	13.26	14.70	----	
LW001S	02/12/2001	15:33	27.96	12.82	15.14	----	
LW001S	06/04/2001	12:24	27.96	12.77	15.19	----	
LW001S	08/16/2001	11:37	27.96	13.45	14.51	----	
LW001S	11/28/2001	12:28	27.96	13.25	14.71	----	
LW001S	02/27/2002	14:19	27.96	9.31	18.65	----	
LW001S	03/05/2002	10:56	27.96	9.45	18.51	----	
LW001S	04/05/2002	09:08	27.96	9.60	18.36	----	
LW001S	05/29/2002	00:00	27.96	10.49	17.47	----	
LW001S	06/27/2002	14:50	27.96	11.26	16.70	----	
LW001S	08/26/2002	17:11	27.96	12.47	15.49	----	
LW001S	11/13/2002	09:07	27.96	13.72	14.24	----	
LW001S	02/11/2003	10:25	27.96	10.11	17.85	----	
LW001S	05/08/2003	08:20	27.96	9.41	18.55	----	
LW001S	08/27/2003	14:51	27.96	12.46	15.50	----	
LW001S	10/23/2003	13:58	27.96	13.32	14.64	----	
LW001S	02/19/2004	14:28	27.96	9.81	18.15	----	
LW001S	06/09/2004	09:20	27.96	11.60	16.36	----	
LW001S	08/10/2004	11:30	27.96	12.86	15.10	----	
LW001S	11/18/2004	08:57	27.96	13.42	14.54	----	
LW001S	02/15/2005	09:24	27.96	12.47	15.49	----	
LW001S	06/07/2005	19:08	27.96	11.45	16.51	----	
LW001S	08/16/2005	17:15	27.96	12.58	15.38	----	
LW001S	11/14/2005	09:10	27.96	12.73	15.23	----	
LW002S	03/25/1997	12:22	29.56	8.06	21.50	----	
LW002S	03/31/1997	11:27	29.56	8.34	21.22	----	
LW002S	07/16/1997	08:33	29.56	10.05	19.51	----	
LW002S	10/21/1997	17:04	29.56	12.77	16.79	----	
LW002S	01/27/1998	13:25	29.56	10.39	19.17	----	
LW002S	05/18/1998	18:02	29.56	11.78	17.78	----	
LW002S	08/17/1998	10:56	29.56	13.38	16.18	----	
LW002S	11/13/1998	10:32	29.56	14.47	15.09	----	
LW002S	02/16/1999	13:42	29.56	8.27	21.29	----	
LW002S	05/18/1999	15:45	29.56	10.63	18.93	----	
LW002S	09/21/1999	12:34	29.56	13.95	15.61	----	
LW002S	12/06/1999	15:11	29.56	13.54	16.02	----	
LW002S	02/16/2000	10:38	29.56	11.08	18.48	----	
LW002S	05/23/2000	17:24	29.56	12.29	17.27	----	
LW002S	08/29/2000	14:12	29.56	14.23	15.33	----	
LW002S	11/09/2000	13:04	29.56	15.00	14.56	----	
LW002S	02/12/2001	15:30	29.56	14.52	15.04	----	
LW002S	06/04/2001	12:34	29.56	14.46	15.10	----	
LW002S	08/16/2001	11:45	29.56	15.16	14.40	----	
LW002S	11/28/2001	12:41	29.56	14.90	14.66	----	
LW002S	02/27/2002	14:19	29.56	11.02	18.54	----	
LW002S	03/05/2002	10:59	29.56	11.17	18.39	----	
LW002S	04/05/2002	08:47	29.56	11.33	18.23	----	
LW002S	05/29/2002	00:00	29.56	12.22	17.34	----	
LW002S	06/27/2002	14:56	29.56	13.00	16.56	----	
LW004S	03/31/1997	09:20	30.26	12.77	17.49	----	
LW004S	07/16/1997	07:40	30.26	14.66	15.60	----	
LW004S	10/21/1997	16:25	30.26	16.88	13.38	----	
LW004S	01/27/1998	12:00	30.26	15.13	15.13	----	
LW004S	05/18/1998	17:32	30.26	16.08	14.18	----	
LW004S	08/17/1998	11:07	30.26	17.30	12.96	----	
LW004S	11/13/1998	09:56	30.26	17.96	12.30	----	
LW004S	02/16/1999	13:16	30.26	13.10	17.16	----	
LW004S	05/18/1999	15:03	30.26	15.43	14.83	----	
LW004S	09/21/1999	11:44	30.26	17.61	12.65	----	
LW004S	12/06/1999	14:19	30.26	17.08	13.18	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW004S	02/16/2000	10:31	30.26	15.84	14.42	----	
LW004S	05/23/2000	16:55	30.26	16.71	13.55	----	
LW004S	08/29/2000	13:39	30.26	17.78	12.48	----	
LW004S	11/09/2000	12:53	30.26	18.17	12.09	----	
LW004S	02/12/2001	16:38	30.26	17.08	13.18	----	
LW004S	06/04/2001	12:08	30.26	17.81	12.45	----	
LW004S	08/16/2001	11:14	30.26	18.39	11.87	----	
LW004S	11/28/2001	12:05	30.26	17.84	12.42	----	
LW004S	02/27/2002	14:01	30.26	15.82	14.44	----	
LW004S	03/05/2002	11:35	30.26	15.95	14.31	----	
LW004S	04/05/2002	08:20	30.26	16.02	14.24	----	
LW004S	05/29/2002	00:00	30.26	16.74	13.52	----	
LW004S	06/27/2002	14:39	30.26	16.89	13.37	----	
LW004S	08/26/2002	16:31	30.26	17.68	12.58	----	
LW004S	11/13/2002	08:22	30.26	19.04	11.22	----	
LW004S	02/11/2003	09:31	30.26	16.03	14.23	----	
LW004S	05/08/2003	07:43	30.26	15.75	14.51	----	
LW004S	08/27/2003	13:59	30.26	17.87	12.39	----	
LW004S	10/23/2003	13:18	30.26	18.52	11.74	----	
LW004S	02/19/2004	13:46	30.26	16.49	13.77	----	
LW004S	06/09/2004	08:31	30.32	17.24	13.08	----	New reference elevation July 2004
LW004S	08/10/2004	11:57	30.32	18.03	12.29	----	
LW004S	11/18/2004	09:23	30.32	18.61	11.71	----	
LW004S	02/15/2005	10:21	30.32	17.68	12.64	----	
LW004S	06/07/2005	18:30	30.32	16.90	13.42	----	
LW004S	08/16/2005	15:48	30.32	17.75	12.57	----	
LW004S	11/14/2005	09:25	30.32	17.72	12.60	----	
LW005S	03/25/1997	12:29	30.79	10.57	20.22	----	
LW005S	03/31/1997	11:35	30.79	10.84	19.95	----	
LW005S	07/16/1997	08:53	30.79	12.29	18.50	----	
LW005S	10/21/1997	15:16	30.79	15.00	15.79	----	
LW005S	01/27/1998	13:36	30.79	12.90	17.89	----	
LW005S	05/18/1998	18:05	30.79	14.19	16.60	----	
LW005S	08/17/1998	11:09	30.79	15.54	15.25	----	
LW005S	11/13/1998	10:38	30.79	16.55	14.24	----	
LW005S	02/16/1999	13:16	30.79	10.59	20.20	----	
LW005S	05/18/1999	16:01	30.79	13.12	17.67	----	
LW005S	09/21/1999	12:40	30.79	16.00	14.79	----	
LW005S	12/06/1999	14:47	30.79	15.64	15.15	----	
LW005S	02/16/2000	09:56	30.79	13.54	17.25	----	
LW005S	05/23/2000	17:51	30.79	14.80	15.99	----	
LW005S	08/29/2000	14:37	30.79	16.35	14.44	----	
LW005S	11/09/2000	13:45	30.79	16.98	13.81	----	
LW005S	02/12/2001	15:13	30.79	16.51	14.28	----	
LW005S	06/04/2001	13:23	30.79	16.43	14.36	----	
LW005S	08/16/2001	12:07	30.79	17.03	13.76	----	
LW005S	11/28/2001	13:01	30.79	16.94	13.85	----	
LW005S	02/27/2002	14:39	30.79	13.48	17.31	----	
LW005S	03/05/2002	11:13	30.79	13.62	17.17	----	
LW005S	04/05/2002	08:38	30.79	13.60	17.19	----	
LW005S	05/29/2002	00:00	30.79	14.81	15.98	----	
LW005S	06/27/2002	10:43	30.79	15.15	15.64	----	
LW005S	08/26/2002	17:08	30.79	16.12	14.67	----	
LW005S	11/13/2002	09:22	30.79	17.39	13.40	----	
LW005S	02/11/2003	10:43	30.79	13.95	16.84	----	
LW005S	05/08/2003	08:32	30.79	13.58	17.21	----	
LW005S	08/27/2003	15:07	30.79	16.11	14.68	----	
LW005S	10/23/2003	14:17	30.79	16.92	13.87	----	
LW005S	02/19/2004	14:00	30.79	13.76	17.03	----	
LW005S	06/09/2004	09:34	30.79	15.50	15.29	----	
LW005S	08/10/2004	12:25	30.79	16.48	14.31	----	
LW005S	11/18/2004	09:40	30.79	17.05	13.74	----	
LW005S	06/07/2005	19:38	30.79	15.34	15.45	----	
LW005S	08/16/2005	16:13	30.79	16.35	14.44	----	
LW005S	11/14/2005	08:12	30.79	16.56	14.23	----	
LW007S	03/31/1997	11:05	28.10	6.75	21.35	----	
LW007S	07/16/1997	08:05	28.10	8.62	19.48	----	
LW007S	10/21/1997	16:45	28.10	11.26	16.84	----	
LW007S	01/27/1998	12:47	28.10	8.85	19.25	----	
LW007S	05/18/1998	17:48	28.10	10.34	17.76	----	
LW007S	08/17/1998	10:48	28.10	11.85	16.25	----	
LW007S	11/13/1998	10:12	28.10	12.90	15.20	----	Strong gasoline odor
LW007S	02/16/1999	13:53	28.10	6.81	21.29	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW007S	05/18/1999	15:23	28.10	9.14	18.96	----	
LW007S	09/21/1999	12:03	28.10	12.37	15.73	----	
LW007S	12/06/1999	14:27	28.10	12.00	16.10	----	
LW007S	02/16/2000	10:46	28.10	9.60	18.50	----	
LW007S	05/23/2000	17:09	28.10	10.70	17.40	----	
LW007S	08/29/2000	13:53	28.10	12.64	15.46	----	
LW007S	11/09/2000	13:14	28.10	13.36	14.74	----	
LW007S	02/12/2001	15:39	28.10	12.94	15.16	----	
LW007S	06/04/2001	12:17	28.10	12.87	15.23	----	
LW007S	08/16/2001	11:33	28.10	13.58	14.52	----	
LW007S	11/28/2001	12:22	28.10	13.34	14.76	----	
LW007S	02/27/2002	14:15	28.10	9.47	18.63	----	
LW007S	03/05/2002	10:52	28.10	9.62	18.48	----	
LW007S	04/05/2002	08:57	28.10	9.73	18.37	----	
LW007S	05/29/2002	00:00	28.10	10.63	17.47	----	
LW007S	06/27/2002	14:45	28.10	11.36	16.74	----	
LW007S	08/26/2002	17:18	28.10	12.69	15.41	----	
LW007S	11/13/2002	09:16	28.10	13.82	14.28	----	
LW007S	02/11/2003	10:37	28.10	10.18	17.92	----	
LW007S	05/08/2003	08:27	28.10	9.54	18.56	----	
LW007S	08/27/2003	14:58	28.10	12.62	15.48	----	
LW007S	10/23/2003	13:39	28.10	13.45	14.65	----	
LW007S	02/19/2004	14:42	28.10	10.01	18.09	----	
LW007S	06/09/2004	09:25	28.10	11.75	16.35	----	
LW007S	08/10/2004	11:26	28.10	13.00	15.10	----	
LW007S	11/18/2004	08:55	28.10	15.53	12.57	----	
LW007S	02/15/2005	09:02	28.10	12.57	15.53	----	
LW007S	06/07/2005	19:05	28.10	11.58	16.52	----	
LW007S	08/16/2005	16:04	28.10	12.72	15.38	----	
LW007S	11/14/2005	09:45	28.10	12.72	15.38	----	
LW008S	05/18/1999	14:55	31.28	14.84	16.44	----	
LW008S	09/21/1999	12:24	31.28	16.94	14.34	----	
LW008S	12/06/1999	14:40	31.28	16.63	14.65	----	
LW008S	02/16/2000	10:16	31.28	15.18	16.10	----	
LW008S	05/23/2000	17:42	31.28	15.88	15.40	----	
LW008S	08/29/2000	14:26	31.28	17.06	14.22	----	
LW008S	11/09/2000	13:32	31.28	17.55	13.73	----	
LW008S	02/12/2001	15:58	31.28	17.24	14.04	----	
LW008S	06/04/2001	13:05	31.28	17.14	14.14	----	
LW008S	08/16/2001	12:00	31.28	17.70	13.58	----	
LW008S	11/28/2001	12:57	31.28	17.63	13.68	0.04	
LW008S	02/27/2002	14:37	31.28	15.12	16.16	----	
LW008S	03/05/2002	11:09	31.28	15.26	16.02	----	
LW008S	04/05/2002	08:17	31.28	15.34	15.94	----	
LW008S	05/29/2002	00:00	31.28	15.91	15.37	----	
LW008S	06/27/2002	15:21	31.28	16.21	15.07	----	
LW008S	08/26/2002	16:38	31.28	16.95	14.33	----	
LW008S	11/13/2002	08:50	31.28	17.88	13.40	----	
LW008S	02/11/2003	09:48	31.28	15.57	15.71	----	
LW008S	05/08/2003	08:00	31.28	15.11	16.17	----	
LW008S	08/27/2003	14:25	31.28	16.97	14.31	----	
LW008S	10/23/2003	12:42	31.28	17.54	13.74	----	
LW008S	02/19/2004	15:03	31.28	15.34	15.94	----	
LW008S	06/09/2004	08:43	31.28	16.50	14.78	----	
LW008S	08/10/2004	12:05	31.28	17.23	14.05	----	
LW008S	11/18/2004	09:15	31.28	17.56	13.72	----	
LW008S	02/15/2005	09:59	31.28	16.91	14.37	----	
LW008S	06/07/2005	19:51	31.28	16.30	14.98	----	
LW008S	08/16/2005	16:25	31.28	17.08	14.20	----	
LW008S	11/14/2005	09:33	31.28	16.99	14.29	----	
LW009S	05/18/1999	14:57	31.04	19.58	11.46	----	Water level appears to be more representative of lower zone
LW009S	09/21/1999	11:36	31.04	dry	----	----	
LW009S	12/06/1999	14:13	31.04	19.64	----	----	Water in endcap
LW009S	02/16/2000	10:24	31.04	19.59	----	----	Water in endcap
LW009S	05/23/2000	16:39	31.04	dry	----	----	
LW009S	08/29/2000	13:28	31.04	dry	----	----	
LW009S	11/09/2000	12:42	31.04	dry	----	----	
LW009S	02/12/2001	16:12	31.04	dry	----	----	
LW009S	06/04/2001	11:50	31.04	dry	----	----	
LW009S	08/16/2001	11:01	31.04	dry	----	----	
LW009S	11/28/2001	11:52	31.04	dry	----	----	
LW009S	02/27/2002	13:48	31.04	dry	----	----	
LW009S	03/05/2002	11:15	31.04	dry	----	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW009S	04/05/2002	08:26	31.04	dry	----	----	
LW009S	05/29/2002	00:00	31.04	dry	----	----	
LW009S	06/27/2002	14:24	31.04	dry	----	----	
LW009S	08/26/2002	16:09	31.04	dry	----	----	
LW009S	11/13/2002	07:49	31.04	dry	----	----	
LW009S	02/11/2003	09:06	31.04	dry	----	----	Recorded DTW of 19.58; well most likely dry
LW009S	05/08/2003	07:11	31.04	dry	----	----	
LW009S	08/27/2003	13:48	31.04	dry	----	----	
LW009S	10/23/2003	12:46	31.04	dry	----	----	
LW009S	02/19/2004	13:04	31.04	dry	----	----	
LW009S	06/09/2004	08:12	31.04	dry	----	----	
LW009S	08/10/2004	11:53	31.04	dry	----	----	
LW009S	11/18/2004	09:28	31.04	dry	----	----	
LW009S	02/15/2005	----	31.04	dry	----	----	
LW009S	06/07/2005	17:22	31.04	dry	----	----	
LW009S	08/16/2005	15:40	31.04	dry	----	----	
LW009S	11/14/2005	10:07	31.04	dry	----	----	
LW010S	05/18/1999	14:59	30.75	17.24	13.51	----	
LW010S	09/21/1999	11:38	30.75	19.13	11.62	----	
LW010S	12/06/1999	14:14	30.75	18.54	12.21	----	
LW010S	02/16/2000	10:26	30.75	17.62	13.13	----	
LW010S	05/23/2000	16:41	30.75	18.25	12.50	----	
LW010S	08/29/2000	13:30	30.75	dry	----	----	
LW010S	11/09/2000	12:45	30.75	dry	----	----	
LW010S	02/12/2001	16:14	30.75	dry	----	----	
LW010S	06/04/2001	11:53	30.75	dry	----	----	
LW010S	08/16/2001	11:03	30.75	dry	----	----	
LW010S	11/28/2001	11:54	30.75	dry	----	----	
LW010S	02/27/2002	13:50	30.75	17.77	12.98	----	
LW010S	03/05/2002	11:32	30.75	17.84	12.91	----	
LW010S	04/05/2002	08:24	30.75	17.82	12.93	----	
LW010S	05/29/2002	00:00	30.75	18.22	12.53	----	
LW010S	06/27/2002	14:28	30.75	18.27	12.48	----	
LW010S	08/26/2002	16:15	30.75	dry	----	----	
LW010S	11/13/2002	08:00	30.75	dry	----	----	
LW010S	02/11/2003	09:20	30.75	17.50	13.25	----	
LW010S	05/08/2003	07:32	30.75	17.68	13.07	----	
LW010S	08/27/2003	13:51	30.75	dry	----	----	
LW010S	10/23/2003	12:51	30.75	dry	----	----	
LW010S	02/19/2004	13:26	30.75	17.77	12.98	----	
LW010S	06/09/2004	08:22	30.75	18.67	12.08	----	
LW010S	08/10/2004	11:54	30.75	dry	----	----	
LW010S	11/18/2004	09:26	30.75	dry	----	----	
LW010S	02/15/2005	10:09	30.75	18.86	11.89	----	
LW010S	06/07/2005	18:20	30.75	18.35	12.40	----	
LW010S	08/16/2005	15:46	30.75	dry	----	----	
LW010S	11/14/2005	10:00	30.75	19.12	11.63	----	
LW011S	05/18/1999	15:10	29.10	11.47	17.63	----	
LW011S	09/21/1999	11:51	29.10	14.23	14.87	----	
LW011S	12/06/1999	15:05	29.10	14.00	15.10	----	
LW011S	02/16/2000	11:01	29.10	11.94	17.16	----	
LW011S	05/23/2000	11:01	29.10	13.01	16.09	----	
LW011S	08/29/2000	14:55	29.10	14.51	14.59	----	
LW011S	11/09/2000	13:36	29.10	15.48	13.92	0.37	First occurrence of product in well.
LW011S	02/12/2001	15:18	29.10	14.62	14.48	----	
LW011S	06/04/2001	13:12	29.10	14.65	14.45	----	
LW011S	08/16/2001	11:24	29.10	15.46	13.86	0.28	
LW011S	11/28/2001	12:51	29.10	15.10	14.00	----	Trace product
LW011S	02/27/2002	14:59	29.10	11.86	17.24	----	
LW011S	03/05/2002	11:40	29.10	11.96	17.14	----	
LW011S	04/05/2002	08:34	29.10	12.07	17.03	----	
LW011S	05/29/2002	00:00	29.10	13.00	16.10	----	
LW011S	06/27/2002	15:09	29.10	13.40	15.70	----	
LW011S	08/26/2002	16:48	29.10	14.37	14.73	----	
LW011S	11/13/2002	08:54	29.10	15.53	13.57	----	
LW011S	02/11/2003	10:03	29.10	12.46	16.64	----	
LW011S	05/08/2003	08:07	29.10	11.91	17.19	----	
LW011S	08/27/2003	14:36	29.10	14.32	14.78	----	
LW011S	10/23/2003	14:12	29.10	15.12	13.98	----	
LW011S	02/19/2004	14:02	29.10	12.13	16.97	----	
LW011S	06/09/2004	08:56	29.10	13.72	15.38	----	
LW011S	08/10/2004	12:08	29.10	14.66	14.44	----	
LW011S	11/18/2004	09:08	29.10	15.33	13.84	0.09	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW011S	02/15/2005	11:03	29.10	14.39	14.71	----	Product odor
LW011S	06/07/2005	20:05	29.10	13.53	15.57	----	
LW011S	08/16/2005	17:10	29.10	14.55	14.55	----	
LW011S	11/14/2005	08:16	29.10	14.68	14.42	----	
LW013S	05/23/2000	16:51	30.17	17.23	12.94	----	
LW013S	08/29/2000	13:37	30.17	18.27	11.90	----	
LW013S	11/09/2000	12:51	30.17	18.75	11.42	----	
LW013S	02/12/2001	16:30	30.17	18.26	11.91	----	
LW013S	06/04/2001	12:06	30.17	18.30	11.87	----	
LW013S	08/16/2001	11:13	30.17	18.81	11.36	----	
LW013S	11/28/2001	12:03	30.17	18.37	11.80	----	
LW013S	02/27/2002	13:58	30.17	16.60	13.57	----	
LW013S	03/05/2002	11:33	30.17	16.68	13.49	----	
LW013S	04/05/2002	08:22	30.17	16.73	13.44	----	
LW013S	05/29/2002	00:00	30.17	17.30	12.87	----	
LW013S	06/27/2002	14:37	30.17	17.38	12.79	----	
LW013S	08/26/2002	16:30	30.17	18.11	12.06	----	
LW013S	11/13/2002	08:14	30.17	19.04	11.13	----	
LW013S	02/11/2003	09:30	30.17	16.57	13.60	----	
LW013S	05/08/2003	07:41	30.17	16.53	13.64	----	
LW013S	08/27/2003	13:57	30.17	18.27	11.90	----	
LW013S	10/23/2003	13:14	30.17	18.81	11.36	----	
LW013S	02/19/2004	13:40	30.17	16.62	13.55	----	
LW013S	06/09/2004	08:30	30.17	17.66	12.51	----	
LW013S	08/10/2004	11:55	30.17	18.33	11.84	----	
LW013S	11/18/2004	09:24	30.17	18.92	11.25	----	
LW013S	02/15/2005	10:13	30.17	18.00	12.17	----	
LW013S	06/07/2005	18:25	30.17	17.31	12.86	----	
LW013S	08/16/2005	15:46	30.17	18.12	12.05	----	
LW013S	11/14/2005	09:27	30.17	18.21	11.96	----	
LW019S	10/23/2003	11:54	27.72	16.62	11.10	----	
LW019S	02/19/2004	15:00	27.72	13.84	13.88	----	
LW019S	06/09/2004	07:27	27.72	15.46	12.26	----	
LW019S	08/10/2004	11:07	27.72	16.35	11.37	----	
LW019S	11/18/2004	08:51	27.72	17.18	10.54	----	
LW019S	02/15/2005	08:20	27.72	16.10	11.62	----	
LW019S	06/07/2005	15:39	27.72	14.82	12.90	----	
LW019S	08/16/2005	16:12	27.72	15.86	11.86	----	Petro odor
LW019S	11/14/2005	09:35	27.72	16.45	11.27	----	
LW020S	10/23/2003	12:14	29.51	14.86	14.65	----	
LW020S	02/19/2004	14:45	29.51	12.55	16.96	----	
LW020S	06/09/2004	07:47	29.51	14.18	15.33	----	
LW020S	08/10/2004	11:05	29.51	14.90	14.61	----	
LW020S	11/18/2004	08:46	29.51	14.42	15.09	----	
LW020S	02/15/2005	08:28	29.51	14.23	15.28	----	
LW020S	06/07/2005	15:27	29.51	13.70	15.81	----	
LW020S	08/16/2005	16:08	29.51	14.68	14.83	----	Petro odor
LW020S	11/14/2005	10:15	29.51	14.04	15.47	----	
LW021S	10/23/2003	12:16	30.29	16.57	13.72	----	
LW021S	02/19/2004	14:54	30.29	13.82	17.29	1.03	
LW021S	06/09/2004	07:44	30.29	15.36	15.02	0.11	
LW021S	08/10/2004	11:02	30.29	16.40	14.03	0.17	
LW021S	11/18/2004	08:43	30.29	16.51	13.87	0.11	
LW021S	02/15/2005	10:52	30.29	15.63	14.68	0.02	
LW021S	06/09/2005	16:00	30.29	14.42	15.94	0.09	Product observed
LW021S	08/16/2005	17:33	30.29	16.02	14.40	0.16	
LW021S	11/14/2005	10:20	30.29	15.61	14.71	0.04	
LW027S	10/23/2003	12:20	30.59	25.40	5.19	----	
LW027S	02/19/2004	12:44	30.59	22.07	9.07	0.69	
LW027S	06/09/2004	07:39	30.59	21.26	9.33	----	
LW027S	08/10/2004	10:58	30.59	24.56	6.13	0.12	
LW027S	11/18/2004	07:39	30.59	24.68	5.93	0.02	
LW027S	02/15/2005	10:58	30.59	23.66	6.95	0.02	
LW027S	06/06/2005	19:10	30.59	21.65	9.02	0.10	Product observed
LW027S	08/16/2005	16:30	30.59	24.24	6.37	0.03	
LW027S	11/14/2005	10:02	30.59	24.46	6.13	----	Strong petroleum odor
LW028S	10/23/2003	14:26	30.98	dry	----	----	
LW028S	02/19/2004	15:17	30.98	12.87	18.11	----	
LW028S	06/09/2004	09:52	30.98	15.15	15.83	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW028S	08/10/2004	11:45	30.98	dry	----	----	
LW028S	11/18/2004	09:45	30.98	dry	----	----	
LW028S	02/15/2005	11:13	30.98	15.31	15.67	----	
LW028S	06/07/2005	12:17	30.98	14.80	16.18	----	
LW028S	08/16/2005	15:32	30.98	dry	----	----	
LW028S	11/14/2005	07:30	30.98	15.47	15.51	----	
LW029S	10/23/2003	14:39	31.34	18.88	12.46	----	
LW029S	02/19/2004	15:30	31.34	16.52	14.82	----	
LW029S	06/09/2004	09:43	31.34	17.85	13.49	----	
LW029S	08/10/2004	11:50	31.34	18.56	12.78	----	
LW029S	11/18/2004	09:58	31.34	18.97	12.37	----	
LW029S	02/15/2005	11:35	31.34	18.15	13.19	----	
LW029S	06/07/2005	14:19	31.34	17.61	13.73	----	
LW029S	08/16/2005	15:34	31.34	18.45	12.89	----	
LW029S	11/14/2005	07:55	31.34	18.55	12.79	----	
LW030S	10/23/2003	14:41	30.08	17.91	12.17	----	
LW030S	02/19/2004	15:32	30.08	15.58	14.50	----	
LW030S	06/09/2004	09:46	30.08	16.91	13.17	----	
LW030S	08/10/2004	11:52	30.08	17.62	12.46	----	
LW030S	11/18/2004	09:59	30.08	17.96	12.12	----	
LW030S	02/15/2005	11:33	30.08	17.24	12.84	----	
LW030S	06/07/2005	14:23	30.08	16.71	13.37	----	
LW030S	08/16/2005	15:36	30.08	17.52	12.56	----	
LW030S	11/14/2005	07:52	30.08	17.54	12.54	----	
LW031S	10/23/2003	14:30	31.26	18.87	12.39	----	
LW031S	02/19/2004	15:21	31.26	16.07	15.19	----	
LW031S	06/09/2004	09:56	31.26	17.67	13.59	----	
LW031S	08/10/2004	11:42	31.26	16.52	14.74	----	
LW031S	11/18/2004	09:50	31.26	18.93	12.33	----	
LW031S	02/15/2005	11:08	31.26	18.14	13.12	----	
LW031S	06/07/2005	13:57	31.26	17.45	13.81	----	
LW031S	08/16/2005	13:24	31.26	18.40	12.86	----	
LW031S	11/14/2005	08:40	31.26	16.61	14.65	----	
LW032S	10/23/2003	14:32	30.71	17.02	13.69	----	
LW032S	02/19/2004	15:29	30.71	13.59	17.12	----	
LW032S	06/09/2004	09:58	30.71	15.66	15.05	----	
LW032S	08/10/2004	11:46	30.71	16.67	14.04	----	
LW032S	11/18/2004	09:52	30.71	17.04	13.67	----	
LW032S	02/15/2005	10:58	30.71	16.26	14.45	----	
LW032S	06/07/2005	13:33	30.71	15.50	15.21	----	
LW032S	08/16/2005	15:28	30.71	16.53	14.18	----	
LW032S	11/14/2005	07:53	30.71	16.41	14.30	----	
LW033S	10/23/2003	14:35	29.89	dry	----	----	
LW033S	02/19/2004	15:23	29.89	13.89	16.00	----	
LW033S	06/09/2004	10:02	29.89	15.60	14.29	----	
LW033S	08/10/2004	11:44	29.89	16.69	13.20	----	
LW033S	11/18/2004	09:51	29.89	dry	----	----	
LW033S	02/15/2005	11:05	29.89	16.36	13.53	----	
LW033S	06/07/2005	12:00	29.89	15.44	14.45	----	
LW033S	08/16/2005	13:47	29.89	16.54	13.35	----	
LW033S	11/14/2005	07:50	29.89	16.55	13.34	----	
LW034S	10/23/2003	14:24	30.93	16.99	13.94	----	
LW034S	02/19/2004	15:15	30.93	13.29	17.64	----	
LW034S	06/09/2004	09:50	30.93	15.53	15.40	----	
LW034S	08/10/2004	11:39	30.93	16.61	14.32	----	
LW034S	11/18/2004	09:46	30.93	17.00	13.93	----	
LW034S	02/15/2005	11:16	30.93	16.20	14.73	----	
LW034S	06/07/2005	11:30	30.93	15.38	15.55	----	
LW034S	08/16/2005	16:16	30.93	16.49	14.44	----	
LW034S	11/14/2005	07:40	30.93	16.39	14.54	----	
LW040S	11/18/2004	08:59	33.70	dry	----	----	
LW040S	02/15/2005	08:45	33.70	dry	----	----	
LW040S	06/07/2005	15:55	33.70	19.84	13.86	----	
LW040S	08/16/2005	16:15	33.70	dry	----	----	
LW040S	11/14/2005	09:32	33.70	20.60	13.10	----	
LW041S	11/18/2004	10:02	29.85	dry	----	----	
LW041S	02/15/2005	11:26	29.85	dry	----	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW041S	06/07/2005	14:43	29.85	19.05	10.80	----	
LW041S	08/16/2005	15:38	29.85	dry	----	----	
LW041S	11/14/2005	07:45	29.85	20.17	9.68	----	
LW042S	11/18/2004	10:00	30.45	18.89	11.56	----	
LW042S	02/15/2005	11:30	30.45	18.25	12.20	----	
LW042S	06/07/2005	14:40	30.45	17.88	12.57	----	
LW042S	08/16/2005	15:36	30.45	18.52	11.93	----	
LW042S	11/14/2005	07:48	30.45	18.49	11.96	----	
LW043S	11/18/2004	09:49	30.66	18.44	12.22	----	
LW043S	02/15/2005	11:10	30.66	17.67	12.99	----	
LW043S	06/07/2005	14:02	30.66	17.07	13.59	----	
LW043S	08/16/2005	15:21	30.66	17.96	12.70	----	
LW043S	11/14/2005	07:47	30.66	17.94	12.72	----	
LW044S	11/18/2004	09:53	30.86	17.44	13.42	----	
LW044S	02/15/2005	10:53	30.86	16.60	14.26	----	
LW044S	06/07/2005	14:06	30.86	15.90	14.96	----	
LW044S	08/16/2005	15:30	30.86	16.95	13.91	----	
LW044S	11/14/2005	07:43	30.86	16.80	14.06	----	
LW101S	03/31/1997	09:54	29.41	4.51	24.90	----	
LW101S	07/16/1997	09:01	29.41	6.81	22.60	----	
LW101S	10/21/1997	18:01	29.41	7.28	22.13	----	
LW101S	01/27/1998	14:15	29.41	4.10	25.31	----	
LW101S	05/18/1998	18:18	29.41	6.68	22.73	----	
LW101S	08/17/1998	11:21	29.41	8.14	21.27	----	
LW101S	11/13/1998	10:48	29.41	8.61	20.80	----	
LW101S	02/16/1999	14:11	29.41	3.21	26.20	----	
LW101S	05/18/1999	16:17	29.41	6.00	23.41	----	
LW101S	09/21/1999	12:54	29.41	8.60	20.81	----	
LW101S	12/06/1999	14:58	29.41	6.98	22.43	----	
LW101S	02/16/2000	09:44	29.41	4.96	24.45	----	
LW101S	05/23/2000	18:06	29.41	6.83	22.58	----	
LW101S	08/29/2000	14:47	29.41	8.67	20.74	----	
LW101S	11/09/2000	13:56	29.41	9.39	20.02	----	
LW101S	02/12/2001	15:02	29.41	8.02	21.39	----	
LW101S	06/04/2001	13:35	29.41	8.40	21.01	----	
LW101S	08/16/2001	12:20	29.41	9.44	19.97	----	
LW101S	11/28/2001	13:12	29.41	8.58	20.83	----	
LW101S	02/27/2002	14:52	29.41	5.70	23.71	----	
LW101S	06/27/2002	15:32	29.41	7.80	21.61	----	
LW101S	08/26/2002	17:34	29.41	8.85	20.56	----	
LW101S	11/13/2002	09:35	29.41	9.92	19.49	----	
LW101S	02/11/2003	10:59	29.41	5.27	24.14	----	
LW101S	05/08/2003	08:43	29.41	5.40	24.01	----	
LW101S	08/27/2003	15:14	29.41	8.59	20.82	----	
LW102S	03/31/1997	10:01	25.77	1.86	23.91	----	
LW102S	07/16/1997	09:09	25.77	3.91	21.86	----	
LW102S	10/21/1997	17:59	25.77	4.03	21.74	----	
LW102S	01/27/1998	14:07	25.77	1.26	24.51	----	
LW102S	05/18/1998	18:15	25.77	3.57	22.20	----	
LW102S	08/17/1998	11:18	25.77	4.88	20.89	----	
LW102S	11/13/1998	10:45	25.77	5.14	20.63	----	
LW102S	02/16/1999	14:08	25.77	0.45	25.32	----	
LW102S	05/18/1999	16:12	25.77	3.24	22.53	----	
LW102S	09/21/1999	12:52	25.77	5.33	20.44	----	
LW102S	12/06/1999	14:56	25.77	3.67	22.10	----	
LW102S	02/16/2000	09:41	25.77	1.91	23.86	----	
LW102S	05/23/2000	18:03	25.77	3.72	22.05	----	
LW102S	08/29/2000	14:45	25.77	5.40	20.37	----	
LW102S	11/09/2000	13:53	25.77	5.94	19.83	----	
LW102S	02/12/2001	15:00	25.77	4.52	21.25	----	
LW102S	06/04/2001	13:32	25.77	4.93	20.84	----	
LW102S	08/16/2001	12:17	25.77	5.96	19.81	----	
LW102S	11/28/2001	13:10	25.77	5.15	20.62	----	
LW102S	02/27/2002	14:48	25.77	2.14	23.63	----	
LW102S	06/27/2002	15:30	25.77	4.50	21.27	----	
LW102S	08/26/2002	17:39	25.77	5.48	20.29	----	
LW102S	11/13/2002	09:32	25.77	6.50	19.27	----	
LW102S	02/11/2003	10:55	25.77	1.88	23.89	----	
LW102S	05/08/2003	08:40	25.77	2.22	23.55	----	
LW102S	08/27/2003	15:17	25.77	5.24	20.53	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW103S	03/31/1997	09:50	29.07	5.50	23.57	----	
LW103S	07/16/1997	08:59	29.07	6.93	22.14	----	
LW103S	10/21/1997	18:03	29.07	7.08	21.99	----	
LW103S	01/27/1998	14:20	29.07	5.11	23.96	----	
LW103S	05/18/1998	18:21	29.07	6.57	22.50	----	
LW103S	08/17/1998	11:24	29.07	7.80	21.27	----	
LW103S	11/13/1998	10:51	29.07	7.91	21.16	----	
LW103S	02/16/1999	14:14	29.07	4.54	24.53	----	
LW103S	05/18/1999	16:20	29.07	6.20	22.87	----	
LW103S	09/21/1999	12:57	29.07	8.30	20.77	----	
LW103S	12/06/1999	15:00	29.07	6.60	22.47	----	
LW103S	02/16/2000	09:46	29.07	5.50	23.57	----	
LW103S	05/23/2000	18:10	29.07	6.64	22.43	----	
LW103S	08/29/2000	14:50	29.07	8.41	20.66	----	
LW103S	11/09/2000	13:58	29.07	8.78	20.29	----	
LW103S	02/12/2001	15:04	29.07	7.39	21.68	----	
LW103S	06/04/2001	13:37	29.07	7.83	21.24	----	
LW103S	08/16/2001	12:23	29.07	9.07	20.00	----	
LW103S	11/28/2001	13:16	29.07	8.02	21.05	----	
LW103S	02/27/2002	14:50	29.07	5.26	23.81	----	
LW103S	06/27/2002	15:34	29.07	7.42	21.65	----	
LW103S	08/26/2002	17:36	29.07	8.57	20.50	----	
LW103S	11/13/2002	09:37	29.07	9.48	19.59	----	
LW103S	02/11/2003	11:03	29.07	5.65	23.42	----	
LW103S	05/08/2003	08:46	29.07	5.86	23.21	----	
LW103S	08/27/2003	15:15	29.07	8.33	20.74	----	
LW104S	03/31/1997	10:06	26.57	3.55	23.02	----	
LW104S	07/16/1997	08:54	26.57	5.71	20.86	----	
LW104S	10/21/1997	16:22	26.57	5.71	20.86	----	
LW104S	01/27/1998	14:00	26.57	2.84	23.73	----	
LW104S	05/18/1998	18:11	26.57	5.17	21.40	----	
LW104S	08/17/1998	11:15	26.57	6.64	19.93	----	
LW104S	11/13/1998	10:41	26.57	6.72	19.85	----	
LW104S	02/16/1999	14:03	26.57	2.11	24.46	----	
LW104S	05/18/1999	16:08	26.57	4.97	21.60	----	
LW104S	09/21/1999	12:48	26.57	7.18	19.39	----	
LW104S	12/06/1999	14:54	26.57	5.00	21.57	----	
LW104S	02/16/2000	09:39	26.57	3.61	22.96	----	
LW104S	05/23/2000	17:59	26.57	5.61	20.96	----	
LW104S	08/29/2000	14:43	26.57	7.08	19.49	----	
LW104S	11/09/2000	13:51	26.57	7.49	19.08	----	
LW104S	02/12/2001	14:57	26.57	6.28	20.29	----	
LW104S	06/04/2001	13:30	26.57	6.64	19.93	----	
LW104S	08/16/2001	12:15	26.57	7.56	19.01	----	
LW104S	11/28/2001	13:06	26.57	6.30	20.27	----	
LW104S	02/27/2002	14:46	26.57	4.07	22.50	----	
LW104S	06/27/2002	15:27	26.57	6.28	20.29	----	
LW104S	08/26/2002	17:41	26.57	7.13	19.44	----	
LW104S	11/13/2002	09:30	26.57	7.85	18.72	----	
LW104S	02/11/2003	10:51	26.57	3.72	22.85	----	
LW104S	05/08/2003	08:38	26.57	4.94	21.63	----	
LW104S	08/27/2003	15:19	26.57	6.87	19.70	----	
RW1	05/18/1999	15:06	31.46	15.70	15.76	----	
RW1	09/21/1999	11:46	31.46	18.02	13.44	----	
RW1	12/06/1999	14:43	31.46	17.73	13.73	----	
RW1	02/16/2000	10:33	31.46	16.14	15.32	----	
RW1	05/23/2000	17:46	31.46	17.09	14.37	----	
RW1	08/29/2000	14:28	31.46	18.29	13.17	----	
RW1	11/09/2000	12:57	31.46	18.67	12.79	----	
RW1	02/12/2001	16:44	31.46	18.30	13.16	----	
RW1	06/04/2001	13:17	31.46	18.22	13.24	----	
RW1	08/16/2001	10:55	31.46		31.46	----	Vapor/water recovery system test running - not measured
RW1	11/28/2001	12:02	31.46	18.55	12.91	----	
RW1	02/27/2002	14:03	31.46	16.12	15.34	----	
RW1	03/05/2002	11:38	31.46	16.33	15.13	----	
RW1	04/05/2002	08:27	31.46	16.28	15.18	----	
RW1	05/29/2002	00:00	31.46	17.00	14.46	----	
RW1	06/27/2002	15:16	31.46	17.33	14.13	----	
RW1	08/26/2002	16:40	31.46	18.00	13.46	----	
RW1	11/13/2002	08:26	31.46	18.85	12.61	----	
RW1	02/11/2003	09:34	31.46	16.50	14.96	----	
RW1	05/08/2003	07:46	31.46	16.23	15.23	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RW1	08/27/2003	14:04	31.46	18.09	13.37	----	
RW1	10/23/2003	13:23	31.46	18.55	12.91	----	
RW1	02/19/2004	13:52	31.46	16.31	15.15	----	
RW1	06/09/2004	08:35	31.46	17.60	13.86	----	
RW1	08/10/2004	12:03	31.46	18.22	13.24	----	
RW1	11/18/2004	09:21	31.46	18.61	12.85	----	
RW1	02/15/2005	10:24	31.46	17.95	13.51	----	
RW1	06/07/2005	19:55	31.46	17.20	14.26	----	
RW1	08/16/2005	15:50	31.46	18.07	13.39	----	
RW1	11/14/2005	09:03	31.46	18.09	13.37	----	
RW3	12/06/1999	15:24	29.96	14.20	15.76	----	
RW3	02/16/2000	10:37	29.96	11.88	18.08	----	
RW3	05/23/2000	17:26	29.96	13.02	16.94	----	
RW3	08/29/2000	13:42	29.96	14.88	15.08	----	
RW3	11/09/2000	13:03	29.96	15.58	14.38	----	
RW3	02/12/2001	15:28	29.96	15.13	14.83	----	
RW3	06/04/2001	12:30	29.96	15.09	14.87	----	
RW3	08/16/2001	11:44	29.96	15.74	14.22	----	
RW3	11/28/2001	12:40	29.96	15.52	14.44	----	
RW3	02/27/2002	14:26	29.96	11.80	18.16	----	
RW3	03/05/2002	11:02	29.96	11.94	18.02	----	
RW3	04/05/2002	08:44	29.96	12.06	17.90	----	
RW3	05/29/2002	00:00	29.96	13.00	16.96	----	
RW3	06/27/2002	14:59	29.96	13.64	16.32	----	
RW3							Abandoned August 2003
PZ1	05/23/2000	17:47	28.04	14.21	13.83	----	
PZ1	08/29/2000	14:30	28.04	15.33	12.71	----	
PZ1	11/09/2000	12:55	28.04	15.68	12.36	----	
PZ1	02/12/2001	16:42	28.04	15.30	12.74	----	
PZ1	06/04/2001	13:20	28.04	15.29	12.75	----	
PZ1	08/16/2001	11:17	28.04	15.94	12.10	----	
PZ1	11/28/2001	12:09	28.04	15.48	12.56	----	
PZ1	02/27/2002	14:02	28.04	13.28	14.76	----	
PZ1	03/05/2002	11:34	28.04	13.40	14.64	----	
PZ1	04/05/2002	08:32	28.04	13.44	14.60	----	
PZ1	05/29/2002	00:00	28.04	14.16	13.88	----	
PZ1	06/27/2002	15:17	28.04	14.50	13.54	----	
PZ1	08/26/2002	16:33	28.04	15.17	12.87	----	
PZ1	11/13/2002	08:42	28.04	15.83	12.21	----	
PZ1	02/11/2003	09:36	28.04	13.58	14.46	----	
PZ1	05/08/2003	07:58	28.04	13.25	14.79	----	
PZ1	08/27/2003	14:20	28.04	15.32	12.72	----	
PZ1	10/23/2003	13:19	28.04	15.75	12.29	----	
PZ1	02/19/2004	13:56	28.04	13.41	14.63	----	
PZ1	06/09/2004	08:37	28.04	14.75	13.29	----	
PZ1	08/10/2004	12:00	28.04	15.42	12.62	----	
PZ1	11/18/2004	09:22	28.04	15.46	12.58	----	
PZ1	06/07/2005	18:45	28.04	14.30	13.74	----	
PZ1	08/16/2005	15:54	28.04	15.13	12.91	----	
PZ1	11/14/2005	09:50	28.04	15.11	12.93	----	
PZ2	06/27/2002	15:18	31.97	18.31	13.66	----	
PZ2	08/26/2002	16:34	31.97	18.88	13.09	----	
PZ2	11/13/2002	08:25	31.97	19.40	12.57	----	
PZ2	02/11/2003	09:44	31.97	17.46	14.51	----	
PZ2	05/08/2003	07:45	31.97	17.15	14.82	----	
PZ2	08/27/2003	14:03	31.97	19.02	12.95	----	
PZ2	10/23/2003	13:21	31.97	19.27	12.75	0.06	
PZ2	02/19/2004	13:50	31.97	17.36	14.61	----	
PZ2	06/09/2004	08:33	31.97	18.51	13.46	----	
PZ2	08/10/2004	12:02	31.97	19.12	12.85	----	
PZ2	11/18/2004	09:20	31.97	19.24	12.73	----	
PZ2	06/07/2005	18:35	31.97	18.19	13.78	----	
PZ2	08/16/2005	15:52	31.97	18.90	13.07	----	
PZ2	11/14/2005	09:20	31.97	18.84	13.13	----	
PZ3	06/27/2002	15:19	31.12	19.35	11.77	----	
PZ3	08/26/2002	16:35	31.12	19.74	11.38	----	
PZ3	11/13/2002	08:45	31.12	16.87	----	----	
PZ3	02/11/2003	09:40	31.12	19.05	12.07	----	
PZ3	05/08/2003	07:53	31.12	18.95	12.17	----	
PZ3	08/27/2003	14:26	31.12	19.82	11.30	----	
PZ3	10/23/2003	12:39	31.12	dry	----	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
PZ3	02/19/2004	15:09	31.12	19.07	12.05	----	
PZ3	06/09/2004	08:39	31.12	19.53	11.59	----	
PZ3	08/10/2004	12:04	31.12	19.86	11.26	----	
PZ3	11/18/2004	09:19	31.12	dry	----	----	
PZ3	06/07/2005	18:40	31.12	18.33	12.79	----	
PZ3	08/16/2005	16:00	31.12	19.73	11.39	----	
PZ3	11/14/2005	09:40	31.12	20.20	10.92	----	
PZ4	06/27/2002	15:20	28.47	dry	----	----	
PZ4	08/26/2002	16:36	28.47	dry	----	----	
PZ4	11/13/2002	08:48	28.47	16.87	11.60	----	
PZ4	02/11/2003	09:41	28.47	dry	----	----	
PZ4	05/08/2003	07:52	28.47	17.78	10.69	----	
PZ4	08/27/2003	14:27	28.47	dry	----	----	
PZ4	10/23/2003	12:36	28.47	dry	----	----	
PZ4	02/19/2004	15:08	28.47	dry	----	----	
PZ4	06/09/2004	08:41	28.47	dry	----	----	
PZ4	08/10/2004	12:03	28.47	dry	----	----	
PZ4	11/18/2004	09:18	28.47	dry	----	----	
PZ4	06/07/2005	19:00	28.47	dry	----	----	
PZ4	08/16/2005	16:04	28.47	dry	----	----	
PZ4	11/14/2005	10:14	28.47	dry	----	----	
OX001S	06/27/2002	15:13	33.38	17.85	15.53	----	
OX001S	08/26/2002	16:45	33.38	18.75	14.63	----	
OX001S	11/13/2002	08:30	33.38	19.92	13.46	----	
OX001S	02/11/2003	09:59	33.38	16.96	16.42	----	
OX001S	05/08/2003	08:04	33.38	16.48	16.90	----	
OX001S	08/27/2003	14:38	33.38	18.76	14.62	----	
OX001S	10/23/2003	14:09	33.38	19.51	13.87	----	
OX001S	02/19/2004	14:10	33.38	16.64	16.74	----	
OX001S	06/09/2004	08:45	33.38	18.16	15.22	----	
OX001S	08/10/2004	12:07	33.38	19.08	14.30	----	
OX001S	11/18/2004	09:07	33.38	19.63	13.77	0.03	
OX001S	02/15/2005	11:11	33.38	18.77	14.61	----	Strong product odor
OX001S	06/07/2005	19:35	33.38	17.97	15.41	----	
OX001S	08/16/2005	16:35	33.38	18.94	14.44	----	
OX001S	11/14/2005	08:53	33.38	19.03	14.35	----	
OX002S	06/27/2002	15:12	28.69	13.22	15.47	----	
OX002S	08/26/2002	16:44	28.69	14.26	14.43	----	
OX002S	11/13/2002	08:33	28.81	15.39	13.42	----	New reference elevation September 2002
OX002S	02/11/2003	10:06	28.81	12.39	16.42	----	
OX002S	05/08/2003	08:09	28.81	11.90	16.91	----	
OX002S	08/27/2003	14:33	28.81	14.55	14.26	----	
OX002S	10/23/2003	14:14	28.81	15.22	13.84	0.31	
OX002S	02/19/2004	14:07	28.81	12.06	16.75	----	
OX002S	06/09/2004	08:52	28.95	13.61	15.34	----	New reference elevation July 2004
OX002S	08/10/2004	12:09	28.95	14.53	14.42	----	
OX002S	11/18/2004	09:10	28.95	15.18	13.87	0.13	
OX002S	02/15/2005	11:09	28.95	14.25	14.72	0.03	
OX002S	06/07/2005	20:00	28.95	13.45	15.50	----	
OX002S	08/16/2005	00:00	28.95	14.58	14.55	0.23	
OX002S	11/14/2005	08:09	28.95	14.58	14.43	0.07	Strong odor
OX003S	06/27/2002	15:14	30.01	14.65	15.36	----	
OX003S	08/26/2002	16:42	30.01	15.50	14.51	----	
OX003S	11/13/2002	08:31	30.01	16.65	13.36	----	
OX003S	02/11/2003	09:58	30.01	13.78	16.23	----	
OX003S	05/08/2003	08:03	30.01	13.30	16.71	----	
OX003S	08/27/2003	14:40	30.01	15.52	14.49	----	
OX003S	10/23/2003	14:10	30.01	16.22	13.79	----	
OX003S	02/19/2004	14:09	30.01	13.47	16.54	----	
OX003S	06/09/2004	08:51	30.01	14.96	15.05	----	
OX003S	08/10/2004	12:06	30.01	15.81	14.20	----	
OX003S	11/18/2004	09:13	30.01	16.61	13.66	0.33	
OX003S	02/15/2005	11:18	30.01	15.53	14.48	----	Slight product odor
OX003S	06/07/2005	19:50	30.01	15.78	14.23	----	
OX003S	08/16/2005	17:20	30.01	15.70	14.31	----	
OX003S	11/14/2005	11:23	30.01	15.77	14.24	----	
OX004S	06/27/2002	15:15	33.42	19.07	14.35	----	
OX004S	08/26/2002	16:39	33.42	19.74	13.68	----	
OX004S	11/13/2002	08:24	33.54	20.73	12.81	----	New reference elevation September 2002
OX004S	02/11/2003	09:38	33.54	18.39	15.15	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
OX004S	05/08/2003	07:47	33.54	19.07	14.47	----	
OX004S	08/27/2003	14:07	33.54	19.95	13.59	----	
OX004S	10/23/2003	12:43	33.54	dry	----	----	
OX004S	02/19/2004	13:54	33.54	18.21	15.33	----	
OX004S	06/09/2004	08:38	33.51	19.44	14.07	----	New reference elevation July 2004
OX004S	08/10/2004	12:06	33.51	20.12	13.39	----	
OX004S	11/18/2004	09:17	33.51	dry	----	----	
OX004S	02/15/2005	10:27	33.51	19.82	13.69	----	
OX004S	06/07/2005	19:40	33.51	19.15	14.36	----	
OX004S	08/16/2005	15:52	33.51	20.00	13.51	----	
OX004S	11/14/2005	09:00	33.51	19.99	13.52	----	
OX005S	10/23/2003	13:44	30.74	16.15	14.59	----	
OX005S	02/19/2004	14:25	30.74	12.46	18.28	----	
OX005S	06/09/2004	09:14	30.74	14.35	16.39	----	
OX005S	08/10/2004	12:18	30.74	15.65	15.09	----	
OX005S	11/18/2004	08:58	30.74	16.26	14.48	----	
OX005S	02/15/2005	09:28	30.74	15.22	15.52	----	
OX005S	06/07/2005	19:12	30.74	14.20	16.54	----	
OX005S	08/16/2005	17:18	30.74	15.40	15.34	----	
OX005S	11/14/2005	08:16	30.74	15.57	15.17	----	
OX006S	10/23/2003	13:45	30.92	16.43	14.49	----	
OX006S	02/19/2004	14:24	30.92	12.85	18.07	----	
OX006S	06/09/2004	09:12	31.03	14.71	16.32	----	New reference elevation July 2004
OX006S	08/10/2004	12:17	31.03	16.09	14.94	----	
OX006S	11/18/2004	09:00	31.03	16.66	14.37	----	
OX006S	02/15/2005	09:30	31.03	15.72	15.31	----	
OX006S	06/07/2005	20:15	31.03	14.65	16.38	----	
OX006S	08/16/2005	17:20	31.03	15.84	15.19	----	
OX006S	11/14/2005	08:18	31.03	15.98	15.05	----	
OX007S	10/23/2003	13:46	30.68	16.25	14.43	----	
OX007S	02/19/2004	14:23	30.68	12.67	18.01	----	
OX007S	06/09/2004	09:11	30.68	14.55	16.13	----	
OX007S	08/10/2004	12:16	30.68	15.79	14.89	----	
OX007S	11/18/2004	09:02	30.68	16.34	14.34	----	
OX007S	02/15/2005	09:32	30.68	15.45	15.23	----	
OX007S	06/07/2005	20:10	30.68	14.37	16.31	----	
OX007S	08/16/2005	17:23	30.68	15.55	15.13	----	
OX007S	11/14/2005	08:20	30.68	15.61	15.07	----	
OX008S	10/23/2003	13:47	30.74	16.41	14.33	----	
OX008S	02/19/2004	14:19	30.74	12.96	17.78	----	
OX008S	06/09/2004	09:09	30.74	14.81	15.93	----	
OX008S	08/10/2004	12:15	30.74	15.96	14.78	----	
OX008S	11/18/2004	08:23	30.74	16.52	14.22	----	
OX008S	02/15/2005	09:35	30.74	15.63	15.11	----	
OX008S	06/07/2005	19:45	30.74	14.63	16.11	----	
OX008S	08/16/2005	06:28	30.74	15.77	14.97	----	
OX008S	11/14/2005	08:23	30.74	15.88	14.86	----	
OX009S	08/10/2004	12:12	31.14	16.92	14.22	----	Reference elevation July 2004
OX009S	02/15/2005	10:15	31.14	16.61	14.53	----	
OX009S	06/07/2005	19:37	31.14	15.84	15.30	----	
OX009S	08/16/2005	16:07	31.14	17.80	13.34	----	
OX009S	11/14/2005	08:08	31.14	16.97	14.17	----	
Deep Wells:							
B2	08/11/1993	10:02	30.31	25.44	4.87	----	Slight sheen, slight to mod solvent-like odor
B2	10/26/1993	13:32	30.31	25.25	5.06	----	
B2	11/17/1993	13:32	30.31	25.23	5.08	----	
B2	12/17/1993	12:59	30.31	23.88	6.43	----	
B2	01/17/1994	13:12	30.31	23.99	6.32	----	
B2	02/18/1994	14:20	30.31	23.73	6.58	----	
B2	03/18/1994	12:59	30.31	23.15	7.16	----	
B2	04/18/1994	14:42	30.31	24.35	5.96	----	
B2	05/18/1994	15:22	30.31	23.12	7.19	----	
B2	06/17/1994	14:54	30.31	22.90	7.41	----	
B2	07/19/1994	09:20	30.31	24.38	5.93	----	
B2	08/17/1994	07:35	30.31	25.22	5.09	----	
B2	09/16/1994	07:27	30.31	25.89	4.42	----	
B2	10/17/1994	09:03	30.31	25.43	4.88	----	
B2	11/21/1994	11:51	30.31	24.56	5.75	----	
B2	12/19/1994	11:10	30.31	21.82	8.49	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
B2	01/18/1995	11:18	30.31	18.93	11.38	----	
B2	02/21/1995	13:23	30.31	17.12	13.19	----	
B2	03/21/1995	13:05	30.31	20.37	9.94	----	
B2	04/19/1995	12:48	30.31	21.21	9.10	----	
B2	05/19/1995	13:38	30.31	19.30	11.01	----	
B2	07/17/1995	13:55	30.31	22.72	7.59	----	
B2	08/22/1995	07:53	30.31	24.42	5.89	----	
B2	09/22/1995	08:28	30.31	25.28	5.03	----	
B2	11/20/1995	07:57	30.31	22.02	8.29	----	
B2	12/01/1995	08:29	30.31	13.63	16.68	----	
B2	12/19/1995	07:26	30.31	15.57	14.74	----	
B2	01/19/1996	08:38	30.31	16.48	13.83	----	
B2	02/20/1996	10:42	30.31	10.63	19.68	----	
B2	03/19/1996	09:23	30.31	16.61	13.70	----	
B2	04/19/1996	11:53	30.31	16.20	14.11	----	
B2	07/22/1996	14:24	30.31	22.29	8.02	----	
B2	08/20/1996	14:20	30.31	23.43	6.88	----	
B2	09/24/1996	08:11	30.31	24.30	6.01	----	
B2	10/28/1996	11:09	30.31	23.76	6.55	----	
B2	12/13/1996	10:47	30.31	16.70	13.61	----	
B2	03/25/1997	12:02	30.31	15.85	14.46	----	
B2	03/31/1997	09:27	30.31	14.91	15.40	----	
B2	07/16/1997	07:45	30.31	19.91	10.40	----	
B2	10/21/1997	16:30	30.31	23.56	6.75	----	
B2	01/27/1998	12:06	30.31	19.32	10.99	----	
B2	05/18/1998	17:54	30.31	18.80	11.51	----	
B2	08/17/1998	10:23	30.31	24.38	5.93	----	
B2	11/13/1998	10:17	30.31	25.33	4.98	----	
B2	02/16/1999	13:34	30.31	19.64	10.67	----	
B2	05/18/1999	15:50	30.31	19.04	11.27	----	
B2	09/21/1999	12:18	30.31	25.34	4.97	----	
B2	12/06/1999	14:39	30.31	20.25	10.06	----	
B2	02/16/2000	10:56	30.31	20.57	9.74	----	
B2	05/23/2000	17:33	30.31	20.99	9.32	----	
B2	08/29/2000	14:20	30.31	25.38	4.93	----	
B2	11/09/2000	13:29	30.31	25.31	5.00	----	
B2	02/12/2001	15:27	30.31	24.62	5.69	----	
B2	06/04/2001	13:04	30.31	24.84	5.47	----	
B2	08/16/2001	11:58	30.31	26.75	3.56	----	
B2	11/28/2001	12:46	30.31	24.14	6.17	----	
B2	02/27/2002	14:35	30.31	22.90	7.41	----	
B2	06/27/2002	15:07	30.31	20.16	10.15	----	
B2	08/26/2002	17:01	30.31	25.32	4.99	----	
B2	11/13/2002	09:03	30.31	25.28	5.03	----	
B2	02/11/2003	10:14	30.31	23.58	6.73	----	
B2	05/08/2003	08:13	30.31	21.33	8.98	----	
B2	08/27/2003	15:32	30.31	24.25	6.06	----	
B2	10/23/2003	14:08	30.31	25.85	4.46	----	
B2	02/19/2004	14:12	30.31	22.21	8.10	----	
B2	06/09/2004	09:02	30.31	21.45	8.86	----	
B2	08/10/2004	08:50	30.31	25.73	4.58	----	
B2	08/10/2004	10:29	30.31	25.96	4.35	----	
B2	11/18/2004	08:13	30.31	25.08	5.23	----	
B2	02/15/2005	10:09	30.31	24.50	5.81	----	
B2	06/07/2005	19:28	30.31	22.72	7.59	----	
B2	08/16/2005	14:30	30.31	25.61	4.70	----	Bees!
B2	11/14/2005	14:54	30.31	23.86	6.45	----	
G1A	03/25/1997	11:55	29.72	14.84	14.88	----	
G1A	03/31/1997	09:11	29.72	14.28	15.44	----	
G1A	07/16/1997	07:33	29.72	18.94	10.78	----	
G1A	10/21/1997	16:18	29.72	22.44	7.28	----	
G1A	01/27/1998	11:46	29.72	18.42	11.30	----	
G1A	05/18/1998	17:31	29.72	18.05	11.67	----	
G1A	08/17/1998	10:07	29.72	23.35	6.37	----	
G1A	11/13/1998	09:54	29.72	24.59	5.13	----	
G1A	02/16/1999	13:14	29.72	18.28	11.44	----	
G1A	05/18/1999	14:51	29.72	18.42	11.30	----	
G1A	09/21/1999	11:29	29.72	24.32	5.40	----	
G1A	12/06/1999	14:05	29.72	19.82	9.90	----	
G1A	02/16/2000	10:18	29.72	19.81	9.91	----	
G1A	05/23/2000	16:31	29.72	20.08	9.64	----	Replaced lock and tubing
G1A	08/29/2000	13:13	29.72	24.36	5.36	----	
G1A	11/09/2000	12:32	29.72	24.85	4.87	----	
G1A	02/12/2001	16:01	29.72	24.08	5.64	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
G1A	06/04/2001	11:40	29.72	24.10	5.62	----	
G1A	08/16/2001	10:52	29.72	25.51	4.21	----	
G1A	11/28/2001	11:32	29.72	23.84	5.88	----	
G1A	02/27/2002	13:39	29.72	21.96	7.76	----	
G1A	06/27/2002	14:17	29.72	19.48	10.24	----	
G1A	08/26/2002	16:06	29.72	24.36	5.36	----	
G1A	11/13/2002	07:35	29.72	24.60	5.12	----	
G1A	02/11/2003	08:59	29.72	22.32	7.40	----	
G1A	05/08/2003	06:58	29.72	20.51	9.21	----	
G1A	08/27/2003	13:36	29.72	24.16	5.56	----	
G1A	10/23/2003	12:37	29.72	25.20	4.52	----	
G1A	02/19/2004	12:57	29.72	21.51	8.21	----	
G1A	06/09/2004	07:55	29.72	20.91	8.81	----	
G1A	08/10/2004	08:46	29.72	25.07	4.65	----	
G1A	08/10/2004	10:25	29.72	25.24	4.48	----	
G1A	11/18/2004	08:09	29.72	24.56	5.16	----	
G1A	02/15/2005	09:53	29.72	23.62	6.10	----	
G1A	06/07/2005	17:56	29.72	22.00	7.72	----	
G1A	08/16/2005	13:57	29.72	24.85	4.87	----	
G1A	11/14/2005	13:45	29.72	23.46	6.26	----	
J2	03/25/1997	12:18	29.65	15.22	14.43	----	
J2	03/31/1997	11:21	29.65	14.38	15.27	----	
J2	07/16/1997	08:24	29.65	19.28	10.37	----	
J2	10/21/1997	17:00	29.65	23.02	6.63	----	
J2	01/27/1998	13:19	29.65	18.69	10.96	----	
J2	05/18/1998	18:00	29.65	18.14	11.51	----	
J2	08/17/1998	10:21	29.65	23.70	5.95	----	
J2	11/13/1998	10:28	29.65	24.64	5.01	----	
J2	02/16/1999	13:40	29.65	19.00	10.65	----	
J2	05/18/1999	15:46	29.65	18.40	11.25	----	
J2	09/21/1999	12:30	29.65	24.73	4.92	----	
J2	12/06/1999	15:08	29.65	19.53	10.12	----	
J2	02/16/2000	11:07	29.65	19.89	9.76	----	
J2	05/23/2000	17:28	29.65	20.33	9.32	----	
J2	08/29/2000	14:15	29.65	24.67	4.98	----	
J2	11/09/2000	13:26	29.65	24.66	4.99	----	
J2	02/12/2001	15:23	29.65	23.92	5.73	----	
J2	06/04/2001	13:02	29.65	24.17	5.48	----	
J2	08/16/2001	11:51	29.65	25.57	4.08	----	
J2	11/28/2001	12:36	29.65	23.45	6.20	----	
J2	02/27/2002	14:31	29.65	22.21	7.44	----	
J2	06/27/2002	15:03	29.65	19.48	10.17	----	
J2	08/26/2002	16:56	29.65	24.67	4.98	----	
J2	11/13/2002	08:59	29.65	24.60	5.05	----	
J2	02/11/2003	10:19	29.65	22.95	6.70	----	
J2	05/08/2003	08:16	29.65	20.65	9.00	----	
J2	08/27/2003	14:48	29.65	24.12	5.53	----	
J2	10/23/2003	13:54	29.65	25.18	4.47	----	
J2	02/19/2004	14:17	29.65	21.52	8.13	----	
J2	06/09/2004	09:07	29.65	20.76	8.89	----	
J2	08/10/2004	08:40	29.65	25.00	4.65	----	
J2	08/10/2004	10:27	29.65	25.24	4.41	----	
J2	11/18/2004	08:20	29.65	24.39	5.26	----	
J2	02/15/2005	09:52	29.65	23.44	6.21	----	
J2	06/07/2005	17:20	29.65	22.07	7.58	----	
J2	08/16/2005	14:17	29.65	24.95	4.70	----	Bees!
J2	11/14/2005	14:40	29.65	23.24	6.41	----	
J3	03/25/1997	12:20	29.58	14.70	14.88	----	
J3	03/31/1997	11:25	29.58	14.03	15.55	----	
J3	07/16/1997	08:25	29.58	18.91	10.67	----	
J3	10/21/1997	17:02	29.58	22.37	7.21	----	
J3	01/27/1998	13:21	29.58	18.28	11.30	----	
J3	05/18/1998	17:58	29.58	17.84	11.74	----	
J3	08/17/1998	10:22	29.58	23.12	6.46	----	
J3	11/13/1998	10:26	29.58	24.14	5.44	----	
J3	02/16/1999	13:41	29.58	18.32	11.26	----	
J3	05/18/1999	15:48	29.58	18.01	11.57	----	
J3	09/21/1999	12:31	29.58	24.12	5.46	----	
J3	12/06/1999	15:09	29.58	19.31	10.27	----	
J3	02/16/2000	10:07	29.58	19.50	10.08	----	
J3	05/23/2000	17:29	29.58	19.86	9.72	----	
J3	08/29/2000	14:17	29.58	24.05	5.53	----	
J3	11/09/2000	13:27	29.58	24.24	5.34	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
J3	02/12/2001	15:24	29.58	23.45	6.13	----	
J3	06/04/2001	12:44	29.58	23.62	5.96	----	
J3	08/16/2001	11:50	29.58	24.98	4.60	----	
J3	11/28/2001	12:37	29.58	22.98	6.60	----	
J3	02/27/2002	14:32	29.58	21.52	8.06	----	
J3	06/27/2002	15:04	29.58	19.14	10.44	----	
J3	08/26/2002	16:57	29.58	23.99	5.59	----	
J3	11/13/2002	08:58	29.58	24.10	5.48	----	
J3	02/11/2003	10:20	29.58	22.28	7.30	----	
J3	05/08/2003	08:17	29.58	20.16	9.42	----	
J3	08/27/2003	14:49	29.58	23.60	5.98	----	
J3	10/23/2003	13:56	29.58	24.70	4.88	----	
J3	02/19/2004	14:16	29.58	21.18	8.40	----	
J3	06/09/2004	09:06	29.58	20.40	9.18	----	
J3	08/10/2004	08:41	29.58	24.50	5.08	----	
J3	08/10/2004	10:28	29.58	24.67	4.91	----	
J3	11/18/2004	08:17	29.58	23.86	5.72	----	
J3	06/07/2005	17:25	29.58	21.61	7.97	----	
J3	08/16/2005	13:58	29.58	24.33	5.25	----	Bees!
J3	11/14/2005	14:42	29.58	23.12	6.46	----	
O	03/25/1997	11:40	32.03	17.01	15.02	----	
O	03/31/1997	08:48	32.03	16.39	15.64	----	
O	07/16/1997	07:05	32.03	21.93	10.10	----	
O	10/21/1997	16:01	32.03	22.23	9.80	----	
O	01/27/1998	11:03	32.03	20.51	11.52	----	
O	05/18/1998	17:14	32.03	20.25	11.78	----	
O	08/17/1998	10:13	32.03	25.42	6.61	----	
O	11/13/1998	09:31	32.03	26.49	5.54	----	
O	02/16/1999	12:45	32.03	20.25	11.78	----	
O	05/18/1999	14:36	32.03	21.23	10.80	----	
O	09/21/1999	11:09	32.03	26.22	5.81	----	
O	12/06/1999	13:48	32.03	21.90	10.13	----	
O	02/16/2000	10:04	32.03	22.21	9.82	----	
O	05/23/2000	16:15	32.03	22.18	9.85	----	
O	08/29/2000	12:56	32.03	26.49	5.54	----	
O	11/09/2000	12:18	32.03	27.01	5.02	----	
O	02/12/2001	15:52	32.03	26.12	5.91	----	
O	06/04/2001	11:22	32.03	26.08	5.95	----	
O	08/16/2001	10:22	32.03	27.58	4.45	----	
O	11/28/2001	11:18	32.03	26.15	5.88	----	
O	02/27/2002	13:15	32.03	24.08	7.95	----	
O	06/27/2002	14:09	32.03	21.29	10.74	----	
O	08/26/2002	15:47	32.03	25.91	6.12	----	
O	11/13/2002	07:21	32.03	26.56	5.47	----	
O	02/11/2003	08:38	32.03	22.81	9.22	----	
O	05/08/2003	06:44	32.03	22.70	9.33	----	
O	08/27/2003	13:23	32.03	26.43	5.60	----	
O	10/23/2003	12:02	32.03	27.11	4.92	----	
O	02/19/2004	12:15	32.03	23.71	8.32	----	
O	06/09/2004	07:32	32.03	22.76	9.27	----	
O	08/10/2004	08:23	32.03	26.51	5.52	----	
O	08/10/2004	10:02	32.03	26.52	5.51	----	
O	11/18/2004	07:33	32.03	26.13	5.90	----	
O	06/07/2005	17:06	32.03	23.68	8.35	----	
O	08/16/2005	13:22	33.03	26.33	6.70	----	
O	11/14/2005	14:22	33.03	16.89	16.14	----	
R	03/25/1997	11:36	30.47	15.56	14.91	----	
R	03/31/1997	08:43	30.47	14.85	15.62	----	
R	07/16/1997	07:00	30.47	20.37	10.10	----	
R	10/21/1997	15:56	30.47	22.54	7.93	----	
R	01/27/1998	10:57	30.47	18.98	11.49	----	
R	05/18/1998	17:15	30.47	18.73	11.74	----	
R	08/17/1998	10:12	30.47	23.93	6.54	----	
R	11/13/1998	09:35	30.47	25.17	5.30	----	
R	02/16/1999	13:05	30.47	18.79	11.68	----	
R	05/18/1999	14:37	30.47	19.64	10.83	----	
R	09/21/1999	11:15	30.47	24.53	5.94	----	
R	12/06/1999	13:46	30.47	20.33	10.14	----	
R	02/16/2000	10:12	30.47	20.65	9.82	----	
R	05/23/2000	16:17	30.47	20.64	9.83	----	
R	08/29/2000	12:58	30.47	24.97	5.50	----	
R	11/09/2000	12:20	30.47	25.47	5.00	----	
R	02/12/2001	15:54	30.47	24.46	6.01	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
R	06/04/2001	11:36	30.47	24.53	5.94	----	
R	08/16/2001	10:35	30.47	26.02	4.45	----	
R	11/28/2001	11:19	30.47	24.57	5.90	----	
R	02/27/2002	13:17	30.47	22.50	7.97	----	
R	06/27/2002	14:08	30.47	19.75	10.72	----	
R	08/26/2002	15:58	30.47	24.38	6.09	----	
R	11/13/2002	07:22	30.47	25.04	5.43	----	
R	02/11/2003	08:41	30.47	21.22	9.25	----	
R	05/08/2003	06:46	30.47	21.14	9.33	----	
R	08/27/2003	13:25	30.47	24.91	5.56	----	
R	10/23/2003	11:56	30.47	25.60	4.87	----	
R	02/19/2004	12:05	30.47	22.15	8.32	----	
R	06/09/2004	07:30	30.47	21.21	9.26	----	
R	08/10/2004	08:21	30.47	24.99	5.48	----	
R	08/10/2004	10:00	30.47	24.99	5.48	----	
R	11/18/2004	07:34	30.47	24.61	5.86	----	
R	06/07/2005	17:46	30.47	22.11	8.36	----	
R	08/16/2005	13:18	30.47	24.82	5.65	----	
R	11/14/2005	14:04	30.47	24.35	6.12	----	
LW001D	03/31/1997	11:11	28.31	12.71	15.60	----	
LW001D	07/16/1997	08:12	28.31	17.65	10.66	----	
LW001D	10/21/1997	16:55	28.31	21.29	7.02	----	
LW001D	01/27/1998	13:07	28.31	17.06	11.25	----	
LW001D	05/18/1998	17:39	28.31	16.53	11.78	----	
LW001D	08/17/1998	10:30	28.31	21.82	6.49	----	
LW001D	11/13/1998	10:01	28.31	22.77	5.54	----	
LW001D	02/16/1999	13:21	28.31	17.30	11.01	----	
LW001D	05/18/1999	15:36	28.31	16.76	11.55	----	
LW001D	09/21/1999	12:12	28.31	22.91	5.40	----	
LW001D	12/06/1999	14:34	28.31	18.00	10.31	----	
LW001D	02/16/2000	10:49	28.31	18.16	10.15	----	
LW001D	05/23/2000	17:19	28.31	18.62	9.69	----	
LW001D	08/29/2000	13:59	28.31	22.81	5.50	----	
LW001D	11/09/2000	13:20	28.31	22.98	5.33	----	
LW001D	02/12/2001	15:35	28.31	22.23	6.08	----	
LW001D	06/04/2001	12:23	28.31	22.36	5.95	----	
LW001D	08/16/2001	11:38	28.31	23.73	4.58	----	
LW001D	11/28/2001	12:29	28.31	21.73	6.58	----	
LW001D	02/27/2002	14:17	28.31	20.31	8.00	----	
LW001D	06/27/2002	14:49	28.31	17.81	10.50	----	
LW001D	08/26/2002	17:12	28.31	22.85	5.46	----	
LW001D	11/13/2002	09:08	28.31	22.91	5.40	----	
LW001D	02/11/2003	10:27	28.31	21.11	7.20	----	
LW001D	05/08/2003	08:19	28.31	18.91	9.40	----	
LW001D	08/27/2003	14:50	28.31	22.40	5.91	----	
LW001D	10/23/2003	13:57	28.31	23.51	4.80	----	
LW001D	02/19/2004	14:30	28.31	19.91	8.40	----	
LW001D	06/09/2004	09:21	28.31	19.13	9.18	----	
LW001D	08/10/2004	08:45	28.31	23.30	5.01	----	
LW001D	08/10/2004	10:27	28.31	23.50	4.81	----	
LW001D	11/18/2004	08:27	28.31	22.69	5.62	----	
LW001D	02/15/2005	09:21	28.31	21.98	6.33	----	
LW001D	06/07/2005	19:10	28.31	20.44	7.87	----	
LW001D	08/16/2005	13:47	28.31	23.14	5.17	----	
LW001D	11/14/2005	14:38	28.31	21.83	6.48	----	
LW003D	03/31/1997	11:45	30.80	19.38	11.42	----	Time estimated
LW003D	07/16/1997	08:38	30.80	28.09	2.71	----	
LW003D	10/21/1997	17:07	30.80	23.36	7.44	----	
LW003D	01/27/1998	13:30	30.80	21.66	9.14	----	
LW003D	05/18/1998	17:35	30.80	19.21	11.59	----	
LW003D	08/17/1998	10:24	30.80	24.62	6.18	----	
LW003D	11/13/1998	09:03	30.80	25.56	5.24	----	
LW003D	02/16/1999	13:44	30.80	20.00	10.80	----	
LW003D	05/18/1999	15:58	30.80	19.42	11.38	----	Purged dry at 11:00
LW003D	09/21/1999	10:40	30.80	25.76	5.04	----	
LW003D	12/06/1999	14:45	30.80	20.69	10.11	----	
LW003D	02/16/2000	09:54	30.80	20.98	9.82	----	
LW003D	05/23/2000	14:40	30.80	21.16	9.64	----	Purged dry at 13:10
LW003D	08/29/2000	14:36	30.80	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW003D	11/09/2000	----	30.80	----	----	----	Well sampled 11/8/00 - water level not representative
LW003D	02/12/2001	15:11	30.80	24.85	5.95	----	
LW003D	06/04/2001	12:35	30.80	25.09	5.71	----	
LW003D	08/16/2001	11:47	30.80	26.43	4.37	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW003D	11/28/2001	12:42	30.80	24.48	6.32	----	
LW003D	02/27/2002	14:20	30.80	23.13	7.67	----	
LW003D	06/27/2002	14:59	30.80	20.55	10.25	----	
LW003D	08/26/2002	17:03	30.80	25.63	5.17	----	
LW003D	11/13/2002	09:20	30.80	25.57	5.23	----	
LW003D	02/11/2003	10:40	30.80	24.03	6.77	----	
LW003D	05/08/2003	08:29	30.80	21.68	9.12	----	
LW003D	08/27/2003	15:04	30.80	25.10	5.70	----	
LW003D	10/23/2003	13:49	30.80	26.18	4.62	----	
LW003D	02/19/2004	14:21	30.80	22.65	8.15	----	
LW003D	06/09/2004	09:29	30.80	21.82	8.98	----	
LW003D	08/10/2004	08:39	30.80	25.95	4.85	----	
LW003D	08/10/2004	10:25	30.80	26.10	4.70	----	
LW003D	11/18/2004	08:24	30.80	25.42	5.38	----	
LW003D	02/15/2005	09:40	30.80	25.06	5.74	----	
LW003D	06/07/2005	19:40	30.80	23.12	7.68	----	
LW003D	08/16/2005	13:53	30.80	25.96	4.84	----	
LW003D	11/14/2005	14:49	30.80	24.33	6.47	----	
LW004D	03/31/1997	09:18	30.17	14.73	15.44	----	
LW004D	07/16/1997	07:42	30.17	19.43	10.74	----	
LW004D	10/21/1997	16:27	30.17	23.02	7.15	----	
LW004D	01/27/1998	11:56	30.17	18.84	11.33	----	
LW004D	05/18/1998	17:33	30.17	18.54	11.63	----	
LW004D	08/17/1998	10:18	30.17	23.81	6.36	----	
LW004D	11/13/1998	09:57	30.17	24.99	5.18	----	
LW004D	02/16/1999	13:17	30.17	18.79	11.38	----	
LW004D	05/18/1999	15:04	30.17	18.77	11.40	----	Completed sampling at 13:40
LW004D	09/21/1999	11:41	30.17	24.78	5.39	----	
LW004D	12/06/1999	14:18	30.17	20.21	9.96	----	
LW004D	02/16/2000	10:30	30.17	20.23	9.94	----	
LW004D	05/23/2000	16:54	30.17	20.55	9.62	----	
LW004D	08/29/2000	13:38	30.17	24.78	5.39	----	
LW004D	11/09/2000	12:52	30.17	25.19	4.98	----	
LW004D	02/12/2001	16:39	30.17	24.71	5.46	----	
LW004D	06/04/2001	12:07	30.17	24.66	5.51	----	
LW004D	08/16/2001	11:15	30.17	26.27	3.90	----	
LW004D	11/28/2001	12:04	30.17	24.41	5.76	----	
LW004D	02/27/2002	14:00	30.17	22.65	7.52	----	
LW004D	03/05/2002	11:36	30.17	22.94	7.23	----	
LW004D	04/05/2002	08:19	30.17	23.75	6.42	----	
LW004D	05/29/2002	00:00	30.17	20.48	9.69	----	
LW004D	06/27/2002	14:41	30.17	20.15	10.02	----	
LW004D	08/26/2002	16:32	30.17	25.02	5.15	----	
LW004D	11/13/2002	08:23	30.17	25.26	4.91	----	
LW004D	02/11/2003	09:32	30.17	23.08	7.09	----	
LW004D	05/08/2003	07:44	30.17	21.21	8.96	----	
LW004D	08/27/2003	14:01	30.17	24.78	5.39	----	
LW004D	10/23/2003	13:16	30.17	25.85	4.32	----	
LW004D	02/19/2004	13:45	30.17	22.14	8.03	----	
LW004D	06/09/2004	08:32	30.17	21.60	8.57	----	
LW004D	08/10/2004	08:24	30.17	25.68	4.49	----	
LW004D	08/10/2004	10:09	30.17	25.87	4.30	----	
LW004DR	11/24/2004	11:00	30.11	26.23	3.88	----	Replacement well installed 11/19/04
LW004DR	02/15/2005	10:20	30.11	23.94	6.17	----	
LW004DR	06/07/2005	18:53	30.17	22.83	7.34	----	
LW004DR	08/16/2005	14:10	30.17	25.68	4.49	----	
LW004DR	11/14/2005	15:07	30.17	23.64	6.53	----	
LW006D	03/25/1997	11:52	30.84	16.51	14.33	----	
LW006D	03/31/1997	09:05	30.84	15.53	15.31	----	Faint odor
LW006D	07/16/1997	07:30	30.84	20.74	10.10	----	
LW006D	10/21/1997	16:16	30.84	24.05	6.79	----	
LW006D	01/27/1998	11:38	30.84	19.94	10.90	----	
LW006D	05/18/1998	17:28	30.84	19.36	11.48	----	
LW006D	08/17/1998	10:05	30.84	24.92	5.92	----	
LW006D	11/13/1998	09:50	30.84	25.94	4.90	----	
LW006D	02/16/1999	13:11	30.84	20.40	10.44	----	
LW006D	05/18/1999	14:53	30.84	19.81	11.03	----	
LW006D	09/21/1999	11:32	30.84	25.92	4.92	----	
LW006D	12/06/1999	14:09	30.84	20.86	9.98	----	
LW006D	02/16/2000	10:20	30.84	21.27	9.57	----	
LW006D	05/23/2000	16:35	30.84	21.64	9.20	----	
LW006D	08/29/2000	13:20	30.84	25.93	4.91	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW006D	11/09/2000	12:35	30.84	26.21	4.63	----	
LW006D	02/12/2001	16:03	30.84	25.37	5.47	----	
LW006D	06/04/2001	11:42	30.84	25.30	5.54	----	
LW006D	08/16/2001	10:54	30.84	26.72	4.12	----	
LW006D	11/28/2001	11:46	30.84	24.92	5.92	----	
LW006D	02/27/2002	13:35	30.84	23.62	7.22	----	
LW006D	06/27/2002	14:19	30.84	20.68	10.16	----	
LW006D	08/26/2002	16:04	30.84	25.79	5.05	----	
LW006D	11/13/2002	07:42	30.84	25.82	5.02	----	
LW006D	02/11/2003	09:01	30.84	24.08	6.76	----	
LW006D	05/08/2003	07:01	30.84	21.97	8.87	----	
LW006D	08/27/2003	13:40	30.84	25.37	5.47	----	
LW006D	10/23/2003	12:31	30.84	26.47	4.37	----	
LW006D	02/19/2004	12:37	30.84	23.00	7.84	----	
LW006D	06/09/2004	08:00	30.84	21.90	8.94	----	
LW006D	08/10/2004	08:42	30.84	26.22	4.62	----	
LW006D	08/10/2004	10:20	30.84	26.43	4.41	----	
LW006D	11/18/2004	07:51	30.84	25.61	5.23	----	
LW006D	02/15/2005	09:20	30.84	24.74	6.10	----	
LW006D	06/07/2005	17:25	30.84	23.50	7.34	----	
LW006D	08/16/2005	13:28	30.84	26.18	4.66	----	
LW006D	11/14/2005	13:48	30.84	24.77	6.07	----	
LW009D	05/18/1999	14:56	30.98	20.02	10.96	----	
LW009D	09/21/1999	11:34	30.98	25.23	5.75	----	
LW009D	12/06/1999	14:11	30.98	21.04	9.94	----	
LW009D	02/16/2000	10:23	30.98	21.17	9.81	----	
LW009D	05/23/2000	16:39	30.98	21.15	9.83	----	
LW009D	08/29/2000	13:27	30.98	25.36	5.62	----	
LW009D	11/09/2000	12:43	30.98	25.96	5.02	----	
LW009D	02/12/2001	16:11	30.98	25.13	5.85	----	
LW009D	06/04/2001	11:49	30.98	25.15	5.83	----	
LW009D	08/16/2001	11:02	30.98	26.57	4.41	----	
LW009D	11/28/2001	11:53	30.98	25.40	5.58	----	
LW009D	02/27/2002	13:47	30.98	22.97	8.01	----	
LW009D	06/27/2002	14:25	30.98	20.38	10.60	----	
LW009D	08/26/2002	16:11	30.98	24.90	6.08	----	
LW009D	11/13/2002	07:48	30.98	25.73	5.25	----	
LW009D	02/11/2003	09:07	30.98	22.03	8.95	----	
LW009D	05/08/2003	07:12	30.98	21.65	9.33	----	
LW009D	08/27/2003	13:47	30.98	25.50	5.48	----	
LW009D	10/23/2003	12:50	30.98	26.22	4.76	----	
LW009D	02/19/2004	13:02	30.98	22.55	8.43	----	
LW009D	06/09/2004	08:11	30.98	21.91	9.07	----	
LW009D	08/10/2004	08:14	30.98	25.49	5.49	----	
LW009D	08/10/2004	09:59	30.98	25.54	5.44	----	
LW009D	11/18/2004	07:44	30.98	25.36	5.62	----	
LW009D	02/15/2005	09:24	30.98	24.46	6.52	----	
LW009D	06/07/2005	17:20	30.98	22.68	8.30	----	
LW009D	08/16/2005	13:26	30.98	25.25	5.73	----	
LW009D	11/14/2005	15:19	30.98	24.88	6.10	----	
LW010D	05/18/1999	15:00	31.12	19.82	11.30	----	
LW010D	09/21/1999	11:37	31.12	25.81	5.31	----	
LW010D	12/06/1999	14:15	31.12	21.18	9.94	----	
LW010D	02/16/2000	10:27	31.12	21.20	9.92	----	
LW010D	05/23/2000	16:42	31.12	21.51	9.61	----	
LW010D	08/29/2000	13:29	31.12	25.86	5.26	----	
LW010D	11/09/2000	12:46	31.12	26.26	4.86	----	
LW010D	02/12/2001	16:15	31.12	25.63	5.49	----	
LW010D	06/04/2001	11:52	31.12	25.62	5.50	----	
LW010D	08/16/2001	11:04	31.12	27.16	3.96	----	
LW010D	11/28/2001	11:55	31.12	25.46	5.66	----	
LW010D	02/27/2002	13:49	31.12	23.58	7.54	----	
LW010D	06/27/2002	14:29	31.12	21.03	10.09	----	
LW010D	08/26/2002	16:17	31.12	25.91	5.21	----	
LW010D	11/13/2002	08:01	31.12	26.17	4.95	----	
LW010D	02/11/2003	09:21	31.12	23.83	7.29	----	
LW010D	05/08/2003	07:33	31.12	22.10	9.02	----	
LW010D	08/27/2003	13:53	31.12	25.74	5.38	----	
LW010D	10/23/2003	13:10	31.12	26.79	4.33	----	
LW010D	02/19/2004	13:25	31.12	22.98	8.14	----	
LW010D	06/09/2004	08:23	31.12	22.46	8.66	----	
LW010D	08/10/2004	08:16	31.12	26.52	4.60	----	
LW010D	08/10/2004	10:02	31.12	26.70	4.42	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW010D	11/18/2004	07:51	31.12	26.08	5.04	----	
LW010D	02/15/2005	10:07	31.12	25.07	6.05	----	
LW010D	06/07/2005	18:19	31.12	23.53	7.59	----	
LW010D	08/16/2005	13:40	31.12	26.38	4.74	----	
LW010D	11/14/2005	12:15	31.12	25.50	5.62	----	
LW011D	05/18/1999	15:09	29.04	18.59	10.45	----	
LW011D	09/21/1999	11:50	29.04	20.76	8.28	----	
LW011D	12/06/1999	15:06	29.04	21.81	7.23	----	
LW011D	02/16/2000	11:02	29.04	20.35	8.69	----	
LW011D	05/23/2000	17:37	29.04	19.50	9.54	----	
LW011D	08/29/2000	14:54	29.04	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW011D	11/09/2000		29.04	----	----	----	Well sampled 11/8/00 - water level not representative
LW011D	02/12/2001	15:16	29.04	23.14	5.90	----	
LW011D	06/04/2001	13:11	29.04	23.35	5.69	----	
LW011D	08/16/2001	11:25	29.04	26.94	2.10	----	
LW011D	11/28/2001	12:53	29.04	24.54	4.50	----	
LW011D	02/27/2002	14:57	29.04	21.80	7.24	----	
LW011D	06/27/2002	15:11	29.04	18.84	10.20	----	
LW011D	08/26/2002	16:47	29.04	22.71	6.33	----	
LW011D	11/13/2002	08:55	29.04	23.87	5.17	----	
LW011D	02/11/2003	10:04	29.04	21.79	7.25	----	
LW011D	05/08/2003	08:08	29.04	19.28	9.76	----	
LW011D	08/27/2003	14:34	29.04	23.35	5.69	----	
LW011D	10/23/2003	14:11	29.04	23.98	5.06	----	
LW011D	02/19/2004	14:05	29.04	21.08	7.96	----	
LW011D	06/09/2004	08:55	29.04	20.04	9.00	----	
LW011D	08/10/2004	08:35	29.04	24.17	4.87	----	
LW011D	08/10/2004	10:20	29.04	24.46	4.58	----	
LW011D	11/18/2004	08:11	29.04	23.67	5.37	----	
LW011D	02/15/2005	10:19	29.04	22.02	7.02	----	
LW011D	06/07/2005	19:31	29.04	21.58	7.46	----	
LW011D	08/16/2005	14:08	29.04	24.11	4.93	----	
LW011D	11/14/2005	14:59	29.04	22.05	6.99	----	
LW012D1	05/18/1999	15:13	30.02	18.45	11.57	----	
LW012D1	09/21/1999	11:54	30.02	24.44	5.58	----	
LW012D1	12/06/1999	14:21	30.02	19.72	10.30	----	
LW012D1	02/16/2000	10:35	30.02	19.89	10.13	----	
LW012D1	05/23/2000	17:00	30.02	20.23	9.79	----	
LW012D1	08/29/2000	13:45	30.02	24.38	5.64	----	
LW012D1	11/09/2000	13:00	30.02	24.66	5.36	----	
LW012D1	02/12/2001	15:57	30.02	23.92	6.10	----	
LW012D1	06/04/2001	12:32	30.02	23.99	6.03	----	
LW012D1	08/16/2001	11:42	30.02	25.39	4.63	----	
LW012D1	11/28/2001	12:38	30.02	23.33	6.69	----	
LW012D1	02/27/2002	14:28	30.02	21.88	8.14	----	
LW012D1	06/27/2002	14:57	30.02	19.58	10.44	----	
LW012D1							Abandoned August 2003
LW012D2	05/18/1999	15:14	29.24	18.23	11.01	----	
LW012D2	09/21/1999	11:53	29.24	24.69	4.55	----	
LW012D2	12/06/1999	14:22	29.24	19.40	9.84	----	
LW012D2	02/16/2000	10:36	29.24	19.90	9.34	----	
LW012D2	05/23/2000	16:59	29.24	20.38	8.86	----	
LW012D2	08/29/2000	13:44	29.24	24.68	4.56	----	
LW012D2	11/09/2000	13:01	29.24	24.56	4.68	----	
LW012D2	02/12/2001	15:56	29.24	23.88	5.36	----	
LW012D2	06/04/2001	12:31	29.24	24.10	5.14	----	
LW012D2	08/16/2001	11:43	29.24	25.43	3.81	----	
LW012D2	11/28/2001	12:39	29.24	23.17	6.07	----	
LW012D2	02/27/2002	14:29	29.24	22.38	6.86	----	
LW012D2	06/27/2002	14:58	29.24	19.44	9.80	----	
LW012D2							Abandoned August 2003
LW014D	05/23/2000	16:50	30.54	21.26	9.28	----	
LW014D	08/29/2000	13:35	30.54	25.68	4.86	----	
LW014D	11/09/2000	12:49	30.54	25.90	4.64	----	
LW014D	02/12/2001	16:20	30.54	25.33	5.21	----	
LW014D	06/04/2001	12:00	30.54	25.37	5.17	----	
LW014D	08/16/2001	11:08	30.54	27.00	3.54	----	
LW014D	11/28/2001	11:56	30.54	25.03	5.51	----	
LW014D	02/27/2002	13:55	30.54	23.57	6.97	----	
LW014D	06/27/2002	14:33	30.54	20.70	9.84	----	
LW014D	08/26/2002	16:26	30.54	25.90	4.64	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW014D	11/13/2002	08:07	30.54	25.76	4.78	----	
LW014D	02/11/2003	09:27	30.54	24.33	6.21	----	
LW014D	05/08/2003	07:38	30.54	21.92	8.62	----	
LW014D	08/27/2003	13:56	30.54	25.32	5.22	----	
LW014D	10/23/2003	13:13	30.54	26.56	3.98	----	
LW014D	02/19/2004	13:30	30.54	22.86	7.68	----	
LW014D	06/09/2004	08:27	30.54	22.11	8.43	----	
LW014D	08/10/2004	08:20	30.54	26.29	4.25	----	
LW014D	08/10/2004	10:05	30.54	26.58	3.96	----	
LW014D	11/18/2004	07:57	30.54	25.74	4.80	----	
LW014D	02/15/2005	10:03	30.54	24.61	5.93	----	
LW014D	06/07/2005	18:25	30.54	23.51	7.03	----	
LW014D	08/16/2005	13:46	30.54	26.30	4.24	----	
LW014D	11/14/2005	15:15	30.54	24.22	6.32	----	
LW015D	05/23/2000	16:49	30.85	21.26	9.59	----	
LW015D	08/29/2000	13:34	30.85	25.54	5.31	----	
LW015D	11/09/2000	12:48	30.85	25.98	4.87	----	
LW015D	02/12/2001	16:18	30.85	25.43	5.42	----	
LW015D	06/04/2001	11:59	30.85	25.41	5.44	----	
LW015D	08/16/2001	11:07	30.85	27.05	3.80	----	
LW015D	11/28/2001	11:55	30.85	25.29	5.56	----	
LW015D	02/27/2002	13:52	30.85	23.42	7.43	----	
LW015D	06/27/2002	14:32	30.85	20.91	9.94	----	
LW015D	08/26/2002	16:25	30.85	25.77	5.08	----	
LW015D	11/13/2002	08:05	30.85	26.04	4.81	----	
LW015D	02/11/2003	09:23	30.85	23.65	7.20	----	
LW015D	05/08/2003	07:37	30.85	21.95	8.90	----	
LW015D	08/27/2003	13:55	30.85	25.58	5.27	----	
LW015D	10/23/2003	13:12	30.85	26.61	4.24	----	
LW015D	02/19/2004	13:30	30.85	22.83	8.02	----	
LW015D	06/09/2004	08:25	30.85	22.36	8.49	----	
LW015D	08/10/2004	08:19	30.85	26.43	4.42	----	
LW015D	08/10/2004	10:04	30.85	26.61	4.24	----	
LW015D	11/18/2004	07:55	30.85	25.98	4.87	----	
LW015D	06/07/2005	18:30	30.85	23.38	7.47	----	
LW015D	08/16/2005	13:43	30.85	26.24	4.61	----	
LW015D	11/14/2005	15:37	30.85	24.84	6.01	----	
LW016D	05/23/2000	16:48	28.40	18.79	9.61	----	
LW016D	08/29/2000	13:32	28.40	23.07	5.33	----	
LW016D	11/09/2000	12:47	28.40	23.59	4.81	----	
LW016D	02/12/2001	16:17	28.40	22.94	5.46	----	
LW016D	06/04/2001	11:57	28.40	23.00	5.40	----	
LW016D	08/16/2001	11:05	28.40	24.43	3.97	----	
LW016D	11/28/2001	11:57	28.40	22.87	5.53	----	
LW016D	02/27/2002	13:54	28.40	20.94	7.46	----	
LW016D	06/27/2002	14:31	28.40	18.46	9.94	----	
LW016D	08/26/2002	16:23	28.40	23.24	5.16	----	
LW016D	11/13/2002	08:08	28.40	23.45	4.95	----	
LW016D	02/11/2003	09:25	28.40	21.14	7.26	----	
LW016D	05/08/2003	07:36	28.40	19.65	8.75	----	
LW016D	08/27/2003	13:54	28.40	23.08	5.32	----	
LW016D	10/23/2003	13:11	28.40	24.10	4.30	----	
LW016D	02/19/2004	13:31	28.40	20.30	8.10	----	
LW016D	06/09/2004	08:26	28.40	19.91	8.49	----	
LW016D	08/10/2004	08:17	28.40	23.88	4.52	----	
LW016D	08/10/2004	10:03	28.40	24.08	4.32	----	
LW016D	11/18/2004	07:54	28.40	23.41	4.99	----	
LW016D	06/07/2005	18:35	28.40	20.87	7.53	----	
LW016D	08/16/2005	14:02	28.40	23.72	4.68	----	
LW016D	11/14/2005	15:30	28.40	22.32	6.08	----	
LW017D	08/29/2000	13:21	27.82	22.96	4.86	----	
LW017D	11/09/2000	12:36	27.82	23.17	4.65	----	
LW017D	02/12/2001	16:04	27.82	22.44	5.38	----	
LW017D	06/04/2001	11:44	27.82	22.42	5.40	----	
LW017D	08/16/2001	10:55	27.82	23.80	4.02	----	
LW017D	11/28/2001	11:50	27.82	22.00	5.82	----	
LW017D	02/27/2002	13:37	27.82	19.82	8.00	----	
LW017D	03/05/2002	11:30	27.82	20.46	7.36	----	
LW017D	04/05/2002	08:15	27.82	21.34	6.48	----	
LW017D	05/29/2002	00:00	27.82	17.90	9.92	----	
LW017D	06/27/2002	14:20	27.82	17.64	10.18	----	
LW017D	08/26/2002	16:07	27.82	22.67	5.15	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW017D	11/13/2002	07:45	27.82	22.80	5.02	----	
LW017D	02/11/2003	09:03	27.82	20.79	7.03	----	
LW017D	05/08/2003	07:05	27.82	18.82	9.00	----	
LW017D	08/27/2003	13:43	27.82	22.38	5.44	----	
LW017D	10/23/2003	12:34	27.82	23.46	4.36	----	
LW017D	02/19/2004	12:52	27.82	19.82	8.00	----	
LW017D	06/09/2004	08:04	27.82	19.00	8.82	----	
LW017D	08/10/2004	08:44	27.82	23.21	4.61	----	
LW017D	08/10/2004	10:23	27.82	23.41	4.41	----	
LW017D	11/18/2004	08:04	27.82	22.69	5.13	----	
LW017D	02/15/2005	09:33	27.82	21.65	6.17	----	
LW017D	06/07/2005	18:00	27.82	20.30	7.52	----	
LW017D	08/16/2005	13:54	27.82	23.07	4.75	----	
LW017D	11/14/2005	13:49	27.82	21.24	6.58	----	
LW018D	08/29/2000	13:25	27.82	22.79	5.03	----	
LW018D	11/09/2000	12:40	27.82	22.91	4.91	----	
LW018D	02/12/2001	16:10	27.82	22.56	5.26	----	
LW018D	06/04/2001	11:47	27.82	22.28	5.54	----	
LW018D	08/16/2001	11:00	27.82	23.81	4.01	----	
LW018D	11/28/2001	11:51	27.82	22.00	5.82	----	
LW018D	02/27/2002	13:43	27.82	20.44	7.38	----	
LW018D	06/27/2002	14:23	27.82	17.72	10.10	----	
LW018D	08/26/2002	16:13	27.82	21.90	5.92	----	
LW018D	11/13/2002	07:51	27.82	22.71	5.11	----	
LW018D	02/11/2003	09:05	27.82	20.95	6.87	----	
LW018D	05/08/2003	07:10	27.82	18.75	9.07	----	
LW018D	08/27/2003	13:45	27.82	22.41	5.41	----	
LW018D	10/23/2003	12:45	27.82	23.46	4.36	----	
LW018D	02/19/2004	13:10	27.82	19.74	8.08	----	
LW018D	06/09/2004	08:07	27.82	19.45	8.37	----	
LW018D	08/10/2004	08:11	27.82	23.26	4.56	----	
LW018D	08/10/2004	09:54	27.82	23.46	4.36	----	
LW018D	11/18/2004	08:02	27.82	22.87	4.95	----	
LW018D	02/15/2005	09:39	27.82	21.80	6.02	----	
LW018D	06/07/2005	18:10	27.82	20.37	7.45	----	
LW018D	08/16/2005	13:50	27.82	23.05	4.77	----	
LW018D	11/14/2005	13:42	27.82	21.31	6.51	----	
LW020D	10/23/2003	12:15	29.51	24.86	4.65	----	
LW020D	02/19/2004	14:46	29.51	21.00	8.51	----	
LW020D	06/09/2004	07:48	29.51	20.45	9.06	----	
LW020D	08/10/2004	08:32	29.51	24.70	4.81	----	
LW020D	08/10/2004	10:08	29.51	24.90	4.61	----	
LW020D	11/18/2004	07:48	29.51	24.17	5.34	----	
LW020D	02/15/2005	08:31	29.51	23.45	6.06	----	
LW020D	06/07/2005	19:11	29.51	21.70	7.81	----	
LW020D	08/16/2005	13:36	29.51	24.64	4.87	----	
LW020D	11/14/2005	14:33	29.51	23.02	6.49	----	
LW022D	10/23/2003	11:58	32.56	27.72	4.84	----	
LW022D	02/19/2004	12:14	32.56	24.44	8.12	----	
LW022D	06/09/2004	07:22	32.56	23.35	9.21	----	
LW022D	08/10/2004	08:16	32.56	27.20	5.36	----	
LW022D	08/10/2004	09:55	32.56	27.21	5.35	----	
LW022D	11/18/2004	07:24	32.56	26.69	5.87	----	
LW022D	02/15/2005	08:55	32.56	26.08	6.48	----	
LW022D	06/07/2005	16:22	32.56	24.36	8.20	----	
LW022D	08/16/2005	13:15	32.56	27.03	5.53	----	
LW022D	11/14/2005	14:01	32.56	26.41	6.15	----	
LW023D	10/23/2003	12:00	31.41	26.56	4.85	----	
LW023D	02/19/2004	12:13	31.41	23.31	8.10	----	
LW023D	06/09/2004	07:21	31.41	22.24	9.17	----	
LW023D	08/10/2004	08:13	31.41	26.08	5.33	----	
LW023D	08/10/2004	09:53	31.41	26.09	5.32	----	
LW023D	11/18/2004	07:22	31.41	25.58	5.83	----	
LW023D	02/15/2005	09:10	31.41	24.94	6.47	----	
LW023D	06/07/2005	16:25	31.41	23.27	8.14	----	
LW023D	08/16/2005	13:13	31.41	25.91	5.50	----	
LW023D	11/14/2005	13:58	31.41	25.30	6.11	----	
LW024D	10/23/2003	12:23	33.47	28.61	4.86	----	
LW024D	02/19/2004	12:40	33.47	25.28	8.19	----	
LW024D	06/09/2004	07:57	33.47	24.30	9.17	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW024D	08/10/2004	08:36	33.47	28.02	5.45	----	
LW024D	08/10/2004	10:15	33.47	28.04	5.43	----	
LW024D	11/18/2004	07:54	33.47	27.65	5.82	----	
LW024D	02/15/2005	09:13	33.47	26.99	6.48	----	
LW024D	06/07/2005	17:33	33.47	25.25	8.22	----	
LW024D	08/16/2005	13:35	33.47	27.80	5.67	----	
LW024D	11/14/2005	13:54	33.47	27.40	6.07	----	
LW025D	10/23/2003	12:28	35.38	30.50	4.88	----	
LW025D	02/19/2004	12:38	35.38	27.25	8.13	----	
LW025D	06/09/2004	07:59	35.38	26.26	9.12	----	
LW025D	08/10/2004	08:40	35.38	29.94	5.44	----	
LW025D	08/10/2004	10:17	35.38	29.96	5.42	----	
LW025D	11/18/2004	07:48	35.38	29.59	5.79	----	
LW025D	02/15/2005	09:16	35.38	28.91	6.47	----	
LW025D	06/07/2005	17:30	35.38	27.25	8.13	----	
LW025D	08/16/2005	13:31	35.38	29.71	5.67	----	
LW025D	11/14/2005	13:51	35.38	25.33	10.05	----	
LW026D	10/23/2003	12:09	31.49	27.17	4.32	----	
LW026D	02/19/2004	12:22	31.49	23.64	7.85	----	
LW026D	06/09/2004	07:37	31.49	22.67	8.82	----	
LW026D	08/10/2004	08:26	31.49	27.03	4.46	----	
LW026D	08/10/2004	10:05	31.49	27.31	4.18	----	
LW026D	11/18/2004	07:36	31.49	26.49	5.00	----	
LW026D	02/15/2005	10:35	31.49	25.08	6.41	----	
LW026D	06/07/2005	17:44	31.49	24.24	7.25	----	
LW026D	08/16/2005	13:38	31.49	27.06	4.43	----	
LW026D	11/14/2005	14:20	31.49	29.09	2.40	----	
LW027D	10/23/2003	12:21	29.71	25.47	4.24	----	
LW027D	02/19/2004	12:43	29.71	21.96	7.75	----	
LW027D	06/09/2004	07:38	29.71	20.97	8.74	----	
LW027D	08/10/2004	08:28	29.71	25.34	4.37	----	
LW027D	08/10/2004	10:12	29.71	25.65	4.06	----	
LW027D	11/18/2004	07:38	29.71	24.78	4.93	----	
LW027D	02/15/2005	10:31	29.71	23.39	6.32	----	
LW027D	06/07/2005	17:52	29.71	22.55	7.16	----	
LW027D	08/16/2005	13:42	29.71	25.40	4.31	----	
LW027D	11/14/2005	14:26	29.71	23.29	6.42	----	
LW029D	10/23/2003	14:40	31.12	26.45	4.67	----	
LW029D	02/19/2004	15:31	31.12	22.55	8.57	----	
LW029D	06/09/2004	09:44	31.12	22.16	8.96	----	
LW029D	08/10/2004	08:28	31.12	26.28	4.84	----	
LW029D	08/10/2004	10:12	31.12	26.52	4.60	----	
LW029D	11/18/2004	08:13	31.12	25.80	5.32	----	
LW029D	02/15/2005	11:33	31.12	24.65	6.47	----	
LW029D	06/07/2005	18:56	31.12	23.42	7.70	----	
LW029D	08/16/2005	14:16	31.12	26.21	4.91	----	
LW029D	11/14/2005	15:59	31.12	24.45	6.67	----	
LW030D	10/23/2003	14:52	30.06	25.58	4.48	----	
LW030D	02/19/2004	15:33	30.06	21.55	8.51	----	
LW030D	06/09/2004	09:47	30.06	21.21	8.85	----	
LW030D	08/10/2004	08:30	30.06	25.58	4.48	----	
LW030D	08/10/2004	10:14	30.06	25.87	4.19	----	
LW030D	11/18/2004	08:15	30.06	25.01	5.05	----	
LW030D	02/15/2005	11:35	30.06	23.68	6.38	----	
LW030D	06/07/2005	19:00	30.06	22.70	7.36	----	
LW030D	08/16/2005	14:20	30.06	25.50	4.56	----	
LW030D	11/14/2005	16:02	30.06	23.18	6.88	----	
LW032D	10/23/2003	14:33	30.86	25.23	5.63	----	
LW032D	02/19/2004	15:28	30.86	21.95	8.91	----	
LW032D	06/09/2004	09:59	30.86	21.41	9.45	----	
LW032D	08/10/2004	08:33	30.86	25.24	5.62	----	
LW032D	08/10/2004	10:16	30.86	25.42	5.44	----	
LW032D	11/18/2004	08:18	30.86	24.63	6.23	----	
LW032D	02/15/2005	10:57	30.86	23.78	7.08	----	
LW032D	06/07/2005	19:03	30.86	22.61	8.25	----	
LW032D	08/16/2005	14:25	30.86	23.15	7.71	----	
LW032D	11/14/2005	13:55	30.86	23.93	6.93	----	
LW035D	10/23/2003	11:48	33.19	28.33	4.86	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW035D	02/19/2004	12:34	33.19	24.86	8.33	----	
LW035D	06/09/2004	07:24	33.19	23.88	9.31	----	
LW035D	08/10/2004	08:19	33.19	27.62	5.57	----	
LW035D	08/10/2004	09:57	33.19	27.65	5.54	----	
LW035D	11/18/2004	07:27	33.19	27.31	5.88	----	
LW035D	02/15/2005	09:02	33.19	26.63	6.56	----	
LW035D	06/07/2005	16:18	33.19	24.80	8.39	----	
LW035D	08/16/2005	13:25	33.19	27.47	5.72	----	
LW035D	11/14/2005	14:09	33.19	27.10	6.09	----	
LW036D	11/18/2004	07:25	11.30	5.59	5.71	----	
LW036D	02/15/2005	08:28	11.30	5.26	6.04	----	
LW036D	06/07/2005	16:51	11.30	3.73	7.57	----	
LW036D	08/16/2005	13:09	11.30	6.12	5.18	----	
LW036D	11/14/2005	13:34	11.30	5.10	6.20	----	
LW037D	11/18/2004	07:30	10.84	5.35	5.49	----	
LW037D	02/15/2005	08:36	10.84	4.84	6.00	----	
LW037D	06/07/2005	16:56	10.84	3.40	7.44	----	
LW037D	08/16/2005	13:15	10.84	6.00	4.84	----	
LW037D	11/14/2005	13:30	10.84	4.67	6.17	----	
LW038D	11/18/2004	07:34	10.21	5.22	4.99	----	
LW038D	02/15/2005	08:43	10.21	4.29	5.92	----	
LW038D	06/07/2005	17:08	10.21	3.21	7.00	----	
LW038D	08/16/2005	13:18	10.21	5.58	4.63	----	
LW038D	11/14/2005	13:24	10.21	4.01	6.20	----	
LW039D	11/18/2004	07:39	9.35	4.03	5.32	----	
LW039D	02/15/2005	08:51	9.35	3.53	5.82	----	
LW039D	06/07/2005	17:00	9.35	2.00	7.35	----	
LW039D	08/16/2005	13:21	9.35	4.50	4.85	----	
LW039D	11/14/2005	13:20	9.35	3.24	6.11	----	
LW040D	02/15/2005	08:39	33.77	27.54	6.23	----	
LW040D	06/07/2005	16:05	33.77	25.97	7.80	----	
LW040D	08/16/2005	13:30	33.77	28.99	4.78	----	
LW040D	11/14/2005	14:16	33.77	27.40	6.37	----	
LW045D	11/18/2004	07:29	33.36	27.53	5.83	----	
LW045D	02/15/2005	09:05	33.36	26.69	6.67	----	
LW045D	06/07/2005	16:13	33.36	24.77	8.59	----	
LW045D	08/16/2005	13:27	33.36	27.45	5.91	----	
LW045D	11/14/2005	14:12	33.36	27.36	6.00	----	
OX008D	10/23/2003	13:48	30.84	26.12	4.72	----	
OX008D	02/19/2004	14:20	30.84	22.52	8.32	----	
OX008D	06/09/2004	09:10	30.84	21.77	9.07	----	
OX008D	08/10/2004	08:37	30.84	25.90	4.94	----	
OX008D	08/10/2004	10:23	30.84	26.09	4.75	----	
OX008D	11/18/2004	08:25	30.84	25.25	5.59	----	
OX008D	02/15/2005	09:37	30.84	24.54	6.30	----	
OX008D	06/07/2005	19:38	30.84	22.97	7.87	----	
OX008D	08/16/2005	13:50	30.84	25.80	5.04	----	
OX008D	11/14/2005	14:46	30.84	24.34	6.50	----	
RW2	05/18/1999	15:02	30.68	19.50	11.18	----	
RW2	09/21/1999	11:40	30.68	25.75	4.93	----	
RW2	12/06/1999	14:17	30.68	20.77	9.91	----	
RW2	02/16/2000	10:29	30.68	20.99	9.69	----	
RW2	05/23/2000	16:52	30.68	21.37	9.31	----	
RW2	08/29/2000	13:36	30.68	25.36	5.32	----	
RW2	11/09/2000	12:50	30.68	25.83	4.85	----	Groundwater interim action pumping began 10/5/00 in the lower zone at this well. Pump not running at time of measurement.
RW2	02/12/2001	16:37	30.68	26.40	4.28	----	
RW2	06/04/2001	12:05	30.68	26.26	4.42	----	
RW2	08/16/2001	11:11	30.68	28.98	1.70	----	
RW2	11/28/2001	12:02	30.68	26.86	3.82	----	
RW2	02/27/2002	13:57	30.68	26.02	4.66	----	
RW2	06/27/2002	14:35	30.68	23.68	7.00	----	
RW2	08/26/2002	16:29	30.68	28.26	2.42	----	
RW2	11/13/2002	08:20	30.68	28.50	2.18	----	
RW2	02/11/2003	09:29	30.68	26.96	3.72	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RW2	05/07/2003	17:30	30.68	24.80	5.88	----	Date of measurement is day of sampling
RW2	08/27/2003	13:57	30.68	27.91	2.77	----	
RW2	10/23/2003	13:30	30.68	28.73	1.95	----	
RW2	02/19/2004	13:43	30.68	25.53	5.15	----	
RW2	06/10/2004	08:13	30.68	25.19	5.49	----	
RW2	08/10/2004	08:23	30.68	29.55	1.13	----	
RW2	08/10/2004	10:07	30.68	29.74	0.94	----	
RW2	11/18/2004	08:05	30.68	29.50	1.18	----	
RW2	02/15/2005	10:36	30.68	37.19	-6.51	----	Strong TPH odor
RW2	06/09/2005	16:20	30.68	22.94	7.74	----	
RW2	08/16/2005	14:57	30.68	30.33	0.35	----	
RW2	11/14/2005	15:12	30.68	29.39	1.29	----	
RIVER_GAUGE	08/11/1993	12:57	28.13	24.90	3.23	----	
RIVER_GAUGE	10/26/1993	13:17	28.13	25.27	2.86	----	
RIVER_GAUGE	11/17/1993	13:21	28.13	24.18	3.95	----	
RIVER_GAUGE	12/17/1993	12:46	28.13	22.48	5.65	----	
RIVER_GAUGE	01/17/1994	12:58	28.13	22.90	5.23	----	
RIVER_GAUGE	02/18/1994	14:10	28.13	22.30	5.83	----	
RIVER_GAUGE	03/18/1994	12:48	28.13	21.70	6.43	----	
RIVER_GAUGE	04/18/1994	14:34	28.13	23.50	4.63	----	
RIVER_GAUGE	05/18/1994	15:14	28.13	21.80	6.33	----	
RIVER_GAUGE	06/17/1994	14:45	28.13	21.32	6.81	----	
RIVER_GAUGE	07/19/1994	09:10	28.13	23.25	4.88	----	
RIVER_GAUGE	08/17/1994	07:26	28.13	24.00	4.13	----	
RIVER_GAUGE	09/16/1994	07:30	28.13	24.66	3.47	----	
RIVER_GAUGE	10/17/1994	08:58	28.13	24.10	4.03	----	
RIVER_GAUGE	11/21/1994	11:43	28.13	23.20	4.93	----	
RIVER_GAUGE	12/19/1994	10:58	28.13	19.95	8.18	----	
RIVER_GAUGE	01/18/1995	11:04	28.13	16.70	11.43	----	
RIVER_GAUGE	02/21/1995	13:14	28.13	14.65	13.48	----	
RIVER_GAUGE	03/21/1995	12:58	28.13	18.90	9.23	----	
RIVER_GAUGE	04/19/1995	12:37	28.13	19.80	8.33	----	
RIVER_GAUGE	05/19/1995	13:22	28.13	17.40	10.73	----	
RIVER_GAUGE	07/17/1995	13:48	28.13	22.00	6.13	----	
RIVER_GAUGE	08/22/1995	07:45	28.13	23.24	4.89	----	
RIVER_GAUGE	09/22/1995	08:19	28.13	24.26	3.87	----	
RIVER_GAUGE	11/20/1995	07:50	28.13	20.20	7.93	----	
RIVER_GAUGE	12/01/1995	08:23	28.13	8.45	19.68	----	
RIVER_GAUGE	12/19/1995	07:11	28.13	14.10	14.03	----	
RIVER_GAUGE	01/19/1996	08:29	28.13	14.06	14.07	----	
RIVER_GAUGE	02/20/1996	10:36	28.13	8.00	20.13	----	
RIVER_GAUGE	03/19/1996	09:15	28.13	15.95	12.18	----	
RIVER_GAUGE	04/19/1996	11:45	28.13	13.95	14.18	----	
RIVER_GAUGE	07/22/1996	14:18	28.13	22.00	6.13	----	
RIVER_GAUGE	07/22/1996	15:05	28.13	22.20	5.93	----	
RIVER_GAUGE	08/20/1996	14:09	28.13	22.80	5.33	----	
RIVER_GAUGE	08/20/1996	15:10	28.13	23.00	5.13	----	
RIVER_GAUGE	09/24/1996	07:55	28.13	23.41	4.72	----	
RIVER_GAUGE	09/24/1996	10:15	28.13	24.25	3.88	----	
RIVER_GAUGE	10/28/1996	10:53	28.13	22.95	5.18	----	
RIVER_GAUGE	10/28/1996	12:12	28.13	23.21	4.92	----	
RIVER_GAUGE	12/13/1996	12:09	28.13	14.50	13.63	----	
RIVER_GAUGE	03/25/1997	11:33	28.13	14.60	13.53	----	
RIVER_GAUGE	03/31/1997		28.13	----	----	----	Locked
RIVER_GAUGE	07/16/1997	06:55	28.13	18.73	9.40	----	
RIVER_GAUGE	07/16/1997	07:55	28.13	18.84	9.29	----	
RIVER_GAUGE	07/16/1997	09:14	28.13	18.92	9.21	----	
RIVER_GAUGE	10/21/1997	15:52	28.13	23.38	4.75	----	
RIVER_GAUGE	10/21/1997	16:11	28.13	23.44	4.69	----	
RIVER_GAUGE	10/21/1997	17:55	28.13	23.59	4.54	----	
RIVER_GAUGE	01/27/1998	10:46	28.13	18.20	9.93	----	
RIVER_GAUGE	01/27/1998	12:25	28.13	18.31	9.82	----	
RIVER_GAUGE	01/27/1998	13:56	28.13	17.89	10.24	----	
RIVER_GAUGE	05/18/1998	17:12	28.13	16.97	11.16	----	
RIVER_GAUGE	05/18/1998	17:45	28.13	17.15	10.98	----	
RIVER_GAUGE	08/17/1998	09:58	28.13	23.98	4.15	----	
RIVER_GAUGE	08/17/1998	10:34	28.13	24.15	3.98	----	
RIVER_GAUGE	11/13/1998	09:30	28.13	24.64	3.49	----	
RIVER_GAUGE	11/13/1998	10:05	28.13	24.45	3.68	----	
RIVER_GAUGE	02/16/1999	12:40	28.13	19.36	8.77	----	
RIVER_GAUGE	02/16/1999	13:27	28.13	19.43	8.70	----	
RIVER_GAUGE	05/18/1999	14:33	28.13	17.24	10.89	----	
RIVER_GAUGE	05/18/1999	15:19	28.13	17.30	10.83	----	
RIVER_GAUGE	09/21/1999	11:10	28.13	24.94	3.19	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - JUNE 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RIVER_GAUGE	09/21/1999	11:59	28.13	25.03	3.10	----	
RIVER_GAUGE	12/06/1999	13:43	28.13	18.24	9.89	----	
RIVER_GAUGE	12/06/1999	14:25	28.13	18.06	10.07	----	
RIVER_GAUGE	02/16/2000	10:03	28.13	19.18	8.95	----	
RIVER_GAUGE	02/16/2000	10:41	28.13	19.07	9.06	----	
RIVER_GAUGE	05/23/2000	16:12	28.13	19.80	8.33	----	
RIVER_GAUGE	05/23/2000	17:04	28.13	19.94	8.19	----	
RIVER_GAUGE	08/29/2000	12:54	28.13	24.63	3.50	----	
RIVER_GAUGE	08/29/2000	13:49	28.13	24.91	3.22	----	
RIVER_GAUGE	11/09/2000	12:19	28.13	24.26	3.87	----	
RIVER_GAUGE	11/09/2000	13:10	28.13	23.67	4.46	----	
RIVER_GAUGE	02/12/2001	15:45	28.13	23.75	4.38	----	
RIVER_GAUGE	02/12/2001	16:43	28.13	24.00	4.13	----	
RIVER_GAUGE	06/04/2001	11:20	28.13	23.62	4.51	----	
RIVER_GAUGE	06/04/2001	12:15	28.13	23.79	4.34	----	
RIVER_GAUGE	08/16/2001	10:20	28.13	24.83	3.30	----	
RIVER_GAUGE	08/16/2001	11:29	28.13	25.23	2.90	----	
RIVER_GAUGE	11/28/2001	11:16	28.13	22.50	5.63	----	
RIVER_GAUGE	11/28/2001	12:18	28.13	23.13	5.00	----	
RIVER_GAUGE	02/27/2002	13:11	28.13	22.24	5.89	----	
RIVER_GAUGE	02/27/2002	14:12	28.13	22.27	5.86	----	
RIVER_GAUGE	03/05/2002	11:25	28.13	21.42	6.71	----	
RIVER_GAUGE	04/05/2002	08:00	28.13	23.10	5.03	----	
RIVER_GAUGE	05/29/2002	14:07	28.13	17.31	10.82	----	
RIVER_GAUGE	06/27/2002	14:07	28.13	18.31	9.82	----	
RIVER_GAUGE	06/27/2002	14:43	28.13	18.36	9.77	----	
RIVER_GAUGE	08/26/2002	15:45	28.13	24.83	3.30	----	
RIVER_GAUGE	08/26/2002	16:13	28.13	24.85	3.28	----	
RIVER_GAUGE	11/13/2002	07:19	28.13	24.10	4.03	----	
RIVER_GAUGE	11/13/2002	07:54	28.13	24.21	3.92	----	
RIVER_GAUGE	02/11/2003	08:34	28.13	23.70	4.43	----	
RIVER_GAUGE	02/11/2003	09:14	28.13	23.43	4.70	----	
RIVER_GAUGE	05/08/2003	06:40	28.13	20.02	8.11	----	
RIVER_GAUGE	05/08/2003	07:17	28.13	20.00	8.13	----	
RIVER_GAUGE	08/27/2003	13:18	28.13	23.36	4.77	----	
RIVER_GAUGE	08/27/2003	14:15	28.13	23.66	4.47	----	
RIVER_GAUGE	10/23/2003	11:46	28.13	25.00	3.13	----	
RIVER_GAUGE	10/23/2003	13:35	28.13	24.94	3.19	----	
RIVER_GAUGE	02/19/2004	12:10	28.13	21.14	6.99	----	
RIVER_GAUGE	02/19/2004	13:20	28.13	20.89	7.24	----	
RIVER_GAUGE	06/09/2004	07:18	28.13	19.79	8.34	----	
RIVER_GAUGE	06/09/2004	08:16	28.13	19.78	8.35	----	
RIVER_GAUGE	08/10/2004	08:10	28.13	24.85	3.28	----	
RIVER_GAUGE	08/10/2004	08:52	28.13	25.11	3.02	----	
RIVER_GAUGE	08/10/2004	09:51	28.13	25.43	2.70	----	
RIVER_GAUGE	08/10/2004	10:35	28.13	25.54	2.59	----	
RIVER_GAUGE	11/18/2004	07:20	28.13	24.25	3.88	----	
RIVER_GAUGE	11/18/2004	08:30	28.13	24.65	3.48	----	
RIVER_GAUGE	02/15/2005	08:18	28.13	22.91	5.22	----	
RIVER_GAUGE	08/16/2005	13:06	28.13	25.10	3.03	----	
RIVER_GAUGE	08/16/2005	14:37	28.13	24.30	3.83	----	
RIVER_GAUGE	11/14/2005	13:17	28.13	22.15	5.98	----	
RIVER_GAUGE	11/14/2005	16:12	28.13	20.23	7.90	----	

Notes:
NM Not measured.
NA Not available.
-- No measurable product or odor observed.
* Well Point
(a) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference elevation surveys were conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the reference elevation was measured at a marked location on the south side of the dock on the Willamette River.
(b) Depth to water (DTW) measured from surveyed reference elevation [see note (1)].
(c) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in the well using the method in " *Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells* " [Lenhard and Parker 1990; Groundwater 28(1):57-67].

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	HRW-1 P5K0699-14 11/16/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol	0.495 U	0.852	0.481 U		2.43 U							
SEMIVOLATILES (µg/L)												
EPA 8270C												
2,3,4,6-Tetrachlorophenol				24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	**38.8**	100 U
Acenaphthene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Acenaphthylene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Anthracene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzo(a)anthracene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzo(a)pyrene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzo(b)fluoranthene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzo(g,h,i)perylene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzo(k)fluoranthene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Benzoic Acid				248 U	250 U	1250 U	101 U	204 U	50.5 U	2500 U	253 U	50.0 U
Benzyl alcohol				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
4-Bromophenyl-phenylether				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Butyl benzyl phthalate				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
4-Chloro-3-methylphenol				9.90 U	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
4-Chloroaniline				14.9 UJ	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U
Bis(2-chloroethoxy)methane				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Bis(2-chloroethyl)ether				9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
Bis(2-chloroisopropyl)ether				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2-Chloronaphthalene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2-Chlorophenol				4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
4-Chlorophenylphenyl ether				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Chrysene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Di-n-butyl phthalate				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Di-n-octyl phthalate				9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
Dibenzo(a,h)anthracene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Dibenzofuran				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
1,2-Dichlorobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
1,3-Dichlorobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
1,4-Dichlorobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
3,3-Dichlorobenzidine				49.5 UJ	50.0 U	250 U	20.2 U	40.8 U	10.1 U	500 U	50.5 U	10.0 U
2,4-Dichlorophenol				14.9 U	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U
Diethyl phthalate				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2,4-Dimethylphenol				14.9 U	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U
Dimethyl phthalate				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
4,6-Dinitro-2-methylphenol				74.3 U	75.0 U	375 U	30.3 U	61.2 U	15.2 U	750 U	75.8 U	15.0 U
2,4-Dinitrophenol				124 U	125 U	625 U	50.5 U	102 U	25.3 U	1250 U	126 U	25.0 U
2,4-Dinitrotoluene				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U

BZTO104(e)027188

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	HRW-1 P5K0699-14 11/16/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005
2,6-Dinitrotoluene				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
Bis(2-ethylhexyl)phthalate				49.5 UJ	50.0 U	250 U	20.2 U	40.8 U	10.1 U	500 U	50.5 U	10.0 U
Fluoranthene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Fluorene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Hexachlorobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Hexachlorobutadiene				9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
Hexachlorocyclopentadiene				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
Hexachloroethane				9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
Indeno(1,2,3-cd)pyrene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Isophorone				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2-Methylnaphthalene				4.95 UJ	**10.8**	25.0 U	**4.14**	**5.27**	1.01 U	50.0 U	5.05 U	1.00 U
2-Methylphenol				4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
3- & 4-Methylphenol				4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Naphthalene				4.95 UJ	**24.6**	25.0 U	**8.32**	**11.7**	1.01 U	50.0 U	5.05 U	**1.27**
2-Nitroaniline				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
3-Nitroaniline				29.7 UJ	30.0 U	150 U	12.1 U	24.5 U	6.06 U	300 U	30.3 U	6.00 U
4-Nitroaniline				24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
Nitrobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2-Nitrophenol				24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
4-Nitrophenol				24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
N-Nitroso-Di-N-Propylamine				9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U
N-Nitrosodiphenylamine				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Pentachlorophenol				**50.4**	25.0 U	**236**	10.1 U	20.4 U	5.05 U	**307**	**2060**	**377**
Phenanthrene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
Phenol				9.90 U	10.0 U	50.0 UJ	4.04 U	8.16 UJ	2.02 U	100 UJ	10.1 UJ	2.00 UJ
Pyrene				4.95 UJ	5.00 UJ	25.0 U	2.02 UJ	4.08 U	1.01 UJ	50.0 U	5.05 U	1.00 U
1,2,4-Trichlorobenzene				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
2,4,5-Trichlorophenol				24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
2,4,6-Trichlorophenol				24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U
Carbazole				4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U
VOLATILES (µg/L)												
EPA 8260B												
Acetone				25.0 U	50.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene				1.00 U	2.00 U	**2.66**	**31**	**43.3**	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone				10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene				5.00 U	**10.3**	5.00 U	5.00 U	**7.31**	5.00 U	5.00 U	5.00 U	**9.01**
sec-Butylbenzene				1.00 U	**23.5**	**3.69**	**6.31**	**7.18**	1.00 U	**1.81**	**3.51**	**17.7**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	HRW-1 P5K0699-14 11/16/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005
tert-Butylbenzene				1.00 U	**10.1**	1.00 U	**1.56**	**1.78**	1.00 U	1.00 U	1.00 U	**3.01**
Carbon disulfide				10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene				1.00 U	**39.7**	**16.9**	**72.5**	**106**	1.00 U	1.00 U	1.00 U	**5.64**
Hexachlorobutadiene				4.00 U	8.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone				10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene				2.00 U	**267**	**8.79**	**27.6**	**33.8**	2.00 U	2.00 U	**2.19**	**17.3**
4-Isopropyltoluene				2.00 U	4.00 U	**2.34**	**4.19**	**5.68**	2.00 U	2.00 U	2.00 U	**6.02**
4-Methyl-2-Pentanone (MIBK)				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride				5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene				2.00 U	**42.1**	**7.05**	**17.8**	**20.4**	2.00 U	2.00 U	2.00 U	**4.64**
n-Propylbenzene				1.00 U	**196**	**11.9**	**33.8**	**42.5**	1.00 U	1.00 U	**2.14**	**23.2**
Styrene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	HRW-1 P5K0699-14 11/16/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005
1,2,3-Trichlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene				1.00 U	2.00 U	**37.1**	**136**	**173**	1.00 U	1.00 U	**9.1**	**146**
1,3,5-Trimethylbenzene				1.00 U	2.00 U	**4.02**	**33**	**44.8**	1.00 U	1.00 U	1.00 U	**22.2**
Vinyl chloride				1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene				1.00 U	2.00 U	**20.4**	**9.61**	**83.7**	1.00 U	1.00 U	**1.52**	**20.1**
m,p-Xylene				2.00 U	4.00 U	**15.4**	**96.3**	**104**	2.00 U	2.00 U	2.00 U	**4.65**
NWTPH-G (µg/L)												
Gasoline-Range Hydrocarbons				80.0 U	**2860**	**739 J**						
NWTPH-Dx (µg/L)												
Diesel-Range Hydrocarbons				250 U	**1390**	**396**						
Heavy Oil-Range Hydrocarbons				500 U	495 U	481 U						
TOTAL METALS (µg/L)												
EPA 6020/7470A												
Antimony				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic				1.00 U	**30.4**	**3.16**	**18.1**	**14.1**	**15.7**	**5.98**	**2.94**	**27**
Beryllium				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**9.72**	1.00 U	1.00 U	1.00 U
Copper				**6.96**	2.00 U	2.00 U	2.00 U	2.00 U	**13**	**8.3**	**2.88**	2.00 U
Lead				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**4.78**	1.00 U	1.00 U	1.00 U
Mercury				0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.355**	0.200 U	0.200 U	0.200 U
Nickel				**18.9**	**8.77**	**44.8**	**27.8**	**23.8**	**12.3**	**41.5**	**80.6**	**154**
Selenium				2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium				1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc				5.00 U	**9.34**	5.00 U	5.00 U	5.00 U	**37.8**	**11.3**	**7.88**	**12.2**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	HRW-1 P5K0699-14 11/16/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005
DIOXINS AND FURANS (ng/L)												
EPA 1613B												
2,3,7,8-TCDF							0.00992 U			0.00986 U		
Total TCDF							0.00992 U			0.00986 U		
2,3,7,8-TCDD							0.00992 U			0.00986 U		
Total TCDD							0.00992 U			0.00986 U		
1,2,3,7,8-PeCDF							0.0496 U			0.0493 U		
2,3,4,7,8-PeCDF							0.0496 U			0.0493 U		
Total PeCDF							0.0496 U			0.0493 U		
1,2,3,7,8-PeCDD							0.0496 U			0.0493 U		
Total PeCDD							0.0496 U			0.0493 U		
1,2,3,4,7,8-HxCDF							0.0496 U			0.0493 U		
1,2,3,6,7,8-HxCDF							0.0496 U			0.0493 U		
2,3,4,6,7,8-HxCDF							0.0496 U			0.0493 U		
1,2,3,7,8,9-HxCDF							0.0496 U			0.0493 U		
Total HxCDF							0.0496 U			**0.214**		
1,2,3,4,7,8-HxCDD							0.0496 U			0.0493 U		
1,2,3,6,7,8-HxCDD							0.0496 U			0.0493 U		
1,2,3,7,8,9-HxCDD							0.0496 U			0.0493 U		
Total HxCDD							0.0496 U			0.0493 U		
1,2,3,4,6,7,8-HpCDF							**0.204**			**0.434**		
1,2,3,4,7,8,9-HpCDF							0.0496 U			0.0493 U		
Total HpCDF							**0.525**			**1.04**		
1,2,3,4,6,7,8-HpCDD							**0.567**			**0.949**		
Total HpCDD							**0.851**			**1.42**		
OCDF							**0.354**			**0.551**		
OCDD							**4.29**			**5.1**		
Total TEQ							**0.012354**			**0.019481**		
FIELD PARAMETERS												
pH	**6.56**	**6.28**	**6.66**	**6.78**	**7.10**	**7.30**	**5.95**	**7.21**	**6.73**	**6.10**	**7.03**	**7.20**
Temperature (deg C)	**15.4**	**9.6**	**15.8**	**15.0**	**15.0**	**15.5**	**14.9**	**14.8**	**15.6**	**15.6**	**16.0**	**1.64**
Conductivity (uS/cm)	**230**	**185**	**219**	**17.4**	**377**	**363**	**238**	**371**	**193**	**216**	**334**	**530**
Dissolved oxygen (mg/l)	**2.93**	**1.8**	**1.16**	**4.06**	**2.95**	**2.19**		**2.96**	**1.42**		**3.65**	**2.97**
Turbidity (NTU)	**5**	**0**	**6**	**0**	**1**		**0**	**0**	**3**	**0**	**0**	**0**
Ferrous Iron (mg/L)						**2.4**	**5.4**	**2.7**	**6.5**	**4.0**	**2.5**	**4.0**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX009S P5K0699-08 11/15/2005	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005
PENTACHLOROPHENOL (µg/L)			
EPA 8270SIM			
Pentachlorophenol		0.481 U	**0.524**
SEMIVOLATILES (µg/L)			
EPA 8270C			
2,3,4,6-Tetrachlorophenol	5.00 U	24.3 U	24.0 U
Acenaphthene	1.00 U	4.85 U	4.81 U
Acenaphthylene	1.00 U	4.85 U	4.81 U
Anthracene	1.00 U	4.85 U	4.81 U
Benzo(a)anthracene	1.00 U	4.85 U	4.81 U
Benzo(a)pyrene	1.00 U	4.85 U	4.81 U
Benzo(b)fluoranthene	1.00 U	4.85 U	4.81 U
Benzo(g,h,i)perylene	1.00 U	4.85 U	4.81 U
Benzo(k)fluoranthene	1.00 U	4.85 U	4.81 U
Benzoic Acid	50.0 U	243 U	240 U
Benzyl alcohol	5.00 U	24.3 U	24.0 U
4-Bromophenyl-phenylether	1.00 U	4.85 U	4.81 U
Butyl benzyl phthalate	1.00 U	4.85 U	4.81 U
4-Chloro-3-methylphenol	2.00 U	9.71 U	9.62 U
4-Chloroaniline	3.00 U	14.6 U	14.4 U
Bis(2-chloroethoxy)methane	1.00 U	4.85 U	4.81 U
Bis(2-chloroethyl)ether	2.00 U	9.71 U	9.62 U
Bis(2-chloroisopropyl)ether	1.00 U	4.85 U	4.81 U
2-Chloronaphthalene	1.00 U	4.85 U	4.81 U
2-Chlorophenol	1.00 U	4.85 U	4.81 U
4-Chlorophenylphenyl ether	1.00 U	4.85 U	4.81 U
Chrysene	1.00 U	4.85 U	4.81 U
Di-n-butyl phthalate	1.00 U	4.85 U	4.81 U
Di-n-octyl phthalate	2.00 U	9.71 U	9.62 U
Dibenzo(a,h)anthracene	1.00 U	4.85 U	4.81 U
Dibenzofuran	1.00 U	4.85 U	4.81 U
1,2-Dichlorobenzene	1.00 U	4.85 U	4.81 U
1,3-Dichlorobenzene	1.00 U	4.85 U	4.81 U
1,4-Dichlorobenzene	1.00 U	4.85 U	4.81 U
3,3-Dichlorobenzidine	10.0 U	48.5 U	48.1 U
2,4-Dichlorophenol	3.00 U	14.6 U	14.4 U
Diethyl phthalate	1.00 U	4.85 U	4.81 U
2,4-Dimethylphenol	3.00 U	14.6 U	14.4 U
Dimethyl phthalate	1.00 U	4.85 U	4.81 U
4,6-Dinitro-2-methylphenol	15.0 U	72.8 U	72.1 U
2,4-Dinitrophenol	25.0 U	121 U	120 U
2,4-Dinitrotoluene	5.00 U	24.3 U	24.0 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX009S P5K0699-08 11/15/2005	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005
2,6-Dinitrotoluene	5.00 U	24.3 U	24.0 U
Bis(2-ethylhexyl)phthalate	10.0 U	48.5 U	48.1 U
Fluoranthene	1.00 U	4.85 U	4.81 U
Fluorene	1.00 U	4.85 U	4.81 U
Hexachlorobenzene	1.00 U	4.85 U	4.81 U
Hexachlorobutadiene	2.00 U	9.71 U	9.62 U
Hexachlorocyclopentadiene	5.00 U	24.3 U	24.0 U
Hexachloroethane	2.00 U	9.71 U	9.62 U
Indeno(1,2,3-cd)pyrene	1.00 U	4.85 U	4.81 U
Isophorone	1.00 U	4.85 U	4.81 U
2-Methylnaphthalene	1.00 U	4.85 U	4.81 U
2-Methylphenol	1.00 U	4.85 U	4.81 U
3- & 4-Methylphenol	1.00 U	4.85 U	4.81 U
Naphthalene	1.00 U	4.85 U	4.81 U
2-Nitroaniline	5.00 U	24.3 U	24.0 U
3-Nitroaniline	6.00 U	29.1 U	28.8 U
4-Nitroaniline	5.00 U	24.3 U	24.0 U
Nitrobenzene	1.00 U	4.85 U	4.81 U
2-Nitrophenol	5.00 U	24.3 U	24.0 U
4-Nitrophenol	5.00 U	24.3 U	24.0 U
N-Nitroso-Di-N-Propylamine	2.00 U	9.71 U	9.62 U
N-Nitrosodiphenylamine	1.00 U	4.85 U	4.81 U
Pentachlorophenol	5.00 U	24.3 U	24.0 U
Phenanthrene	1.00 U	4.85 U	4.81 U
Phenol	2.00 U	9.71 UJ	9.62 UJ
Pyrene	1.00 UJ	4.85 U	4.81 U
1,2,4-Trichlorobenzene	1.00 U	4.85 U	4.81 U
2,4,5-Trichlorophenol	5.00 U	24.3 U	24.0 U
2,4,6-Trichlorophenol	5.00 U	24.3 U	24.0 U
Carbazole	1.00 U	4.85 U	4.81 U
VOLATILES (µg/L)			
EPA 8260B			
Acetone	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	**6.39**	**6.43**
Bromobenzene	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	**4.37**	**4.35**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX009S P5K0699-08 11/15/2005	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005
tert-Butylbenzene	1.00 U	**1.5**	**1.59**
Carbon disulfide	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	**40.1**	**41**
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U
Isopropylbenzene	2.00 U	**27.5**	**27.7**
4-Isopropyltoluene	2.00 U	**2.13**	**2.13**
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	**10.4**	**10.2**
n-Propylbenzene	1.00 U	**26.4**	**26.7**
Styrene	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX009S P5K0699-08 11/15/2005	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	**87.1**	**90.2**
1,3,5-Trimethylbenzene	1.00 U	**7.16**	**7.62**
Vinyl chloride	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	**18.6**	**19.1**
m,p-Xylene	2.00 U	**39.5**	**41.5**
NWTPH-G (µg/L)			
Gasoline-Range Hydrocarbons		**826 J**	**880 J**
NWTPH-Dx (µg/L)			
Diesel-Range Hydrocarbons		**483**	**516**
Heavy Oil-Range Hydrocarbons		481 U	481 U
TOTAL METALS (µg/L)			
EPA 6020/7470A			
Antimony	1.00 U	1.00 U	1.00 U
Arsenic	**2.35**	**3.66**	**3.76**
Beryllium	1.00 U	1.00 U	1.00 U
Cadmium	1.00 U	1.00 U	1.00 U
Chromium	1.00 U	1.00 U	1.00 U
Copper	2.00 U	**2.62**	**2.51**
Lead	1.00 U	1.00 U	1.00 U
Mercury	0.200 U	0.200 U	0.200 U
Nickel	**14.5**	**87.6**	**88.2**
Selenium	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U
Zinc	5.00 U	5.00 U	5.00 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX009S P5K0699-08 11/15/2005	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005
DIOXINS AND FURANS (ng/L)			
EPA 1613B			
2,3,7,8-TCDF		0.00988 U	
Total TCDF		0.00988 U	
2,3,7,8-TCDD		0.00988 U	
Total TCDD		0.00988 U	
1,2,3,7,8-PeCDF		0.0494 U	
2,3,4,7,8-PeCDF		0.0494 U	
Total PeCDF		0.0494 U	
1,2,3,7,8-PeCDD		0.0494 U	
Total PeCDD		0.0494 U	
1,2,3,4,7,8-HxCDF		0.0494 U	
1,2,3,6,7,8-HxCDF		0.0494 U	
2,3,4,6,7,8-HxCDF		0.0494 U	
1,2,3,7,8,9-HxCDF		0.0494 U	
Total HxCDF		0.0494 U	
1,2,3,4,7,8-HxCDD		0.0494 U	
1,2,3,6,7,8-HxCDD		0.0494 U	
1,2,3,7,8,9-HxCDD		0.0494 U	
Total HxCDD		0.0494 U	
1,2,3,4,6,7,8-HpCDF		0.0494 U	
1,2,3,4,7,8,9-HpCDF		0.0494 U	
Total HpCDF		0.0494 U	
1,2,3,4,6,7,8-HpCDD		0.0494 U	
Total HpCDD		0.0494 U	
OCDF		0.0988 U	
OCDD		**0.254**	
Total TEQ		**0.000254**	
FIELD PARAMETERS			
pH	**6.91**	**6.61**	**6.59**
Temperature (deg C)	**15.7**	**15.9**	**15.9**
Conductivity (uS/cm)	**411**	**234**	**233**
Dissolved oxygen (mg/l)	**3.27**	**1.88**	**1.07**
Turbidity (NTU)	**0**	**8**	**10**
Ferrous Iron (mg/L)	**2.1**	**10**	**10**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Bold indicates detected constituent.
Note: Dioxin/furan data for OX001S, OX006S, and RW1 were collected on 11/18/2005.

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005
SEMIVOLATILES (µg/L)					
EPA 8270C					
2,3,4,6-Tetrachlorophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Acenaphthene	20.0 U	4.81 U	5.00 U	10.0 U	**6.17**
Acenaphthylene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Anthracene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Benzo(a)anthracene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Benzo(a)pyrene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Benzo(b)fluoranthene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Benzo(g,h,i)perylene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Benzo(k)fluoranthene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Benzoic Acid	1000 U	240 U	250 U	500 U	194 U
Benzyl alcohol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
4-Bromophenyl-phenylether	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Butyl benzyl phthalate	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
4-Chloro-3-methylphenol	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U
4-Chloroaniline	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U
Bis(2-chloroethoxy)methane	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Bis(2-chloroethyl)ether	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U
Bis(2-chloroisopropyl)ether	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
2-Chloronaphthalene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
2-Chlorophenol	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
4-Chlorophenylphenyl ether	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Chrysene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Di-n-butyl phthalate	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Di-n-octyl phthalate	40.0 U	19.2 U	10.0 U	20.0 U	7.77 U
Dibenzo(a,h)anthracene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Dibenzofuran	20.0 U	4.81 U	5.00 U	10.0 U	**4.19**
1,2-Dichlorobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
1,3-Dichlorobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
1,4-Dichlorobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
3,3-Dichlorobenzidine	200 U	48.1 U	50.0 U	100 U	38.8 U
2,4-Dichlorophenol	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U
Diethyl phthalate	20.0 U	4.81 U	5.00 U	10.0 U	5.83 U
2,4-Dimethylphenol	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U
Dimethyl phthalate	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
4,6-Dinitro-2-methylphenol	300 U	72.1 U	75.0 U	150 U	58.3 U
2,4-Dinitrophenol	500 U	120 U	125 U	250 U	97.1 U
2,4-Dinitrotoluene	100 U	24.0 U	25.0 U	50.0 U	19.4 U
2,6-Dinitrotoluene	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Bis(2-ethylhexyl)phthalate	200 U	48.1 U	50.0 U	100 U	38.8 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005
Fluoranthene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Fluorene	20.0 U	4.81 U	5.00 U	10.0 U	**5.48**
Hexachlorobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Hexachlorobutadiene	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U
Hexachlorocyclopentadiene	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Hexachloroethane	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U
Indeno(1,2,3-cd)pyrene	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U
Isophorone	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
2-Methylnaphthalene	20.0 U	4.81 U	**37.2**	10.0 U	3.88 U
2-Methylphenol	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
3- & 4-Methylphenol	20.0 U	4.81 U	5.00 U	**48.9**	3.88 U
Naphthalene	20.0 U	4.81 U	**17.6**	10.0 U	3.88 U
2-Nitroaniline	100 U	24.0 U	25.0 U	50.0 U	19.4 U
3-Nitroaniline	120 U	28.8 U	30.0 U	60.0 U	23.3 U
4-Nitroaniline	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Nitrobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
2-Nitrophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
4-Nitrophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
N-Nitroso-Di-N-Propylamine	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U
N-Nitrosodiphenylamine	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Pentachlorophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Phenanthrene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
Phenol	40.0 U	9.62 UJ	**17.3 J**	**80.5 J**	7.77 UJ
Pyrene	20.0 UJ	4.81 U	5.00 U	10.0 U	3.88 U
1,2,4-Trichlorobenzene	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
2,4,5-Trichlorophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
2,4,6-Trichlorophenol	100 U	24.0 U	25.0 U	50.0 U	19.4 U
Carbazole	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U
PAHs (µg/L)					
EPA 8270SIM					
Acenaphthene	**0.905**	0.594 U	**0.902**	**5.55**	**3.88**
Acenaphthylene	0.500 U	0.396 U	0.408 U	0.990 U	0.297 U
Anthracene	0.500 U	0.396 U	0.408 U	**0.786**	0.198 U
Benzo(a)anthracene	0.500 U	0.396 U	0.408 U	**0.454**	0.198 U
Benzo(a)pyrene	0.500 U	0.396 U	0.408 U	0.198 U	0.198 U
Benzo(b)fluoranthene	0.500 U	0.396 U	0.408 U	**0.231**	0.198 U
Benzo(g,h,i)perylene	0.500 U	0.396 U	0.408 U	0.198 U	0.198 U
Benzo(k)fluoranthene	0.500 U	0.396 U	0.408 U	0.198 U	0.198 U
Chrysene	0.500 U	0.396 U	0.408 U	**0.447**	0.198 U
Dibenzo(a,h)anthracene	1.00 U	0.792 U	0.816 U	0.396 U	0.396 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005
Fluoranthene	0.500 U	0.396 U	0.408 U	**2.03**	**0.236**
Fluorene	**2.62**	0.396 U	**2.13**	**6.44**	**3.49**
Indeno(1,2,3-cd)pyrene	0.500 U	0.396 U	0.408 U	0.198 U	0.198 U
Naphthalene	1.75 U	0.990 U	**15.7**	7.43 U	1.29 U
Phenanthrene	**0.891**	0.396 U	**1.06**	**3.45**	**1.96**
Pyrene	0.500 U	0.396 U	0.408 U	**1.71**	0.198 U
VOLATILES (µg/L)					
EPA 8260B					
Acetone	25.0 U	25.0 U	250 U	500 U	125 U
Benzene	1.00 U	1.00 U	**716**	**2470**	**220**
Bromobenzene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Bromochloromethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Bromodichloromethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Bromoform	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Bromomethane	5.00 U	5.00 U	50.0 U	100 U	25.0 U
2-Butanone	10.0 U	10.0 U	100 U	200 U	50.0 U
n-Butylbenzene	5.00 U	5.00 U	50.0 U	100 U	25.0 U
sec-Butylbenzene	**5.25**	1.00 U	**201**	20.0 U	**5.8**
tert-Butylbenzene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Carbon disulfide	10.0 U	10.0 U	100 U	200 U	50.0 U
Carbon tetrachloride	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Chlorobenzene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Chloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Chloroform	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Chloromethane	5.00 U	5.00 U	50.0 U	100 U	25.0 U
2-Chlorotoluene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
4-Chlorotoluene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	50.0 U	100 U	25.0 U
Dibromochloromethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2-Dibromoethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Dibromomethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2-Dichlorobenzene (8260)	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,3-Dichlorobenzene (8260)	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,4-Dichlorobenzene (8260)	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	50.0 U	100 U	25.0 U
1,1-Dichloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2-Dichloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1-Dichloroethene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U

TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005
1,2-Dichloropropane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,3-Dichloropropane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
2,2-Dichloropropane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1-Dichloropropene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Ethylbenzene	1.00 U	1.00 U	**131**	**72.8**	**6.5**
Hexachlorobutadiene (8260)	4.00 U	4.00 U	40.0 U	80.0 U	20.0 U
2-Hexanone	10.0 U	10.0 U	100 U	200 U	50.0 U
Isopropylbenzene	**7.05**	2.00 U	**51.6**	40.0 U	**52.5**
4-Isopropyltoluene	2.00 U	2.00 U	20.0 U	40.0 U	10.0 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	50.0 U	100 U	25.0 U
Methyl tert-butyl ether	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Methylene chloride	5.00 U	5.00 U	50.0 U	100 U	25.0 U
Naphthalene (8260)	2.00 U	2.00 U	**38.9**	40.0 U	10.0 U
n-Propylbenzene	**10.3**	1.00 U	**77.5**	20.0 U	**96.6**
Styrene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Tetrachloroethene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Toluene	1.00 U	1.00 U	**19**	**64.2**	**12.6**
1,2,3-Trichlorobenzene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2,4-Trichlorobenzene (8260)	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Trichloroethene	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
Trichlorofluoromethane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	**244**	**96.2**	5.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	**70.4**	**67.4**	5.00 U
Vinyl chloride	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U
o-Xylene	1.00 U	1.00 U	**62.2**	**221**	5.00 U
m,p-Xylene	2.00 U	2.00 U	**314**	**412**	**12.1**
NWTPH-G (µg/L)					
Gasoline Range Hydrocarbons	**315**	**240**	**5100 J**	**8560**	**1530 J**
NWTPH-Dx (µg/L)					
Diesel Range Hydrocarbons	**1020**	**2090**	**3410**	**2720**	**1480**
Heavy Oil Range Hydrocarbons	495 U	500 U	500 U	500 U	500 U

TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005
TOTAL METALS (µg/L)					
EPA 6020/7470A					
Antimony	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic	**46**	**59.6**	**38.3**	**35.9**	**41.1**
Beryllium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Copper	2.00 U	2.00 U	2.00 U	**2.81**	2.00 U
Lead	1.00 U	1.00 U	**6.83**	**26**	**12.4**
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Nickel	2.00 U	**5.35**	**2.26**	**3.98**	**2.11**
Selenium	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc	**6.17**	5.00 U	5.00 U	5.00 U	5.00 U
FIELD PARAMETERS					
pH	**7.40**	**7.10**	**6.57**	**6.64**	**7.47**
Temperature (deg C)	**13.9**	**14.9**	**14.0**	**12.8**	**14.7**
Conductivity (uS/cm)	**654**	**358**	**198**	**253**	**632**
Dissolved oxygen (mg/l)	**3.23**	**3.10**		**0.71**	**2.43**
Turbidity (NTU)	**0**	**0**	**0**	**6**	**0**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Bold indicates detected constituent.

TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
PENTACHLOROPHENOL (µg/L)					
EPA 8270SIM					
Pentachlorophenol	0.485 U	0.505 U	0.485 U	0.490 U	0.476 U
SEMIVOLATILES (µg/L)					
EPA 8270C					
2,3,4,6-Tetrachlorophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Acenaphthene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Acenaphthylene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Anthracene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(a)anthracene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(a)pyrene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(b)fluoranthene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(g,h,i)perylene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(k)fluoranthene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzoic Acid	198 U	99.0 U	48.5 U	49.5 U	47.6 U
Benzyl alcohol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
4-Bromophenyl-phenylether	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Butyl benzyl phthalate	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4-Chloro-3-methylphenol	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
4-Chloroaniline	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Bis(2-chloroethoxy)methane	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Bis(2-chloroethyl)ether	39.6 U	3.96 U	1.94 U	1.98 U	1.90 U
Bis(2-chloroisopropyl)ether	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Chloronaphthalene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Chlorophenol	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4-Chlorophenylphenyl ether	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Chrysene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Di-n-butyl phthalate	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Di-n-octyl phthalate	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Dibenzo(a,h)anthracene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Dibenzofuran	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,2-Dichlorobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,3-Dichlorobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,4-Dichlorobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
3,3-Dichlorobenzidine	39.6 U	19.8 U	9.71 U	9.90 U	9.52 U
2,4-Dichlorophenol	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Diethyl phthalate	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2,4-Dimethylphenol	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Dimethyl phthalate	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4,6-Dinitro-2-methylphenol	59.4 U	29.7 U	14.6 U	14.9 U	14.3 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
2,4-Dinitrophenol	99.0 U	49.5 U	24.3 U	24.8 U	23.8 U
2,4-Dinitrotoluene	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
2,6-Dinitrotoluene	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Bis(2-ethylhexyl)phthalate	39.6 U	19.8 U	**13.6**	9.90 U	9.52 U
Fluoranthene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Fluorene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Hexachlorobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Hexachlorobutadiene	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Hexachlorocyclopentadiene	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Hexachloroethane	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Indeno(1,2,3-cd)pyrene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Isophorone	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Methylnaphthalene	3.96 U	1.98 U	0.971 U	0.990 U	**2.02**
2-Methylphenol	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
3- & 4-Methylphenol	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Naphthalene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Nitroaniline	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
3-Nitroaniline	23.8 U	11.9 U	5.83 U	5.94 U	5.71 U
4-Nitroaniline	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Nitrobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Nitrophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
4-Nitrophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
N-Nitroso-Di-N-Propylamine	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
N-Nitrosodiphenylamine	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Pentachlorophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Phenanthrene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Phenol	7.92 UJ	3.96 UJ	1.94 U	1.98 UJ	1.90 U
Pyrene	3.96 U	1.98 U	0.971 UJ	0.990 U	0.952 UJ
1,2,4-Trichlorobenzene	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2,4,5-Trichlorophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
2,4,6-Trichlorophenol	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Carbazole	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
VOLATILES (µg/L)					
EPA 8260B					
Acetone	**47.5**	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	**1.06**	1.00 U	1.00 U	1.00 U	**5.92**
tert-Butylbenzene	**3.15**	1.00 U	1.00 U	1.00 U	**1.85**
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	2.00 U	2.00 U	2.00 U	2.00 U	**37.3**
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	**2.48**
n-Propylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	**34.3**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)					
Gasoline-Range Hydrocarbons	**329**	80.0 U	80.0 UJ	80.0 U	**371**
NWTPH-Dx (µg/L)					
Diesel-Range Hydrocarbons	**452 J**	248 U	245 U	250 U	245 U
Heavy Oil-Range Hydrocarbons	495 U	495 U	490 U	500 U	490 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
TOTAL METALS (µg/L)					
EPA 6020/7470A					
Antimony	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic	**10.8**	**32.6**	**15.3**	**6.96**	**22**
Beryllium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	1.00 U	**1.04**	**5.7**	**27.8**	1.00 U
Copper	2.00 U	2.00 U	**9.24**	**37.3**	2.00 U
Lead	1.00 U	1.00 U	**2.15**	**15.1**	1.00 U
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Nickel	**15.5**	2.00 U	**5.26**	**70.6**	**23.5**
Selenium	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc	**8.29**	5.00 U	**16.6**	**85.1**	**8.11**
FIELD PARAMETERS					
pH	**6.66**	**7.49**	**6.27**	**6.76**	**7.55**
Temperature (deg C)	**14.6**	**15.7**	**14.0**	**14.9**	**13.6**
Conductivity (uS/cm)	**196**	**312**	**128**	**299**	**385**
Dissolved oxygen (mg/l)	**1.19**	**3.64**	**7.77**	**1.55**	**3.79**
Turbidity (NTU)	**0**	**14**	**102**	**373**	**0**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Bold indicates detected constituent.

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
SEMIVOLATILES (µg/L)												
EPA 8270C												
2,3,4,6-Tetrachlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Acenaphthene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Acenaphthylene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Anthracene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Benzo(a)anthracene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Benzo(a)pyrene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(b)fluoranthene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(g,h,i)perylene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(k)fluoranthene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzoic Acid	49.0 U	49.5 U	990 U	50.0 U	50.0 U	49.5 U	48.5 U	49.5 U	49.5 U	50.0 U	49.0 U	51.0 U
Benzyl alcohol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
4-Bromophenyl-phenylether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Butyl benzyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4-Chloro-3-methylphenol	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
4-Chloroaniline	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Bis(2-chloroethoxy)methane	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Bis(2-chloroethyl)ether	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Bis(2-chloroisopropyl)ether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Chloronaphthalene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Chlorophenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4-Chlorophenylphenyl ether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Chrysene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Di-n-butyl phthalate	0.980 U	0.990 U	19.8 U	**1.24**	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Di-n-octyl phthalate	19.6 U	19.8 U	39.6 U	20.0 U	20.0 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	20.4 U
Dibenzo(a,h)anthracene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Dibenzofuran	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,2-Dichlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,3-Dichlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,4-Dichlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
3,3-Dichlorobenzidine	9.80 U	9.90 U	198 U	10.0 U	10.0 U	9.90 U	9.71 U	9.90 U	9.90 U	10.0 U	9.80 U	10.2 U
2,4-Dichlorophenol	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Diethyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2,4-Dimethylphenol	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Dimethyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4,6-Dinitro-2-methylphenol	14.7 U	14.9 U	297 U	15.0 U	15.0 U	14.9 U	14.6 U	14.9 U	14.9 U	15.0 U	14.7 U	15.3 U
2,4-Dinitrophenol	24.5 U	24.8 U	495 U	25.0 U	25.0 U	24.8 U	24.3 U	24.8 U	24.8 U	25.0 U	24.5 U	25.5 U
2,4-Dinitrotoluene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
2,6-Dinitrotoluene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Bis(2-ethylhexyl)phthalate	9.80 U	9.90 U	198 U	10.0 U	10.0 U	9.90 U	9.71 U	9.90 U	9.90 U	10.0 U	9.80 U	10.2 U
Fluoranthene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
Fluorene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Hexachlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Hexachlorobutadiene	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Hexachlorocyclopentadiene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Hexachloroethane	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Indeno(1,2,3-cd)pyrene	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Isophorone	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Methylnaphthalene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Methylphenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
3- & 4-Methylphenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Naphthalene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Nitroaniline	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
3-Nitroaniline	5.88 U	5.94 U	119 U	6.00 U	6.00 U	5.94 U	5.83 U	5.94 U	5.94 U	6.00 U	5.88 U	6.12 U
4-Nitroaniline	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Nitrobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Nitrophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
4-Nitrophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
N-Nitroso-Di-N-Propylamine	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
N-Nitrosodiphenylamine	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Pentachlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Phenanthrene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Phenol	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Pyrene	0.980 UJ	0.990 UJ	19.8 UJ	1.00 UJ	1.00 UJ	0.990 UJ	0.971 UJ	0.990 UJ	0.990 UJ	1.00 UJ	0.980 UJ	1.02 UJ
1,2,4-Trichlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2,4,5-Trichlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
2,4,6-Trichlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Carbazole	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene	0.0971 U	**0.458**	**1.18**	**0.366**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Acenaphthylene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Anthracene	0.0971 U	0.100 U	0.500 U	**0.133**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**1.66**
Benzo(a)anthracene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(a)pyrene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(b)fluoranthene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(g,h,i)perylene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(k)fluoranthene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Chrysene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Dibenzo(a,h)anthracene	0.194 U	0.200 U	1.00 U	0.198 U	0.204 U	0.198 U	0.192 U	0.196 U	0.194 U	0.200 U	0.194 U	0.202 U
Fluoranthene	0.0971 U	0.100 U	0.500 U	**0.256**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Fluorene	0.0971 U	**0.198**	**2.69**	**0.611**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
Indeno(1,2,3-cd)pyrene	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Naphthalene	0.146 U	1.00 U	2.00 U	0.792 U	0.306 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.505 U
Phenanthrene	0.0971 U	0.100 U	**1.38**	**0.435**	0.153 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**0.198**
Pyrene	**0.099**	0.100 U	0.500 U	**0.393**	**0.126**	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**0.122**
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	**8.03**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	**1.81**	**4.72**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.63**
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	2.00 U	**8.61**	**10.1**	**2.55**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**10.8**
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	**16.4**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene	1.00 U	**1.93**	**10.1**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**2.05**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)												
Gasoline-Range Hydrocarbons	80.0 U	**292**	**387**	**97.9**	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U
NWTPH-Dx (µg/L)												
Diesel-Range Hydrocarbons	243 U	243 U	**591**	248 U	278 U	250 U	245 U	248 U	245 U	243 U	243 U	250 U
Heavy Oil-Range Hydrocarbons	485 U	485 U	495 U	495 U	556 U	500 U	490 U	495 U	490 U	485 U	485 U	500 U

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
TOTAL METALS (µg/L)												
EPA 6020/7470A												
Antimony	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic	**22.2**	**55.4**	**49.7**	**44.9**	**10.5**	1.00 U	1.00 U	**1.64**	**1.57**	**7.76**	**4.37**	**48.1**
Beryllium	1.00 U	1.00 U	1.00 U	**1.15**	**1.58**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**2.1**
Cadmium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	**2.08**	**14.9**	**9.61**	**26.7**	**31.8**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**19.8**	**38.6**
Copper	**3.22**	**26.1**	**14.6**	**38.8**	**44.4**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**26.6**	**47.6**
Lead	**1.37**	**9.1**	**6.4**	**18.9**	**17.2**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**7.76**	**18.2**
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Nickel	**4.9**	**13.8**	**10.8**	**32.4**	**56.8**	2.00 U	2.00 U	2.00 U	2.00 U	**6.12**	**27.6**	**53.2**
Selenium	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc	**18**	**51.5**	**36.8**	**104**	**166**	5.00 U	5.00 U	5.00 U	**5.12**	5.00 U	**73**	**159**
DISSOLVED METALS (µg/L)												
EPA 6020												
Antimony (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Arsenic (Dissolved)						1.00 U	1.00 U	**1.45**	**1.51**	**7.99**		
Beryllium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Cadmium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chromium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Copper (Dissolved)						2.00 U	2.00 U	**2.36**	2.00 U	2.00 U		
Lead (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Mercury						2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
Nickel (Dissolved)						2.00 U	2.00 U	2.00 U	2.00 U	**8.85**		
Selenium (Dissolved)						2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
Silver (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Thallium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Zinc (Dissolved)						5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
FIELD PARAMETERS												
pH	**7.20**	**7.75**	**6.32**	**5.77**	**7.44**	**6.72**	**6.61**	**7.27**	**7.28**	**7.32**	**6.03**	**7.34**
Temperature (deg C)	**14.8**	**14.1**	**14.5**	**14.9**	**13.7**	**15.1**	**14.2**	**15.5**	**15.5**	**14.9**	**13.0**	**13.4**
Conductivity (uS/cm)	**276**	**574**	**225**	**177**	**662**	**120**	**55**	**74**	**74**	**76**	**147**	**630**
Dissolved oxygen (mg/l)	**3.25**	**2.66**	**1.72**		**4.35**	**1.55**	**3.42**	**2.62**	**2.60**	**2.90**		**2.86**
Turbidity (NTU)	**163**	**248**	**149**	**772**	**755**	**0**	**11**	**0**	**0**	**0**	**546**	**999**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
Bold indicates detected constituent.

BZTO104(e)027212

TABLE A-7
NEARSHORE WELLS
GROUNDWATER ANALYTICAL RESULTS - DETECTED ANALYTES
FOURTH QUARTER 2005
TIME OIL NORTHWEST TERMINAL

		River Bank Wells							Shoreline (Beach) Wells				
Parameter	Minimum Preliminary Screening Level	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005
SEMIVOLATILES (µg/L)													
EPA 8270C													
Di-n-butyl phthalate	35 (a)	3.96 U	1.98 U	0.980 U	0.990 U	19.8 U	**1.24**	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U
PAHs (µg/L)													
EPA 8270SIM													
Acenaphthene (8270SIM)	520 (b)			0.0971 U	**0.458**	**1.18**	**0.366**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
Anthracene (8270SIM)	13 (a)			0.0971 U	0.100 U	0.500 U	**0.133**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
Fluoranthene (8270SIM)	6.16 (a)			0.0971 U	0.100 U	0.500 U	**0.256**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
Fluorene (8270SIM)	3.99 (a)			0.0971 U	**0.198**	**2.69**	**0.611**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
Phenanthrene (8270SIM)	620 (a)			0.0971 U	0.100 U	**1.38**	**0.435**	0.153 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
Pyrene (8270SIM)	4000 (c)			**0.099**	0.100 U	0.500 U	**0.393**	**0.126**	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U
VOLATILES (µg/L)													
EPA 8260B													
Acetone		**47.5**	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	51 (c)	1.00 U	1.00 U	1.00 U	**8.03**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	130 (a)	**1.06**	1.00 U	1.00 U	**1.81**	**4.72**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	130 (a)	**3.15**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Isopropylbenzene	130 (a)	2.00 U	2.00 U	2.00 U	**8.61**	**10.1**	**2.55**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	31,000 (g)	1.00 U	1.00 U	1.00 U	**16.4**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	130 (a)	1.00 U	1.00 U	1.00 U	**1.93**	**10.1**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
NWTPH-G (µg/L)													
Gasoline Range Hydrocarbons	--	**329**	80.0 U	80.0 U	**292**	**387**	**97.9**	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U
NWTPH-Dx (µg/L)													
Diesel Range Hydrocarbons	--	**452 J**	248 U	243 U	243 U	**591**	248 U	278 U	250 U	245 U	248 U	245 U	243 U
TOTAL METALS (µg/L)													
EPA 6020/7470A													
Arsenic	1,500 (d)	**10.8**	**32.6**	**22.2**	**55.4**	**49.7**	**44.9**	**10.5**	1.00 U	1.00 U	**1.64**	**1.57**	**7.76**
Beryllium		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.15**	**1.58**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	11 (a)	1.00 U	**1.04**	**2.08**	**14.9**	**9.61**	**26.7**	**31.8**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Copper	9 (e)	2.00 U	2.00 U	**3.22**	**26.1**	**14.6**	**38.8**	**44.4**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Lead	20 (d)	1.00 U	1.00 U	**1.37**	**9.1**	**6.4**	**18.9**	**17.2**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Nickel	52 (f)	**15.5**	2.00 U	**4.9**	**13.8**	**10.8**	**32.4**	**56.8**	2.00 U	2.00 U	2.00 U	2.00 U	**6.12**
Zinc	100 (a)	**8.29**	5.00 U	**18**	**51.5**	**36.8**	**104**	**166**	5.00 U	5.00 U	5.00 U	**5.12**	5.00 U
DISSOLVED METALS (µg/L)													
EPA 6020													
Arsenic (Dissolved)	1,500 (d)								1.00 U	1.00 U	**1.45**	**1.51**	**7.99**
Copper (Dissolved)	9 (e)								2.00 U	2.00 U	**2.36**	2.00 U	2.00 U
Nickel (Dissolved)	52 (f)								2.00 U	2.00 U	2.00 U	2.00 U	**8.85**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Bold indicates detected constituent.
Boxed cells indicate an exceedance of Preliminary Screening Levels.
Preliminary Screening Levels:

(a) Oregon Screening Level Values (SLVs) - surface water, aquatic.
(b) Oregon Screening Level Values (SLVs), surface water - aquatic and Oregon Ambient Water Quality Criteria (AWQC), Tables 20 and 33A, fresh water, acute.
(c) Oregon AWQC, Tables 20 and 33A, fish consumption only and National Recommended Water Quality Criteria, organism only.
(d) Site-specific background concentrations (Phase I and II Contaminants of Potential Concern Screening Report, Time Oil Northwest Terminal, Landau Associates, September 10, 1999)
(e) Oregon Screening Level Values (SLVs), surface water - aquatic and National Recommended Water Quality Criteria, fresh water chronic.
(f) Oregon AWQC, fresh water acute and fresh chronic.
(g) Risked-based concentration, construction and excavation worker.

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TABLE A-8
FOURTH QUARTER 2005 TOTAL AND DISSOLVED METALS IN SHORELINE WELLS - DETECTED ANALYTES
TIME OIL NORTHWEST TERMINAL

Parameter	Minimum Preliminary Screening Level	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005
TOTAL METALS (µg/L)						
EPA 6020/7470A						
Arsenic	1,500 (a)	1.00 U	1.00 U	**1.64**	**1.57**	**7.76**
Nickel	52 (d)	2.00 U	2.00 U	2.00 U	2.00 U	**6.12**
Zinc	100 (a)	5.00 U	5.00 U	5.00 U	**5.12**	5.00 U
DISSOLVED METALS (µg/L)						
EPA 6020						
Arsenic (Dissolved)	1,500 (a)	1.00 U	1.00 U	**1.45**	**1.51**	**7.99**
Copper (Dissolved)	9 (b)	2.00 U	2.00 U	**2.36**	2.00 U	2.00 U
Nickel (Dissolved)	52 (c)	2.00 U	2.00 U	2.00 U	2.00 U	**8.85**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
Bold indicates detected constituent.

Preliminary Screening Levels

(a) Site-specific background concentrations (*Phase I and II Contaminants of Potential ConcernScreening Report, Time Oil Northwest Terminal*, Landau Associates 1999).

(b) Oregon Screening Level Values (SLVs), surface water - aquatic and National Recommended Water Quality Criteria, fresh water chronic.

(c) Oregon AWQC, fresh water acute and fresh chronic

APPENDIX B

Groundwater Interim Action Recovery Summary

LANDAU ASSOCIATES

October 19, 2005

Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201-4987

Attn: Mr. Tom Roick

RE: RECOMMENDATION FOR REDUCTION OF SAMPLING FREQUENCY TIME OIL NORTHWEST TERMINAL

Dear Tom:

On behalf of Time Oil Co., this letter provides our recommendation for modification of the groundwater quality sampling and analysis requirements for future groundwater monitoring events at the Time Oil Northwest Terminal. This recommendation is based on groundwater monitoring results from previous quarterly sampling and annual monitoring events. We propose that this recommendation be applied to the upcoming fourth quarter 2005 sampling event, which is currently scheduled to occur in November 2005.

The sampling frequency reduction recommendations are broken down by the following areas: Phase II *in-situ* chemical oxidation (ISCO) area wells, Phase II wells associated with the groundwater interim action activities, Phase III wells located in the vicinity of the Main Terminal Tank Farm, and Phase III wells located in the vicinity of the Bell Terminal Tank Farm. The following is a summary by area.

- **Phase II ISCO area wells**: An additional ISCO event is planned for late 2005 or early 2006, depending on seasonal increase in groundwater levels. The following wells will continue to be sampled on a quarterly basis to monitor the success of this event within the extent of the pentachlorophenol (PCP) plume in the upper zone: (RW-1, LW-11S, LW-13S, OX-1S through OX-9S, and LW-11D). Downgradient concentrations from the plume will be monitored by the wells included below for the groundwater interim action. After the third ISCO event, we will reevaluate the necessity for future ISCO events and future sampling of the ISCO area wells.

- **Phase II Groundwater Interim Action**: The following locations associated with the Phase II groundwater interim action monitoring will continue to be sampled on a quarterly basis to meet the requirements for the discharge permit for the onsite wastewater treatment system: RW-2, HRW-1, and SDM-1. In addition, wells RW-1, LW-6D, LW-9D, LW-10S, and LW-10D will be sampled to monitor PCP concentrations downgradient of, or outside the influence of, the interim actions.

- **Phase III Main Terminal Tank Farm wells**: The following nearshore (berm) and shoreline wells located on the beach will be sampled on a quarterly basis until the source control evaluation is approved by DEQ: LW-22D through LW-25D and LW-35D through LW-39D. In addition, the following wells located inside the Main Terminal Tank Farm will be monitored for free product and sampled in the absence of product: N, P, Q, LW-21S, and LW-27S. In addition to the nearshore, shoreline, and tank farm wells, an additional attempt will be made to sample the wells located on the Port of Portland (Port) property to define the locality of the facility to the north. If we are able to sample the Port wells, the following wells located at the north side of the terminal will also be sampled: LW-40S, LW-40D, LW-45D, and LW-19S. If the Port wells are observed to be dry (as in second quarter 2005) during the fourth quarter 2005 sampling event, we will attempt to monitor these wells one additional time during the first quarter 2006 sampling event. If we are still unsuccessful in obtaining groundwater samples from these wells, we will discuss with DEQ an alternative strategy for defining the locality of the facility in this area.

- **Phase III Bell Terminal Tank Farm wells**: Sampling of Phase III wells located in the Bell Terminal Tank Farm will be discontinued. Adequate data have been collected during at least four quarterly events in this area to determine the nature and extent of impacted groundwater within the Bell Terminal.

The fourth quarter 2005 sampling event is scheduled to begin the week of November 14, 2005. Following this sampling event, the necessity and frequency of sampling will be reevaluated. The currently planned wells are presented on Figure 1.

We hope that this letter provides DEQ with the information needed to approve the reduction in the frequency of sampling for some of the wells at the Time Oil Northwest Terminal. Because we would like to implement this reduction for the next quarterly event in November 2005, we would appreciate an approval from you by November 4, 2005. Please do not hesitate to call if you have any questions.

Sincerely,

LANDAU ASSOCIATES, INC.

for Rebekah Brooks
Project Manager

RB/jdr

Attachment: Figure 1, Proposed Sampling Modification Locations

cc: Mark Chandler, Time Oil Co.
Patty Dost, Schwabe Williamson & Wyatt
Mike Tischuk, Beazer East, Inc.

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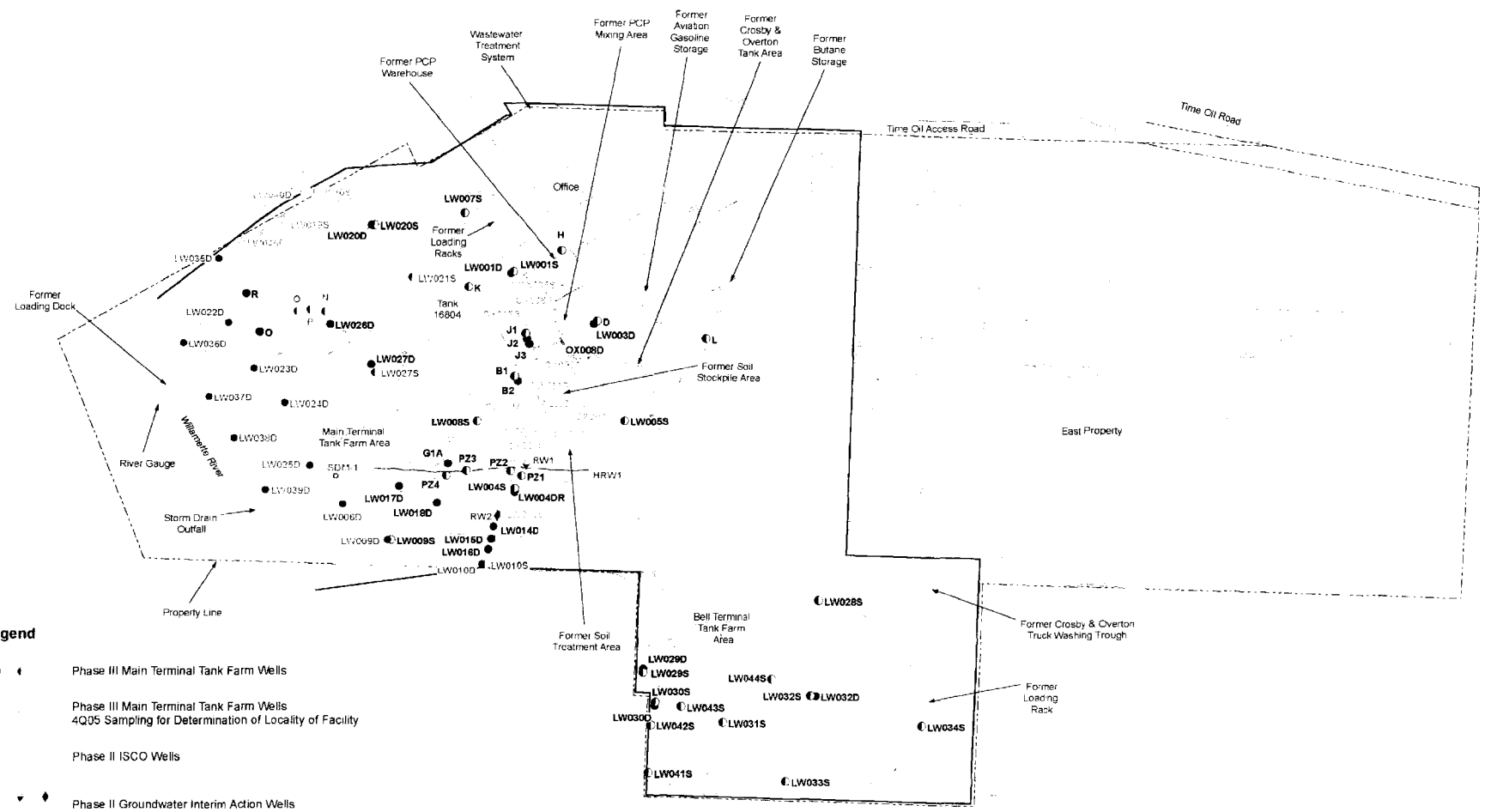

Legend

- Phase III Main Terminal Tank Farm Wells
- Phase III Main Terminal Tank Farm Wells 4Q05 Sampling for Determination of Locality of Facility
- Phase II ISCO Wells
- Phase II Groundwater Interim Action Wells
- Monitoring Wells Not Included in Proposed Sampling Modification
- Phase III Study Area Boundary
- Storm Drain
- Manhole

Notes

1 Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation

0 200 400
Scale in Feet

LANDAU ASSOCIATES

Time Oil NW Terminal Portland, Oregon	**Proposed Sampling Modification Locations**	Figure 1

W:\Emgis\GIS\Projects\231001\235\Figures\SampleMod\Fig1.mxd October 17, 2005

BZT0104(e)027218

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
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TTY (503) 229-5471

October 31, 2005

Mark Chandler
Time Oil Co.
2737 W. Commodore Way
Seattle, WA 98199-1233

Re: Recommendation for Reduction of Sampling Frequency
Time Oil Co. Northwest Terminal

Dear Mr. Chandler:

The Department of Environmental Quality (DEQ) reviewed the October 19, 2005, *Recommendation for Reduction of Sampling Frequency, Time Oil Northwest Terminal,* prepared by Landau Associates. DEQ approves the recommended changes with the following comments.

Phase II ISCO area wells:

- DEQ recommends sampling LW004S rather than LW013S. In a past comment DEQ requested sampling of LW013S for downgradient control of the pentachlorophenol plume, however the plume has since decreased in the downgradient direction and LW04S may be closer to the plume boundary.

- LW008S should be included in the monitoring. This well once contained product and continues to have total petroleum hydrocarbon detections.

- DEQ recommends sampling B1 and J1 to provide control on the western boundary of the pentachlorophenol plume until a source control evaluation is approved.

Phase III Bell Terminal Tank Farm wells:

DEQ requests one monitoring and sampling of the Bell Terminal wells after Schnitzer Investment Corp. installs proposed additional wells at the adjacent Premier Edible Oils site. Schnitzer will likely complete the well installations in the first Quarter of 2006. The Bell Terminal well sampling should be timed in coordination with the sampling of the Premier Edible Oils wells. Please coordinate with Schnitzer on the schedule for this work. DEQ will evaluate the need for additional sampling of Bell Terminal wells after this work is completed.

Please call me at 503-229-5502 if you have any questions about our review.

Sincerely,

Thomas E. Roick, Project Manager
Cleanup & Lower Willamette Section

Cc: Rod Struck, DEQ NWR
Rebekah Brooks, Landau Associates, Inc.
Patricia Dost; Schwabe, Williamson & Wyatt

APPENDIX C

Measurement and Evaluation Procedures

APPENDIX C
MEASUREMENT AND EVALUATION PROCEDURES

This appendix discusses the procedures for conducting groundwater level and product (where observed) measurements during the quarterly groundwater events and the method used to evaluate the groundwater elevations.

MEASUREMENT PROCEDURES

Groundwater level measurements and the check for the presence of product were conducted using an electronic oil-water interface probe. Measurements were taken from the top of the PVC well casing at a marked survey point or at the north side of the casing, and recorded to the nearest 0.01 ft. Measurements in the Willamette River were taken from a surveyed PK nail with washer located on the south side of the dock. Surveyed reference elevations for each water level measurement location, obtained by a licensed land surveyor (ZTec Engineers, Inc., Portland, Oregon), are shown in Table A-2 of this report.

Water level measurements for the quarterly event were obtained over about a 2.5-hour period beginning at about 2.5 hours after a predicted mean river stage, based on predictions for the St. Johns station on the Willamette River. The timing for water level measurements was scheduled to estimate a mean water level elevation or elevation minimally influenced by river stage, and to reduce the time-dependent variation between wells screened in the same water-bearing zone. The timing of the water level measurements was based on average time lag calculations presented in the additional groundwater investigation technical memorandum (Landau Associates 1998), aquifer test report (Landau Associates 1999), and previous quarterly measurements.

GROUNDWATER LEVEL EVALUATION METHODS

For evaluation purposes, the groundwater level measurements were converted from depth-to-water readings to groundwater elevations using the survey information for each location. At locations where product was observed, the groundwater elevations were adjusted to account for the presence of product using the method defined by Lenhard and Parker (1990). Groundwater elevations for the upper and lower zones were contoured using GIS/Key or manually in conjunction with the evaluations conducted to evaluate the capture zone of the groundwater interim action for the upper and lower zones.

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GROUNDWATER SAMPLING PROCEDURES

Groundwater samples were collected from the shallow wells using a peristaltic pump attached to dedicated polyethylene tubing immediately following purging. The deep wells were sampled with disposable bailers, with the following exceptions: the sample from RW-2 was collected from the in-line sampling port on the groundwater interim action system, and the sample from the groundwater intercept system at SDM-1 was collected from the discharge line at the output into Tank 16804. Wells were purged using a peristaltic pump or a centrifugal purge pump. Purging continued until at least 3 casing volumes of water had been removed and specific conductance and temperature had stabilized or until the well purged dry. Four replicate measurements of field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature) were collected at each well during sampling. To prevent degassing of volatile organic compounds during sampling, the pumping rate was maintained below about 100 milliliters per minute. All sampling was conducted in accordance with the Phase I/II RI/FS work plan (Landau Associates 1996) and appropriate provisions of the revised quality assurance project plan and project health and safety plan (Landau Associates 2001). A more detailed description of groundwater sampling procedures is provided in the Phase II RI report (Landau Associates 2000).

REFERENCES

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Landau Associates. 2000. Report: *Phase II Remedial Investigation, Time Oil Co. Northwest Terminal.* Prepared for: Time Oil Co., Seattle, Washington. April 6.

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APPENDIX D

Summary of Modifications to Quarterly Groundwater Analysis Program

APPENDIX D
SUMMARY OF MODIFICATIONS TO QUARTERLY GROUNDWATER ANALYSIS PROGRAM

A summary of modifications to the Phase II RI quarterly groundwater monitoring program for the Time Oil Northwest Terminal in Portland, Oregon is presented below by the date of first implementation. A reference list for the modifications is included.

- ***Second Quarter 1998*** (Landau Associates 1998; DEQ 1998):
  - Annual sampling of east property wells LW-101S, LW-102S, LW-103S, and LW-104S
  - Elimination of 2-chloroethylvinylether from the volatile analyte list
  - Reduction of the suite of metals analyses to include only arsenic, chromium, copper, lead, nickel, and zinc
  - Quarterly analysis of only metals in well K and only chlorinated phenols and metals in well H
  - Elimination of PCB analysis
  - Annual analysis for major ions; quarterly analysis for chloride and dissolved oxygen.

- ***First Quarter 1999*** (Landau Associates 1999; Urbanowicz, K., 12 February 1999, personal communication):
  - Analysis of polycyclic aromatic hydrocarbons (PAHs) using analytical techniques that provide lower detection limits at upper zone wells LW-2S, LW-7S and LW-101S and at lower zone wells G1A, O, and LW-4D for the first quarter 1999 event only
  - Elimination of sampling at well J3.

- ***Second Quarter 2000*** (Landau Associates 2000a; DEQ 2000):
  - Elimination of dioxin/furan analyses.

- ***Third Quarter 2000*** (Landau Associates 2000b; Roick 2000):
  - Reduction of sampling frequency of wells H, L, and LW-5S from quarterly to annually.

- ***Second Quarter 2001*** (Landau Associates 2001a, 2001b; Roick 2001):
  - Reduction of the list of chlorinated phenols being analyzed by EPA Method 8040 to pentachlorophenol (PCP) only using EPA Method 8270 SIM
  - Reduction of the frequency of total petroleum hydrocarbon (TPH) analysis from quarterly to annually at upper zone wells J1 and LW-1S; lower zone wells B2, J2, LW-1D; and deep sand unit well LW-12D2. In addition, TPH analysis was eliminated for the following wells: upper zone wells D, L, LW-5S, LW-101S through -104S, and lower zone well LW-3D.

- ***First Quarter 2004*** (Landau Associates 2004; Roick 2005):
  - Elimination of eight wells from the Phase II sampling program for future events. These wells included five upper zone wells (H, K, L, LW-1S, and LW-5S), and three lower zone wells (O, R, LW-1D).

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- Reduction of the monitoring frequency for selected Phase II wells from quarterly to semiannually. These wells include: B1, B2, D, J1, J2, LW-3D, LW-4S, LW-4D, LW-11S, LW-11D, LW-13S, LW-14D, LW-17D, LW-18D, OX-1S through OX-8S, OX-8D, and RW-1. Semiannual sampling of these wells will be conducted in conjunction with the first and third quarter sampling of the Phase III wells.

- ***Fourth Quarter 2005*** (Landau Associates 2005; Roick 2005):

  - Quarterly sampling of ISCO wells RW-1, LW-11S, LW-4, OX-1S through OX-9S, and LW-11D.

  - Quarterly sampling of Phase II wells B-1, J-1, RW-2, HRW-1, SDM-1, RW-1, LW-6D, LW-8S, LW-10S, and LW-10D.

  - Quarterly sampling of Phase III Main Terminal Tank Farm wells LW-22D through LW-25D, LW-35D through LW-39D, N, P, Q, LW-21S and LW-27S.

  - Sampling of the adjacent Port of Portland wells, or contingency wells LW-40S, LW-40D, LW-45D, and LW-19S during fourth quarter 2005 and first quarter 2006.

  - Discontinuation of quarterly sampling of the Phase III Bell Terminal Tank farm wells. These wells will be sampled when additional wells are installed and sampled on the adjacent Schnitzer Investment Corporation property.

REFERENCES

DEQ. 2005. Letter: *Recommendation for Reduction of Sampling Frequency, Time Oil Co. Northwest Terminal.* From Thomas E. Roick, Oregon Department of Environmental Quality, to Mark Chandler, Time Oil Co. October 31.

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Urbanowicz, K. 12 February 1999. Personal communication (telephone conversation with Rebekah Brooks, Landau Associates, Edmonds, Washington). Re: *Approval of Additional Modification to Groundwater Sampling and Analysis Program, Time Oil Northwest Terminal, Portland, Oregon*. Karla Urbanowicz, Oregon Department of Environmental Quality, Portland, Oregon.

BZTO104(e)027227

APPENDIX E

Data Validation Report

TECHNICAL MEMORANDUM

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

TO: Rebekah Brooks, Landau Associates

CC: Tom Roick, DEQ
Mark Chandler, Time Oil Co.
Patty Dost, Schwabe, Williamson & Wyatt
Mike Tischuk, Beazer East, Inc.

FROM: April Wallace and Anne Halvorsen, Landau Associates

DATE: January 4, 2006

RE: 4TH QUARTER 2005 GROUNDWATER MONITORING
LABORATORY DATA QUALITY EVALUATION
TIME OIL NORTHWEST TERMINAL

INTRODUCTION

This technical memorandum provides the results of a data quality evaluation for 39 groundwater samples and 4 trip blanks collected at the Time Oil Northwest Terminal November 14 through November 18, 2005, for the Phase II/III Remedial Investigation (RI) fourth quarter 2005 groundwater monitoring event. A data quality evaluation was performed for analysis of volatile organic compounds [VOCs; U.S. Environmental Protection Agency (EPA) Method 8260B]; semivolatile organic compounds (SVOCs; EPA Method 8270C); total petroleum-range hydrocarbons (NWTPH-Dx and NWTPH-G); polycyclic aromatic hydrocarbons [PAH; EPA Method 8270 with selected ion monitoring (SIM)]; pentachlorophenol (PCP; EPA Method 8270 SIM); selected total and dissolved priority pollutant (PP) metals (EPA Methods 6020 and 7470A); and dioxins and furans (EPA Method 1613B).

Analyses of groundwater samples were performed by North Creek Analytical, Inc. (NCA) located in Beaverton, Oregon; and Pace Analytical Services, Inc. (Pace) located in Minneapolis, Minnesota. This data quality evaluation covers NCA data packages P5K0698, P5K0699, P5K0819, P5K0820, and Pace data package 05-1024060.

The data quality evaluation was performed in accordance with the revised quality assurance project plan (QAPP) contained in Appendix C of the *Phase III Remedial Investigation* work plan (Landau Associates 2001), and with applicable portions of the EPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review* and *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 1994a,b).

The evaluation considered the following elements:

- Chain-of-custody records
- Holding times
- Method and field trip blank results
- Surrogate spike recoveries
- Matrix spike and matrix spike duplicate (MS/MSD) results
- Laboratory control sample and laboratory control sample duplicate (LCS/LCSD) results
- Duplicate (laboratory and field) results
- Reporting limits
- Overall data quality and completeness.

Data validation qualifiers are added to sample results based on the evaluation of data quality. The absence of a data qualifier indicates that the datum is acceptable without qualification. Applicable data validation qualifiers are summarized in Table 1. The data quality evaluation is summarized below.

CHAIN-OF-CUSTODY RECORDS

Signed chain-of-custody (COC) records accompanied each data package. The laboratory received all samples in good condition. All requested analyses were performed with the following exceptions:

- The laboratory indicated that two sample bottles from data package P5K0699 were broken at the laboratory and therefore were not analyzed for dioxins/furans as requested on the original COC. These two locations were re-sampled and new bottles were resubmitted for analysis. The dioxins/furans results for these two samples are reported in data package 05-1024060.

- Due to an oversight by the laboratory, PCP analysis by method 8270SIM was not run for those Phase II samples where PCP was not detected by method 8270C as requested on the COC. The laboratory has been contacted and will correct this for the 1st Quarter 2006 sampling event.

HOLDING TIMES

For all analyses and all samples, the time between sample collection, extraction, and analyses was determined to be within EPA- and project-specified holding times. No qualification of the data is necessary.

METHOD BLANK RESULTS

Method blanks were analyzed with each batch of samples for each analysis. No contamination was detected in any of the method blanks, except as indicated below:

- 2-Methylphenol and Phenol were detected in the method blank associated with the SVOC analysis of data packages P5K0698 and P5K0699. Neither of these compounds was detected in any of the associated project samples. No qualification of the data is necessary.

FIELD TRIP BLANK RESULTS

In accordance with the QAPP, field equipment rinsate blanks were not collected (all sampling equipment was dedicated and/or disposable, which eliminated the potential for cross contamination). Four field trip blanks were collected and submitted for laboratory VOC analyses. No contamination was detected in any of the trip blanks. No qualification of the data is necessary.

SURROGATE SPIKE RECOVERIES

Surrogate spikes were performed with each organic analysis (or internal standards for dioxin/furan analysis). Recovery values for the surrogate spikes were within the current laboratory control limits, except as indicated below:

- Recoveries of the surrogate 4-Bromofluorobenzene (4-BFB) associated with the TPH-G analysis of several samples in data packages P5K0699 were not within laboratory control limits. The laboratory indicated that the surrogate recoveries could not be accurately quantified due to interference from coeluting organic compounds. No qualification of the data is necessary.

- Recoveries of the surrogate 4-BFB associated with the TPH-G analyses of several samples in data packages P5K0819 and P5K0820 exceeded laboratory control limits. The laboratory indicated that the surrogate recoveries are outside control limits due to matrix interference. The gasoline results for these project samples are qualified as estimates (J), as indicated in Table 1.

- Recovery of the surrogate 1-Chlorooctodecane (1-COD) associated with the TPH-Dx analyses of two samples in data package P5K0820 slightly exceeded laboratory control limits. The detected diesel results for these samples are qualified as estimates (J), as indicated in Table 1.

- Recoveries of the two base/neutral fraction surrogates Nitrobenzene-d5 and p-Terphenyl-d14 associated with the SVOC analysis of one sample in data package P5K0699 were below laboratory control limits. In accordance with the EPA guidelines (EPA 1994a), all base/neutral fraction compounds in the project sample are qualified as estimates (J/UJ), as indicated in Table 1.

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- The laboratory indicated that the recoveries of several surrogates associated with the SVOC analyses of data packages P5K0698, P5K0699, P5K0819, and P5K0820 are estimated values. All surrogate recoveries are within laboratory control limits. No qualification of the data is necessary.

- Recoveries of surrogates 2-Fluorobiphenol (2-FBP), Phenol-d6, and 2,4,6-Tribromophenol (2,4,6-TPB) associated with the method blank and Phenol-d6 associated with the LCSD for the SVOC analysis in data packages P5K0699, P5K0819, and P5K0820 were not within laboratory-specified control limits due to failure of the acid surrogates. All surrogate recoveries for the samples associated with this method blank or LCSD are within acceptance criteria. No qualification of the data is necessary.

- Recovery of the surrogate 2,4,6-TBP for one sample associated with the PCP analysis (Method 8270SIM) of data package P5K0699 was not available. The laboratory indicated that surrogate recovery is not available due to sample dilution required for high analyte concentration and/or matrix interference. No qualification of the data is necessary.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) RESULTS

MS, MSD, and/or laboratory duplicate samples were performed for most analyses. Recoveries and RPDs for all project sample matrix spikes were within the project-specified control limits, except as indicated below:

- The MS and MSD recoveries for gasoline associated with the TPH-G analysis of data package P5K0699 were below laboratory-specified control limits. The gasoline result for the source project sample is qualified as an estimate (UJ), as indicated in Table 1.

LABORATORY CONTROL SAMPLE (LCS) RESULTS

At least one LCS (or blank spike sample) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples for each analysis. Recoveries and RPDs for the laboratory control samples and associated duplicates were within laboratory-specified control limits for all project samples, except as indicated below:

- The LCS and LCSD recoveries for phenol associated with the SVOC analyses of several samples from data packages P5K0699, P5K0819, and P5K0820 were below laboratory-specified control limits. In addition, the RPD between the LCS and LCSD results was greater than the laboratory control limit. Phenol results for associated project samples are qualified as estimates (J/UJ), as indicated in Table 1.

- The RPD associated with the SVOC analysis for 2-Chlorophenol is outside of acceptance criteria in the LCS/LCSD for data packages P5K0699 and P5K0820. Individual spike recoveries are within limits, and the compound was not detected in any associated project sample. No qualification of the data is necessary.

- The LCS recoveries for pyrene and acenaphthene associated with the SVOC analyses of data packages P5K0698 and P5K0699 were below laboratory control limits. The acenaphthene results for associated project samples were only slightly low and no qualifiers were assigned. Pyrene results for associated project samples are qualified as estimate (UJ), as indicated in Table 1.

FIELD DUPLICATE RESULTS

Two pairs of blind field duplicate samples (RW1/W and LW028D/Y) were collected during this sampling event and submitted for analysis. A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate sample results, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for all duplicate sample pairs submitted for analysis were within the control limits. No qualification of the data is necessary.

REPORTING LIMITS

All project-specified reporting limits were met, except as indicated below:

- Reporting limits were raised for several analytes associated with the SVOC, PAH, and/or PCP analyses of several samples from all data packages. The laboratory indicated that this was due to matrix interference or to dilution necessary for analysis. No qualification of the data is necessary.

- Project-specified reporting limits generally exceeded those defined in the QAPP for most semivolatile compounds. Reporting limits were raised due to matrix interference or dilution necessary for analysis due to high levels of reported analyte. The laboratory was notified after 3rd Quarter 2005 sampling event and was directed to be in compliance with the reporting limits listed in Table C-3 of the QAPP. This did not happen in all cases for 4th Quarter 2005 SVOC data. The laboratory will correct this for the 1st Quarter 2006 sampling event.

OTHER

Other factors which required evaluation of the data include the following:

- Detected diesel-range organics for several samples associated with the TPH-Dx analyses of data packages P5K0819, P5K0698, P5K0699, and P5K0820 were identified by the laboratory as having weathered diesel/heavy gas/light diesel components. No qualification of the data is necessary.

- Dioxin/furan analyses were subcontracted to Pace. Sample bottles for two of three samples were broken at the laboratory, requiring re-sampling by Landau personnel. Analytical results from data package 05-1024060 were acceptable without qualification.

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OVERALL DATA QUALITY AND COMPLETENESS

Data precision was evaluated through laboratory duplicates, field duplicates, matrix spike duplicates, and laboratory control samples duplicates. Data accuracy was evaluated through surrogate spikes, matrix spikes, and laboratory control samples. Based on this data quality evaluation, all of the data were determined to be acceptable and no data were rejected. The completeness for this set of data is 100 percent, which exceeds the project-specified goal of 90 percent.

REFERENCES

EPA. 1994a. *Contract Laboratory Program National Functional Guidelines for Organic Data Review*. U.S. Environmental Protection Agency.

EPA. 1994b. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. U.S. Environmental Protection Agency.

Landau Associates. 2001. *Work Plan, Phase III Remedial Investigation, Time Oil Northwest Terminal, Portland, Oregon.* June 18.

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TABLE 1
SUMMARY OF DATA VALIDATION QUALIFIERS
TIME OIL NORTHWEST TERMINAL
4TH QUARTER 2005 GROUNDWATER SAMPLING

Package Number	Analysis	Analyte	Sample Number	Concentration	Qualifier	Reason
P5K0819	NWTPH-G	Gasoline	Q	1530	J	High surrogate recoveries
P5K0819	NWTPH-G	Gasoline	N	5100	J	High surrogate recoveries
P5K0820	NWTPH-G	Gasoline	W	880	J	High surrogate recoveries
P5K0820	NWTPH-G	Gasoline	RW1	826	J	High surrogate recoveries
P5K0820	NWTPH-G	Gasoline	LW011S	739	J	High surrogate recoveries
P5K0699	NWTPH-G	Gasoline	LW010D	80.0	UJ	Low MS/MSD recoveries
P5K0820	NWTPH-Dx	Diesel	LW006D	0.452	J	High surrogate recovery
P5K0819	SVOCs	Phenol	Q	7.77	UJ	Low LCS/LCSD recoveries
P5K0819	SVOCs	Phenol	P	80.5	J	Low LCS/LCSD recoveries
P5K0819	SVOCs	Phenol	N	17.3	J	Low LCS/LCSD recoveries
P5K0819	SVOCs	Phenol	LW027S	9.62	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	W	9.62	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	RW1	9.71	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	LW011S	50.0	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	LW011D	1.98	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	LW009D	3.96	UJ	Low LCS/LCSD recoveries
P5K0820	SVOCs	Phenol	LW006D	7.92	UJ	Low LCS/LCSD recoveries
P5K0699	SVOCs	Phenol	OX003S	8.16	UJ	Low LCS/LCSD recoveries
P5K0699	SVOCs	Phenol	OX008S	2.00	UJ	Low LCS/LCSD recoveries
P5K0699	SVOCs	Phenol	OX006S	100	UJ	Low LCS/LCSD recoveries
P5K0699	SVOCs	Phenol	OX007S	10.1	UJ	Low LCS/LCSD recoveries
P5K0698	SVOCs	Pyrene	Y	0.990	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW037D	0.971	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW038D	0.990	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW039D	1.00	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW036D	0.990	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW019S	20.0	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW040D	0.980	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW045D	1.02	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW024D	19.8	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW025D	1.00	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW035D	1.00	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW022D	0.980	UJ	Low LCS recovery
P5K0698	SVOCs	Pyrene	LW023D	0.990	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	LW010D	0.971	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	LW004S	4.95	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	LW008S	5.00	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	RW2	0.952	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	OX005S	1.01	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	OX009S	1.00	UJ	Low LCS recovery
P5K0699	SVOCs	Pyrene	OX001S	2.02	UJ	Low LCS recovery
P5K0699	SVOCs	Acenaphthene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Acenaphthylene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Anthracene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzo(a)anthracene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzo(a)pyrene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzo(b)fluoranthene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzo(g,h,i)perylene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzo(k)fluoranthene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Benzyl Alcohol	LW004S	24.8	UJ	Low surrogate recoveries
P5K0699	SVOCs	4-Bromophenyl phenyl ether	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Butyl benzyl phthalate	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	4-Chloroaniline	LW004S	14.9	UJ	Low surrogate recoveries
P5K0699	SVOCs	Bis(2-chloroethoxy)methane	LW004S	4.95	UJ	Low surrogate recoveries

TABLE 1
SUMMARY OF DATA VALIDATION QUALIFIERS
TIME OIL NORTHWEST TERMINAL
4TH QUARTER 2005 GROUNDWATER SAMPLING

Package Number	Analysis	Analyte	Sample Number	Concentration	Qualifier	Reason
P5K0699	SVOCs	Bis(2-chloroethyl)ether	LW004S	9.90	UJ	Low surrogate recoveries
P5K0699	SVOCs	Bis(2-chloroisopropyl)ether	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	2-Chloronaphthalene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	4-Chlorophenyl phenyl ether	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Chrysene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Di-n-butyl phthalate	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Di-n-octyl phthalate	LW004S	9.90	UJ	Low surrogate recoveries
P5K0699	SVOCs	Dibenzo(a,h)anthracene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Dibenzofuran	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	1,2-Dichlorobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	1,3-Dichlorobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	1,4-Dichlorobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	3,3-Dichlorobenzidine	LW004S	49.5	UJ	Low surrogate recoveries
P5K0699	SVOCs	Diethyl phthalate	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Dimethyl phthalate	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	2,4-Dinitrotoluene	LW004S	24.8	UJ	Low surrogate recoveries
P5K0699	SVOCs	2,6-Dinitrotoluene	LW004S	24.8	UJ	Low surrogate recoveries
P5K0699	SVOCs	Bis(2-ethylhexyl)phthalate	LW004S	49.5	UJ	Low surrogate recoveries
P5K0699	SVOCs	Fluoranthene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Fluorene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Hexachlorobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Hexachlorobutadiene	LW004S	9.90	UJ	Low surrogate recoveries
P5K0699	SVOCs	Hexachlorocyclopentadiene	LW004S	24.8	UJ	Low surrogate recoveries
P5K0699	SVOCs	Hexachloroethane	LW004S	9.90	UJ	Low surrogate recoveries
P5K0699	SVOCs	Indeno(1,2,3-cd)pyrene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Isophorone	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	2-Methylnaphthalene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Naphthalene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	2-Nitroaniline	LW004S	24.8	UJ	Low surrogate recoveries
P5K0699	SVOCs	3-Nitroaniline	LW004S	29.70	UJ	Low surrogate recoveries
P5K0699	SVOCs	4-Nitroaniline	LW004S	24.80	UJ	Low surrogate recoveries
P5K0699	SVOCs	Nitrobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	N-Nitrosodi-n-propylpamine	LW004S	9.90	UJ	Low surrogate recoveries
P5K0699	SVOCs	N-Nitrosodiphenylamine	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Phenanthrene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Pyrene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	1,2,4-Trichlorobenzene	LW004S	4.95	UJ	Low surrogate recoveries
P5K0699	SVOCs	Carbazole	LW004S	4.95	UJ	Low surrogate recoveries

UJ = Indicates the compound was analyzed for; the given detection limit is an estimate.
J = Indicates the compound was analyzed for and positively identified; the given value is an estimate.

RECEIVED APR 1 0 2006

LANDAU ASSOCIATES

April 7, 2006

Mr. Tom Roick
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201-4987

RE: TIME OIL NORTHWEST TERMINAL
PORTLAND, OREGON

Dear Mr. Roick:

On behalf of Time Oil, attached is the January, February, and March 2006 quarterly report for Time Oil Northwest Terminal RI/FS.

LANDAU ASSOCIATES, INC.

Glenda Moore

For Rebekah Brooks
Project Manager

RB/rgm

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cc: Mr. Mark Chandler, Time Oil Co.
Ms. Patricia Dost, Schwabe Williamson & Wyatt
Mr. Mike Tischuk, Beazer East, Inc.

QUARTERLY REPORT TO DEQ
TIME OIL - NORTHWEST TERMINAL
January through March, 2006

SUMMARY OF WORK PERFORMED

- Prepared and submitted the October – December 2005 quarterly report to DEQ.
- Continued operation of the groundwater interim action in the lower zone at RW-2 at an average flow rate of 7.20 gpm.
- Continued operation of groundwater recovery in the upper zone at the groundwater intercept system at the east-west trending storm drain line (SDM-1) at an average flow rate of 7.65 gpm.
- Conducted intermittent operation of groundwater recovery in the upper zone from horizontal recovery well (HRW-1) at an average flow rate of 0.52 gpm. Due to low groundwater elevation conditions, no groundwater was recovered from HRW-1 in March 2006.
- A total of approximately 24.27 million gallons of groundwater have been treated and discharged from the interim action system, with a total of about 1.51 million gallons treated during this quarter.
- Continued review of the system operations performance for the groundwater interim action system at RW-2 and HRW-1, the groundwater intercept system at SDM-1, and the onsite wastewater treatment plant (WWTP).
- Collected effluent samples from the WWTP throughout the quarter to evaluate the treatment system efficiency. Laboratory analysis of the effluent samples collected indicated that the system was operating within the established permit limitations.
- Replaced the 4-inch HPDE pipeline between Tank 16804 and the WWTP where leakage in the pipeline previously occurred.
- Installed a permanent 3-phase power supply and a pump with a larger discharge head capacity for the stormwater intercept system at SDM-1 to alleviate blockage of the discharge line.
- Conducted the third full-scale *in situ* chemical oxidation (ISCO) injection event for the PCP plume in the upper zone of groundwater, January 30 through February 3, 2006.
- Submitted and received approval from DEQ for a work plan to conduct a pilot test for ISCO injections in the Main Terminal Tank Farm Area to determine feasibility of treating petroleum free product. Conducted the injections at 3 locations in the area around LW-21S in conjunction with the third full scale ISCO event in the PCP plume area, February 3, 2006.
- Submitted the *Third Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report* to DEQ.
- Submitted the *Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Report* to DEQ.
- Conducted a presentation to new DEQ project personnel on historical and current activities at the Terminal and conducted a site walk on February 1, 2006.

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- Conducted the first quarter 2006 groundwater monitoring event, February 21-24, 2006, and began receiving and validating the first quarter 2006 (February 2005) groundwater monitoring data. As part of this monitoring event, we attempted to sample two wells located on the Port of Portland property to define the locality of facility at the north side of the Terminal property. We collected a groundwater sample from the northernmost well, but we were unable to sample the other well because of lack of water. We will evaluate the data from this well and provide our recommendation to DEQ on the need for future action.

- Continued passive LNAPL recovery in wells LW-21S and LW-27S using passive bailers. No LNAPL was observed in LW-21S during the first quarter 2006 and only a trace of LNAPL (0.02 ft) was observed at LW-27S. For the first time, LNAPL was observed was observed in wells LW-19S (0.24 ft) and LW-20S (0.05ft). Product socks were placed in these wells for LNAPL recovery and will be replaced during the next quarterly monitoring event in June 2006. Recovered product and the spent product socks are temporarily being stored in a 55-gallon drum in a designated location at the terminal pending disposal.

- Prepared the *Source Control Evaluation Report.*

RESULTS COLLECTED

- Influent/effluent samples from the WWTP for January, February, and March 2006. The analytical results from the sampling events indicated that the WWTP was operating within the established permit limits. The data results will be presented in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

- Final groundwater data for the first quarter 2006 groundwater sampling events. Data results will be presented in the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

PROBLEMS ENCOUNTERED AND STEPS TO RESOLVE

- Replaced pump and power supply for the SDM-1 pump due to inconsistent pump performance attributed to sludge buildup in the pipeline between SDM-1 and Tank 16804.

- Replaced water pipeline leading from Tank 16804 to the wastewater treatment plant as the old pipeline was susceptible to leaks. Replacement pipeline is high-density polyethylene (HDPE), which should address potential leakage due to pipeline corrosion.

WORK TO BE PERFORMED NEXT QUARTER

- Prepare and submit quarterly report to DEQ.

- Continue implementation of the groundwater interim action in the lower zone at RW-2. Continue to operate the groundwater intercept system at the storm drain (SDM-1). Continue groundwater treatment and discharge to POTW. Continue review of the system operations performance for the groundwater interim action system at RW-2, HRW-1, SDM-1 and the onsite wastewater treatment system.

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- Continue to monitor the effluent from the WWTP.
- Prepare the *First Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Report* and submit to DEQ.
- Continue passive product recovery in wells in the Main Tank Farm Area, as appropriate.
- Conduct the second quarter 2006 groundwater monitoring event in June 2006.
- Submit *Source Control Evaluation Report* to DEQ.

JUN 16 2006

LANDAU ASSOCIATES

June 13, 2006

Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201-4987

Attn: Mr. Tom Roick

RE: RESPONSE TO DEQ COMMENTS
RISK ASSESSMENT WORK PLAN
TIME OIL NORTHWEST TERMINAL
PORTLAND, OREGON

Dear Tom:

On behalf of Time Oil Co. (Time Oil), this letter provides Landau Associates' responses to the Oregon Department of Environmental Quality's (DEQ) comments (dated April 25, 2006) on the Risk Assessment Work Plan for the Time Oil Northwest Terminal in Portland, Oregon (Landau Associates, December 28, 2005). As indicated in DEQ's comment letter, DEQ is not requiring a revised work plan, but we will incorporate these comments and responses into the risk assessment and the source control evaluation.

1. ***DEQ Comment: Page 1-7, bottom of page.*** *DEQ agrees that while the groundwater to surface water pathway will not be included in the upland risk assessment, this pathway should be included in the source control evaluation. Because the storm drain is a preferential pathway for contaminant migration to surface water without operation of the current intercept system, this pathway should be included in the source control evaluation. This comment also applies to section 1.3.3.5 of the Work Plan.*

   Response: The groundwater to surface pathway and the preferential pathway via the storm drain is addressed in the Source Control Evaluation Report which will be provided to DEQ in mid-June 2006. Contamination migration for both these pathways is currently being controlled either through groundwater recovery interim measures or through natural attenuation.

2. **DEQ Comment: Page 1-10.** *Because of the likelihood for subsurface development (e.g., parking structures in downtown Portland), typically construction workers are considered potentially exposed to soils at depths greater than 3 feet (usually depths of 10 feet or 15 feet). However, for this site, unless it is reasonably expected that site-redevelopment will involve excavations to greater depths, it is acceptable to use the proposed depth of 3 feet.*

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Response: Considering the location of the property in the river floodplain, construction of buildings at depths where groundwater would infiltrate into the subsurface structures is an unlikely scenario. Therefore, as indicated in your comment, we will use the proposed depth of 3 ft for construction worker exposure.

3. ***DEQ Comment: Page 3-1.*** *Evaluation using the existing data set is acceptable. With respect to the existing tanks, the tank foundations (e.g., tar material) likely contain hazardous substances and if the tanks are removed during site redevelopment the foundations and soil directly beneath must be evaluated and/or removed.*

   Response: Comment noted.

4. ***DEQ Comment: Page 4-2.*** *In developing exposure point concentrations (EPCs) for the site, Time Oil should consider the suitability of establishing exposure units that do not encompass the entire site. These exposure units could be established based on chemical distribution or expected future use fo llowing redevelopment. We understand future use may be difficult to establish at this time.*

   Response: For human health risk assessments, separation of the site into exposure units is typically done when there are differences in land or water use, which leads to different exposure scenarios or physical characteristics of the site that would limit activity and exposure to only a portion of the site. For ecological risk assessments, exposure units are most often based on habitat and related ecological receptor exposure differences. As noted in DEQ's comment, exposure units may also be established based on differing contaminant types. The current area included in the risk assessment only includes the western third of the entire property and excludes the formerly designated East Property. Because the land and water use and habitat conditions (including gravel and maintained grassy/weedy vegetation) are quite similar within the current assessment area, and because of the area's relatively small areal extent, only one exposure unit was proposed in the work plan. With the exception of pentachlorophenol (PCP) and associated constituents, the other contaminants of concern are similar; however, because of the small areal extent, a worker or ecological receptor would likely be exposed to both the PCP constituents and petroleum constituents when working at or visiting the site. In the absence of evidence that future land use would vary across the site, we plan to conduct the risk assessment as originally proposed, using only one exposure unit.

5. ***DEQ Comment: Page 4-3, first bullet.*** *In addition to inhalation of suspended particulates, inhalation of volatiles should also be evaluated.*

   Response: These exposure pathways will be assessed in the human health risk assessment.

6. ***DEQ Comment: Page 4-3.*** *The assumptions associated with industrial use of groundwater are not standard, and will need to be specified in the risk assessment.*

   Response: The risk assessment will specify assumptions associated with industrial use of groundwater, in particular, that exposure to groundwater used for industrial purposes is limited to dermal contact and inhalation.

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7. ***DEQ Comment: Page 5-1.*** *The comparison of concentrations with individual-level screening values is conservative for non-threatened and endangered species. Screening can be conducted using population-level values.*

   Response: Comment accepted.

8. ***DEQ Comment: Page 5-4, Riverine Environment.*** *The riparian habitat along the bank and berm is important, and should be considered as part of the terrestrial environment. While there is a potential for contaminants to be present in dredged fill or in surface soil due to fugitive dust from historic facility operations, concentrations at the bank are likely to be less than concentrations in active areas of the facility. Additionally, the remedial investigation did not include soil data from the bank because releases to this area have not been identified. These arguments should be presented as part of the conceptual site model for the upland risk assessment and for the source control evaluation, in lieu of soil sampling along the bank.*

   Response: Comment noted.

9. ***DEQ Comment: Page 5-9, second bullet.*** *If the data are not normally or lognormally distributed, EPA has non-parametric methods available for calculating the upper confidence on the arithmetic mean. See Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites, EPA OSWER 9285.6-10, December 2002, and EPA's associated ProUCL spreadsheet. The Z-statistic may be appropriate if there are sufficient data. If the central limit theorem is used, EPA's recommendation is to use the adjusted Z-statistic.*

   Response: Comment noted.

10. ***DEQ Comment: Page 5-19.*** *If the project proceeds to an ecological Level III evaluation, DEQ will provide updated guidance on the application of the risk assessment equations.*

    Response: Comment noted.

11. ***DEQ Comment: Figure 4.*** *For the excavation worker, inhalation should be added to the groundwater pathway (in addition to direct contact) given the presence of volatile compounds.*

    Response: Comment accepted.

12. ***DEQ Comment: Figure 11.*** *In the equation for DA_{water}, EPA currently uses a factor of $(1 + 3B + 3B^2)/(1 + B^3)$ instead of $(1 + 3B)/(1 + B)$. This is a minor revision.*

    Response: Comment accepted.

13. ***DEQ Comment: Figure 13.*** *Terrestrial mammalian carnivores may also be present because we observed what appeared to be coyote scat during our site visit on February 1, 2006.*

    Response: Comment accepted.

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14. ***DEQ Comment: Table 1.*** *It is acceptable to use exposure factors from Appendix C of DEQ's guidance document on Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (22 September 2003). Factors for soil ingestion, skin surface area, and skin adherence factors were updated to match EPA default values.*

    Response: Comment noted.

15. ***DEQ Comment: Tables 2 and 4.*** *As noted above, a mammalian carnivore should be added as potentially present.*

    Response: Comment accepted.

16. ***DEQ Comment: Appendix A, Level I Checklist.*** *The contaminants of interest (COI) listed are the most significant for ecological exposure. Nevertheless, the list of COI is likely to include volatile organic compounds (e.g., benzene, toluene, ethylbenzene, and xylenes) and chlorinated dibenzo-p-dioxins and dibenzofurans associated with pentachlorophenol.*

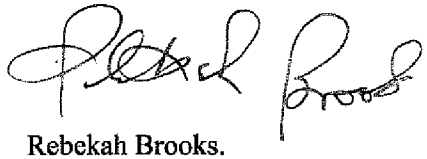
    Response: Comment noted. All analytical data collected for the proposed exposure area will be included in the risk assessment data set.

* * * * * *

We hope that these responses provide you with the information you need to approve the Risk Assessment Work Plan for the Time Oil Northwest Terminal. Please call if you have any additional comments or questions.

Best regards,

LANDAU ASSOCIATES, INC.



Rebekah Brooks.
Project Manager

Charles P. Halbert, P.E.
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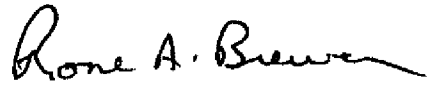
SOUND ECOLOGICAL ENDEAVORS



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Source Control Evaluation
Time Oil Northwest Terminal
Portland, Oregon

June 21, 2006

Prepared for

Time Oil Co.
Seattle, Washington

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1.0 INTRODUCTION

This report presents the results of the source control evaluation conducted for the Time Oil Co. (Time Oil) Northwest Terminal (Terminal), located in Portland, Oregon (Figure 1). Activities at the Terminal are currently conducted in accordance with the State of Oregon's Hazardous Substance Remedial Action Rules (OAR 340-122), under the oversight of the Oregon Department of Environmental Quality (DEQ) and under the voluntary cleanup program (VCP) agreement between Time Oil and DEQ, dated September 9, 1996 (DEQ No. WMCVC-NWR-96-07; DEQ 1996). The source control evaluation was conducted in accordance with the Final Portland Harbor Joint Source Control Strategy (JSCS; EPA and DEQ 2005). The data included in the Phase III remedial investigation report (RI; Landau Associates 2005a) and data collected during subsequent groundwater monitoring events were used as a basis for the evaluation.

1.1 PURPOSE

Overall, the purpose of the source control evaluation was to determine whether or not the facility as a whole is an ongoing source of contaminants of interest (COIs) to the in-water portion of the Portland Harbor Superfund site at levels that may present risk to in-water receptors. Based upon data collected during completion of the Phase III RI, this source control evaluation considers all known potential contaminant migration pathways to the river. The evaluation identifies where complete physical transport pathways to the river exist and whether these pathways represent current complete contaminant migration pathways. The evaluation also includes how contaminant migration pathways are addressed through previous or currently ongoing source control actions. The source control evaluation also provides the screening results comparing groundwater concentrations in the shoreline wells against the screening level values (SLVs) from the Table 3-1 of the JSCS and our recommendations for any future actions related to source control at the Terminal. Based on groundwater concentrations observed to date in shoreline wells along the Willamette River, Time Oil has thus far demonstrated there is not a complete contaminant migration pathway to the river at concentrations that exceed the JSCS SLVs, as will be supported by the contents of this report. The lack of a current complete contaminant migration pathway to the river is due in part to the successful implementation of the groundwater interim action system and storm drain intercept system for groundwater contamination associated with the historical wood treatment product formulation operations.

A more specific objective of the source control evaluation was to evaluate the potential for an upland petroleum hydrocarbon source to impact the Willamette River. A portion of the source control evaluation focuses on the potential for natural attenuation to limit migration of light non-aqueous phase

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liquid (LNAPL) from the Main Terminal Tank Farm area to the river using monitored natural attenuation (MNA) parameter measurements and a fate and transport model that takes into account the effects of natural attenuation, including both LNAPL mobility and dissolved-phase mobility. A plan for the MNA evaluation was provided to DEQ on September 15, 2005 (Landau Associates 2005b) and approved by DEQ in a letter, dated October 11, 2005 (DEQ 2005a).

1.2 REPORT ORGANIZATION

This report is organized into the following sections:

- **Section 2.0 Background Information.** This section provides a description of the facility and its history, as well as potential onsite sources of contamination.

- **Section 3.0 Potential Migration Pathways.** This section provides a description of the physical transport pathways and potential contaminant migration pathways to the river from impacted media onsite.

- **Section 4.0 Summary of Source Control/Removal Activities.** This section provides a description of ongoing source control and source removal activities, as wells as completed source control and source removal activities conducted onsite to date.

- **Section 5.0 Preliminary Screening Evaluation for COIs.** This section provides the contaminant screening criteria used for comparison .to site-specific contaminant concentrations and the results of the screening process in accordance with the JSCS.

- **Section 6.0 Conclusions and Recommendations.** This section provides our conclusions on whether complete contaminant migration pathways exist for each of the potential migration pathways using the comparison to JSCS SLVs and other weight-of-evidence information.

- **Section 7.0 Use of This Report.**

- **Section 8.0 References.**

- **Appendix A: Monitored Natural Attenuation Evaluation.** This appendix provides a description of the monitored natural attenuation evaluation, including an evaluation of the MNA parameter measurements and the results of the fate and transport modeling.

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2.0 BACKGROUND

This section provides background information for the Terminal for use in making a source control decision under the JSCS. Specifically, this section provides a general description of the Terminal and its operational history, potential sources of contamination at the Terminal, and associated upland contaminants of interest.

2.1 SITE DESCRIPTION AND HISTORY

The Northwest Terminal is a former bulk petroleum storage and transfer facility currently owned by Time Oil. Time Oil ceased operations at the Terminal on October 31, 2001. From 1943 to 2001, the Terminal was operated by Time Oil as the Northwest Terminal petroleum products facility. Since operations began, the Terminal was used for the receipt, storage, and distribution of petroleum and petroleum-related products. Historically, Time Oil leased tank space to Crosby & Overton for storage of waste oils, and the Koppers Company leased and owned tanks and equipment at the Terminal for the formulation and blending of pentachlorophenol (PCP)-containing wood treatment products.

The facility is located in Township 2 North, Range 1 West, Sections 34 and 35, in the industrialized Rivergate area of north Portland, Oregon (Figure 1). The Terminal is bordered to the east and south by heavy industrial complexes, to the north by heavy industrial property and Port of Portland undeveloped property, and to the west by the Willamette River. The Terminal is approximately 52 acres in size and is generally flat with an average land surface elevation of about 28 ft above mean sea level (MSL). The Terminal is enclosed by a terminal-wide chain link fence, and access is through the main gate at the termination of Time Oil Road. Significant site features are shown on Figure 2.

2.1.1 FORMER PCP MIXING AREA AND WAREHOUSE

In the former PCP mixing area and warehouse area, specialty wood treating products containing PCP in various formulations (typically with petroleum-based carriers) were blended and stored for offsite shipment from 1967 to 1984 under an agreement with the Koppers Company Inc., (n/k/a Beazer East, Inc). The former PCP mixing area was located in the approximate center of the Terminal, and included the former PCP warehouse and the area south of the warehouse (formerly occupied by various mixing and storage tanks that were removed by 1982; Figure 2). During September through November 2002, soil removal action activities were conducted within the former PCP mixing area and associated areas. These activities included the demolition of the former PCP warehouse and the excavation of approximately 6,400 yd^3 of PCP-impacted soil from the former PCP mixing area. The excavation area and remaining PCP concentrations in soil are shown on Figure 4. Also, as part of this removal action, approximately

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2,400 yd^3 of PCP-impacted soil, which was excavated from the former PCP mixing area in 1989 and stockpiled in the former stockpile area or was transferred from the East Property during interim removal actions in 1996-97, were also removed. Therefore, a total of approximately 8,800 yd^3 (9,700 tons) of PCP-impacted soil associated with this source area were removed for offsite incineration and disposal at the Swan Hills facility in Alberta, Canada. Removal activities are documented in the Removal Actions Completion Report, Phases I/II RI Areas (Landau Associates 2003a).

2.1.2 Former Main Tank Farm Area and Associated Petroleum Operations

Various petroleum products were stored and handled in the former Main Terminal Tank Farm area located on the western portion of the facility, adjacent to the Willamette River (Figure 2). The Main Terminal Tank Farm area includes 21 aboveground storage tanks (ASTs), ranging from approximately 3,000 to 80,000 barrels (i.e., 126,000 to 3,360,000 gallons) in capacity. In 1943 when the Terminal was first established, 12 of the original tanks were moved to the Main Terminal Tank Farm area from a location south of the current property. Between the mid to late 1950s and 1970s, additional tanks were added in the Main Terminal Tank Farm area bringing the area to the current configuration. Currently, all tanks are empty except for tank 16804 in the Main Terminal Tank Farm area, which temporarily stores recovered water from groundwater interim action wells RW-2 and HRW-1, and water collected from the groundwater intercept system in the east-west trending storm drain at SDM-1, prior to treatment at the onsite wastewater treatment system.

2.1.3 Former Bell Terminal Tank Farm Area and Associated Petroleum Operations

Various petroleum products were stored and handled in the Bell Terminal Tank Farm area located on the southern portion of the facility. The Bell Terminal Tank Farm area was first established in the late 1940s to early 1950s. Currently, the Bell Terminal includes 10 ASTs ranging from 3,000 to 80,000 barrels in capacity. All tanks are empty.

In September 2001, a 5,000-gallon fiberglass underground storage tank (UST) was removed from an area to the east of the office at the Bell Terminal Tank Farm area. Approximately 43 tons of diesel-impacted soil was removed from the tank excavation and treated and disposed at the TPS Technologies facility, formerly located in Portland. Analytical results for confirmation soil samples collected at the base and sides of the excavation indicate that petroleum constituents were not detected or were less than 500 mg/kg (the DEQ Level 2 Soil Matrix Cleanup Standard for diesel- and heavy oil-range hydrocarbons). Documentation of the UST removal is provided in the Report of UST Removal Site Assessment (GeoEngineers 2001). Also at the Bell Terminal Tank Farm area, historical aerial

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photographs indicate that a strip of land approximately 80 ft wide along the entire western property boundary and outside the wall surrounding the Bell Terminal Tank Farm area was apparently used by occupants of the adjacent property for storage of equipment and possibly other unknown activities for approximately 25 years, ending in about 2000. No specific spills or leaks in the Bell Terminal Tank Farm area or along the western property boundary of the Bell Terminal have been reported.

2.1.4 FORMER CROSBY & OVERTON TANK AREA

The former Crosby & Overton Tank area was located directly south of the former PCP mixing area where waste oils were previously stored in two ASTs from 1974 to 1989 through a lease to Crosby & Overton. The tanks have since been removed from this area. Another AST (Tank 38009), removed during the Phases I/II removal actions, was established in 1989 as a bioreactor during soil treatment activities for the former soil stockpile. Remedial action activities were conducted within the former Crosby & Overton tank areas in late 2002. Activities included the removal of 819 tons soil impacted by polychlorinated biphenyls (PCB) and carcinogenic polycyclic aromatic hydrocarbon (cPAH) for offsite thermal treatment and disposal. The excavation area and remaining PCB and PAH concentrations in soil are shown on Figures 5 and 6, respectively. Removal activities are documented in the Removal Actions Completion Report, Phases I/II RI Areas (Landau Associates 2003a).

2.1.5 EAST PROPERTY ROADWAYS

The East Property area, comprised of the easternmost 23 acres of the facility, is currently and historically an undeveloped area. During a 1996-1997 interim removal action on the East Property, approximately 100, 55-gallon drums and about 500 yd^3 of PCP-impacted debris and soil were removed for offsite disposal from the former drum area and former small stockpile and soil removal area (Figure 2; Landau Associates 1997; 1998). During an additional investigation conducted in 2000-01, the presence of cPAHs in surficial soils was identified and appeared to be related to historical road oiling, as documented in historical aerial photographs from the late 1960s through 1970s. Impacts to groundwater were not observed. A soil remedial action for the East Property was implemented during the fall of 2002. The remedial action for the East Property resulted in the removal and disposal of 1,732 tons of cPAH-impacted soil for offsite thermal treatment and disposal. The east property soil remedial action is documented in the Soil Remedial Action Completion Report, East Property (Landau Associates 2003b). A conditional No Further Action (NFA) determination was granted to Time Oil by DEQ for the East Property on November 24, 2003.

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2.2 PHYSICAL HYDROGEOLOGIC SETTING

Based on similar geologic soil types and hydrogeologic characteristics, four principal near-surface hydrogeologic units have been identified at the Terminal. In descending order from ground surface, these units include: 1) an upper zone, 2) a confining unit, 3) a lower zone, and 4) a deep sand unit. Depending on the continuity of the confining unit, the hydrogeologic units can act as distinct aquifer units with unconfined conditions in the upper zone and confined to semi-confined characteristics in the lower zone, or act as a single unconfined aquifer (beyond the western extent of the confining unit).

The upper zone at the Terminal consists of fine to medium sand and occurs in the surficial fill material and alluvial sands. The lower zone consists of a fine to medium sand to silty sand with multiple discontinuous interlayers of silt up to 6 ft thick, and occurs in interlayered river channel and overbank deposits. The upper and lower zones are separated by a silt confining unit across most of the Terminal. The silt unit consists of material that is characteristic of natural river overbank deposits and varies in thickness across the site from less than 1 ft to about 30 ft. The confining unit is thickest in the eastern portion of the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area, and thins as it extends westward in the Main Terminal Tank Farm area toward the river where it eventually becomes discontinuous and no longer acts as a confining unit between the upper and lower zones.

Based on the hydrogeologic data for the Terminal, groundwater flow direction in the upper and lower zones is toward the Willamette River. Groundwater elevations measured during fourth quarter 2005 for the upper zone and lower zone are presented on Figures 7 and 8, respectively. Groundwater elevations at the Terminal in both the upper and lower zones vary seasonally, but the groundwater flow patterns presented for the fourth quarter 2005 event are representative of typical historical observations. During the fourth quarter 2005 and historically, groundwater elevations indicate that groundwater flow in the upper zone is generally to the west-southwest toward the Willamette River across the Main Terminal and Bell Terminal tank farm areas. A localized southward shift in groundwater flow in the upper zone, which has historically been apparent within and downgradient of the former PCP mixing area, appears to be due to the influence of the east-west trending storm drain located about 170 ft north of the southern property boundary. Groundwater elevations in the lower zone are influenced by diurnal river stage fluctuations and groundwater flow from the upper zone to the west across the confining unit boundary. In the area where the confining zone is absent toward the river, ground elevation contours indicate that pumping of recovery well RW-2 has modified groundwater flow in the lower zone in proximity to the pumping well, as described in Section 4.2.1. Groundwater flow in the lower zone outside the well RW-2 capture zone is generally west/southwest toward the Willamette River.

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2.3 LAND AND BENEFICIAL WATER USE EVALUATIONS

In accordance with OAR 340-122-080 (e) and (f), evaluations were conducted regarding current and reasonably anticipated future land use and regarding current and reasonably likely future beneficial water use at the Terminal and surrounding areas, as part of the RI. The information collected during these evaluations was reported in the Phase II RI report (Landau Associates 2001) and was updated in the Phase III RI report (Landau Associates 2005a).

Based on the evaluations, the current and historical land use for the Terminal and the adjacent properties is and was primarily industrial with some commercial use. The current zoning of the Terminal property is heavy industrial (IH), which is also the comprehensive plan designation for the site property. This designation indicates that the likely reasonable future land use at the Terminal and surrounding properties is and will remain as heavy industrial.

The evaluations also identified the current and likely future beneficial use of groundwater and surface water at the Terminal, at adjacent properties, and within a 1-mile radius of the Terminal as primarily industrial with some use for irrigation. Shallow groundwater at the Terminal is not considered suitable for beneficial use. For the upper zone, aquifer yield is low (less than 1 gpm) and the unit is discontinuous: therefore, the upper zone would not likely support long-term use for any purpose. For the lower zone, aquifer yield appears to be adequate for low production use (approximately 10 gpm based on sustainable yield from the groundwater interim action system); however, because of its interconnection with the upper zone and its heterogeneous nature, it is possible that this yield would not be sustained for long-term use. Additionally, groundwater used for water supply throughout the Portland area has been typically derived from the deeper Troutdale aquifers, probably because of their significantly higher yield. Therefore, based on the significantly more favorable hydrogeologic characteristics of the Troutdale aquifers and historical groundwater use in this area, as well as the readily available City of Portland water supply, it was determined unlikely that the shallow water-bearing units defined at the Terminal would be used in the future for water supply. DEQ concurred with this determination in its NFA letter for the East Property (DEQ 2003a).

Lower zone groundwater discharges to the Willamette River and may provide some recharge benefit to the river, although the flow volume would be minimal compared to in-stream Willamette flows.

2.4 SOURCE AREAS

Sources that have affected soil and groundwater quality at the Terminal were related to historical operations described above: 1) the wood treatment formulation operation in the former PCP mixing area and former PCP warehouse area; 2) petroleum handling and storage in the Main Terminal and the Bell

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Terminal Tank Farm areas and associated loading rack and petroleum handling areas; 3) storage of waste oils in tanks in the former Crosby & Overton area; 4) "oiling" of roads (likely for dust suppression) on the East Property; and 5) unknown sources along the western property boundary of the Bell Terminal Tank Farm area outside the tank farm wall and on the adjacent former Premier Edible Oils (PEO) property to the west. Contamination to soil on the East Property has been addressed through a soil remedial action and the soil to groundwater pathway has been effectively eliminated. Because DEQ has issued a conditional NFA determination for the East Property portion of the Terminal, further discussion is focused on the other areas of the Terminal.

Upland COIs discussed below were identified by consistent detections of constituents based on soil data collected during various investigations, quarterly groundwater monitoring results, and historical site operations and uses in upland areas of the terminal. The data summarized in the following sections were presented in the Phase III RI report (Landau Associates 2005a) and the most recent groundwater monitoring and groundwater interim action status reports (fourth quarter 2004 through fourth quarter 2005; Landau Associates 2005c,d,e,f; 2006a). Monitoring well locations are shown on Figure 3. A summary of the most recent quarterly results (fourth quarter 2005) is included in Table 2-1. For the purposes of the source control evaluation, upper and lower zone contaminant concentration maps for the fourth quarter 2005 event have been combined except for chromium and copper (Figures 9, and 11 through 14). Since groundwater from both zones combine beyond the extent of the confining zone into a single water-bearing zone, these maps represent the combined concentrations of contaminants that have the potential to migrate to the river.

2.4.1 Former PCP Mixing Area and Warehouse

Two source areas for PCP-related contamination (e.g., PCP by-products and dioxins/ furans) have been defined at the Terminal. These areas are the former PCP mixing area (including the area below the former PCP warehouse) and the northwestern portion of former Crosby & Overton tank area (Figure 2). The primary contaminant of concern resulting from the historical blending of specialty wood treating products is PCP. As discussed in the RI report, releases of PCP, carriers, additives, and PCP formulations to soil in the PCP mixing area appear to have occurred during the mixing operations. These releases resulted in the primary source of PCP contamination (and related constituents) to soil in this area with historical PCP soil concentrations exceeding 100,000 mg/kg. Based on historical upper and lower zone groundwater data, the former PCP mixing area was also identified as a significant or primary source of PCP contamination to groundwater with historical concentrations in the upper zone exceeding 60,000 µg/L. PCP concentrations detected in the lower zone have been as high as 18,000 µg/L. Based on the magnitude of PCP detections in the soil and groundwater in and downgradient of the PCP source area

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and information about the PCP formulations, there is the possibility that free-phase PCP (dense non-aqueous phase liquid (DNAPL)] with a carrier was used, providing a potential residual source of PCP. However, to date, there has been no direct observation or evidence of DNAPL at the Terminal.

Contaminated soil was removed from the former PCP mixing area and below the footprint of the former PCP warehouse during a soil removal action in the fall of 2002. Where possible, soil exceeding PCP concentrations of 5 mg/kg was removed from these source areas for offsite incineration and disposal. However, soil containing PCP concentrations above 5 mg/kg still remains in some areas, mainly at or below the water table (Figure 4). An interim remedial action using an *in situ* chemical oxidation (ISCO) remediation technique is currently being implemented to address PCP-impacted soil and groundwater both in and downgradient of these source areas, as discussed further in Section 4.2.3.

The most recent groundwater analytical data (fourth quarter 2005) indicate that six wells contained detected PCP concentrations ranging from 0.852 to 2,060 µg/L. The highest concentrations were detected in the samples from wells OX-7S and OX-8S [2,060 and 377 µg/L, respectively], located within and downgradient of the former PCP mixing area. OX-2S was not sampled during fourth quarter 2005 due to the presence of product in the well (0.07 ft thickness).

Dioxin and furan analyses were performed on groundwater samples from wells OX-1S, OX-6S, and RW-1, which are located within and downgradient of the former PCP mixing area during the fourth quarter 2005 event. Results from these analyses indicated concentrations, as total equivalency quotient (TEQ), ranged from 2.54×10^{-4} nanograms per liter (ng/L) (RW-1) to 1.95×10^{-2} ng/L (OX-6S).

2.4.2 TANK FARM AREAS

Three primary source areas for diesel-range and gasoline-range petroleum hydrocarbon contamination (and related constituents) have been identified on the Terminal property based on concentrations of these contaminants detected in soil and groundwater. These areas include the Main Terminal Tank Farm area, the central portion of the Bell Terminal Tank Farm area, and an area along the western boundary of the Bell Terminal Tank Farm area. Another source area appears to occur downgradient of the Bell Terminal Tank Farm area on the former PEO property where significant historical releases have been documented in the area of the former diesel ASTs.

Contaminants in soil and groundwater at the Terminal associated with petroleum storage and handling operations include mainly petroleum hydrocarbons, PAHs, and VOCs. The presence of these contaminants is consistent with the historical uses of the Terminal for bulk storage of petroleum products. The graphical results presented in this document focus on VOCs (benzene and ethylbenzene) because these constituents are related to former petroleum operations at the terminal, have been detected at

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concentrations deserving evaluation, and have JSCS screening level values. However, all detected constituents were evaluated using the JSCS SLVs, if available (see Section 5.0). Total petroleum hydrocarbons (diesel and gasoline-range) are not included in the source control evaluation because no published JSCS screening level values are currently available for assessment of these constituents in water or soil. Presentation of the TPH results are provided in the Phase III RI report and quarterly groundwater monitoring reports.

The most recent groundwater monitoring events for the Main Tank Farm area and Bell Terminal Tank Farm area were conducted in November and August 2005, respectively. (At DEQ's request for simultaneous sampling of wells at the Bell Terminal and at the PEO site, sampling of the Bell Terminal wells has been discontinued until additional data is scheduled to be collected at the Schnitzer property.) Figures 11 and 12 show concentrations of benzene and ethylbenzene during the most recent sampling event conducted in the tank farm areas.

2.4.2.1 Main Terminal Tank Farm Area

Past releases of petroleum products have been documented in the Main Terminal Tank Farm area. Specifically, a release of diesel occurred in 1975 when Tank 29508 split along a vertical weld. An unleaded gasoline spill in 1994 was also reported in the Main Terminal Tank Farm area. Such releases have provided a source for petroleum-related constituents (e.g., VOCs, PAHs, and diesel-range and gasoline-range petroleum hydrocarbons). Reported spills within the Main Terminal Tank Farm area are summarized in the following table:

Date	Material(s) Released	Volume Spilled (Gallons)	Spill Surface (Gravel, Asphalt, Sewer)	Action Taken (Yes /No)
1975	Diesel	Unknown	Soil in bermed area	Yes – free product recovery and soil removal
1990	Ethanol	~500 gallons	Soil in bermed area	Yes - Product and groundwater recovery
1994	Unleaded Gasoline	1300 gallons	Soil in bermed area	Yes – Product recovery and long-term groundwater monitoring
1999	Ethanol	2,479 gallons (suspected)	Subsurface soil	Yes - Installed recovery well and conducted groundwater monitoring; no product ever observed

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Unquantifiable leaks along pipelines conveying petroleum products may have also provided a source for the petroleum hydrocarbon contamination in soil and groundwater in this area. LNAPL has been observed at locations within the Main Terminal Tank Farm area in the area of the 1994 spill and more recently in the central portion of the Main Terminal Tank Farm area, which is likely related to periodic leaks along conveyance pipelines. To a lesser extent, inadvertent spills near the loading rack and entrance to the Terminal may have occurred during truck loading/unloading and may have provided a source of petroleum products to soil and groundwater in this area. LNAPL occurrence in the Main Terminal Tank Farm area is discussed in more detail in Section 3.3. The well locations where LNAPL has been observed historically and currently are shown on Figure 10.

As shown on Figures 11 and 12, the maximum concentrations of benzene and ethylbenzene were observed in wells P (2,470 µg/L) and N (131 µg/L), respectively during the November 2005 event. The most elevated benzene concentrations were observed in an area where the 1994 gasoline spill occurred and where LNAPL has historically been observed (Figure 10). Elevated ethylbenzene concentrations were also observed in this area and in two other areas. These two other areas, located within and near the southeast corner of the Main Terminal Tank Farm area, although adjacent, are likely associated with separate historic activities at the terminal (Figure 12). The plume to the west, including well LW-8S, is likely associated with spills related to former petroleum operations within the Main Terminal tank farm area. The plume to the east, including wells RW-1 and LW-11S is likely associated with carrier fluids used with PCP during wood treatment formulation activities within the former PCP mixing area. This interpretation is supported by the results for a product sample collected from well LW-11S in November 2000, which contained 3.2 percent PCP in addition to other petroleum constituents, versus the results for the product samples collected from wells LW-21S and LW-27S in April 2004, which contained only petroleum constituents (e.g., gasoline-, diesel-, and motor oil-range TPH). Also, the plume in the area around well LW-8S appears to be associated with the former petroleum operations in the Main Terminal tank farm area because upper zone groundwater flow in this area is to the south-southwest and constituents originating in the former PCP mixing area (e.g., PCP) have not been observed at well LW-8S.

2.4.2.2 Bell Terminal Tank Farm Area

No past releases in the Bell Terminal Tank Farm area or along the western property boundary of the Bell Terminal have been reported. Reported releases have occurred on the former PEO property located downgradient of the former Bell Terminal Tank Farm area. In the mid-1970s, the western portion of a conveyance pipeline that was used to convey petroleum products was demolished by Schnitzer during construction of the former PEO facility while still in use and containing product. This pipeline

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trends east-west from the northernmost dock on the former PEO property through the center of the Bell Terminal. The demolition resulted in a release to soil in an area near the dock; any impacts of the release to other areas are unknown. Additionally, petroleum releases on the former PEO property reportedly occurred near the locations of the former diesel ASTs, where product has consistently been observed in nearby well MW-4.

Soil and groundwater concentrations collected within the Bell Terminal Tank Farm area and on the former PEO property suggest the presence of three commingled petroleum hydrocarbon plumes within this area: 1) one originating in the central portion of the Bell Terminal Tank Farm area, near the east-west trending pipeline, 2) one originating along the western property boundary in an area outside the tank farm walls, and 3) one originating on the eastern portion of the former PEO property where significant petroleum releases are known to have occurred (e.g., where the former diesel ASTs were located). The source for soil and groundwater impacts in the central portion of the Terminal is likely related to minor, incidental releases associated with operations of the Terminal. The source of petroleum contamination outside the operational area of the Bell Terminal near the western property boundary is unknown. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of the plumes commingle with other contamination originating on the former PEO property in the area where former diesel ASTs were located, it is unlikely that the elevated concentrations observed near the western property boundary of the Bell Terminal or on the former PEO property originate from the Bell Terminal tank farm operations. This conclusion is based on the decreases in soil and groundwater concentrations between the central portion of the Bell Terminal and the western property boundary, and the significant increase in both the soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Also, product was observed with thicknesses of up to 6 ft in wells on the east portion of the former PEO property between 2001 and 2003 (the most recent data available), but no product has ever been observed within wells or in soil within the Bell Terminal Tank Farm area at over 50 soil sample locations, 14 well locations, and 20 direct push groundwater sample locations. Because the confining unit boundary on the former PEO property is estimated within the likely source area where the former diesel ASTs were located on the eastern portion of the PEO property, the elevated groundwater concentrations in this area could reflect groundwater contamination resulting from direct releases to soil where the confining unit is not present or downgradient flow of contaminated groundwater from the upper zone across the confining unit boundary. However, in the latter case, concentrations would typically decrease instead of increase in the downgradient direction.

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Despite the differences in TPH concentrations, benzene and ethylbenzene have not been detected in the Bell Terminal Tank Farm area above laboratory reporting limits during the last five quarters of groundwater monitoring.

2.4.3 FORMER CROSBY & OVERTON TANK AREA

In the former Crosby & Overton area, PCBs and cPAHs are the primary contaminants of concern due to apparent releases to soil during storage and removal of the oil historically stored in tanks or cleaning of tanks in this area. Contaminated soil was removed from depths ranging from 0.5 to 2.5 ft below the ground surface (BGS) from this area as part of the removal actions for the East Property and former PCP mixing area in the fall of 2002. PCB and cPAH contamination appeared to be limited to surface soil in the former Crosby & Overton source area. No impacts to groundwater have been observed in this area. The residual concentrations of PCBs and cPAHs in soil are shown on Figures 5 and 6.

2.4.4 OTHER CONSTITUENTS

In addition to the COIs associated with operations at the Terminal, metals, including chromium, copper, nickel and zinc, have also been observed in groundwater. As shown on Figures 13 and 14, elevated concentrations of chromium and copper were observed in an area extending from the central portion of the Main Terminal tank farm area toward the north property boundary, at LW-11D and at LW-10D (for copper only), and at two locations in the Bell Terminal tank farm area. Based on knowledge of historical operations at the Terminal, the presence of metals is unlikely related to terminal operations. As described in more detail in Appendix A, reducing groundwater conditions likely exist over most of the upper and lower zones with more oxidizing conditions occurring during periods of river recharge at locations closer to the river and at locations outside the area where petroleum constituents are observed. Also, biodegradation is likely occurring or has historically occurred within the dissolved petroleum plumes within both groundwater zones. The presence of metals in lower zone groundwater does not appear to be directly related to the presence of petroleum constituents and reducing conditions resulting from their biodegradation, because a correlation can not be made between petroleum constituent and metals concentrations. For example, gasoline- and diesel- range hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX) are not detected in the lower zone at the same locations where metals concentrations are greatest (e.g., LW-35D, LW-27D, LW-1D, etc.).

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3.0 POTENTIAL MIGRATION PATHWAYS TO RIVER FROM IMPACTED MEDIA

Releases of contaminants at the source areas have apparently occurred during operation of the Terminal. Contamination of soil at each of the source areas appears to be the result of releases of hazardous substances directly onto the soil and subsequent migration. At the former PCP mixing area, these releases occurred during PCP formulation activities. At the former Crosby & Overton area, the releases occurred during lease operations. In the Main Terminal Tank Farm area and loading racks, these releases occurred due to spills and possibly leaking along conveyance pipelines and/or from activities associated with bulk fuel storage. In the Bell Terminal Tank Farm area, these releases may have occurred due to activities associated with bulk fuel storage as well as unknown activities along the western property boundary. It appears that separate releases occurred on the adjacent former PEO property. A conceptual site model for the Terminal, which includes a schematic of the source areas, release mechanisms, and transport mechanisms is provided on Figure 15.

The predominant potential migration pathway for transport of contaminants to the river is via groundwater (i.e., dissolved phase). Other potential migration pathways addressed in this source control evaluation include a preferential migration pathway for contaminated groundwater via the storm drain, LNAPL migration, stormwater/upland surface water runoff, and soil erosion/catch basin sediment. Each potential migration pathway is discussed in detail below.

3.1 GROUNDWATER MIGRATION – DISSOLVED PHASE

In some areas of the Terminal, dissolved phase contamination in groundwater has resulted from contact between infiltrating water and contaminated soil in the unsaturated zone and/or subsurface water and NAPL, or downward vertical migration of shallow groundwater contamination to the lower groundwater zones through discontinuities in the confining unit or across the confining unit boundary. Based on the hydrogeologic data for the Terminal, groundwater flow direction in the upper and lower zones is toward the Willamette River. Groundwater elevations measured during fourth quarter 2005 for the upper zone and lower zone are presented on Figures 7 and 8, respectively. Groundwater seeps have not been observed along the riverbank adjacent to the Terminal, so groundwater likely discharges to the river below the water line. Consequently, there is a potential for dissolved chemicals in groundwater or LNAPL from the Main Terminal Tank Farm area to be transported to the river by groundwater flow. However, there does not appear to be a current complete migration pathway for groundwater contamination to the river at concentrations exceeding screening levels (see Section 5.0).

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3.1.1 PCP Mixing Area

The majority of the contaminated soil from the former PCP mixing area and former soil stockpile area has been excavated and disposed offsite. However, at the conclusion of soil removal activities, residual amounts of PCP at concentrations greater than 5 mg/kg still remained at depths typically at or greater than 13 ft BGS (the approximate water table elevation) within and directly adjacent to the mixing area. ISCO injections conducted within the former PCP mixing area are likely to have further decreased the residual concentrations (see Section 4.2.3.)

PCP formulations were likely introduced into the environment through spills of PCP-containing NAPL directly onto the ground surface and subsequent migration through the subsurface to groundwater. Historical information indicates that most of the PCP formulations were less dense than water (i.e., specific gravity of less than 1) and, therefore, would migrate through the environment as LNAPL; however, at least one formulation had a density greater than 1 and could move as DNAPL through the subsurface. LNAPL has been observed in wells LW-11S, OX-1S, OX-2S, and OX-3S, which are located downgradient from the PCP mixing area. DNAPL has never been observed.

Elevated levels of PCP in the upper zone and lower zone groundwater at the Terminal indicate that PCP has partitioned from the soil and/or NAPL into the groundwater. PCP has been observed in groundwater in both zones in and to the south and southwest (downgradient) of the former PCP mixing area. Historically, low PCP concentrations have also been detected within the deep sand unit near where well LW-12D2 was previously located within the former PCP mixing area. The available data suggest that the primary source of the groundwater contamination in the upper zone results from partitioning of PCP from the residual amounts remaining in the soil within and adjacent to the former PCP mixing area and subsequent advective migration from this area, or from partitioning of LNAPL that has migrated downgradient from the PCP mixing area along the water table surface. LNAPL in the downgradient wells has not been observed consistently or over a wide area and is typically associated with very low seasonal groundwater levels. This inconsistent occurrence suggests that the LNAPL exists most of the year in a residual phase within the subsurface adjacent to these wells, and then is released/mobilized to the wells when water levels are low. PCP break-down products (e.g., trichlorophenols, tetrachlorophenols, etc.) have typically not been detected in groundwater indicating that the PCP has not typically degraded. Dioxins/furans tend to bind to soil particles; however, dioxins/furans have been detected in groundwater within the PCP plume area, likely indicating partitioning from LNAPL within or downgradient of the source area.

PCP in the lower zone likely results from downward migration of dissolved PCP via groundwater from the upper to the lower zone where the silt layer separating the upper and lower zones is heterogeneous and/or discontinuous across the confining unit boundary. No DNAPL has been

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encountered during any of the investigations to date. Therefore, downward migration across the confining unit likely occurs under the natural downward groundwater gradient within the upper zone plume resulting in the elevated concentrations detected in the lower zone. Under this scenario, the PCP concentration distribution within the lower zone would appear to mimic that of the upper zone, while mean groundwater flow in the lower zone would still be toward the river. This distribution is reflected by the observation of the highest historic concentration of PCP in the lower zone at a downgradient location from the source areas in the upper zone. Further migration of dissolved PCP in the lower zone groundwater would be primarily controlled by advective groundwater flow in a downgradient direction from the impacted area.

Historically and currently, the PCP in the upper zone is limited to a narrow plume that extends from the former PCP mixing area downgradient about 350 to 450 ft to between LW-4S and LW-13S. The PCP concentrations in the upper zone are highest within and just downgradient of the former PCP mixing area. PCP appears to have migrated in a downgradient direction toward the south-southwest. Upper zone PCP concentrations within the mixing area have decreased significantly since the first sampling in 1991. This decrease may reflect the removal of contaminant source material during the 1989 soil excavation within the former PCP mixing area, as well as natural attenuation of the PCP (through adsorption, biodegradation, etc.) or downgradient movement past these monitoring points. PCP has not migrated in the upper zone farther downgradient to the south than well LW-13S, as indicated by the lack of detected concentrations in upper zone wells near the south property boundary (LW-10S, when saturated). The reduction in PCP concentrations and plume extent in the upper zone since 2002 is likely related to the removal of the majority of the remaining contaminated soil during the soil removal in the former PCP mixing area and, within the last year, to implementation of the ISCO remediation technique.

The PCP contamination observed in the lower zone historically consisted of several discrete areas of contamination rather than a contiguous plume. The discrete areas were mainly located within and near the former PCP mixing area, in proximity to well LW-11D, and in an area including wells LW-4D and RW-2. The highest PCP concentrations in groundwater in the lower zone, which occurred at well LW-4D (18,000 ppb in October 1997), have decreased significantly at this location and since spring 1999, the PCP concentrations at this location have been mostly below the laboratory reporting limits.

PCP concentrations in groundwater from downgradient wells closest to the river are typically non-detect. Since November 2002, low level PCP concentrations (generally less than 1 µg/L) have been detected on an intermittent basis in wells LW-6D and LW-9D (located between LW-4D and the river), and well LW-10D (located at the southern property boundary). These detections have not been observed on a consistent basis, which may be related to dilution of groundwater by river water at the groundwater-

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surface water interface (particularly in the lower zone where the river stage influence is greatest); natural attenuation processes (e.g., adsorption, biodegradation, etc.); or seasonal variability.

Low concentrations of PCP (1 to 3 µg/L) were detected in the deep sand unit at LW-12D2 sporadically (three times) during quarterly monitoring between May 1999 and June 2002. This well was subsequently abandoned in advance of the soil removal action in the former PCP mixing area because it was located within the excavation area. The historical detections in this well were likely due to downward vertical migration of contaminants via groundwater flow between the upper and lower zone and between the lower zone and the deep sand unit. The source area for the impacts to the upper zone has been mitigated by the soil removal actions in 1989 and 2002, so the potential for ongoing groundwater impact in this area is considered to be low.

Beginning in October 2000, several source control methods have been used to contain PCP-impacted groundwater in the upper and lower groundwater zones. These source control methods are described in more detail in Section 4.2.

The concentrations of petroleum hydrocarbons and VOCs detected in wells downgradient of the former PCP mixing area are likely due to the presence of PCP carrier products (e.g., mineral spirits) that are present as LNAPL and the partitioning of these constituents into groundwater. The distribution of detected petroleum hydrocarbon concentrations in this area is consistent with the intermittent presence of LNAPL observed in well LW-11S, the recent occurrence of LNAPL at wells OX-1S, OX-2S, and LX-3S; and the presence of elevated PCP concentrations in groundwater. The intermittent nature of LNAPL occurrences at LW-11S appears to be related to seasonal groundwater fluctuations, such that residual LNAPL is observed in nearby monitoring wells under low water table conditions or to effects from the ISCO implementation events.

3.1.2 TANK FARMS

Soil contamination by petroleum-related constituents in the Main Terminal and Bell Terminal Tank Farm areas occurs primarily at depth within the capillary fringe. The elevated concentrations of contaminants within the capillary fringe in the Main Terminal and Bell Terminal Tank Farm areas indicate that releases of petroleum substances to the ground surface were historical and that NAPL has had sufficient time to migrate downward and spread laterally within the capillary fringe. The presence of the same contaminants both in groundwater and in soil indicate that these contaminants have partitioned from the soil and/or NAPL into the groundwater. Most of the shallow soil samples containing elevated petroleum hydrocarbon concentrations did not contain elevated benzene or ethylbenzene concentrations, indicating that the low molecular weight aromatics (e.g., BTEX) that may have once been present have undergone biodegradation or volatilization, or have been reduced by infiltrating precipitation.

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In the Main Terminal Tank Farm area, contaminants are present in the upper and lower zone groundwater. However, contamination of the lower zone groundwater is typically found only in the western portion of the Main Terminal Tank Farm area where the silt confining unit separating the upper and lower zones does not exist or is discontinuous. In this portion of the Main Terminal Tank Farm area, only a single unconfined groundwater zone exists. In the eastern portion of the Main Terminal Tank Farm area, where the silt layer separating the upper and lower groundwater zones is present, contaminant concentrations in the lower zone groundwater are typically low and are primarily detected near where the silt layer pinches out or becomes discontinuous. This suggests that the silt layer over much of the western portion of the Main Terminal Tank Farm area provides a natural geologic/hydrogeologic boundary between the upper zone groundwater and the lower zone groundwater, limiting the vertical migration of contaminants over this portion of the Main Terminal Tank Farm area, or that the characteristic of the contaminant does not lend itself to vertical migration.

In the Bell Terminal Tank Farm area, contaminants are present in the upper zone groundwater, but not in the lower zone groundwater. The lack of contaminants in the lower zone groundwater indicates that the silt confining unit between the upper and lower zones is acting as an impermeable boundary and the two groundwater zones are not interconnected in this area. Concentration contours for selected contaminants in upper zone and lower zone groundwater (Figures 9, and 11 through 14) indicate that lateral migration in the downgradient groundwater direction has occurred. The lateral migration is likely a combination of the individual contaminant properties (e.g., solubility) and the processes of advection, hydrodynamic dispersion, and adsorption. The lack of contaminants in groundwater upgradient of the source areas indicates that contaminant migration in groundwater is primarily due to advection (transport of constituents by groundwater movement). For contamination in the groundwater along the western property boundary of the Bell Terminal Tank Farm area or on the former PEO property, there is not enough information about the nature of the release to determine the mechanisms affecting migration. However, the downgradient extent of petroleum constituents in the Bell Terminal Tank Farm area suggests that lateral movement of the contaminants is slow, which may be due to a low rate of advection in this area; possible natural attenuation (through adsorption, biodegradation, etc.); and/or volatilization.

The distribution of petroleum constituent concentrations within and downgradient of the Bell Terminal Tank Farm area suggest the presence of three commingled groundwater plumes, as discussed earlier. Except for low level metals in lower zone wells at the Bell Terminal Tank Farm area (Figure 13 and 14), concentrations of petroleum constituents, such as benzene and ethylbenzene, have typically not been detected in groundwater. Groundwater from the Bell Terminal is expected to flow west toward the Willamette River; it is unknown whether a complete contaminant migration pathway via groundwater exists from the former PEO property.

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3.2 STORM DRAIN – PREFERENTIAL PATHWAY FOR GROUNDWATER

The storm drain (Figures 2 and 17) and backfill associated with its construction appear to affect groundwater flow and contaminant transport in the upper zone. The presence of the storm drain may partly explain the southerly components of upper zone groundwater flow in the Terminal area as groundwater flows toward the zone of higher hydraulic conductivity (i.e., the storm drain pipeline backfill). The storm drain pipeline does not appear to fully penetrate the confining unit (where present) and, therefore, is not considered to provide a vertical pathway for groundwater flow and contaminant transport to deeper aquifers. Groundwater samples collected from manholes in the storm drain and at the storm drain outfall in the river in 2001 and 2002 (Table 3) indicate that the storm drain was serving as a preferential pathway for upper zone groundwater to the river.

A stormwater intercept system was installed in 2002 to eliminate the potential for PCP-impacted upper zone groundwater to migrate through the storm drain to the river. A detailed description of the intercept system is provided in Section 4.2.2. Groundwater that may migrate within the pipeline fill outside the pipeline is likely not collected by the storm drain intercept system. However, PCP concentrations have not been detected in river outfall samples since implementation of the storm drain intercept system.

3.3 LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL) MIGRATION

LNAPL has been observed both historically and currently in the area downgradient of the former PCP mixing area (in wells LW-8S, LW-11S, OX-1S, OX-2S, and OX-3S) and in the former Main Terminal Tank Farm area (in wells N, P, Q, LW-21S, and LW-27S), as shown on Figure 10 and in Table 2.

In the Main Terminal Tank Farm area, the maximum LNAPL thickness was observed in well N in July 1997 (1.20 ft); however, no LNAPL has been observed in well N since November 2002. The maximum LNAPL thickness observed in wells P and Q were 0.17 ft (July 1997) and 0.42 ft (November 2001), respectively. No LNAPL has been observed in wells P and Q since October 2003 and November 2004, respectively. The maximum thickness of LNAPL observed in wells LW-21S and LW-27S was observed in February 2004, at thicknesses of 1.03 ft and 0.69 ft, respectively. LNAPL has been observed at thicknesses of less than 0.16 ft in wells in the Main Tank Farm area during the last year. Also, LNAPL thicknesses have decreased over time at each of the wells where LNAPL was observed (Figure 20). This decrease is likely due to a combination of passive recovery techniques and natural attenuation processes. LNAPL has never been observed in wells located at the top of the riverbank or in the shoreline wells

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(Figure 18). The results of the MNA evaluation which included assessment of the migration potential of the LNAPL are discussed in Section 6.0.

In the area downgradient of the former PCP mixing area, LNAPL containing PCP was observed in wells LW-8S, OX-1S, and OX-3S in November 2004 only, at thicknesses of 0.04 ft, 0.03 ft, and 0.33 ft, respectively. LNAPL was observed in well LW-11S at a maximum thickness of 0.37 ft in November 2000, although no LNAPL has been observed in that well since November 2004. LNAPL is consistently detected in well OX-2S, with a maximum thickness of 0.31 ft observed in October 2003. During the four sampling events conducted in 2005, the maximum thickness observed in well OX-2S was 0.23 ft. As shown on Figure 19, LNAPL thicknesses in this area have decreased over time. This decrease is likely due to use of ISCO in proximity of the wells containing LNAPL downgradient of the former PCP mixing area.

As shown on Figure 19, LNAPL thicknesses appear to correlate with groundwater level fluctations such that LNAPL thicknesses increase at historically high groundwater conditions (LW-21S and LW-27S) and at historically low groundwater conditions (LW-11S). These increases are likely related to the release of residual LNAPL in the vadose zone as groundwater levels get shallower and closer to the ground surface where the source of the LNAPL originated (LW-21S, LW-27S), or due to the release of residual LNAPL bound up in previously saturated pore spaces as the water levels decrease (LW-11S).

3.4 STORMWATER/SURFACE WATER RUNOFF

Stormwater primarily infiltrates at the Terminal. In areas where stormwater runoff occurs, the stormwater is routed to an onsite stormwater treatment system (SWTS) or collected into the storm drain lines for discharge to the Willamette River. Stormwater from the former industrial areas of the terminal, including the loading rack along the rail spur, the truck loading rack, the valve pit on the vessel dock, and the other areas where valves exist is routed to the SWTS. The discharge from the SWTS to the stormwater drainage system, which ultimately discharges to the Willamette River following treatment, is regulated by the provisions of NPDES Permit 1200-Z.

Stormwater from the terminal entrance area and the low topographic area east of the rail spur and from the other areas of the Terminal during storm events is collected into the storm drain line for untreated discharge into the Willamette River. The stormwater flow route is shown on Figure 17.

The storm drain line runs east-west along the length of the Terminal about 160 ft north of the southern property boundary (Figures 2 and 17) to the river outfall. The storm drain was constructed before construction of the Terminal in 1943 and, therefore, backfill/construction details are not available. Internal inspection of a 600-ft section of the storm drain by remote video camera in April 2000 revealed

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that the line is a 15-inch diameter concrete pipe. The pipeline appeared to be in good condition with few internal leaks. Several lateral lines to the main line were also observed in the Main Terminal Tank Farm area. One of the lateral lines was damaged during drilling of the horizontal well installed as part of the groundwater interim action (see Section 4.2.1). The lateral lines were subsequently abandoned and isolated from the main line using internal patches.

Stormwater data collected between September 2001 and August 2002 at the catch basin closest to the river contained PCP concentrations ranging from 0.7 to 190 µg/L (Table 3). Except for diesel-range petroleum hydrocarbons, petroleum compounds (gasoline, mineral spirits, kerosene, and lube oil) were not detected. Diesel-range petroleum hydrocarbons were detected twice at concentrations of 0.261 mg/L and 0.3 mg/L. These data and the groundwater flow pattern in the upper zone indicated that upper zone groundwater was likely infiltrating into the storm drain pipeline. In October 2002, a groundwater intercept system was installed within the storm drain to capture groundwater between the two stormwater manholes closest to the river (see Section 4.2.2). Stormwater samples collected from the groundwater intercept system located in the catch basin closest to the river (SDM-1) continue to be analyzed as influent into the onsite WWTS on a quarterly basis (Table 3); however, these concentrations represent groundwater captured by the intercept system that do not reach the river outfall. Samples are also collected from the river outfall, when exposed during the quarterly sampling events.

In summary, stormwater runoff from the east property and from former operational areas of the terminal outside of the former PCP mixing area that does not infiltrate discharges to the Willamette River at the river outfall. Stormwater from former operational areas at the Terminal is collected and treated at the onsite SWTS, discharged to the storm sewer system under NPDES permit 1200Z, combined with the untreated stormwater from the east property (when present), and ultimately discharged to the Willamette River (Figure 17). Impacted media are not located within the area of stormwater runoff that discharges to the river; therefore, stormwater is not considered a current, potential contaminant migration pathway to the river. Potential historical releases to the river via the river outfall are being addressed by the Portland Harbor RI/FS.

No surface water body is present on or across the Terminal.

3.5 RIVERBANK SOIL EROSION AND CATCH BASIN SEDIMENT

Soil susceptible to potential erosion near the river embankment is outside of the bermed area that surrounds the Main Terminal Tank Farm area, to the west of where terminal operations were mainly located. Also, much of the river bank is either covered with vegetation or gravel fill and the beach is relatively wide, so the potential for riverbank erosion is limited. There are no records or evidence of spills from the pipelines along the dock where petroleum products were transferred from ships to the

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Main Terminal Tank Farm area. Soil samples collected from the wells drilled on the shoreline do not indicate contamination, and no seeps, staining or other visual evidence of contamination has been observed. Soil erosion is therefore considered an unlikely pathway for contaminant migration.

Impacted surface soils in non-operational areas of the property that drain to the river outfall have largely been removed and replaced with gravelly fill at the ground surface. As discussed above, contamination of soil within the former Crosby & Overton tank area is anticipated to be the result of waste oil spills from the tanks historically located within this area. Because cPAHs and PCBs tend to absorb or bind to soil, contamination in this area was limited to the upper few feet of surface soil. As part of the soil removal action conducted for the former PCP mixing area and soil stockpile, impacted soil was excavated from the Crosby & Overton tank area and disposed offsite. Remaining PCP and cPAH concentrations in soil at completion of the removal action are shown on Figures 5 and 6 and confirm that the areal and vertical extent of the contamination was limited. Because historical releases in this area resulted in contamination that was limited to surface soil and groundwater contamination has never been observed in this area, the concentrations remaining in soil are considered to be protective of groundwater and additional cleanup in this area is not necessary. The residual soil concentrations are not expected to provide a complete exposure pathway to ecological or human receptors or provide a source of erodible soil, because the soil is buried under approximately 1.5 ft of backfill and groundwater quality results in this area before the removal action showed nondetect PCB and cPAH concentrations over a year period from 1997 to 1998. Also, residual PCP-impacted soil resulting from the historical PCP mixing area operations only remains at depths more than 13 ft BGS and below the excavation backfill (Figure 4), and therefore would not provide a source of erodible soil to the storm drain system via stormwater.

Therefore, significant erosion and transport of impacted soil at the Terminal through the stormwater system is unlikely. Potential historical releases to the river via the river outfall are being addressed by the Portland Harbor RI/FS.

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4.0 SUMMARY OF COMPLETED OR ONGOING SOURCE CONTROL/REMOVAL ACTIVITIES

This section summarizes the source control and/or removal activities that have been conducted or are currently ongoing at the Terminal to address source area impacts.

4.1 PCP-IMPACTED SOIL

Approximately 9,700 tons of contaminated soil were removed from the former PCP mixing area, below the footprint of the former PCP warehouse, and from the former soil stockpile area during a soil removal action in the fall of 2002. Where possible, soil exceeding PCP concentrations of 5 mg/kg was removed from these source areas for offsite incineration and disposal. However, soil containing PCP concentrations above 5 mg/kg still remain in some areas, mainly at or below the water table (approximately 13 ft BGS) at conclusion of the soil removal activities (Figure 4). The ISCO remediation technique being used for upper zone groundwater (see Section 4.2.3) is expected to address some of the PCP contamination in soil within the zone of groundwater fluctuation. Because the remaining PCP-contaminated soil is buried under approximately 13 ft of backfill, the soil is not likely to be transported by stormwater to the storm drain system.

4.2 PCP-IMPACTED GROUNDWATER

Source control methods currently being used to capture and treat PCP-impacted groundwater consist of the following:

- Storm Drain Intercept System – captures PCP-impacted groundwater in the upper zone that infiltrates into the storm drain pipeline in the area of the PCP plume.
- Horizontal Recovery Well – captures upper zone groundwater near the downgradient extent of the PCP plume in the upper zone during periods of seasonal high water levels.
- ISCO – treats upper zone groundwater and soil within the zone of groundwater fluctuation. ISCO has been used during three full-scale injection events within the PCP plume area in February 2005, June 2005 and January 2006.
- Vertical Recovery Well – captures lower zone groundwater at downgradient locations where elevated concentrations of PCP were historically recorded.

These methods are described in detail in the following sections. Because of the source control systems in place, there is not a current, complete contaminant transport pathway to the river for PCP-impacted groundwater.

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4.2.1 GROUNDWATER RECOVERY AND ONSITE TREATMENT

To prevent further migration of PCP in upper zone and lower zone groundwater at the Terminal, a groundwater interim action was implemented. The system consists of two groundwater extraction wells, a horizontal well (HRW-1) in the upper zone and a vertical well (RW-2) in the lower zone, and a groundwater intercept system in the east-west trending storm drain at the manhole closest to the Willamette River (SDM-1; Section 4.2.2). These well locations and the location of SDM-1 are shown on Figure 3.

Pumping from recovery well RW-2 began in October 2000. Since startup of recovery well RW-2, with the exception of periodic shutdowns for system maintenance, groundwater has been extracted continuously from the lower zone. Through December 2005, approximately 19.5 million gallons of water have been removed from the lower zone at RW-2 and transferred to the onsite wastewater treatment system (WWTS) for subsequent treatment and discharge to the sanitary sewer under a publicly owned treatment works (POTW) permit with the City of Portland.

The horizontal well (HRW-1) was installed in the upper zone during April 2000 across the approximate downgradient edge of the PCP plume in the upper zone. Four piezometers (PZ-1 through PZ-4) were installed, and water level monitoring was performed in February through May 2002 in the area of the east-west trending storm drain and HRW-1 to assess why the desired pumping rate could not be achieved in HRW-1 (Figure 3). The water level monitoring indicated that the water level in HRW-1 was lower than in the surrounding upper zone monitoring wells. From the water level data collected to date, information collected regarding the storm drain line, and the nature of the confining unit, it is believed that there is a hydraulic interconnection between the upper and lower zones in the area of the horizontal well. Based on this information and observed conditions, pumping of HRW-1 is limited to the wetter months of the year (i.e., December through May). Approximately 332,000 gallons of groundwater have been removed from HRW-1 since startup and transferred to the onsite WWTS for subsequent treatment and discharge to the sanitary sewer under a POTW permit with the City of Portland.

4.2.2 STORM DRAIN INTERCEPT SYSTEM

During installation activities for HRW-1, a lateral from the main storm drain was penetrated. A subsequent investigation was conducted to assess the impact of the east-west trending storm drain, located approximately 15 to 20 ft south (downgradient) of HRW-1, on upper zone groundwater. Samples were collected from two manhole locations (SDM-1 and SDM-2) and from the storm drain outfall at the discharge point into the Willamette River and analyzed for PCP. Results indicated that groundwater from the upper zone was infiltrating into the concrete stormwater drain (Table 3).

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Due to the inability to operate HRW-1 during the drier months from June through November and the potential for upper zone groundwater to infiltrate into the storm drain line, a groundwater intercept system was installed in the storm drain line on October 8, 2002, at the manhole (SDM-1) located closest to the point of discharge to the Willamette River. The system consists of an 8-inch diameter polyethylene pipe routed through the 15-inch storm drain line from manhole SDM-1A through manhole SDM-1 (Figure 17). Stormwater from the East Property and Terminal office area, as well as treated stormwater from the SWTS, is routed through the 8-inch liner pipe and discharged to the Willamette River. Potentially impacted groundwater entering the storm drain pipe between manholes SDM-1A and SDM-1 is routed through the annulus between the pipes and is collected in manhole SDM-1. The intercepted water is pumped from the manhole to Tank 16804 for processing by the onsite WWTS. Approximately 3 million gallons of water have been removed from SDM-1 since startup.

4.2.3 ISCO INJECTIONS

To further facilitate the remediation of PCP contamination in the groundwater and soil at the Terminal within the upper zone, ISCO injections have been implemented. The primary objectives of the ISCO injections are to reduce the concentration of PCP present in upper zone groundwater within the PCP source area, to reduce the extent of the PCP plume in the upper zone groundwater, and to reduce the concentration of PCP in the soil located within the zone of groundwater fluctuation (i.e., smear zone). The specific type of chemical oxidation that has been implemented for the interim action is based on Fenton's Reagent oxidation technology. The Fenton's Reagent chemical oxidation reaction is created by the combination of soluble iron with low concentrations of hydrogen peroxide to produce hydroxyl radicals (•OH). The hydroxyl radical is a short-lived oxidizer that cleaves the carbon double bonds of chlorinated hydrocarbons (e.g., PCP).

To date, three full-scale injection events have been conducted in February 2005, June 2005, and January-February 2006. The results are of the first two events were provided in the RI report and the first quarter 2005 groundwater monitoring and groundwater interim action status report (Landau Associates 2005d), respectively. The results for the February 2006 event are currently being evaluated. The injection points for all three events were primarily focused within the PCP plume area within the upper zone within and downgradient of the former PCP mixing area, as shown on Figure 22. The results from the first two events indicate that PCP concentrations were effectively reduced within the plume area. Figure 22 shows baseline PCP concentrations in the upper zone prior to the first ISCO injection in June 2004. Figures 22 and 23 show PCP concentrations following the first and second ISCO injections in August 2004 and February 2005, respectively. Figure 9 shows the most recent PCP concentrations. After the first ISCO event, PCP concentrations in upper zone monitoring wells within the PCP plume area were

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reduced by 63 percent (OX-8S) to 92 percent (OX-3S) and following the second event, PCP concentrations were reduced by 3 percent (LW-11S) to 80 percent (OX-6S). Based on mass calculations of PCP before and after the two injection events, the ISCO injections appear to have caused a mass reduction of PCP of approximately 0.85 lbs, or 76 percent over a one year period. The results of the 2006 event will be provided in the First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report (Landau Associates 2006b - in preparation).

4.3 PAH AND PCB-IMPACTED SURFACE SOIL REMOVAL

In the former Crosby & Overton area, PCB- and cPAH-impacted soil was removed as part of the removal actions for the East Property and former PCP mixing area in the fall of 2002. The removal action consisted of the removal and offsite treatment and disposal of 819 tons of soil from depths ranging from 0.5 to 2.5 ft BGS. Residual soil concentrations remaining within the soil removal area are shown on Figures 5 and 6. PCB and cPAH contamination appeared to be limited to surface soil in the former Crosby & Overton source area and has not been detected in groundwater. These residual concentrations are not expected to provide a complete exposure pathway to ecological or human receptors or provide a source of erodible soil, because the soil is buried under approximately 1.5 ft of backfill and groundwater quality results in this area before the removal action showed nondetect PCB and cPAH concentrations.

4.4 PASSIVE LNAPL RECOVERY

In the Main Terminal Tank Farm area, LNAPL has been observed since the first quarter 2004 in wells LW-21S and LW-27S (Table 2). Keck® passive product recovery bailers were installed at LW-21S and LW-27S in March 2004. The recovered LNAPL is removed during quarterly groundwater sampling events and temporarily contained in a 55-gallon drum onsite pending appropriate offsite disposal. Through December 2005, less than 5 gallons of LNAPL have been removed from these wells.

Also, LNAPL has been observed intermittently in wells L, P, and Q in the Main Terminal Tank Farm area (Table 2). Product socks have been placed in these wells when product has been observed and removed and replaced on a quarterly basis, as needed. Currently, there is no measurable product in these wells. The potential for LNAPL migration from the Main Terminal Tank Farm area is discussed in Section 6.0.

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5.0 COMPARISON OF DETECTED GROUNDWATER CONCENTRATIONS AT TO JSCS SCREENING LEVEL VALUES

This section presents the results of a comparison of detected groundwater concentrations in nearshore wells to the JSCS screening level values (SLVs). Only groundwater results were compared to the JSCS SLV, because, as discussed in Section 3 and below, groundwater is the only potentially complete contaminant migration pathway to the Willamette River at the Terminal.

To assess the potential for a complete contaminant migration pathway from the source areas, concentrations of groundwater from wells in the following areas were compared to the JSCS SLVs:

- Shoreline (beach) wells on the Willamette River – represent groundwater concentrations downgradient of the Main Terminal Tank Farm area and near the point of groundwater discharge to the Willamette River.

- Bell Terminal Tank Farm well – represent groundwater concentrations at the downgradient edge of the Bell Terminal property, but upgradient from other potential sources on the former PEO property.

- Downgradient wells from the PCP groundwater plume – represent groundwater concentrations downgradient of the PCP plume area in the upper zone at wells located on the river bank less than 200ft from the river

The analytical results were compared to the SLVs presented in Table 3-1 of the JSCS. Any constituent detected during the five quarterly events between November 2004 and November 2005 was compared to the screening levels identified in Table 3-1 of the JSCS, as shown on Tables 4, 5, and 6.

5.1 SHORELINE WELLS

The Willamette River shoreline wells (LW-36D, LW-37D, LW-38D, and LW-39D; shown on Figure 3) were used for the comparison because the analytical results from these wells are representative of groundwater concentrations downgradient of the Main Terminal Tank Farm area and near the area of groundwater discharge to the river. The results of the comparison to the JSCS levels indicate that except for certain metals, no other constituents exceed the SLVs in groundwater at the shoreline wells. The TPH, BTEX, and selected metals (e.g., chromium, copper, and arsenic) results for these wells for the November 2005 event as wells as the results for wells located along the riverbank are shown on Figure 16. As shown on Table 4, arsenic exceeded the SLVs regularly at wells LW-38D and LW-39D and during one event each at wells LW-37D and LW-38D. A site-specific background concentration established for arsenic (1.5 mg/L) in groundwater based on concentrations collected at wells on the East Property was not exceeded in any sampling event. Because these East Property wells were located outside of the terminal operation areas, the site-specific background concentration is representative of a

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naturally occurring background level. Consideration of site-specific background concentrations is allowed for the weight-of-evidence approach under the JSCS. Other metals, including copper, lead, nickel, and zinc were detected intermittently at concentrations exceeding the JSCS SLVs. One sample collected at well LW-37D in November 2005 contained concentrations of arsenic, copper, lead and zinc that exceeded the SLVs. The overall higher turbidity measurement at this well during this event could be indicative of suspended material in this sample and could have biased the results high. Groundwater results for later events at this location, including both total and dissolved metals concentrations, showed concentrations less than the SLVs. The only other exceedances of the SLVs included total lead at well LW-37D in February 2005 (the three most recent events have been nondetect or less than the SLV) and a single occurrence (August 2005) for total and dissolved nickel at well LW-39D (all other nickel results were nondetect or less than the SLV).

The presence of metals concentrations in groundwater are not likely related to historical operations at the Terminal because the materials handled at the Terminal did not contain these constituents. This is further demonstrated by the fact that concentrations of all other constituents originating from Terminal operations are typically higher in the upper zone than in the lower zone, which is not the case for the metals concentrations. An evaluation of whether metals concentrations could be influenced by redox conditions in the lower zone was conducted as part of the MNA evaluation through the measurement of MNA parameters (including oxidation-reduction potential). The results of the MNA evaluation are included in Section 6.1. Further discussion of the metals concentrations are provided in Section 2.3.4. Under the groundwater screening procedures specified in the JSCS, a weight-of-evidence approach is allowed where concentrations exceed the SLVs. For these metals concentrations, considering the site-specific background concentration for arsenic (a regional background groundwater value is not available, but arsenic and other metals are ubiquitous throughout the area), the sporadic and low level nature of the other metals detections, and the lack of use of these constituents during terminal operations, source control should not be required for the metals constituents.

5.2 BELL TERMINAL TANK FARM WELLS

Groundwater concentrations from ten wells (seven upper zone, three lower zone) located within the Bell Terminal Tank Farm area were screened against the JSCS SLVs. These groundwater results represent groundwater concentrations within and at the downgradient edge of the Bell Terminal property, but upgradient from other potential sources on the former PEO property. Groundwater concentrations on the former PEO property at locations between the Bell Terminal and the river have not been monitored since 1998.

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The results of the comparison to the JSCS levels indicate that except for certain metals, no other constituents exceed the SLVs in groundwater at the Bell Terminal. As shown on Table 6, arsenic exceeded the SLVs regularly at most of the wells, but did not exceed the site-specific background concentration. Other metals concentrations that sporadically exceeded the JSCS SLVs included copper, lead, nickel and zinc in the lower zone wells (LW-29D, LW-30D, and LW-32D). The presence of metals concentrations in the lower zone may be related to the presence of reducing conditions, but does not appear to be exacerbated by the presence of petroleum constituents. Petroleum constituents are typically nondetect in the Bell Terminal in the lower zone. For the reasons stated in Section 5.1 above, source control should not be required for metals in groundwater within the Bell Terminal.

5.3 PCP PLUME – DOWNGRADIENT WELLS

Two wells (LW-6D and LW-9D) are located on the riverbank within approximately 200 ft of the river shoreline. Groundwater concentrations from these wells were screened against the JSCS SLVs because the groundwater is representative of concentrations downgradient of the PCP plume, as shown on Table 5. PCP concentrations at these wells have typically been nondetect during the period of monitoring between 1997 to present. Between November 2004 and November 2005, PCP was detected at LW-6D on one occasion at a concentration less than 3.0 µg/L, the National Recommended Water Quality Criteria (organism only, consumption rate = 17.5 g/day; EPA 2002) and DEQ's Ambient Water Quality Criteria (AWQC) (organism only, consumption rate = 17.5 g/day; DEQ 2004;Figure 9), but slightly greater than the minimum JSCS SLV (0.3 µg/L; based on the 175 g/day consumption rate for the same criteria) The source control methods currently in place, as described in Section 4, have been effective in containing the migration of PCP to the river; and therefore, there is not a current complete contaminant migration pathway for PCP-impacted groundwater to the river.

Arsenic is the only other constituent detected in groundwater from these wells that routinely exceeds the minimum JSCS SLV (0.014 µg/L). However, none of the arsenic concentrations exceed the site-specific background concentration (1,500 µg/L). Other metals, copper and lead, also sporadically are observed at concentrations slightly exceeding the minimum JSCS SLVs (copper: 2.7 µg/L; lead: 0.54 µg/L). For the reasons stated in Section 5.1 above, source control should not be required for these low detections of metals in groundwater within or downgradient of the PCP plume area.

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6.0 CONCLUSIONS AND PLANNED ACTIVITIES

Five potential migration pathways between impacted media within source areas at the Terminal and the Willamette River were identified during the source control evaluation. Based on information presented herein and the comparison of groundwater concentrations with the JSCS SLVs, we conclude that no pathway that transports contaminated media to the river at concentrations consistently greater than the JSCS SLVs or site-specific background levels currently exists at the Terminal. We justify this conclusion for each potential pathway defined in Section 3 below.

6.1 GROUNDWATER MIGRATION - DISSOLVED PHASE

Three source areas for potential groundwater migration of dissolved phase contaminants were identified at the Terminal. These source areas consist of the former Main Terminal Tank Farm area and Bell Terminal Tank Farm areas for dissolved phase petroleum hydrocarbon constituents, and the former PCP mixing area and warehouse for dissolved phase PCP.

- **Former Main Terminal Tank Farm Area**: Groundwater analytical data collected over the past year from the shoreline (beach) wells located downgradient of the Main Terminal Tank Farm area indicate that none of the constituents exceed the JSCS SLVs, with the exception of some metals. Concentrations of arsenic routinely exceed the SLVs but do not exceed the site-specific groundwater background concentration established for arsenic. The JSCS SLVs are exceeded for other metals (including copper, lead, nickel and zinc), but none on a consistent basis (Table 4). The presence of metals at these concentrations does not appear to be related to terminal operations because metals of this type were not used historically for site activities. The presence of metals at these concentrations is explained in Section 2.4.4. The monitored natural attenuation evaluation results (Appendix A) support these data and indicate that dissolved petroleum constituent concentrations are likely naturally attenuated between the source area and the river. Therefore, these data support the conclusion that even though there is a complete physical groundwater transport pathway to the river, there is not a current complete contaminant migration pathway via groundwater to the river from the Main Terminal Tank Farm area.

- **Former Bell Terminal Tank Farm Area**: The Bell Terminal Tank Farm area boundary is located more than 600 ft from the river shoreline. Groundwater concentrations for all petroleum-related constituents from the operational area of the Bell Terminal Tank Farm area do not exceed the JSCS SLVs (Table 5). Similar to the Main Terminal, arsenic concentrations routinely exceed the SLVs, but do not exceed the site-specific background concentrations. Other metals (including copper, lead, nickel, zinc) occasionally exceed the SLVs, but only in lower zone groundwater. Elevated groundwater concentrations along the downgradient western property boundary and on the former PEO property do not appear to be related to Time Oil operations; however, petroleum-related constituents do not exceed the JSCS SLVs along the western property boundary (where SLVs are available). Groundwater sampling has not been conducted on the PEO property since 1998. These data indicate that dissolved groundwater concentrations leaving the Bell Terminal property do not consistently exceed the JSCS SLVs; therefore, a contaminant migration pathway for groundwater concentrations exceeding the JSCS SLVs does not occur from the Bell Terminal.

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- **Former PCP Mixing Area and Warehouse.** Groundwater concentrations between the defined PCP plume and river are typically nondetect for PCP-related constituents (Table 6). Similar to the tank farms, arsenic and other metals exceed the JSCS SLVs, but arsenic concentrations do not exceed the site-specific background concentration and the other metals are only observed sporadically at concentrations slightly above the JSCS SLVs. Groundwater downgradient of the former PCP mixing area and warehouse is currently being captured using the storm drain intercept system, the horizontal recovery well, the vertical recovery well, and ISCO techniques and recovered groundwater is treated by the onsite WWTS. These source control activities interrupt any potential migration pathways of the PCP-impacted groundwater to the river.

6.2 STORM DRAIN – PREFERENTIAL PATHWAY FOR GROUNDWATER

PCP-impacted groundwater that infiltrates into the storm drain is currently being intercepted and transferred to the onsite WWTS. Therefore, direct discharge of impacted groundwater through the storm drain to the river does not represent a current complete contaminant migration pathway. Potential historical impacts to the river via the storm drain are being addressed as part of the Portland Harbor RI/FS.

6.3 LNAPL MIGRATION

The migration potential of PCP from the former PCP-operation area is being addressed using ISCO techniques. The migration potential of LNAPL from the Main Terminal Tank Farm area was unknown, and therefore modeled as part of the source control evaluation (Appendix A). The MNA measurements and fate and transport modeling efforts indicated that LNAPL and associated contaminants were likely being attenuated before reaching downgradient locations near the point of groundwater discharge, and no reduction in concentration of contaminants in Main Terminal Tank Farm area wells was required to meet the JSCS SLVs in river bank wells in the future. Therefore, migration of LNAPL does not represent a complete current or future contaminant migration pathway to the river.

6.4 STORMWATER/SURFACE WATER RUNOFF

Stormwater runoff from former operational areas associated with the former industrial areas of the site is collected and treated at the onsite SWTS. Stormwater typically infiltrates on the East Property or in other non-operational areas of the Terminal. Any stormwater runoff from the East Property and other non-operational areas originates from non-impacted areas, and therefore is not a potential migration pathway for contaminants to the river.

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6.5 RIVERBANK SOIL EROSION AND CATCH BASIN SEDIMENT

Soils susceptible to potential erosion near the river embankment are located outside the bermed areas that surround the tank farms (i.e., operational areas) and no records or evidence of spills have occurred near the river embankment. In addition, impacted surface soils in non-operational areas of the property have been removed and/or covered with fill; therefore, no erosion and transport of impacted soil to catch basins from these areas will occur.

6.6 PLANNED SOURCE CONTROL ACTIVITIES

Time Oil will continue to operate the groundwater interim action system for recovery of PCP-impacted groundwater in the upper and lower zones. Because of the minimum area impacted currently in the lower zone, Time Oil will continue to assess the need to maintain groundwater recovery efforts at RW-2. Also, an assessment of the overall success of the ISCO injections for treatment of PCP-impacted groundwater in the upper zone is currently being evaluated, based on the most recent event conducted in February 2006. The results of the ISCO event and any future recommendations will be provided in the upcoming First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report (Landau Associates 2006b, in progress).

The results of the MNA parameter measurements and the fate and transport modeling indicate that anaerobic biodegradation is likely occurring within impacted groundwater in the Main Terminal Tank Farm area under natural aquifer conditions to attenuate LNAPL and dissolved contaminants from reaching the river, and a more aggressive method for remediation of the LNAPL is not necessary under current conditions. However, based on the current concentrations of sulfate and nitrate, continued biodegradation of these constituents may be limited. Other anaerobic biodegradation indicators (e.g., ferrous iron and methane) haven't been fully characterized; these indicators, as well as confirmation of the nitrate and sulfate results, may provide additional information on biodegradation capacities. Time Oil will continue to use passive recovery methods to remove measurable product from wells within the Main Tank Farm area, as necessary.

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7.0 USE OF THIS REPORT

This source control evaluation report has been prepared by Landau Associates for the exclusive use of Time Oil Co. for specific application to the Northwest Terminal. Services for this project were conducted in accordance with the Environmental Services Contract between Time Oil Co. and Landau Associates, Inc. Landau Associates has performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by Time Oil Co. or others in connection with any site other than the Northwest Terminal without Landau Associates' written permission shall be at the sole risk of Time Oil Co. and without liability to Landau Associates.

This document was prepared under the supervision and direction of the following key staff.

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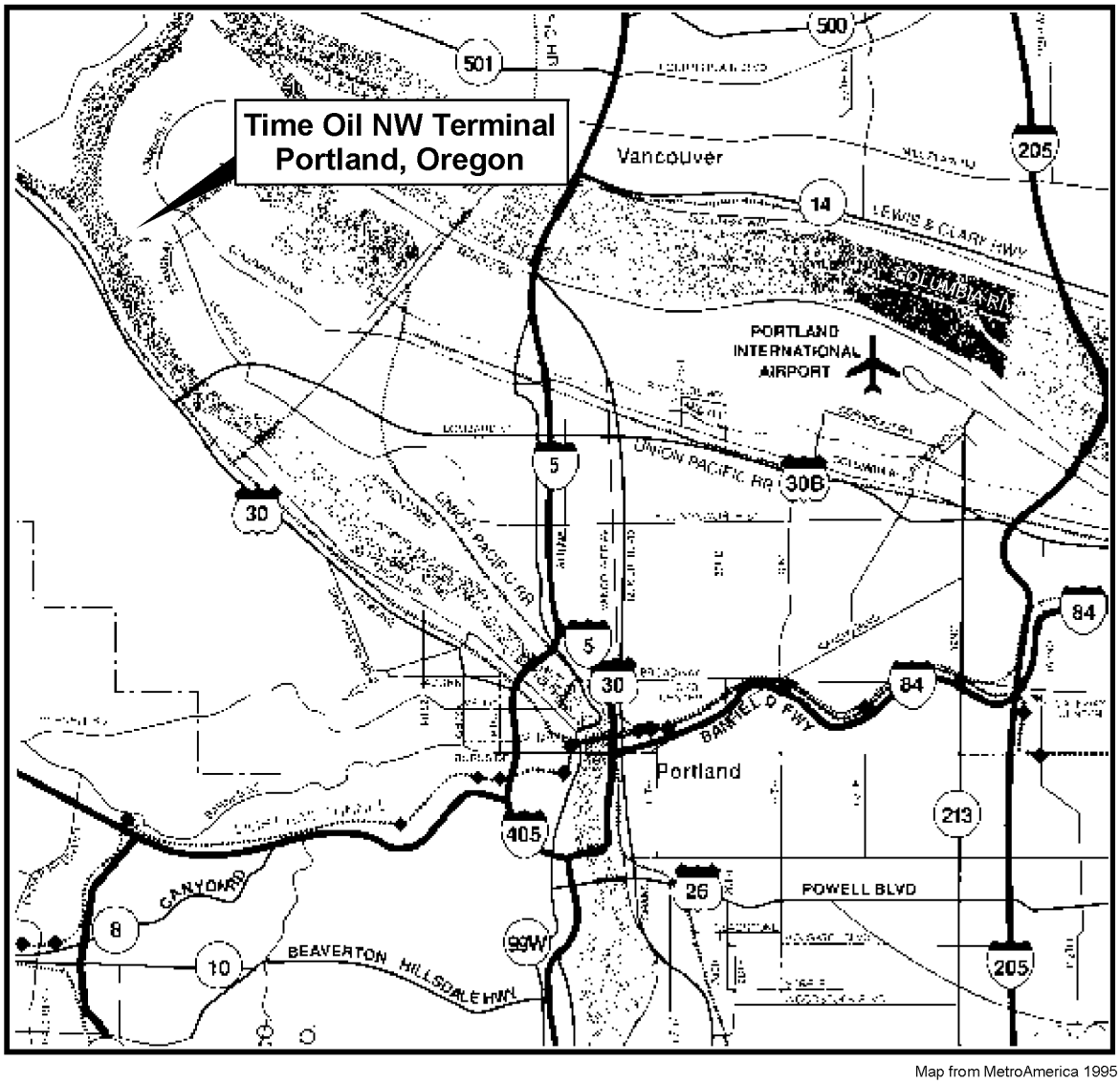
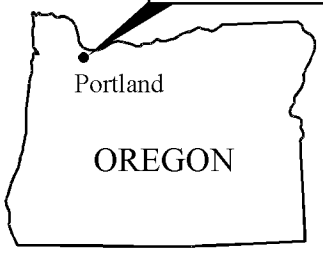


Map from MetroAmerica 1995

SITE LOCATION
(see enlarged map area above)



0 2 4
Approximate Scale in Miles

Time Oil | T:\2311001\Vicinity Map.cdr (C) 6/20/2003

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Time Oil NW Terminal Portland, Oregon	**Vicinity Map**	Figure 1

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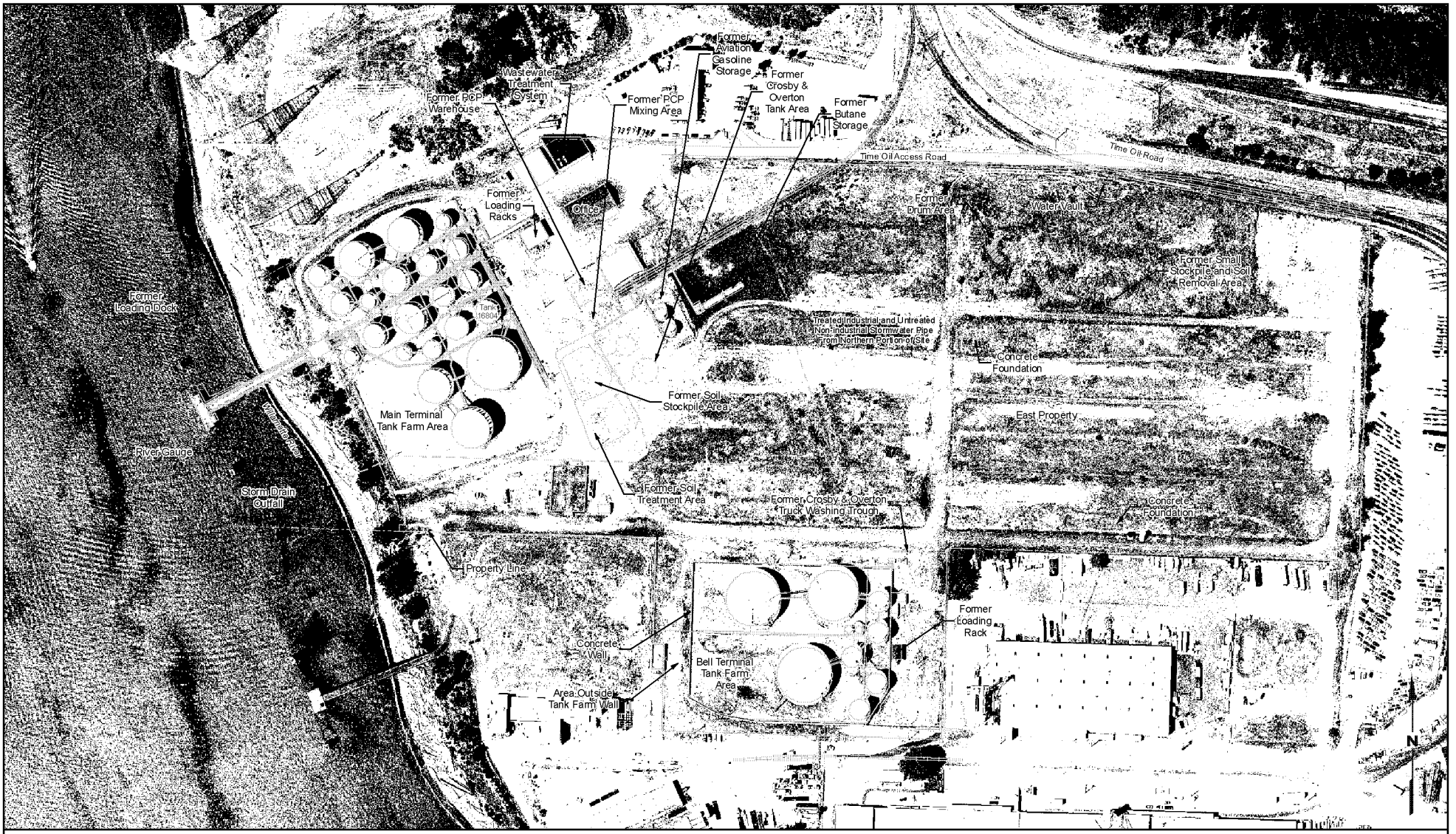

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Legend

- Manhole
- Storm Drain
- Fence

0 200 400

Scale in Feet

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Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Terminal Map**	Figure 2

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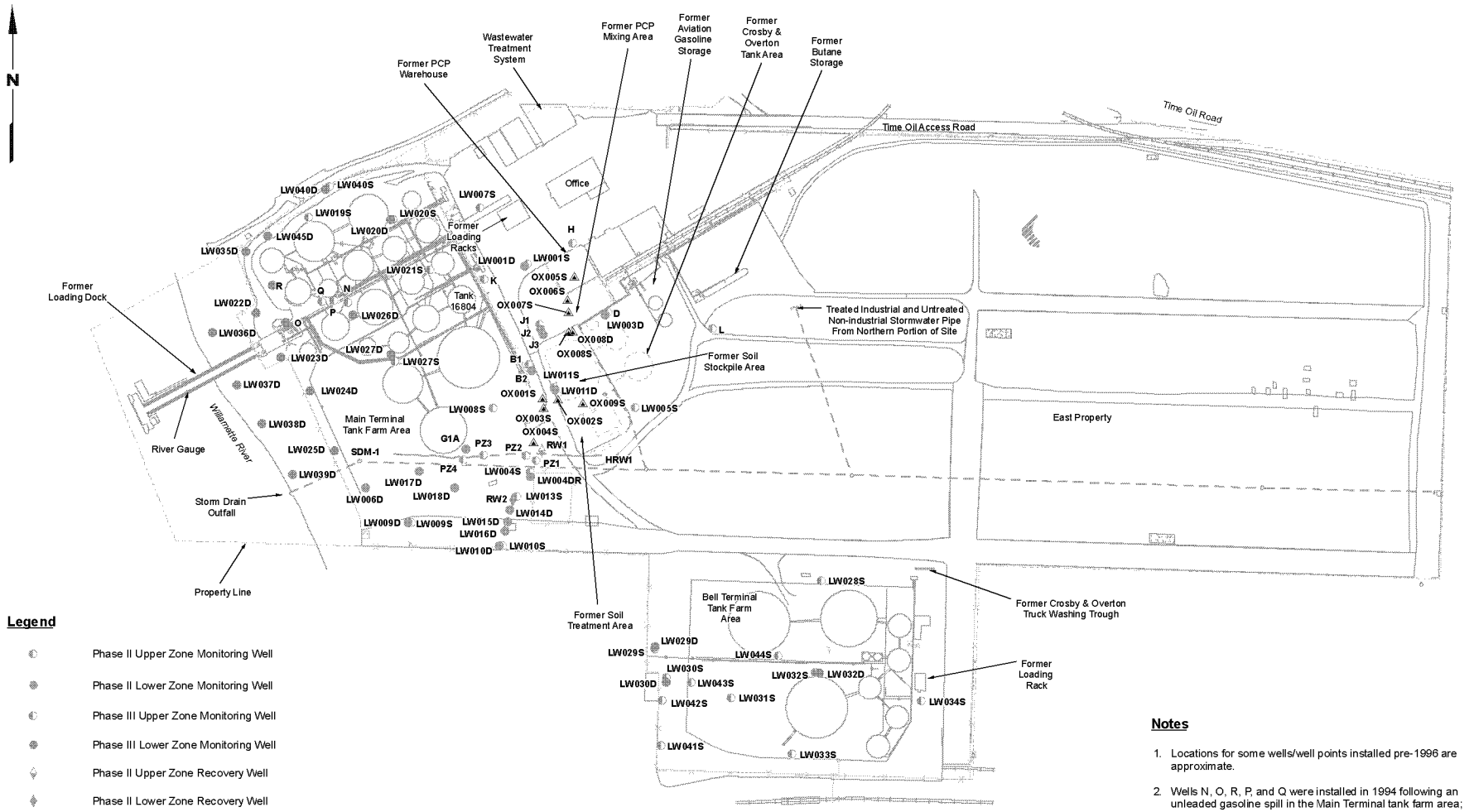


Legend

- Phase II Upper Zone Monitoring Well
- Phase II Lower Zone Monitoring Well
- Phase III Upper Zone Monitoring Well
- Phase III Lower Zone Monitoring Well
- Phase II Upper Zone Recovery Well
- Phase II Lower Zone Recovery Well
- Phase II ISCO Observation Well
- HRW1 — Phase II Upper Zone Horizontal Recovery Well (Dashes Denote Screened Interval)
- Phase III Study Area Boundary
- Storm Drain
- Manhole

Notes

1. Locations for some wells/well points installed pre-1996 are approximate.
2. Wells N, O, R, P, and Q were installed in 1994 following an unleaded gasoline spill in the Main Terminal tank farm area; wells are designated as Phase III because of location.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

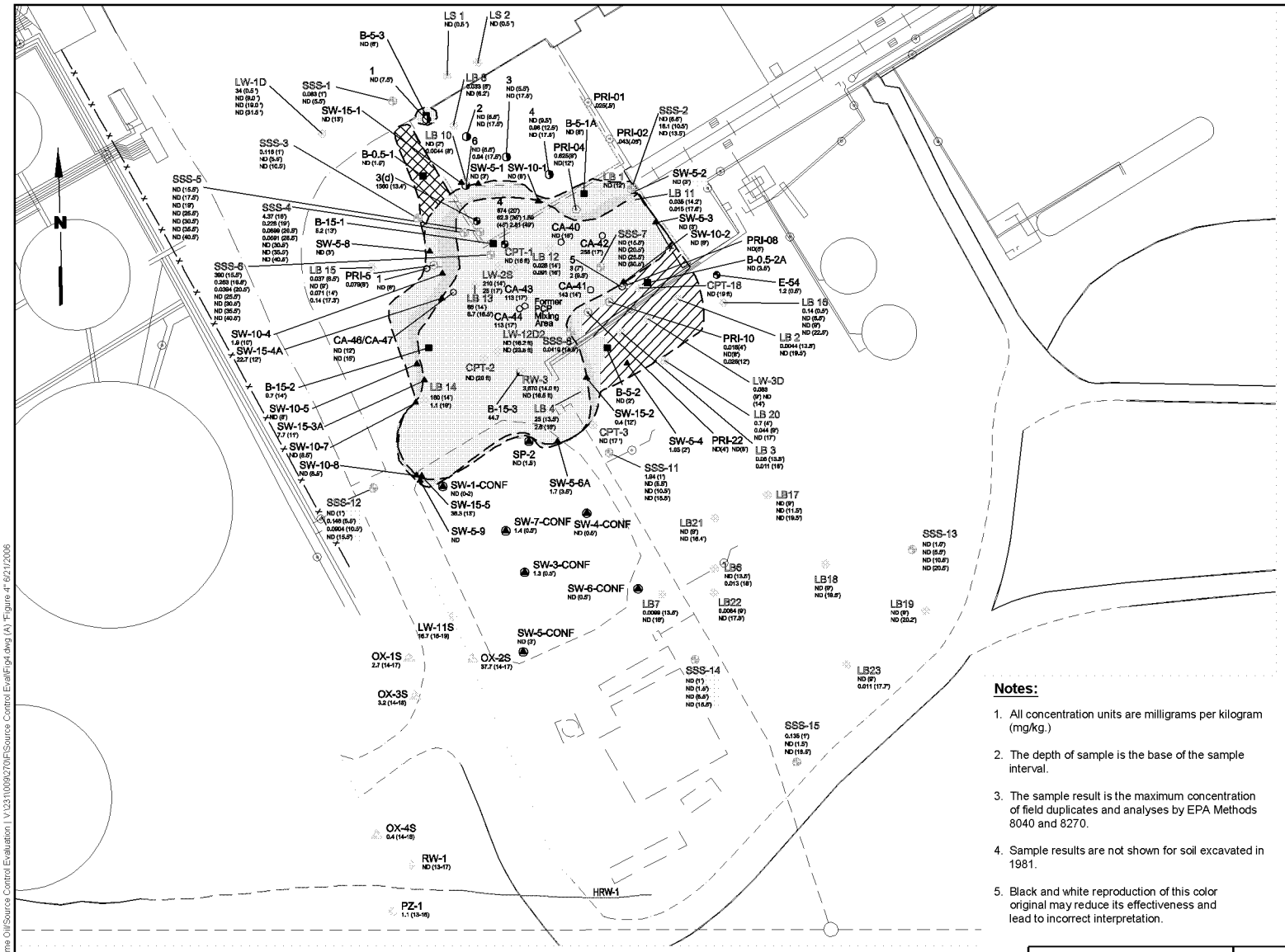
0 200 400
Scale in Feet

LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Well Locations**	Figure 3

Y:\Projects\2310011\SourceControlMapDocs\Fg3.mxd June 20, 2006

BZTO104(e)027287



Legend:

- Approximate Extent of Excavation from 0 - 5 ft BGS
- Approximate Extent of Excavation from 5 - 10 ft BGS
- Approximate Extent of Excavation from 10 - 13 ft BGS
- Approximate Extent of Excavation from 0 - 0.5 ft BGS
- Approximate Extent of Excavation from 0 - 2 ft BGS
- HRW-1 — Horizontal Recovery Well - Upper Zone (Dashes Denote Screened Interval)
- Soil Data from Phase II RI
- Historical Soil Data (Ecova 1989)
- Historical Soil Data (Riedel 1985)
- Historical Soil Data (SRH 1986)
- Phase II Supplemental Sampling Data
- Pre-Removal Investigation Data
- ND — Not Detected
- NA — Not Analyzed
- Upper Zone Monitoring Well
- Upper Zone Recovery Well
- ISCO Pilot Test Monitoring Well
- Verification Sample Location (2002)
- Verification Soil Sample Location Base of Excavation (2002)
- Verification Soil Sample Location Side Wall of Excavation (2002)

Location Identifier → LB 10

PCP Concentration (mg/kg): ND (2') / 0.0044 (8') — Depths Below Ground Surface in ft

Notes:

1. All concentration units are milligrams per kilogram (mg/kg.)
2. The depth of sample is the base of the sample interval.
3. The sample result is the maximum concentration of field duplicates and analyses by EPA Methods 8040 and 8270.
4. Sample results are not shown for soil excavated in 1981.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 50 100
Scale in Feet

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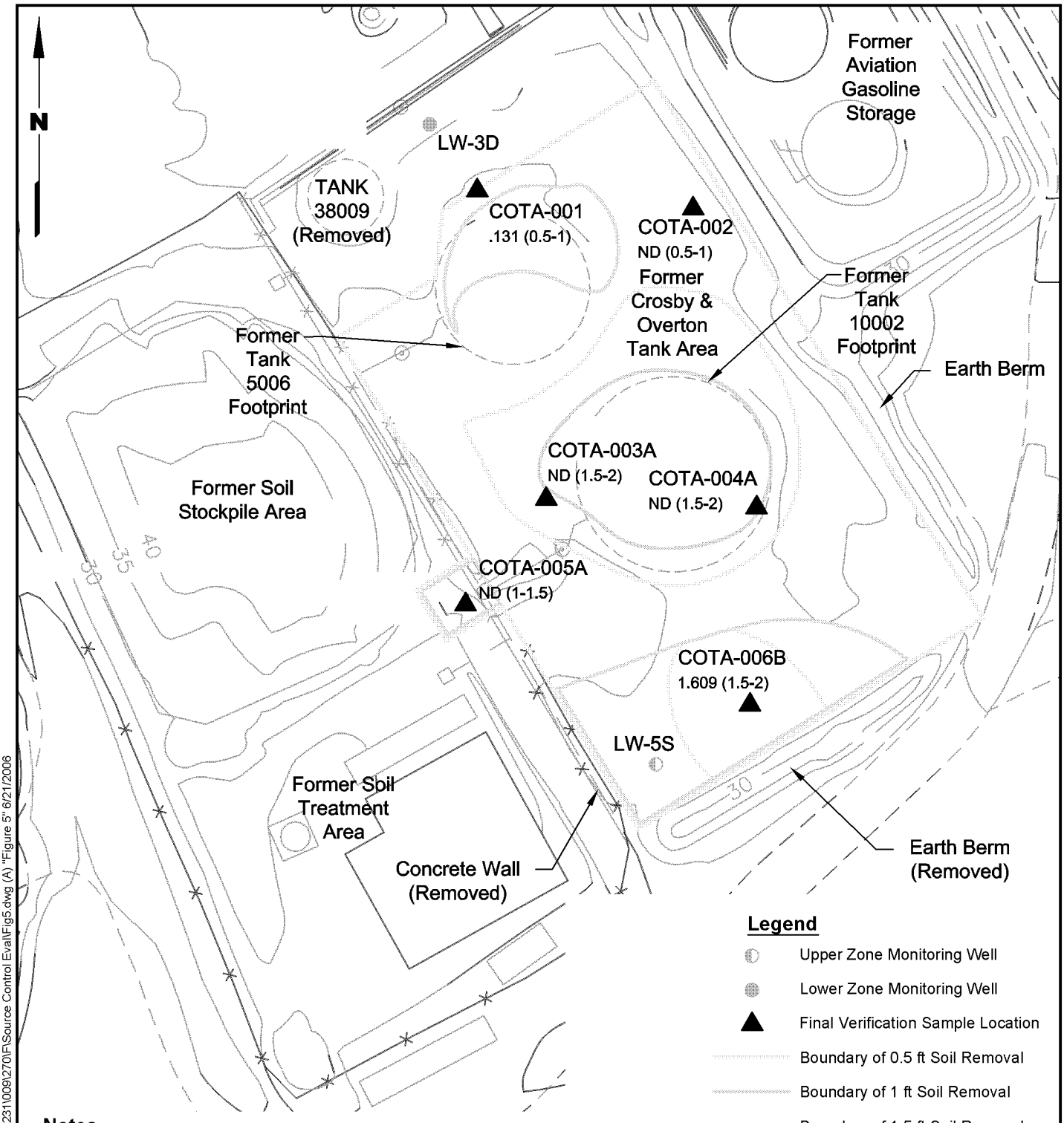
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**PCP Mixing Area Excavation Boundaries and Summary of PCP Concentrations Remaining in Soil**	Figure **4**

Time Oil\Source Control Evaluation | V:\231\009\270\ES\Source Control Eval\Fig4.dwg (A) 'Figure 4' 6/21/2006

BZTO104(e)027288



Legend

- Upper Zone Monitoring Well
- Lower Zone Monitoring Well
- Final Verification Sample Location
- Boundary of 0.5 ft Soil Removal
- Boundary of 1 ft Soil Removal
- Boundary of 1.5 ft Soil Removal
- Boundary of 2.5 ft Soil Removal
- ND Not Detected

PCB Concentration (mg/kg) { 130.8 (0.5-1) } Depth Below Ground Surface in ft

Notes

1. Total PCB results represent the sum of detected concentrations of individual Aroclors.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80

Scale in Feet

Time Oil/Source Control Evaluation | V:\2311009\270\F\Source Control Eval\Fig5.dwg (A) "Figure 5" 6/21/2006

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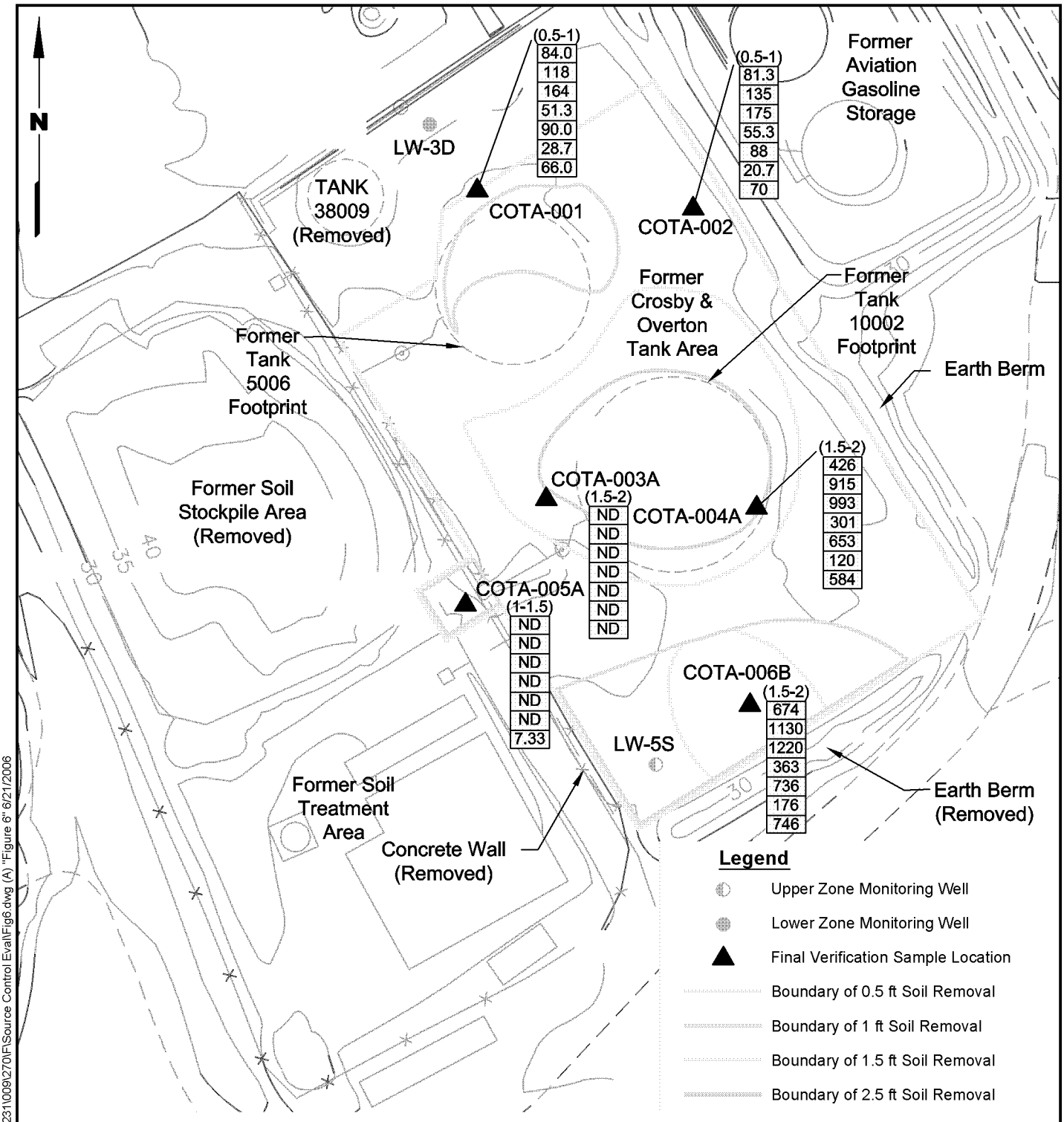
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Removal Boundaries and Verification Soil Sample PCB Results Former Crosby & Overton Tank Area**	Figure **5**



Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80

Scale in Feet

Time Oil/Source Control Evaluation | V:\2311009\270\F\Source Control Eval\Fig6.dwg (A) "Figure 6" 6/21/2006

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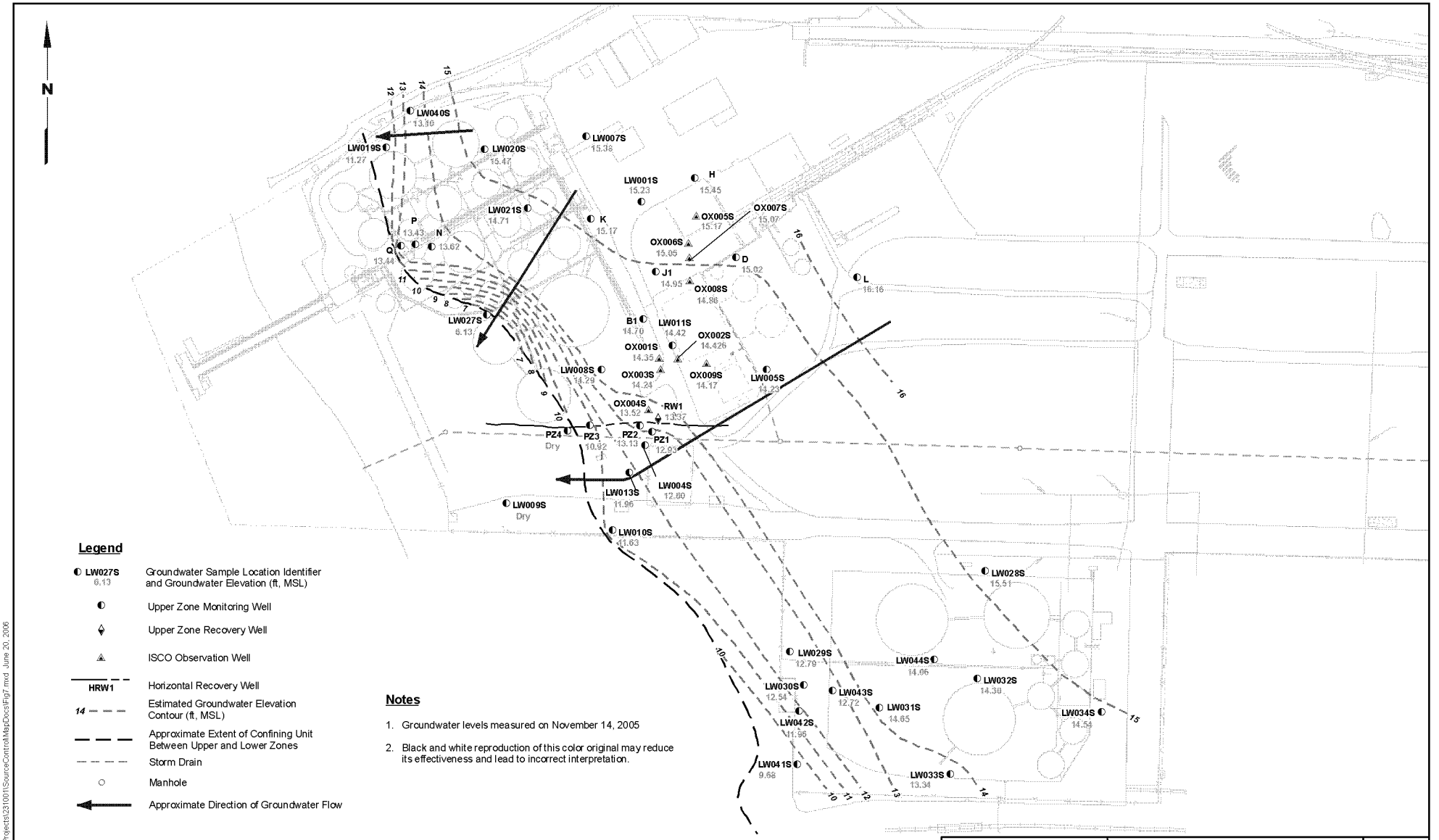
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

Removal Boundaries and Verification Soil Sample cPAH Results Former Crosby & Overton Tank Area

Figure 6



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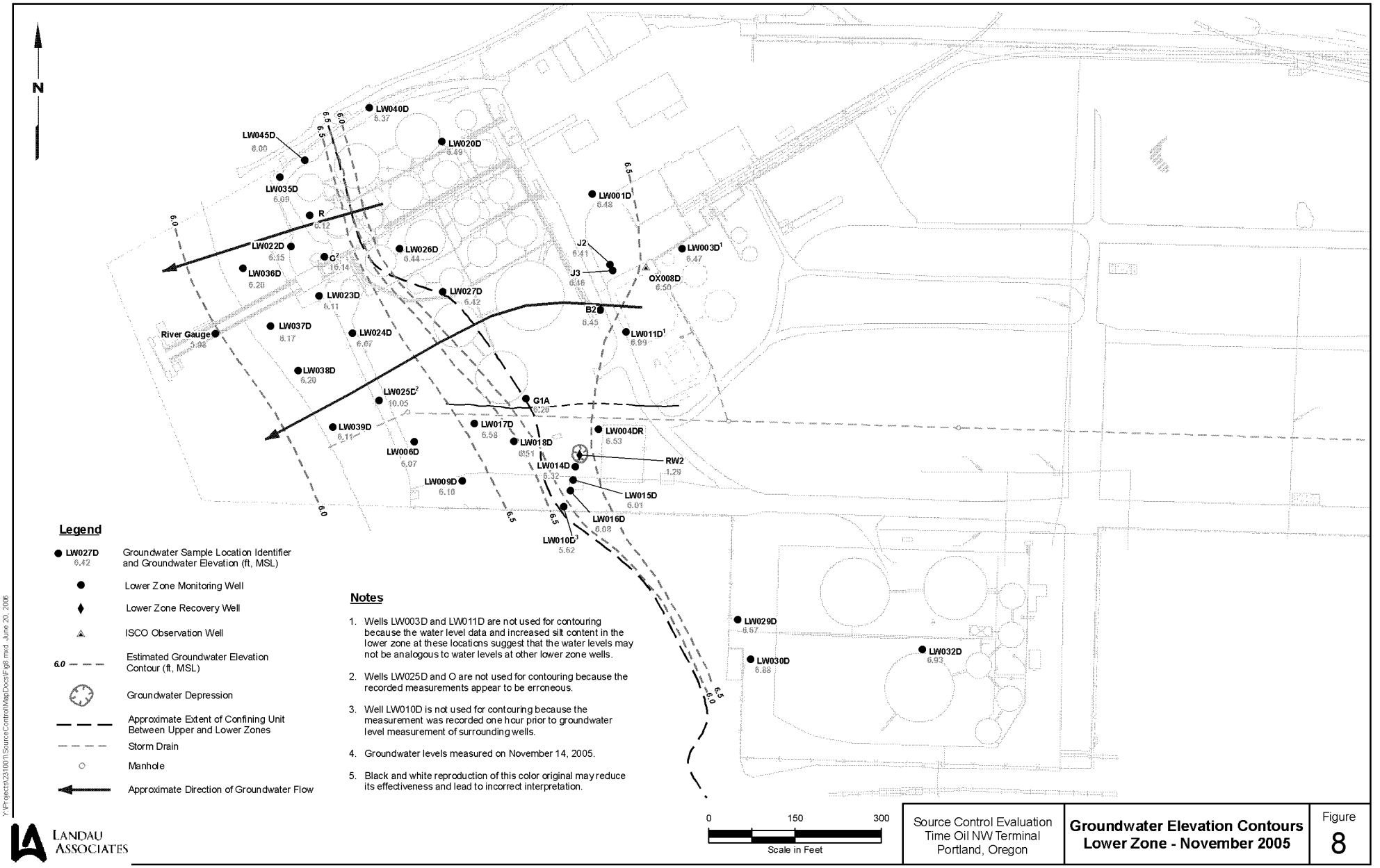
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Groundwater Elevation Contours Upper Zone - November 2005**	Figure 7

Y:\Projects\231001\SourceControl\MapDocs\Fig7.mxd June 20, 2006

BZTO104(e)027291



Y:\Projects\23100\1\SourceControlMapDocs\Fig8.mxd June 20, 2006

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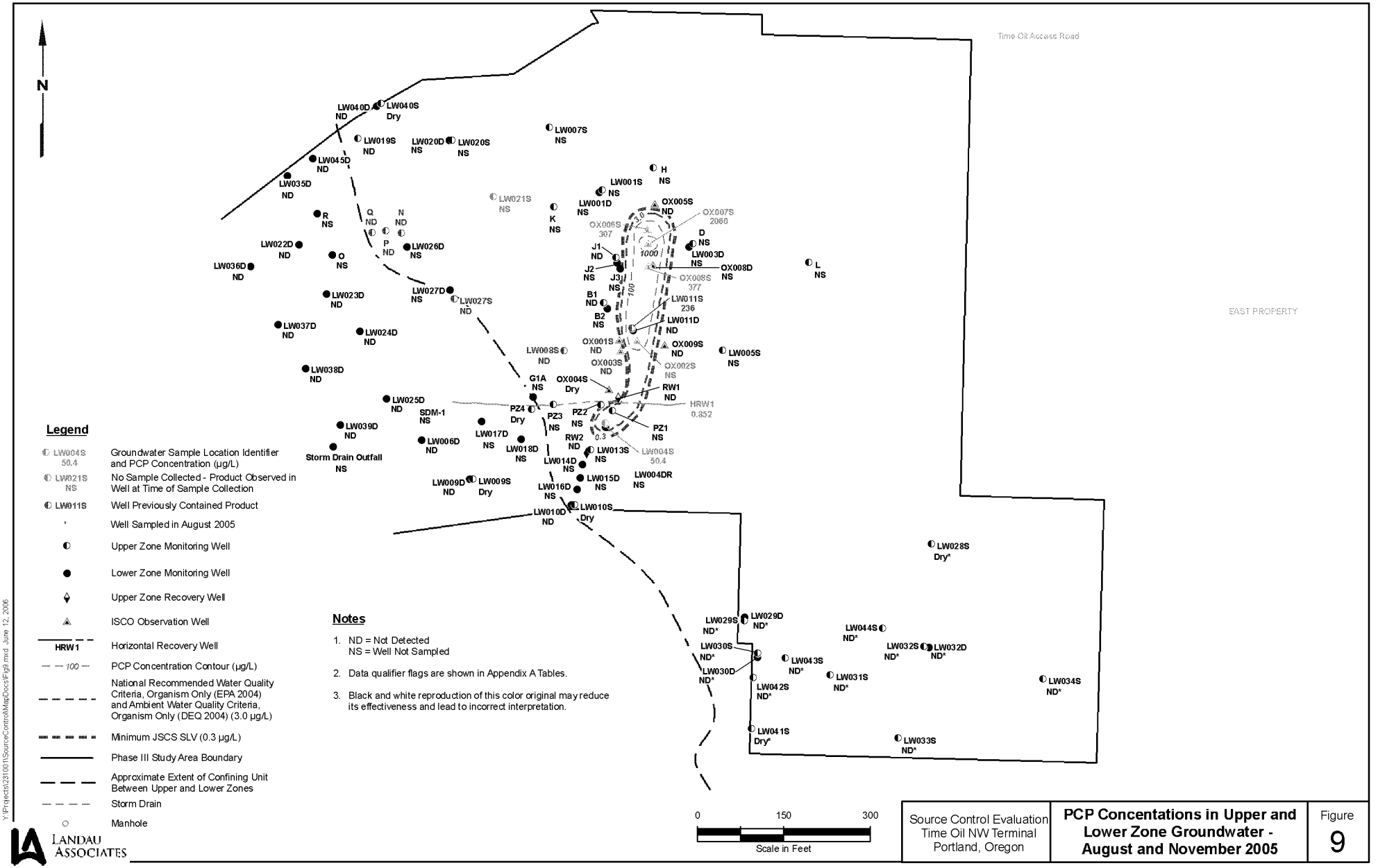
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Groundwater Elevation Contours Lower Zone - November 2005**	Figure 8

BZTO104(e)027292


N
Time Oil Access Road
EAST PROPERTY
LW040D ND
LW040S Dry
LW019S ND
LW020D NS
LW020S NS
LW007S NS
LW045D ND
LW035D ND
LW021S NS
H NS
LW001S NS
LW001D NS
OX005S ND
OX007S 2060
OX006S 307
R NS
Q ND
N ND
P ND
O NS
LW022D ND
LW026D NS
LW036D ND
D NS
LW003D NS
OX008D NS
J1 ND
J2 NS
J3 NS
OX008S 377
L NS
LW023D ND
LW027D NS
LW027S ND
B1 ND
B2 NS
LW011S 236
LW011D ND
LW037D ND
LW024D ND
OX001S ND
OX009S ND
LW005S NS
LW008S ND
OX003S ND
OX002S NS
LW038D ND
G1A NS
OX004S Dry
RW1 ND
LW025D ND
SDM-1 NS
PZ4 Dry
PZ3 NS
PZ2 NS
PZ1 NS
HRW1 0.852
LW039D ND
LW017D NS
RW2 ND
LW006D ND
LW018D NS
LW013S NS
LW004S 50.4
Storm Drain Outfall NS
LW014D NS
LW009D ND
LW009S Dry
LW015D NS
LW004DR NS
LW016D NS
LW010D ND
LW010S Dry
LW028S Dry*
LW029S ND*
LW029D ND*
LW044S ND*
LW030S ND*
LW032S ND*
LW032D ND*
LW043S ND*
LW030D ND*
LW031S ND*
LW042S ND*
LW034S ND*
LW041S Dry*
LW033S ND*
Legend
LW004S 50.4 Groundwater Sample Location Identifier and PCP Concentration (µg/L)
LW021S NS No Sample Collected - Product Observed in Well at Time of Sample Collection
LW011S Well Previously Contained Product
* Well Sampled in August 2005
Upper Zone Monitoring Well
Lower Zone Monitoring Well
Upper Zone Recovery Well
ISCO Observation Well
HRW1 Horizontal Recovery Well
100 PCP Concentration Contour (µg/L)
National Recommended Water Quality Criteria, Organism Only (EPA 2004) and Ambient Water Quality Criteria, Organism Only (DEQ 2004) (3.0 µg/L)
Minimum JSCS SLV (0.3 µg/L)
Phase III Study Area Boundary
Approximate Extent of Confining Unit Between Upper and Lower Zones
Storm Drain
Manhole
Notes
1. ND = Not Detected
NS = Well Not Sampled
2. Data qualifier flags are shown in Appendix A Tables.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
0
150
300
Scale in Feet
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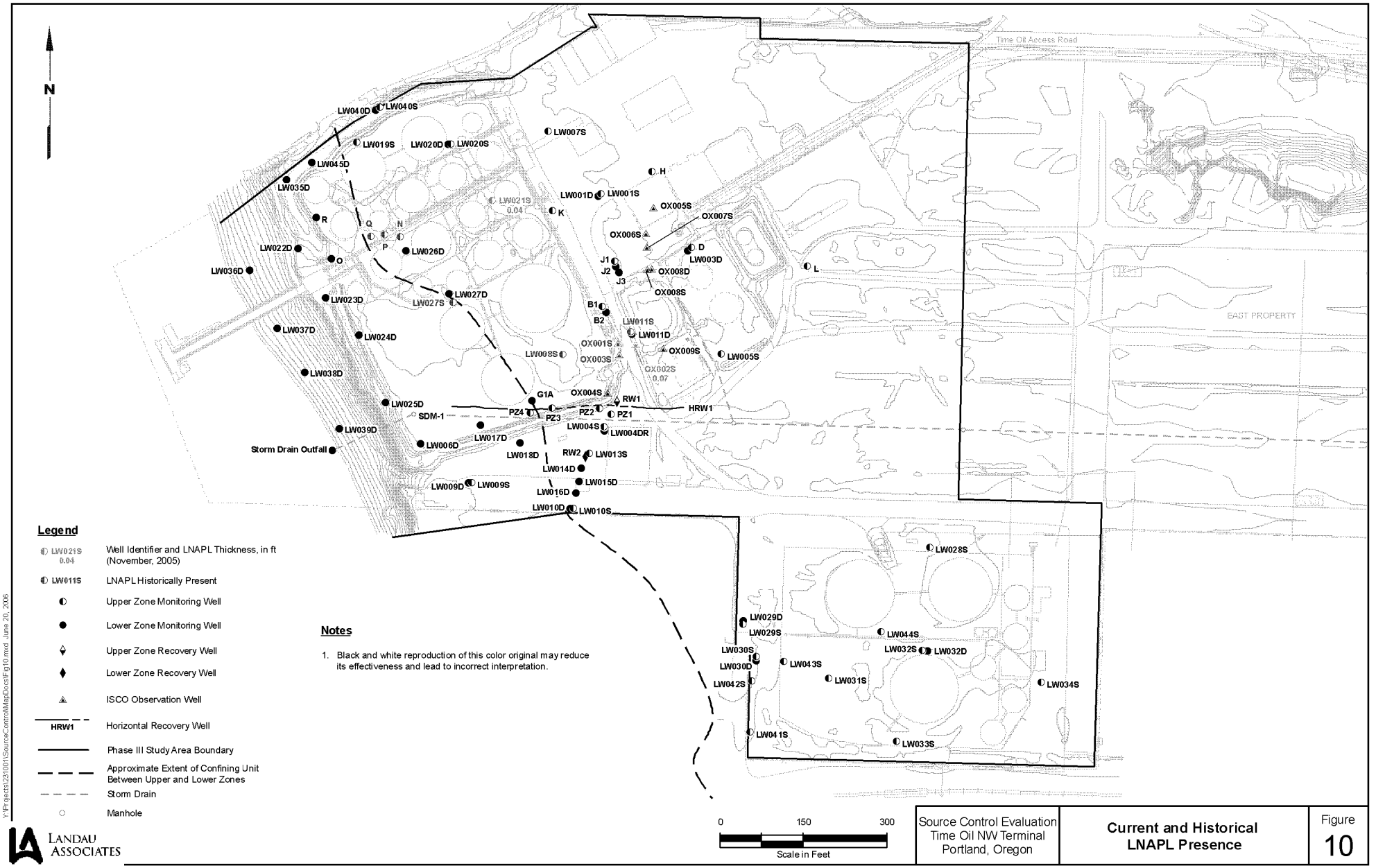
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon
PCP Concentations in Upper and Lower Zone Groundwater - August and November 2005
Figure
9
X:\Projects\231001\SourceControl\MapDocs\Fig9.mxd June 12, 2006
BZTO104(e)027293



Legend

LW021S 0.04	Well Identifier and LNAPL Thickness, in ft (November, 2005)
LW011S	LNAPL Historically Present
	Upper Zone Monitoring Well
	Lower Zone Monitoring Well
	Upper Zone Recovery Well
	Lower Zone Recovery Well
	ISCO Observation Well
HRW1	Horizontal Recovery Well
	Phase III Study Area Boundary
	Approximate Extent of Confining Unit Between Upper and Lower Zones
	Storm Drain
	Manhole

Notes

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 150 300
Scale in Feet

Y:\Projects\231001\SourceControl\MapDocs\Fig10.mxd June 20, 2006

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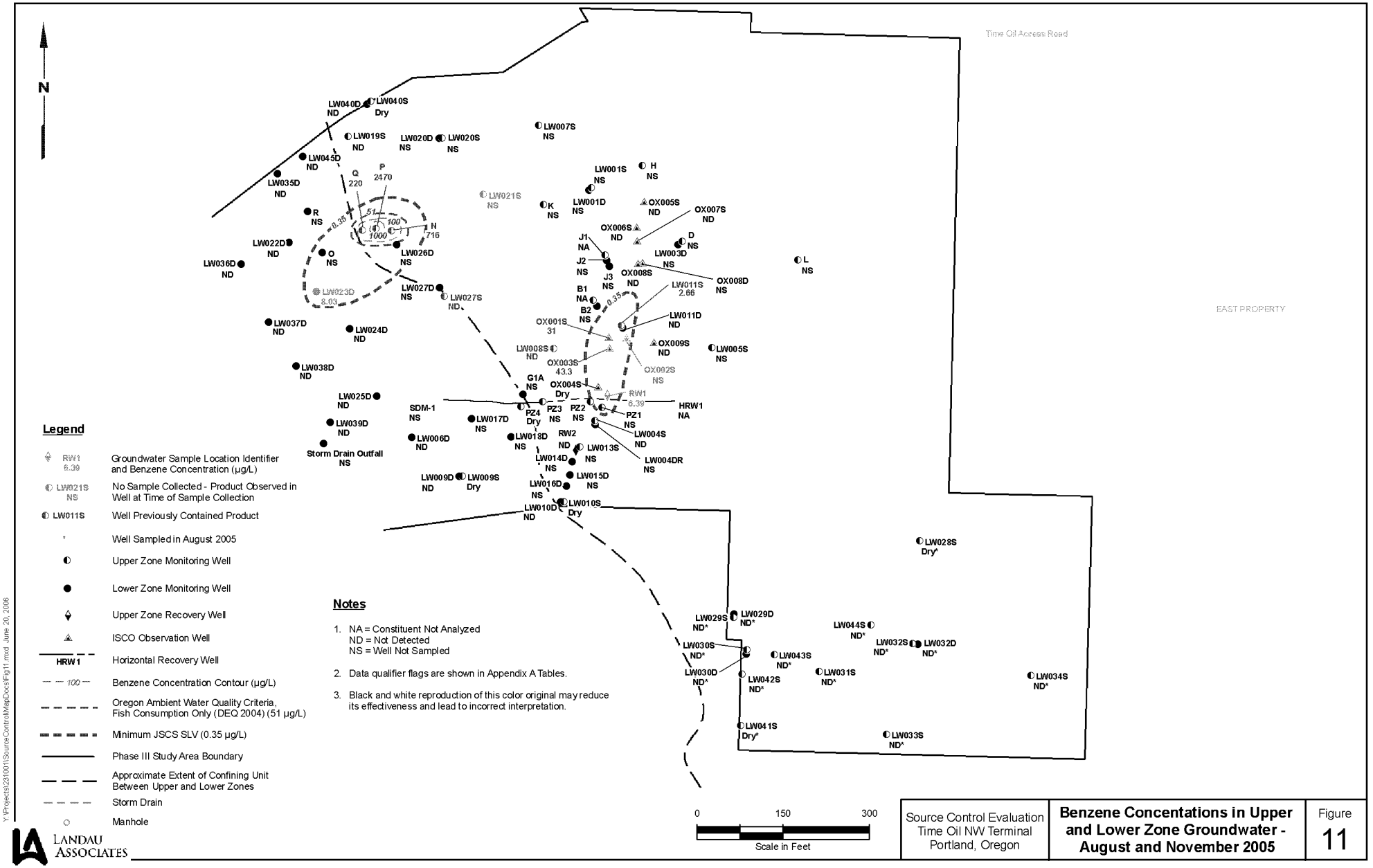
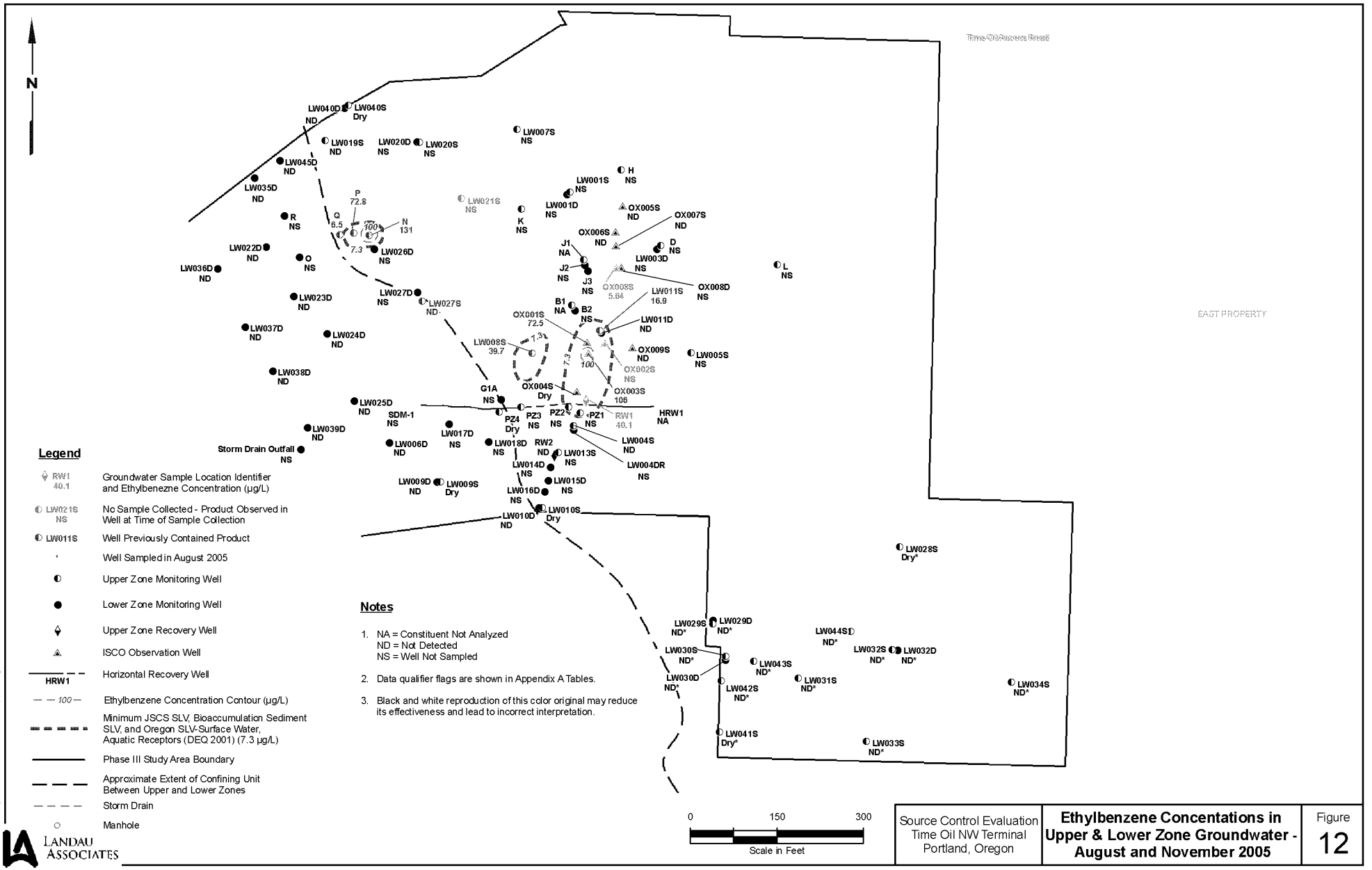
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Current and Historical LNAPL Presence**	Figure 10

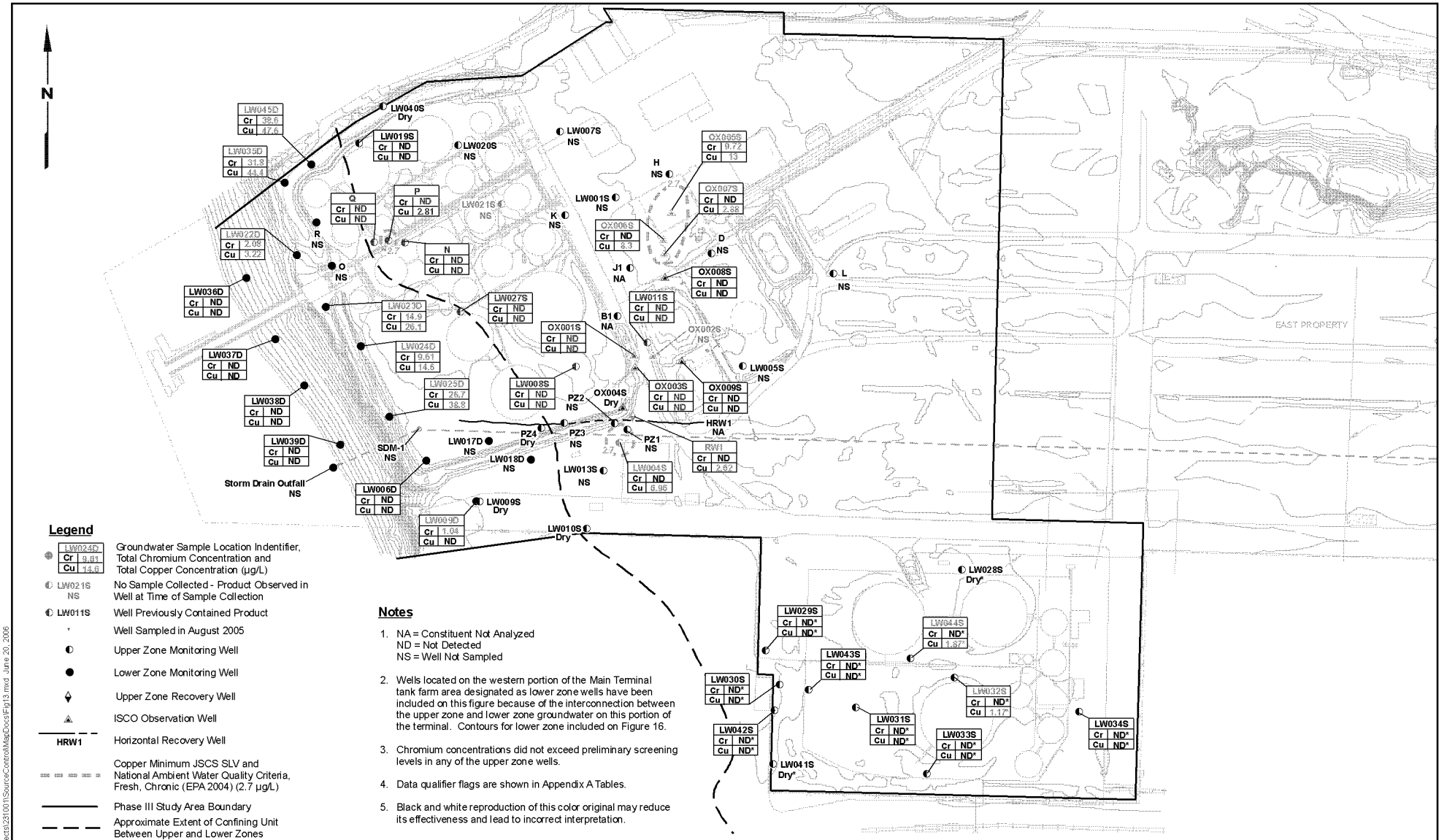
BZTO104(e)027294



BZTO104(e)027295



BZTO104(e)027296



Legend

- LW024D Cr 9.61 Cu 14.6 — Groundwater Sample Location Indentifier, Total Chromium Concentration and Total Copper Concentration (µg/L)
- LW021S NS — No Sample Collected - Product Observed in Well at Time of Sample Collection
- LW011S — Well Previously Contained Product
- * — Well Sampled in August 2005
- Upper Zone Monitoring Well
- Lower Zone Monitoring Well
- Upper Zone Recovery Well
- ISCO Observation Well
- HRW1 — Horizontal Recovery Well
- Copper Minimum JSCS SLV and National Ambient Water Quality Criteria, Fresh, Chronic (EPA 2004) (2.7 µg/L)
- Phase III Study Area Boundary
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole

Notes

1. NA = Constituent Not Analyzed
   ND = Not Detected
   NS = Well Not Sampled
2. Wells located on the western portion of the Main Terminal tank farm area designated as lower zone wells have been included on this figure because of the interconnection between the upper zone and lower zone groundwater on this portion of the terminal. Contours for lower zone included on Figure 16.
3. Chromium concentrations did not exceed preliminary screening levels in any of the upper zone wells.
4. Data qualifier flags are shown in Appendix A Tables.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 150 300
Scale in Feet

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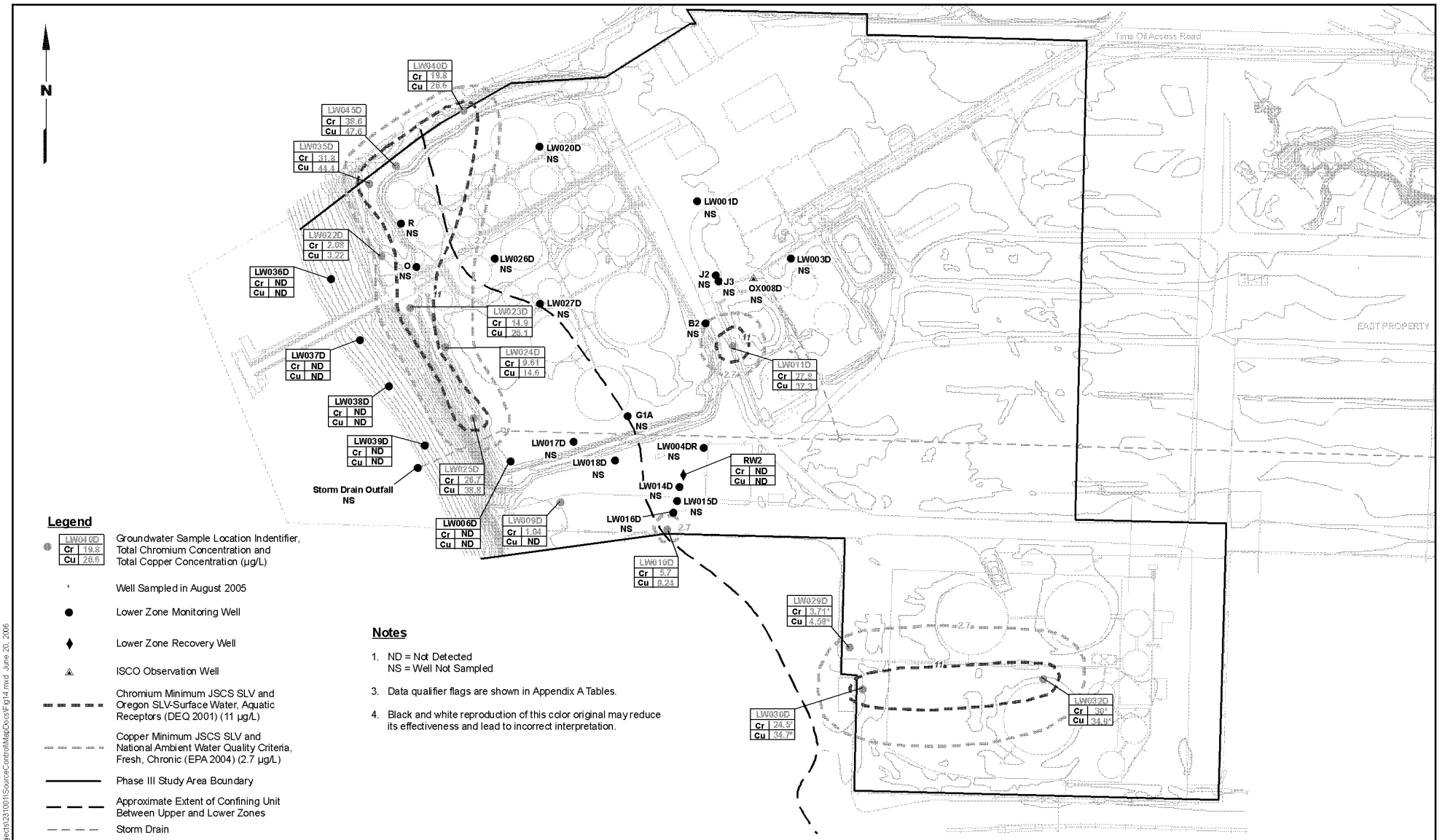
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

Total Chromium and Copper in GW, Upper Zone and Beyond Confining Unit Boundary - August and November 2005

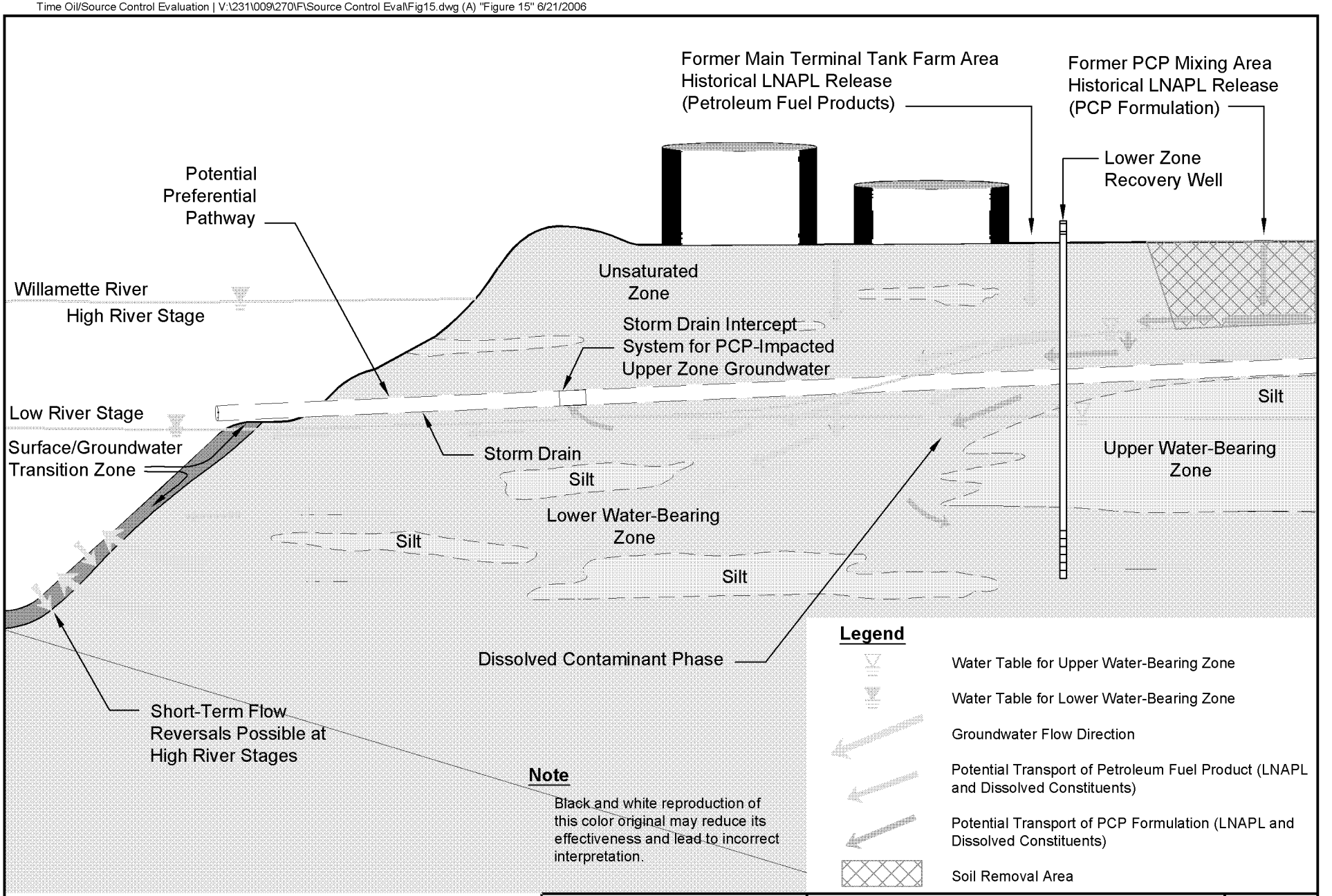
Figure 13

Y:\Projects\231001\SourceControl\MapDocs\Fig13.mxd June 20, 2006

BZTO104(e)027297



BZTO104(e)027298



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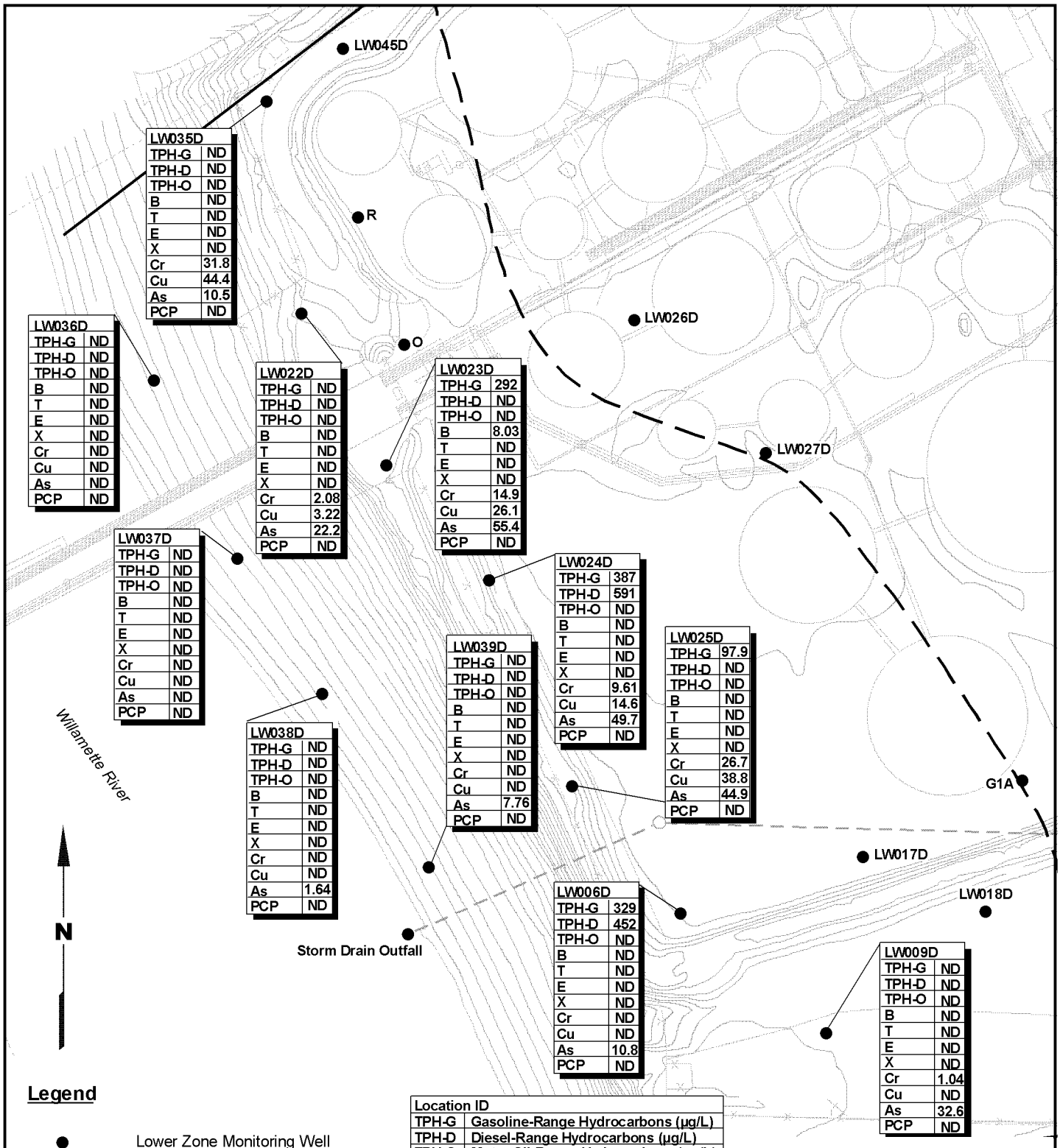
Not to Scale

Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

Conceptual Site Model

Figure
15

BZTO104(e)027299



Y:\Projects\231001\SourceControlMapDocs\Fig16.mxd June 20, 2006

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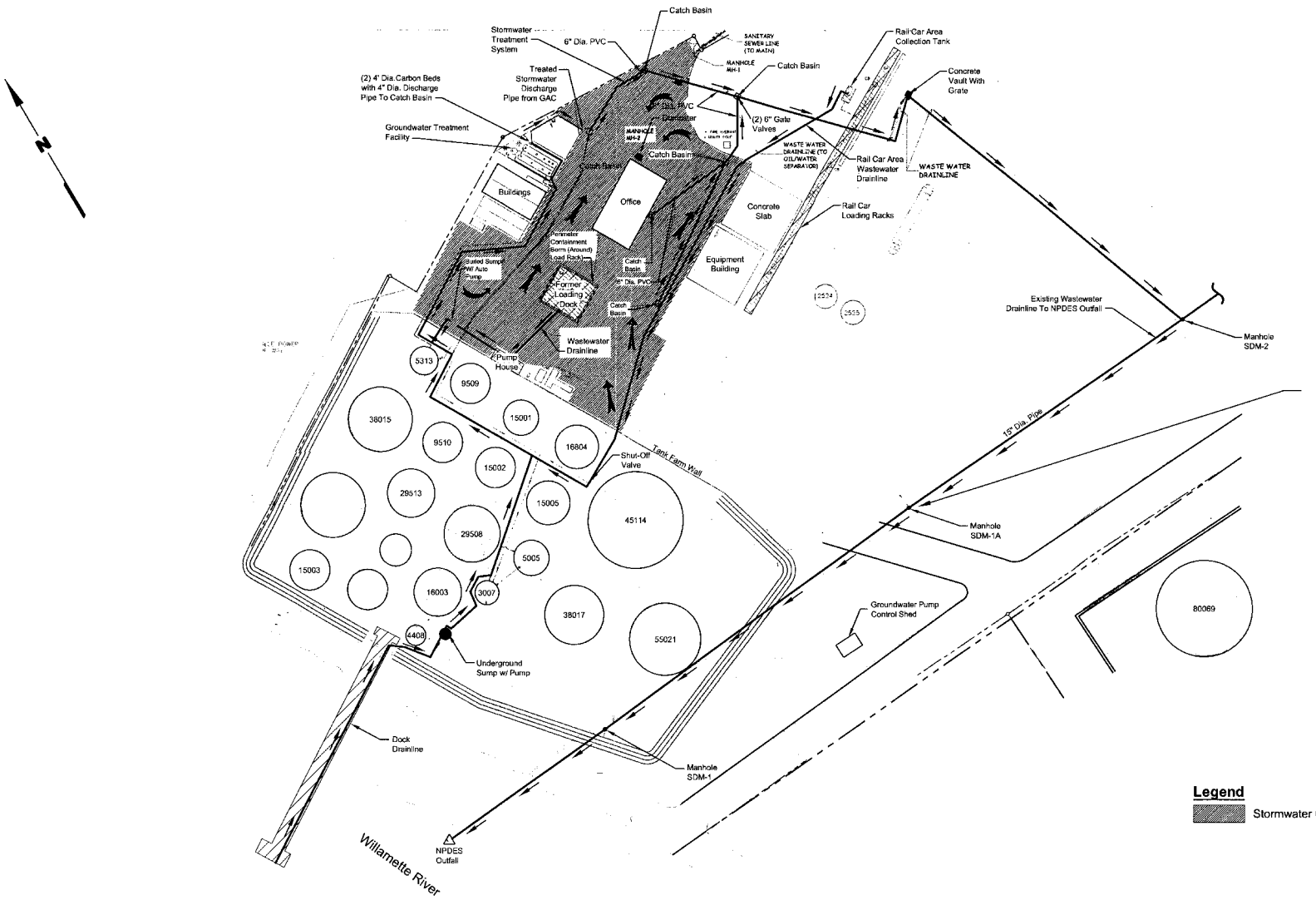
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

Groundwater Concentrations, Nearshore Wells, Selected Analytes November 2005

Figure 16

BZTO104(e)027300



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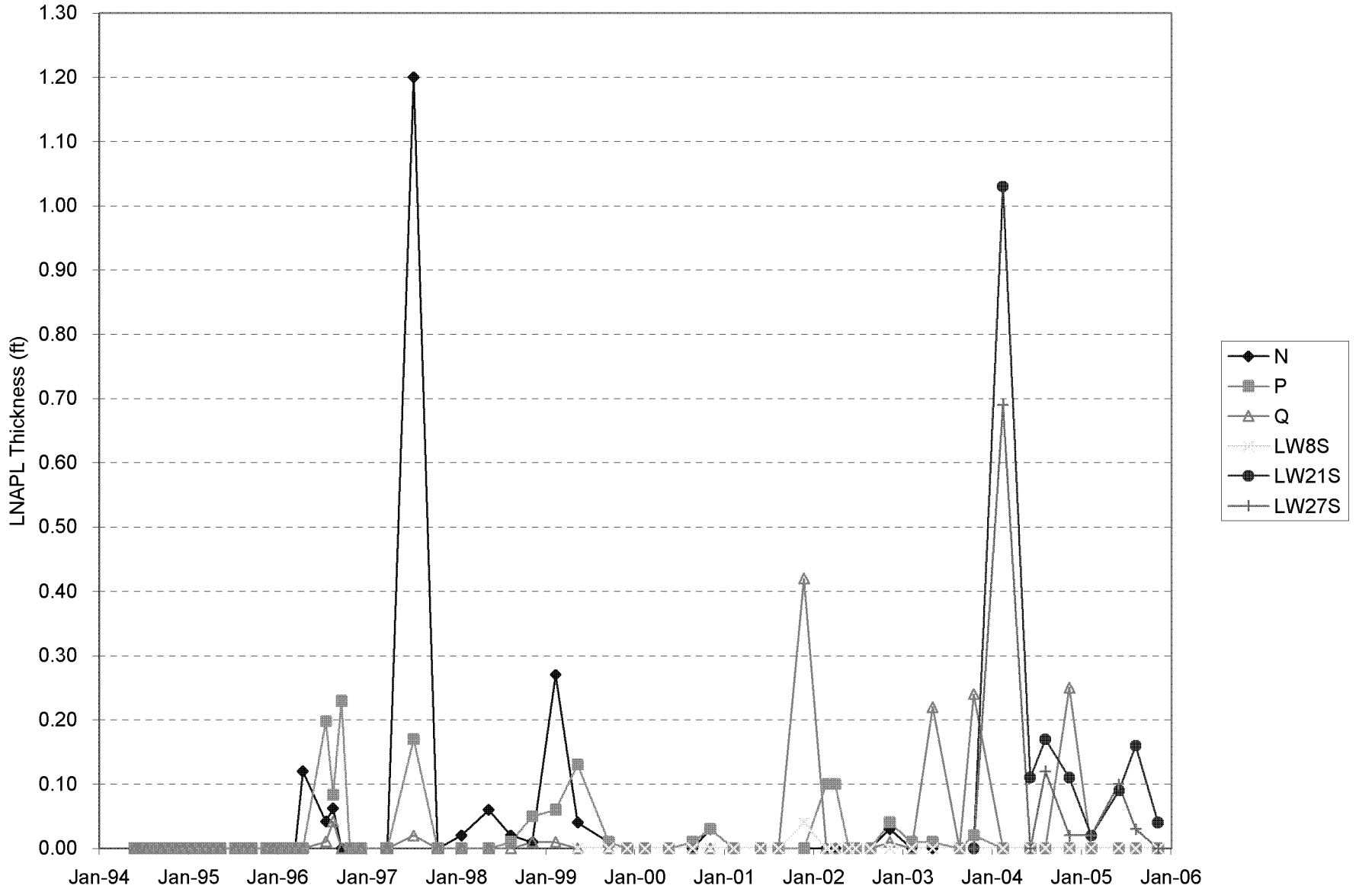
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Stormwater Sewer System Flow Route**	Figure 17

Time Oil/Source Control Evaluation | V:\231\009\270\FS\Source Control Eval\Fig17.dwg (A) "Figure 17" 6/21/2006

BZTO104(e)027301



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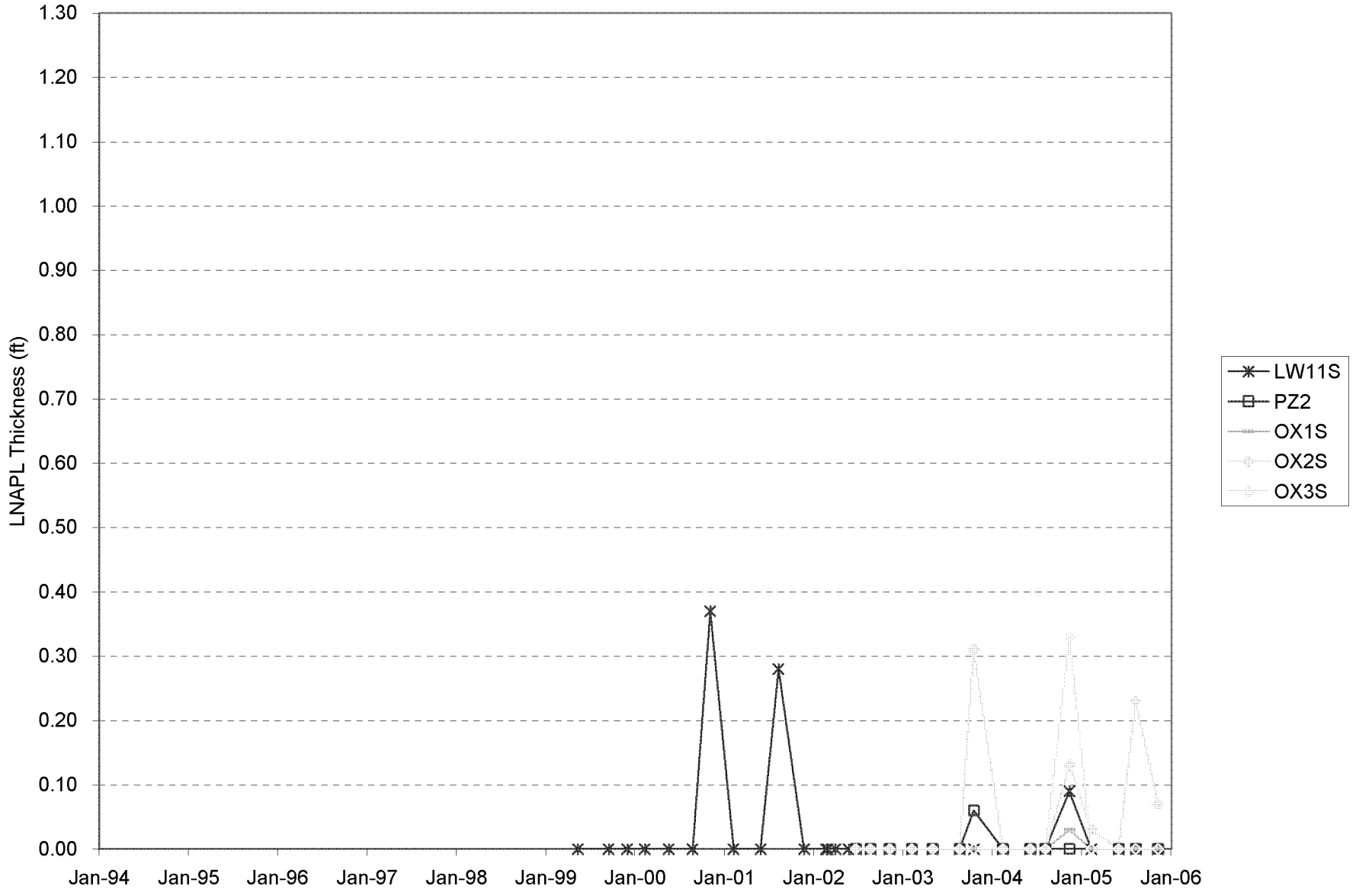
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

LNAPL Thickness vs. Time
Main Terminal Tank Farm Area

Figure
18

BZTO104(e)027302



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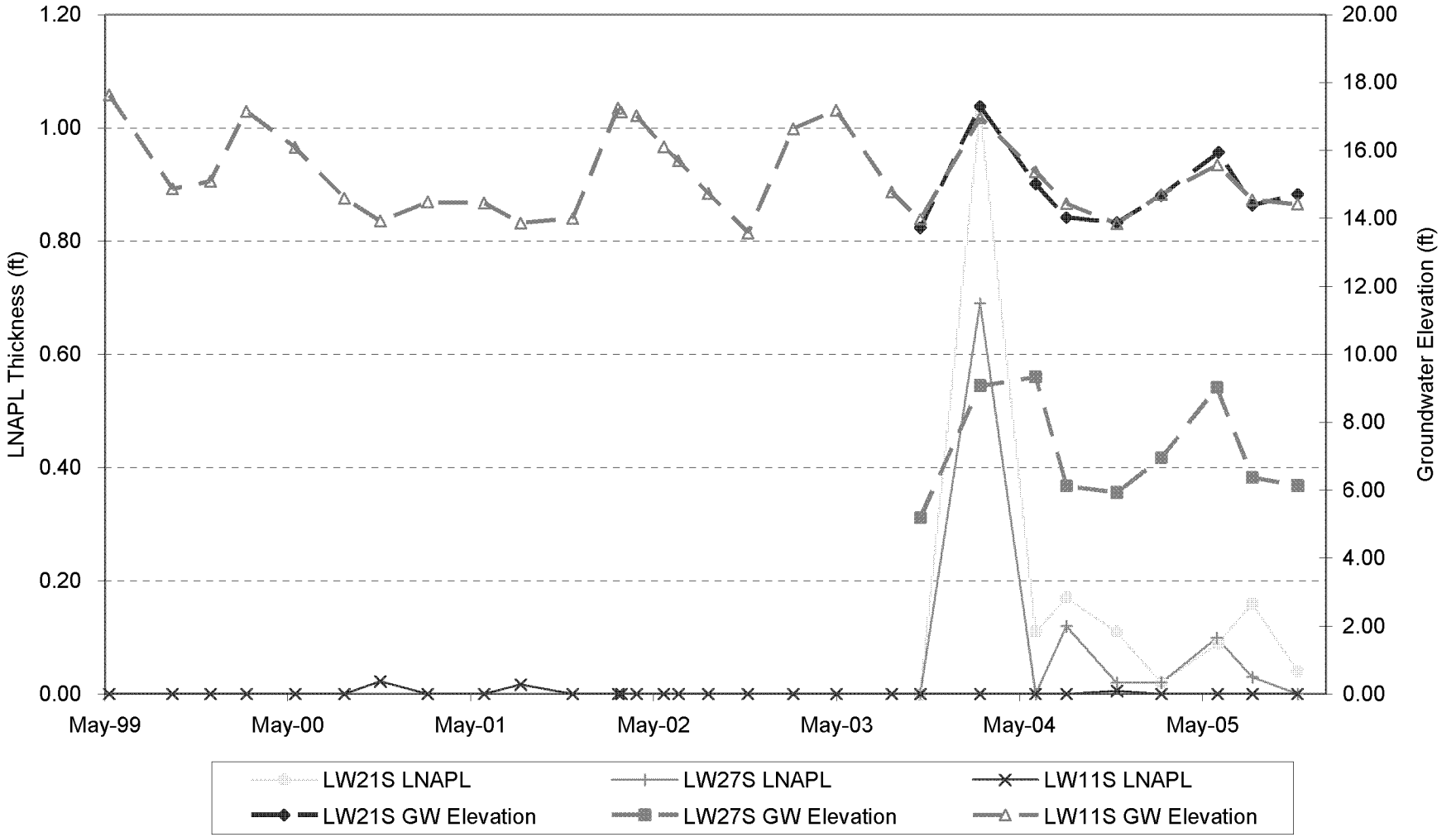
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

LNAPL Thickness vs. Time
Former PCP Mixing Area

Figure
19

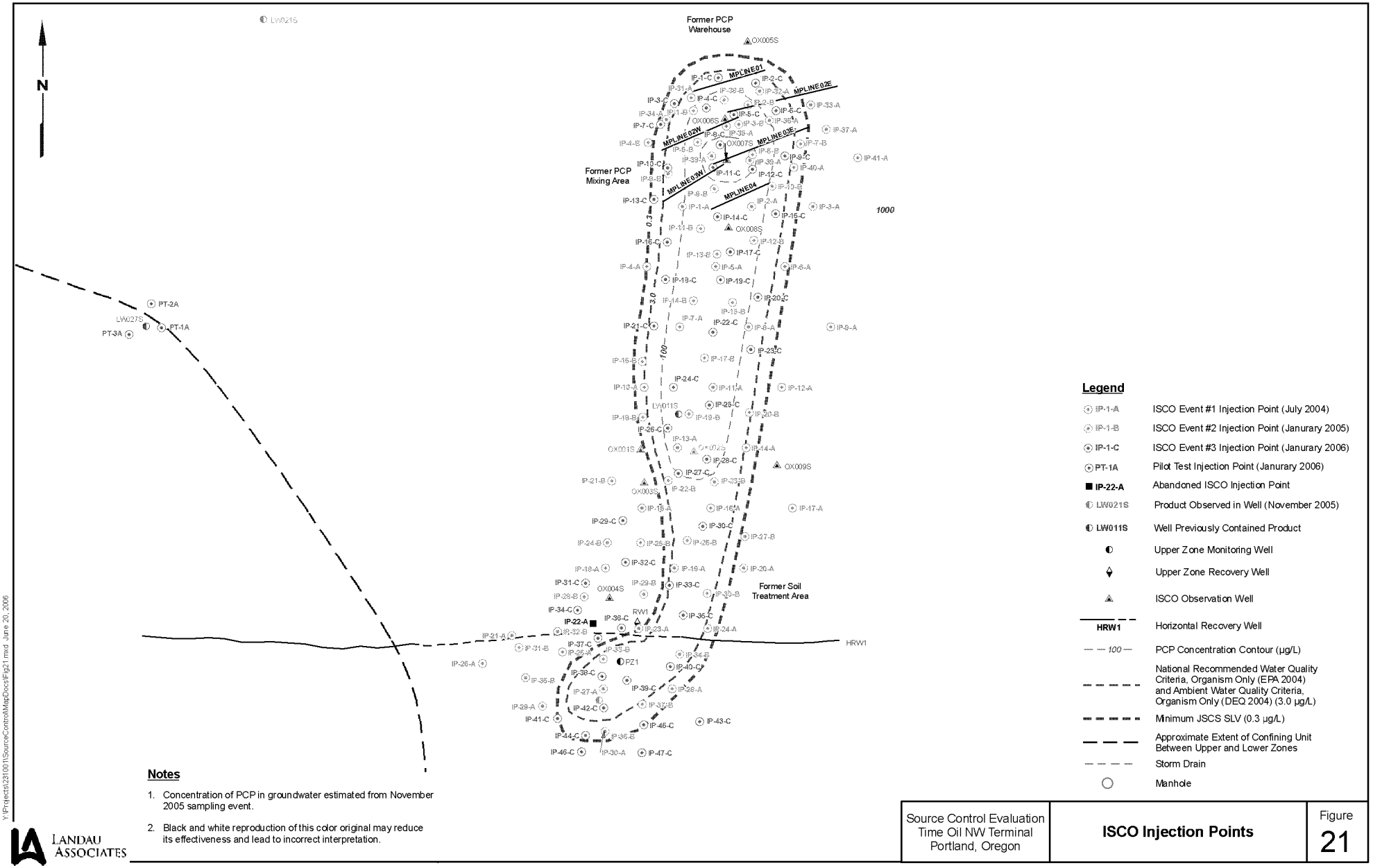
BZTO104(e)027303



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**LNAPL Thickness vs. Time and Groundwater Elevations**	Figure 20

BZTO104(e)027304



Notes

1. Concentration of PCP in groundwater estimated from November 2005 sampling event.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

X:\Projects\231001\SourceControl\MapDocs\Fig21.mxd, June 20, 2006

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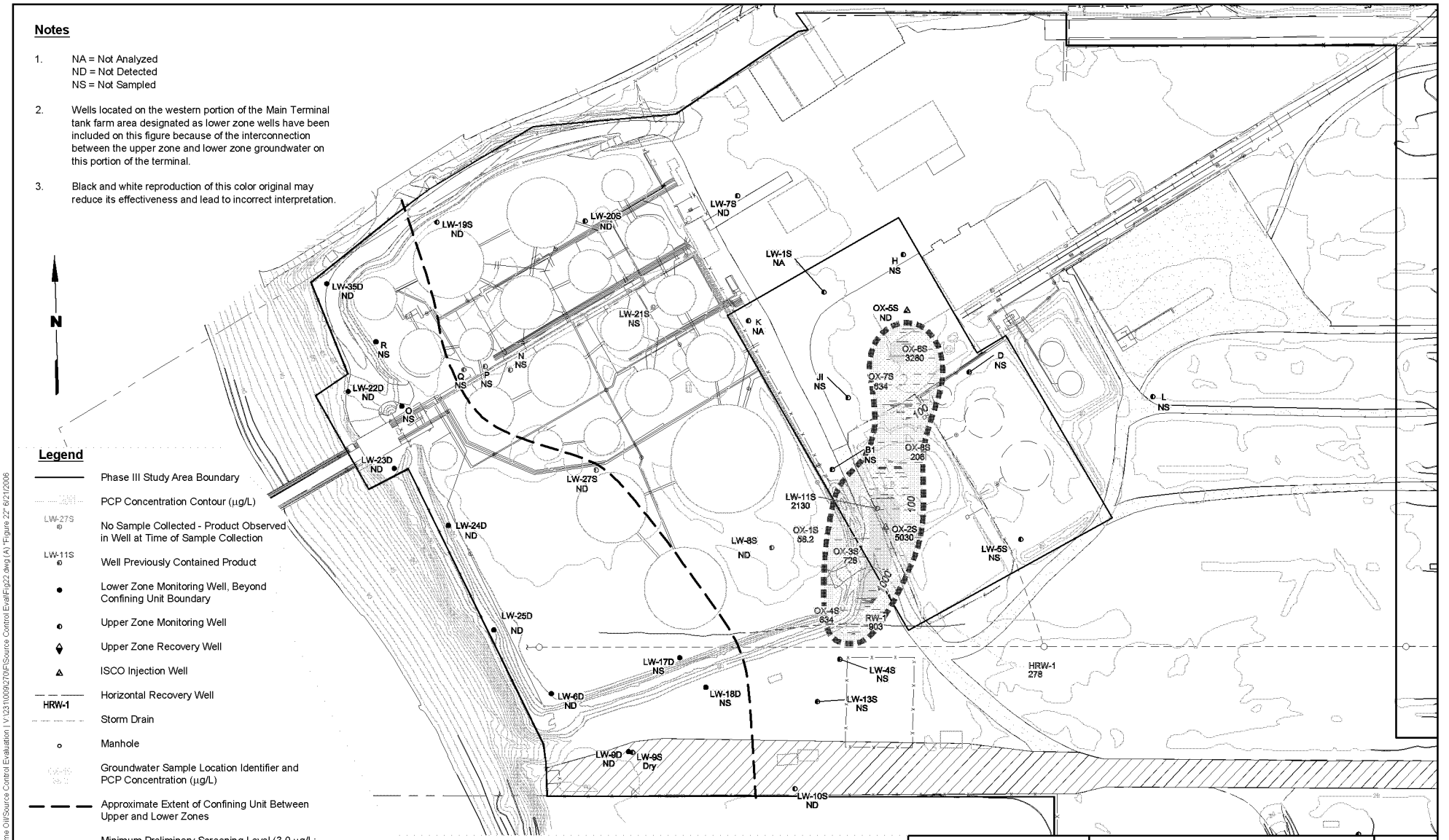
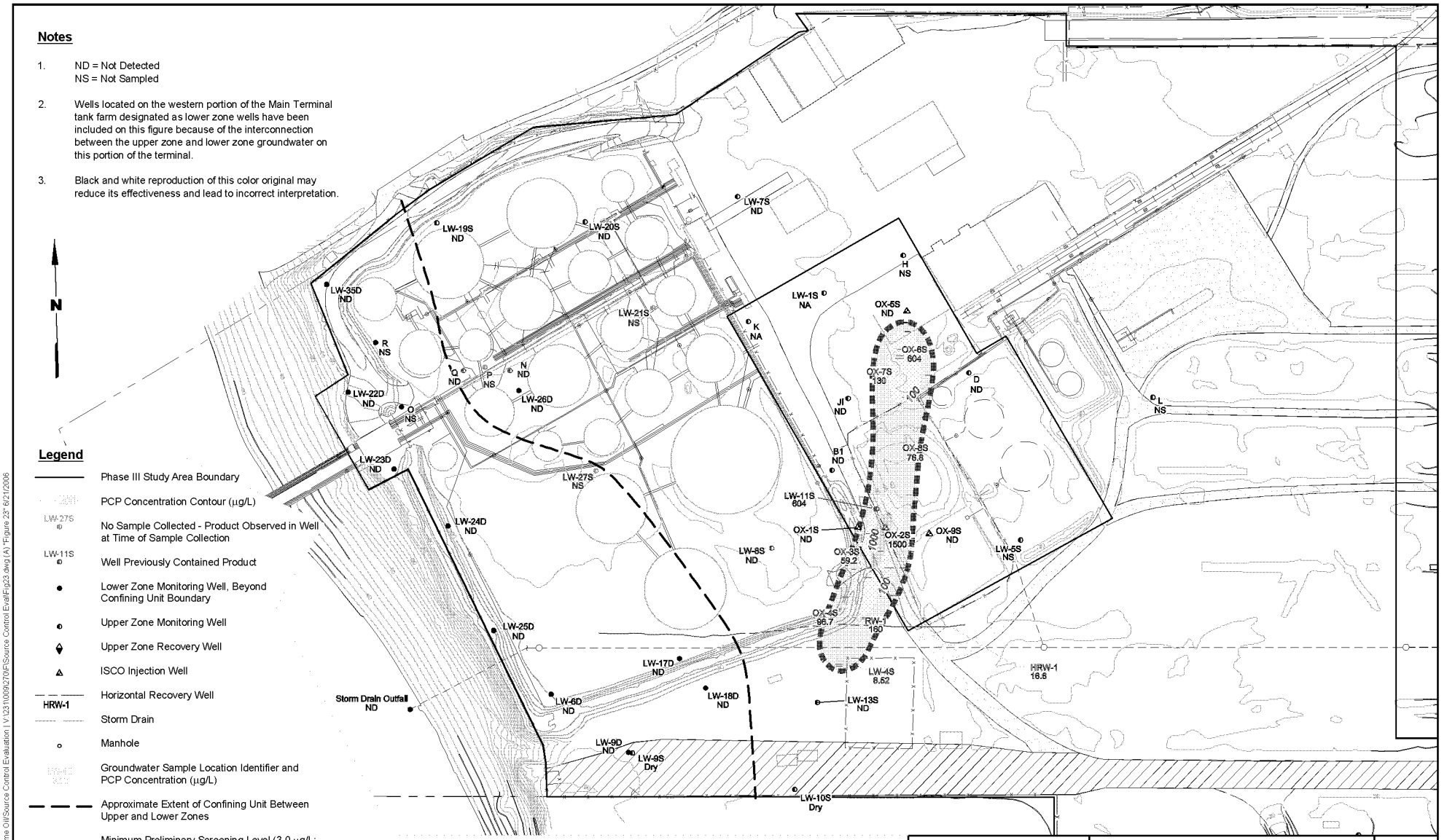
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**ISCO Injection Points**	Figure 21

BZTO104(e)027305

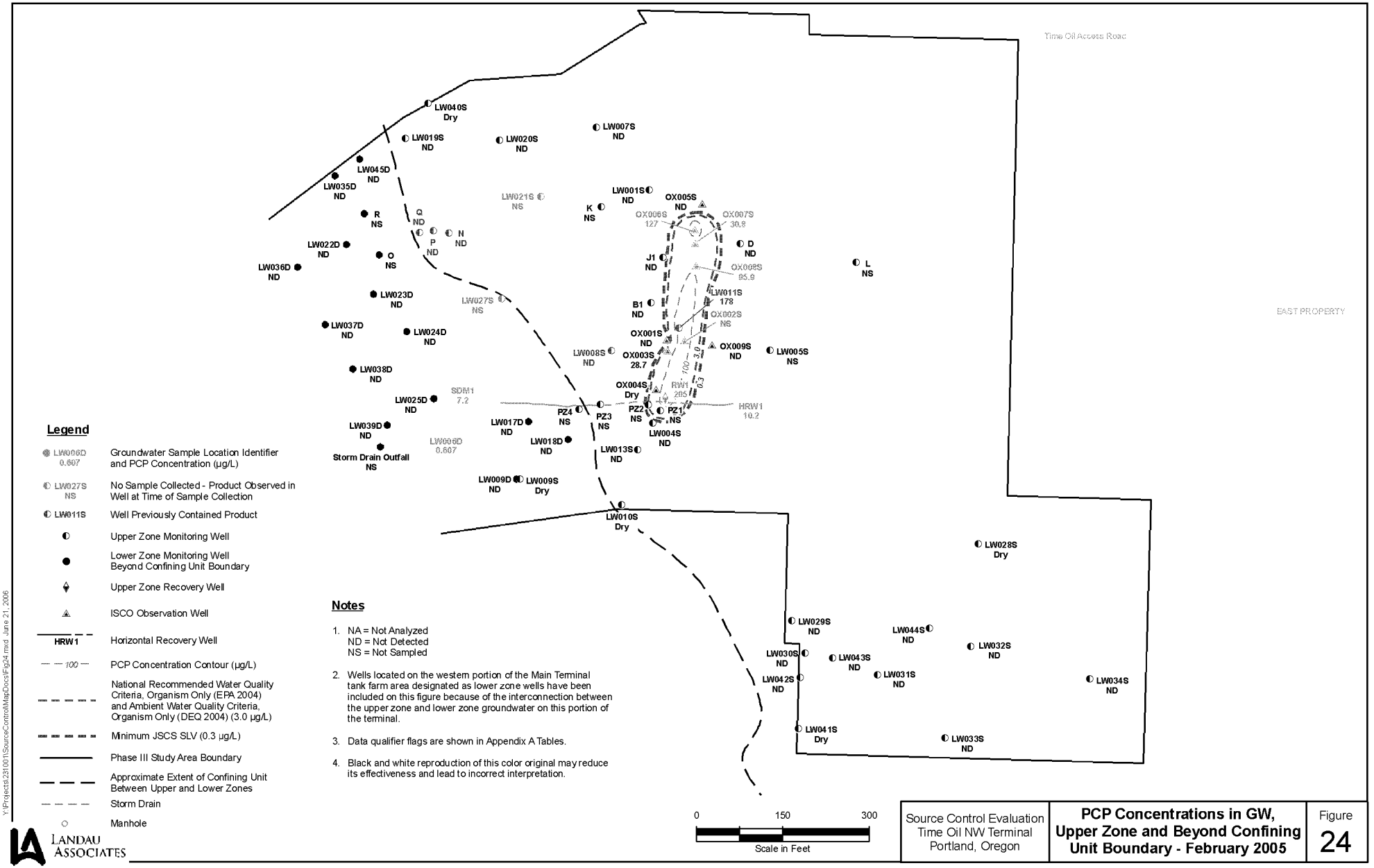


Time Oil\Source Control Evaluation | V:\231\009\270\ES\Source Control Eval\Fig22.dwg (A) "Figure 22" 6/21/2006

BZTO104(e)027306



BZTO104(e)027307



Legend

- LW006D 0.607 — Groundwater Sample Location Identifier and PCP Concentration (µg/L)
- LW027S NS — No Sample Collected - Product Observed in Well at Time of Sample Collection
- LW011S — Well Previously Contained Product
- Upper Zone Monitoring Well
- Lower Zone Monitoring Well Beyond Confining Unit Boundary
- Upper Zone Recovery Well
- ISCO Observation Well
- HRW1 — Horizontal Recovery Well
- 100 — PCP Concentration Contour (µg/L)
- National Recommended Water Quality Criteria, Organism Only (EPA 2004) and Ambient Water Quality Criteria, Organism Only (DEQ 2004) (3.0 µg/L)
- Minimum JSCS SLV (0.3 µg/L)
- Phase III Study Area Boundary
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole

Notes

1. NA = Not Analyzed
   ND = Not Detected
   NS = Not Sampled
2. Wells located on the western portion of the Main Terminal tank farm area designated as lower zone wells have been included on this figure because of the interconnection between the upper zone and lower zone groundwater on this portion of the terminal.
3. Data qualifier flags are shown in Appendix A Tables.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**PCP Concentrations in GW, Upper Zone and Beyond Confining Unit Boundary - February 2005**	Figure 24

Y:\Projects\231001\SourceControl\MapDocs\Fig24.mxd June 21, 2006

BZTO104(e)027308

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol (8270SIM)	0.495 U	0.481 U		2.43 U								
SEMIVOLATILES (µg/L)												
EPA 8270C												
2,3,4,6-Tetrachlorophenol			24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	38.8	100 U	5.00 U
Acenaphthene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Acenaphthylene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Anthracene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzo(a)anthracene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzo(a)pyrene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzo(b)fluoranthene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzo(g,h,i)perylene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzo(k)fluoranthene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Benzoic Acid			248 U	250 U	1250 U	101 U	204 U	50.5 U	2500 U	253 U	50.0 U	50.0 U
Benzyl alcohol			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
4-Bromophenyl-phenylether			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Butyl benzyl phthalate			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
4-Chloro-3-methylphenol			9.90 U	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
4-Chloroaniline			14.9 UJ	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U	3.00 U
Bis(2-chloroethoxy)methane			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Bis(2-chloroethyl)ether			9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
Bis(2-chloroisopropyl)ether			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2-Chloronaphthalene			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2-Chlorophenol			4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
4-Chlorophenylphenyl ether			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Chrysene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Di-n-butyl phthalate			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Di-n-octyl phthalate			9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
Dibenzo(a,h)anthracene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Dibenzofuran (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
1,2-Dichlorobenzene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
1,3-Dichlorobenzene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
1,4-Dichlorobenzene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
3,3-Dichlorobenzidine			49.5 UJ	50.0 U	250 U	20.2 U	40.8 U	10.1 U	500 U	50.5 U	10.0 U	10.0 U
2,4-Dichlorophenol			14.9 U	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U	3.00 U
Diethyl phthalate			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2,4-Dimethylphenol			14.9 U	15.0 U	75.0 U	6.06 U	12.2 U	3.03 U	150 U	15.2 U	3.00 U	3.00 U
Dimethyl phthalate			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
4,6-Dinitro-2-methylphenol			74.3 U	75.0 U	375 U	30.3 U	61.2 U	15.2 U	750 U	75.8 U	15.0 U	15.0 U
2,4-Dinitrophenol			124 U	125 U	625 U	50.5 U	102 U	25.3 U	1250 U	126 U	25.0 U	25.0 U
2,4-Dinitrotoluene			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
2,6-Dinitrotoluene			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate			49.5 UJ	50.0 U	250 U	20.2 U	40.8 U	10.1 U	500 U	50.5 U	10.0 U	10.0 U
Fluoranthene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Fluorene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Hexachlorobenzene			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Hexachlorobutadiene (8270)			9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
Hexachlorocyclopentadiene			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
Hexachloroethane			9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
Indeno(1,2,3-cd)pyrene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Isophorone			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2-Methylnaphthalene (8270)			4.95 UJ	**10.8**	25.0 U	**4.14**	**5.27**	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2-Methylphenol			4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
3- & 4-Methylphenol			4.95 U	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Naphthalene (8270)			4.95 UJ	**24.6**	25.0 U	**8.32**	**11.7**	1.01 U	50.0 U	5.05 U	**1.27**	1.00 U
2-Nitroaniline			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
3-Nitroaniline			29.7 UJ	30.0 U	150 U	12.1 U	24.5 U	6.06 U	300 U	30.3 U	6.00 U	6.00 U
4-Nitroaniline			24.8 UJ	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
Nitrobenzene			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2-Nitrophenol			24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
4-Nitrophenol			24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
N-Nitroso-Di-N-Propylamine			9.90 UJ	10.0 U	50.0 U	4.04 U	8.16 U	2.02 U	100 U	10.1 U	2.00 U	2.00 U
N-Nitrosodiphenylamine			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Pentachlorophenol (8270)			**50.4**	25.0 U	**236**	10.1 U	20.4 U	5.05 U	**307**	**2060**	**377**	5.00 U
Phenanthrene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
Phenol			9.90 U	10.0 U	50.0 UJ	4.04 U	8.16 UJ	2.02 U	100 UJ	10.1 UJ	2.00 UJ	2.00 U
Pyrene (8270)			4.95 UJ	5.00 UJ	25.0 U	2.02 UJ	4.08 U	1.01 UJ	50.0 U	5.05 U	1.00 U	1.00 UJ
1,2,4-Trichlorobenzene (8270)			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
2,4,5-Trichlorophenol			24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
2,4,6-Trichlorophenol			24.8 U	25.0 U	125 U	10.1 U	20.4 U	5.05 U	250 U	25.3 U	5.00 U	5.00 U
Carbazole			4.95 UJ	5.00 U	25.0 U	2.02 U	4.08 U	1.01 U	50.0 U	5.05 U	1.00 U	1.00 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene (8270SIM)												
Acenaphthylene (8270SIM)												
Anthracene (8270SIM)												
Benzo(a)anthracene (8270SIM)												
Benzo(a)pyrene (8270SIM)												
Benzo(b)fluoranthene (8270SIM)												
Benzo(g,h,i)perylene (8270SIM)												
Benzo(k)fluoranthene (8270SIM)												
Chrysene (8270SIM)												
Dibenzo(a,h)anthracene (8270SIM)												

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
Fluoranthene (8270SIM)												
Fluorene (8270SIM)												
Indeno(1,2,3-cd)pyrene (8270SIM)												
Naphthalene (8270SIM)												
Phenanthrene (8270SIM)												
Pyrene (8270SIM)												
VOLATILES (µg/L)												
EPA 8260B												
Acetone			25.0 U	50.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene			1.00 U	2.00 U	**2.66**	**31**	**43.3**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone			10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene			5.00 U	**10.3**	5.00 U	5.00 U	**7.31**	5.00 U	5.00 U	5.00 U	**9.01**	5.00 U
sec-Butylbenzene			1.00 U	**23.5**	**3.69**	**6.31**	**7.18**	1.00 U	**1.81**	**3.51**	**17.7**	1.00 U
tert-Butylbenzene			1.00 U	**10.1**	1.00 U	**1.56**	**1.78**	1.00 U	1.00 U	1.00 U	**3.01**	1.00 U
Carbon disulfide			10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene (8260)			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene (8260)			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene (8260)			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
2,2-Dichloropropane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene			1.00 U	**39.7**	**16.9**	**72.5**	**106**	1.00 U	1.00 U	1.00 U	**5.64**	1.00 U
Hexachlorobutadiene (8260)			4.00 U	8.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone			10.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene			2.00 U	**267**	**8.79**	**27.6**	**33.8**	2.00 U	2.00 U	**2.19**	**17.3**	2.00 U
4-Isopropyltoluene			2.00 U	4.00 U	**2.34**	**4.19**	**5.68**	2.00 U	2.00 U	2.00 U	**6.02**	2.00 U
4-Methyl-2-Pentanone (MIBK)			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride			5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene (8260)			2.00 U	**42.1**	**7.05**	**17.8**	**20.4**	2.00 U	2.00 U	2.00 U	**4.64**	2.00 U
n-Propylbenzene			1.00 U	**196**	**11.9**	**33.8**	**42.5**	1.00 U	1.00 U	**2.14**	**23.2**	1.00 U
Styrene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene (8260)			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene			1.00 U	2.00 U	**37.1**	**136**	**173**	1.00 U	1.00 U	**9.1**	**146**	1.00 U
1,3,5-Trimethylbenzene			1.00 U	2.00 U	**4.02**	**33**	**44.8**	1.00 U	1.00 U	1.00 U	**22.2**	1.00 U
Vinyl chloride			1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene			1.00 U	2.00 U	**20.4**	**9.61**	**83.7**	1.00 U	1.00 U	**1.52**	**20.1**	1.00 U
m,p-Xylene			2.00 U	4.00 U	**15.4**	**96.3**	**104**	2.00 U	2.00 U	2.00 U	**4.65**	2.00 U
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons			80.0 U	**2860**	**739 J**							
NWTPH-Dx (µg/L)												

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
Diesel Range Hydrocarbons			250 U	**1390**	**396**							
Heavy Oil Range Hydrocarbons			500 U	495 U	481 U							
TOTAL METALS (µg/L)												
EPA 6020/7470A												
Antimony			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic			1.00 U	**30.4**	**3.16**	**18.1**	**14.1**	**15.7**	**5.98**	**2.94**	**27**	**2.35**
Beryllium			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**9.72**	1.00 U	1.00 U	1.00 U	1.00 U
Copper			**6.96**	2.00 U	2.00 U	2.00 U	2.00 U	**13**	**8.3**	**2.88**	2.00 U	2.00 U
Lead			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**4.78**	1.00 U	1.00 U	1.00 U	1.00 U
Mercury			0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.355**	0.200 U	0.200 U	0.200 U	0.200 U
Nickel			**18.9**	**8.77**	**44.8**	**27.8**	**23.8**	**12.3**	**41.5**	**80.6**	**154**	**14.5**
Selenium			2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc			5.00 U	**9.34**	5.00 U	5.00 U	5.00 U	**37.8**	**11.3**	**7.88**	**12.2**	5.00 U
DISSOLVED METALS (µg/L)												
EPA 6020												
Antimony (Dissolved)												
Arsenic (Dissolved)												
Beryllium (Dissolved)												
Cadmium (Dissolved)												
Chromium (Dissolved)												
Copper (Dissolved)												
Lead (Dissolved)												
Nickel (Dissolved)												
Selenium (Dissolved)												
Silver (Dissolved)												
Thallium (Dissolved)												
Zinc (Dissolved)												
DIOXINS AND FURANS (ng/L)												
EPA 1613B												
2,3,7,8-TCDF						0.00992 U			0.00986 U			
Total TCDF						0.00992 U			0.00986 U			
2,3,7,8-TCDD						0.00992 U			0.00986 U			
Total TCDD						0.00992 U			0.00986 U			
1,2,3,7,8-PeCDF						0.0496 U			0.0493 U			
2,3,4,7,8-PeCDF						0.0496 U			0.0493 U			
Total PeCDF						0.0496 U			0.0493 U			

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5K0699-02 11/15/2005	J1 P5K0699-06 11/15/2005	LW004S P5K0699-03 11/15/2005	LW008S P5K0699-04 11/15/2005	LW011S P5K0820-03 11/17/2005	OX001S P5K0699-10 11/16/2005	OX003S P5K0699-09 11/16/2005	OX005S P5K0699-07 11/15/2005	OX006S P5K0699-12 11/16/2005	OX007S P5K0699-13 11/16/2005	OX008S P5K0699-11 11/16/2005	OX009S P5K0699-08 11/15/2005
1,2,3,7,8-PeCDD						0.0496 U			0.0493 U			
Total PeCDD						0.0496 U			0.0493 U			
1,2,3,4,7,8-HxCDF						0.0496 U			0.0493 U			
1,2,3,6,7,8-HxCDF						0.0496 U			0.0493 U			
2,3,4,6,7,8-HxCDF						0.0496 U			0.0493 U			
1,2,3,7,8,9-HxCDF						0.0496 U			0.0493 U			
Total HxCDF						0.0496 U			**0.214**			
1,2,3,4,7,8-HxCDD						0.0496 U			0.0493 U			
1,2,3,6,7,8-HxCDD						0.0496 U			0.0493 U			
1,2,3,7,8,9-HxCDD						0.0496 U			0.0493 U			
Total HxCDD						0.0496 U			0.0493 U			
1,2,3,4,6,7,8-HpCDF						**0.204**			**0.434**			
1,2,3,4,7,8,9-HpCDF						0.0496 U			0.0493 U			
Total HpCDF						**0.525**			**1.04**			
1,2,3,4,6,7,8-HpCDD						**0.567**			**0.949**			
Total HpCDD						**0.851**			**1.42**			
OCDF						**0.354**			**0.551**			
OCDD						**4.29**			**5.1**			
Total TEQ						**0.012354**			**0.019481**			
FIELD PARAMETERS												
pH	**6.56**	**6.66**	**6.78**	**7.10**	**7.30**	**5.95**	**7.21**	**6.73**	**6.10**	**7.03**	**7.20**	**6.91**
Temperature (deg C)	**15.4**	**15.8**	**15.0**	**15.0**	**15.5**	**14.9**	**14.8**	**15.6**	**15.6**	**16.0**	**1.6**	**15.7**
Conductivity (uS/cm)	**230**	**219**	**17.4**	**377**	**363**	**238**	**371**	**193**	**216**	**334**	**530**	**411**
Dissolved oxygen (mg/l)	**2.93**	**1.16**	**4.06**	**2.95**	**2.19**		**2.96**	**1.42**		**3.65**	**2.97**	**3.27**
Turbidity (NTU)	**5**	**6**	**0**	**1**		**0**	**0**	**3**	**0**	**0**	**0**	**0**
Ferrous Iron (mg/L)					**2.4**	**5.4**	**2.7**	**6.5**	**4.0**	**2.5**	**4.0**	**2.1**

BZTO104(e)027314

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol (8270SIM)	0.481 U	**0.524**						0.485 U	0.505 U	0.485 U	0.490 U	0.476 U
SEMIVOLATILES (µg/L)												
EPA 8270C												
2,3,4,6-Tetrachlorophenol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Acenaphthene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	**6.17**	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Acenaphthylene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Anthracene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(a)anthracene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(a)pyrene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(b)fluoranthene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(g,h,i)perylene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzo(k)fluoranthene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Benzoic Acid	243 U	240 U	1000 U	240 U	250 U	500 U	194 U	198 U	99.0 U	48.5 U	49.5 U	47.6 U
Benzyl alcohol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
4-Bromophenyl-phenylether	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Butyl benzyl phthalate	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4-Chloro-3-methylphenol	9.71 U	9.62 U	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
4-Chloroaniline	14.6 U	14.4 U	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Bis(2-chloroethoxy)methane	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Bis(2-chloroethyl)ether	9.71 U	9.62 U	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U	39.6 U	3.96 U	1.94 U	1.98 U	1.90 U
Bis(2-chloroisopropyl)ether	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Chloronaphthalene	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Chlorophenol	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4-Chlorophenylphenyl ether	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Chrysene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Di-n-butyl phthalate	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Di-n-octyl phthalate	9.71 U	9.62 U	40.0 U	19.2 U	10.0 U	20.0 U	7.77 U	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Dibenzo(a,h)anthracene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Dibenzofuran (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	**4.19**	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,2-Dichlorobenzene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,3-Dichlorobenzene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
1,4-Dichlorobenzene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
3,3-Dichlorobenzidine	48.5 U	48.1 U	200 U	48.1 U	50.0 U	100 U	38.8 U	39.6 U	19.8 U	9.71 U	9.90 U	9.52 U
2,4-Dichlorophenol	14.6 U	14.4 U	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Diethyl phthalate	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	5.83 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2,4-Dimethylphenol	14.6 U	14.4 U	60.0 U	14.4 U	15.0 U	30.0 U	11.7 U	11.9 U	5.94 U	2.91 U	2.97 U	2.86 U
Dimethyl phthalate	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
4,6-Dinitro-2-methylphenol	72.8 U	72.1 U	300 U	72.1 U	75.0 U	150 U	58.3 U	59.4 U	29.7 U	14.6 U	14.9 U	14.3 U
2,4-Dinitrophenol	121 U	120 U	500 U	120 U	125 U	250 U	97.1 U	99.0 U	49.5 U	24.3 U	24.8 U	23.8 U
2,4-Dinitrotoluene	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U

BZTO104(e)027315

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	RW1 P5K0820-02 11/17/2005	Dup of RW1 W P5K0820-01 11/17/2005	LW019S P5K0698-06 11/16/2005	LW027S P5K0819-04 11/17/2005	N P5K0819-03 11/17/2005	P P5K0819-02 11/17/2005	Q P5K0819-01 11/17/2005	LW006D P5K0820-06 11/17/2005	LW009D P5K0820-05 11/17/2005	LW010D P5K0699-01 11/14/2005	LW011D P5K0820-04 11/17/2005	RW2 P5K0699-05 11/15/2005
2,6-Dinitrotoluene	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Bis(2-ethylhexyl)phthalate	48.5 U	48.1 U	200 U	48.1 U	50.0 U	100 U	38.8 U	39.6 U	19.8 U	**13.6**	9.90 U	9.52 U
Fluoranthene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Fluorene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	**5.48**	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Hexachlorobenzene	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Hexachlorobutadiene (8270)	9.71 U	9.62 U	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Hexachlorocyclopentadiene	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Hexachloroethane	9.71 U	9.62 U	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
Indeno(1,2,3-cd)pyrene (8270)	4.85 U	4.81 U	20.0 U	9.62 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Isophorone	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Methylnaphthalene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	**37.2**	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	**2.02**
2-Methylphenol	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
3- & 4-Methylphenol	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	**48.9**	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Naphthalene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	**17.6**	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Nitroaniline	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
3-Nitroaniline	29.1 U	28.8 U	120 U	28.8 U	30.0 U	60.0 U	23.3 U	23.8 U	11.9 U	5.83 U	5.94 U	5.71 U
4-Nitroaniline	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Nitrobenzene	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2-Nitrophenol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
4-Nitrophenol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
N-Nitroso-Di-N-Propylamine	9.71 U	9.62 U	40.0 U	9.62 U	10.0 U	20.0 U	7.77 U	7.92 U	3.96 U	1.94 U	1.98 U	1.90 U
N-Nitrosodiphenylamine	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Pentachlorophenol (8270)	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Phenanthrene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
Phenol	9.71 UJ	9.62 UJ	40.0 U	9.62 UJ	**17.3 J**	**80.5 J**	7.77 UJ	7.92 UJ	3.96 UJ	1.94 U	1.98 UJ	1.90 U
Pyrene (8270)	4.85 U	4.81 U	20.0 UJ	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 UJ	0.990 U	0.952 UJ
1,2,4-Trichlorobenzene (8270)	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
2,4,5-Trichlorophenol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
2,4,6-Trichlorophenol	24.3 U	24.0 U	100 U	24.0 U	25.0 U	50.0 U	19.4 U	19.8 U	9.90 U	4.85 U	4.95 U	4.76 U
Carbazole	4.85 U	4.81 U	20.0 U	4.81 U	5.00 U	10.0 U	3.88 U	3.96 U	1.98 U	0.971 U	0.990 U	0.952 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene (8270SIM)			**0.905**	0.594 U	**0.902**	**5.55**	**3.88**					
Acenaphthylene (8270SIM)			0.500 U	0.396 U	0.408 U	0.990 U	0.297 U					
Anthracene (8270SIM)			0.500 U	0.396 U	0.408 U	**0.786**	0.198 U					
Benzo(a)anthracene (8270SIM)			0.500 U	0.396 U	0.408 U	**0.454**	0.198 U					
Benzo(a)pyrene (8270SIM)			0.500 U	0.396 U	0.408 U	0.198 U	0.198 U					
Benzo(b)fluoranthene (8270SIM)			0.500 U	0.396 U	0.408 U	**0.231**	0.198 U					
Benzo(g,h,i)perylene (8270SIM)			0.500 U	0.396 U	0.408 U	0.198 U	0.198 U					
Benzo(k)fluoranthene (8270SIM)			0.500 U	0.396 U	0.408 U	0.198 U	0.198 U					
Chrysene (8270SIM)			0.500 U	0.396 U	0.408 U	**0.447**	0.198 U					
Dibenzo(a,h)anthracene (8270SIM)			1.00 U	0.792 U	0.816 U	0.396 U	0.396 U					

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Fluoranthene (8270SIM)			0.500 U	0.396 U	0.408 U	**2.03**	**0.236**					
Fluorene (8270SIM)			**2.62**	0.396 U	**2.13**	**6.44**	**3.49**					
Indeno(1,2,3-cd)pyrene (8270SIM)			0.500 U	0.396 U	0.408 U	0.198 U	0.198 U					
Naphthalene (8270SIM)			1.75 U	0.990 U	**15.7**	7.43 U	1.29 U					
Phenanthrene (8270SIM)			**0.891**	0.396 U	**1.06**	**3.45**	**1.96**					
Pyrene (8270SIM)			0.500 U	0.396 U	0.408 U	**1.71**	0.198 U					
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	250 U	500 U	125 U	**47.5**	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	**6.39**	**6.43**	1.00 U	1.00 U	**716**	**2470**	**220**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	100 U	200 U	50.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	**4.37**	**4.35**	**5.25**	1.00 U	**201**	20.0 U	**5.8**	**1.06**	1.00 U	1.00 U	1.00 U	**5.92**
tert-Butylbenzene	**1.5**	**1.59**	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	**3.15**	1.00 U	1.00 U	1.00 U	**1.85**
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	100 U	200 U	50.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	**40.1**	**41**	1.00 U	1.00 U	**131**	**72.8**	**6.5**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene (8260)	4.00 U	4.00 U	4.00 U	4.00 U	40.0 U	80.0 U	20.0 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	100 U	200 U	50.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	**27.5**	**27.7**	**7.05**	2.00 U	**51.6**	40.0 U	**52.5**	2.00 U	2.00 U	2.00 U	2.00 U	**37.3**
4-Isopropyltoluene	**2.13**	**2.13**	2.00 U	2.00 U	20.0 U	40.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	50.0 U	100 U	25.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene (8260)	**10.4**	**10.2**	2.00 U	2.00 U	**38.9**	40.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	**2.48**
n-Propylbenzene	**26.4**	**26.7**	**10.3**	1.00 U	**77.5**	20.0 U	**96.6**	1.00 U	1.00 U	1.00 U	1.00 U	**34.3**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	**19**	**64.2**	**12.6**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	**87.1**	**90.2**	1.00 U	1.00 U	**244**	**96.2**	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	**7.16**	**7.62**	1.00 U	1.00 U	**70.4**	**67.4**	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	10.0 U	20.0 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	**18.6**	**19.1**	1.00 U	1.00 U	**62.2**	**221**	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	**39.5**	**41.5**	2.00 U	2.00 U	**314**	**412**	**12.1**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	**826 J**	**880 J**	**315**	**240**	**5100 J**	**8560**	**1530 J**	**329**	80.0 U	80.0 UJ	80.0 U	**371**
NWTPH-Dx (µg/L)												

BZTO104(e)027318

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Diesel Range Hydrocarbons	**483**	**516**	**1020**	**2090**	**3410**	**2720**	**1480**	**452 J**	248 U	245 U	250 U	245 U
Heavy Oil Range Hydrocarbons	481 U	481 U	495 U	500 U	500 U	500 U	500 U	495 U	495 U	490 U	500 U	490 U
TOTAL METALS (µg/L)												
EPA 6020/7470A												
Antimony	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic	**3.66**	**3.76**	**46**	**59.6**	**38.3**	**35.9**	**41.1**	**10.8**	**32.6**	**15.3**	**6.96**	**22**
Beryllium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Cadmium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.04**	**5.7**	**27.8**	1.00 U
Copper	**2.62**	**2.51**	2.00 U	2.00 U	2.00 U	**2.81**	2.00 U	2.00 U	2.00 U	**9.24**	**37.3**	2.00 U
Lead	1.00 U	1.00 U	1.00 U	1.00 U	**6.83**	**26**	**12.4**	1.00 U	1.00 U	**2.15**	**15.1**	1.00 U
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Nickel	**87.6**	**88.2**	2.00 U	**5.35**	**2.26**	**3.98**	**2.11**	**15.5**	2.00 U	**5.26**	**70.6**	**23.5**
Selenium	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc	5.00 U	5.00 U	**6.17**	5.00 U	5.00 U	5.00 U	5.00 U	**8.29**	5.00 U	**16.6**	**85.1**	**8.11**
DISSOLVED METALS (µg/L)												
EPA 6020												
Antimony (Dissolved)												
Arsenic (Dissolved)												
Beryllium (Dissolved)												
Cadmium (Dissolved)												
Chromium (Dissolved)												
Copper (Dissolved)												
Lead (Dissolved)												
Nickel (Dissolved)												
Selenium (Dissolved)												
Silver (Dissolved)												
Thallium (Dissolved)												
Zinc (Dissolved)												
DIOXINS AND FURANS (ng/L)												
EPA 1613B												
2,3,7,8-TCDF	0.00988 U											
Total TCDF	0.00988 U											
2,3,7,8-TCDD	0.00988 U											
Total TCDD	0.00988 U											
1,2,3,7,8-PeCDF	0.0494 U											
2,3,4,7,8-PeCDF	0.0494 U											
Total PeCDF	0.0494 U											

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1,2,3,7,8-PeCDD	0.0494 U											
Total PeCDD	0.0494 U											
1,2,3,4,7,8-HxCDF	0.0494 U											
1,2,3,6,7,8-HxCDF	0.0494 U											
2,3,4,6,7,8-HxCDF	0.0494 U											
1,2,3,7,8,9-HxCDF	0.0494 U											
Total HxCDF	0.0494 U											
1,2,3,4,7,8-HxCDD	0.0494 U											
1,2,3,6,7,8-HxCDD	0.0494 U											
1,2,3,7,8,9-HxCDD	0.0494 U											
Total HxCDD	0.0494 U											
1,2,3,4,6,7,8-HpCDF	0.0494 U											
1,2,3,4,7,8,9-HpCDF	0.0494 U											
Total HpCDF	0.0494 U											
1,2,3,4,6,7,8-HpCDD	0.0494 U											
Total HpCDD	0.0494 U											
OCDF	0.0988 U											
OCDD	**0.254**											
Total TEQ	**0.000254**											
FIELD PARAMETERS												
pH	**6.61**	**6.59**	**7.40**	**7.10**	**6.57**	**6.64**	**7.47**	**6.66**	**7.49**	**6.27**	**6.76**	**7.55**
Temperature (deg C)	**15.9**	**15.9**	**13.9**	**14.9**	**14.0**	**12.8**	**14.7**	**14.6**	**15.7**	**14.0**	**14.9**	**13.6**
Conductivity (uS/cm)	**234**	**233**	**654**	**358**	**198**	**253**	**632**	**196**	**312**	**128**	**299**	**385**
Dissolved oxygen (mg/l)	**1.88**	**1.07**	**3.23**	**3.10**		**0.71**	**2.43**	**1.19**	**3.64**	**7.77**	**1.55**	**3.79**
Turbidity (NTU)	**8**	**10**	**0**	**0**	**0**	**6**	**0**	**0**	**14**	**102**	**373**	**0**
Ferrous Iron (mg/L)	**10**	**10**										

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol (8270SIM)												
SEMIVOLATILES (µg/L)												
EPA 8270C												
2,3,4,6-Tetrachlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Acenaphthene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Acenaphthylene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Anthracene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Benzo(a)anthracene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Benzo(a)pyrene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(b)fluoranthene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(g,h,i)perylene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzo(k)fluoranthene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Benzoic Acid	49.0 U	49.5 U	990 U	50.0 U	50.0 U	49.5 U	48.5 U	49.5 U	49.5 U	50.0 U	49.0 U	51.0 U
Benzyl alcohol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
4-Bromophenyl-phenylether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Butyl benzyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4-Chloro-3-methylphenol	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
4-Chloroaniline	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Bis(2-chloroethoxy)methane	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Bis(2-chloroethyl)ether	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Bis(2-chloroisopropyl)ether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Chloronaphthalene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Chlorophenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4-Chlorophenylphenyl ether	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Chrysene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Di-n-butyl phthalate	0.980 U	0.990 U	19.8 U	**1.24**	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Di-n-octyl phthalate	19.6 U	19.8 U	39.6 U	20.0 U	20.0 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	20.4 U
Dibenzo(a,h)anthracene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Dibenzofuran (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,2-Dichlorobenzene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,3-Dichlorobenzene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
1,4-Dichlorobenzene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
3,3-Dichlorobenzidine	9.80 U	9.90 U	198 U	10.0 U	10.0 U	9.90 U	9.71 U	9.90 U	9.90 U	10.0 U	9.80 U	10.2 U
2,4-Dichlorophenol	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Diethyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2,4-Dimethylphenol	2.94 U	2.97 U	59.4 U	3.00 U	3.00 U	2.97 U	2.91 U	2.97 U	2.97 U	3.00 U	2.94 U	3.06 U
Dimethyl phthalate	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
4,6-Dinitro-2-methylphenol	14.7 U	14.9 U	297 U	15.0 U	15.0 U	14.9 U	14.6 U	14.9 U	14.9 U	15.0 U	14.7 U	15.3 U
2,4-Dinitrophenol	24.5 U	24.8 U	495 U	25.0 U	25.0 U	24.8 U	24.3 U	24.8 U	24.8 U	25.0 U	24.5 U	25.5 U
2,4-Dinitrotoluene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
2,6-Dinitrotoluene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Bis(2-ethylhexyl)phthalate	9.80 U	9.90 U	198 U	10.0 U	10.0 U	9.90 U	9.71 U	9.90 U	9.90 U	10.0 U	9.80 U	10.2 U
Fluoranthene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Fluorene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Hexachlorobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Hexachlorobutadiene (8270)	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Hexachlorocyclopentadiene	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Hexachloroethane	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Indeno(1,2,3-cd)pyrene (8270)	9.80 U	9.90 U	19.8 U	10.0 U	10.0 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	10.2 U
Isophorone	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Methylnaphthalene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Methylphenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
3- & 4-Methylphenol	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Naphthalene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Nitroaniline	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
3-Nitroaniline	5.88 U	5.94 U	119 U	6.00 U	6.00 U	5.94 U	5.83 U	5.94 U	5.94 U	6.00 U	5.88 U	6.12 U
4-Nitroaniline	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Nitrobenzene	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2-Nitrophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
4-Nitrophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
N-Nitroso-Di-N-Propylamine	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
N-Nitrosodiphenylamine	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Pentachlorophenol (8270)	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Phenanthrene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
Phenol	1.96 U	1.98 U	39.6 U	2.00 U	2.00 U	1.98 U	1.94 U	1.98 U	1.98 U	2.00 U	1.96 U	2.04 U
Pyrene (8270)	0.980 UJ	0.990 UJ	19.8 UJ	1.00 UJ	1.00 UJ	0.990 UJ	0.971 UJ	0.990 UJ	0.990 UJ	1.00 UJ	0.980 UJ	1.02 UJ
1,2,4-Trichlorobenzene (8270)	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
2,4,5-Trichlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
2,4,6-Trichlorophenol	4.90 U	4.95 U	99.0 U	5.00 U	5.00 U	4.95 U	4.85 U	4.95 U	4.95 U	5.00 U	4.90 U	5.10 U
Carbazole	0.980 U	0.990 U	19.8 U	1.00 U	1.00 U	0.990 U	0.971 U	0.990 U	0.990 U	1.00 U	0.980 U	1.02 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene (8270SIM)	0.0971 U	**0.458**	**1.18**	**0.366**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Acenaphthylene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Anthracene (8270SIM)	0.0971 U	0.100 U	0.500 U	**0.133**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**1.66**
Benzo(a)anthracene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(a)pyrene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(b)fluoranthene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(g,h,i)perylene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Benzo(k)fluoranthene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Chrysene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Dibenzo(a,h)anthracene (8270SIM)	0.194 U	0.200 U	1.00 U	0.198 U	0.204 U	0.198 U	0.192 U	0.196 U	0.194 U	0.200 U	0.194 U	0.202 U

BZTO104(e)027322

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER SAMPLING EVENT, NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
Fluoranthene (8270SIM)	0.0971 U	0.100 U	0.500 U	**0.256**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Fluorene (8270SIM)	0.0971 U	**0.198**	**2.69**	**0.611**	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Indeno(1,2,3-cd)pyrene (8270SIM)	0.0971 U	0.100 U	0.500 U	0.0990 U	0.102 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.101 U
Naphthalene (8270SIM)	0.146 U	1.00 U	2.00 U	0.792 U	0.306 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	0.505 U
Phenanthrene (8270SIM)	0.0971 U	0.100 U	**1.38**	**0.435**	0.153 U	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**0.198**
Pyrene (8270SIM)	**0.099**	0.100 U	0.500 U	**0.393**	**0.126**	0.0990 U	0.0962 U	0.0980 U	0.0971 U	0.100 U	0.0971 U	**0.122**
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	**8.03**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	**1.81**	**4.72**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.63**
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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TIME OIL NORTHWEST TERMINAL

Parameter	LW022D P5K0698-12 11/16/2005	LW023D P5K0698-13 11/16/2005	LW024D P5K0698-09 11/16/2005	LW025D P5K0698-10 11/16/2005	LW035D P5K0698-11 11/16/2005	LW036D P5K0698-05 11/15/2005	LW037D P5K0698-02 11/15/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D P5K0698-04 11/15/2005	LW040D P5K0698-07 11/16/2005	LW045D P5K0698-08 11/16/2005
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene (8260)	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	2.00 U	**8.61**	**10.1**	**2.55**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**10.8**
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	**16.4**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene (8260)	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene	1.00 U	**1.93**	**10.1**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**2.05**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene (8260)	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	80.0 U	**292**	**387**	**97.9**	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U
NWTPH-Dx (µg/L)												

BZTO104(e)027324

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Diesel Range Hydrocarbons	243 U	243 U	**591**	248 U	278 U	250 U	245 U	248 U	245 U	243 U	243 U	250 U
Heavy Oil Range Hydrocarbons	485 U	485 U	495 U	495 U	556 U	500 U	490 U	495 U	490 U	485 U	485 U	500 U
TOTAL METALS (µg/L)												
EPA 6020/7470A												
Antimony	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Arsenic	**22.2**	**55.4**	**49.7**	**44.9**	**10.5**	1.00 U	1.00 U	**1.64**	**1.57**	**7.76**	**4.37**	**48.1**
Beryllium	1.00 U	1.00 U	1.00 U	**1.15**	**1.58**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**2.1**
Cadmium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chromium	**2.08**	**14.9**	**9.61**	**26.7**	**31.8**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**19.8**	**38.6**
Copper	**3.22**	**26.1**	**14.6**	**38.8**	**44.4**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**26.6**	**47.6**
Lead	**1.37**	**9.1**	**6.4**	**18.9**	**17.2**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**7.76**	**18.2**
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Nickel	**4.9**	**13.8**	**10.8**	**32.4**	**56.8**	2.00 U	2.00 U	2.00 U	2.00 U	**6.12**	**27.6**	**53.2**
Selenium	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Silver	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Thallium	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Zinc	**18**	**51.5**	**36.8**	**104**	**166**	5.00 U	5.00 U	5.00 U	**5.12**	5.00 U	**73**	**159**
DISSOLVED METALS (µg/L)												
EPA 6020												
Antimony (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Arsenic (Dissolved)						1.00 U	1.00 U	**1.45**	**1.51**	**7.99**		
Beryllium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Cadmium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chromium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Copper (Dissolved)						2.00 U	2.00 U	**2.36**	2.00 U	2.00 U		
Lead (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Nickel (Dissolved)						2.00 U	2.00 U	2.00 U	2.00 U	**8.85**		
Selenium (Dissolved)						2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
Silver (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Thallium (Dissolved)						1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Zinc (Dissolved)						5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
DIOXINS AND FURANS (ng/L)												
EPA 1613B												
2,3,7,8-TCDF												
Total TCDF												
2,3,7,8-TCDD												
Total TCDD												
1,2,3,7,8-PeCDF												
2,3,4,7,8-PeCDF												
Total PeCDF												

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1,2,3,7,8-PeCDD												
Total PeCDD												
1,2,3,4,7,8-HxCDF												
1,2,3,6,7,8-HxCDF												
2,3,4,6,7,8-HxCDF												
1,2,3,7,8,9-HxCDF												
Total HxCDF												
1,2,3,4,7,8-HxCDD												
1,2,3,6,7,8-HxCDD												
1,2,3,7,8,9-HxCDD												
Total HxCDD												
1,2,3,4,6,7,8-HpCDF												
1,2,3,4,7,8,9-HpCDF												
Total HpCDF												
1,2,3,4,6,7,8-HpCDD												
Total HpCDD												
OCDF												
OCDD												
Total TEQ												
FIELD PARAMETERS												
pH	**7.20**	**7.75**	**6.32**	**5.77**	**7.44**	**6.72**	**6.61**	**7.27**	**7.28**	**7.32**	**6.03**	**7.34**
Temperature (deg C)	**14.8**	**14.1**	**14.5**	**14.9**	**13.7**	**15.1**	**14.2**	**15.5**	**15.5**	**14.9**	**13.0**	**13.4**
Conductivity (uS/cm)	**276**	**574**	**225**	**177**	**662**	**120**	**55**	**74**	**74**	**76**	**147**	**630**
Dissolved oxygen (mg/l)	**3.25**	**2.66**	**1.72**		**4.35**	**1.55**	**3.42**	**2.62**	**2.60**	**2.90**		**2.86**
Turbidity (NTU)	**163**	**248**	**149**	**772**	**755**	**0**	**11**	**0**	**0**	**0**	**546**	**999**
Ferrous Iron (mg/L)												

TABLE 2
LNAPL MEASUREMENTS AND OBSERVATIONS IN GROUNDWATER
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	NOTES
N	05/31/1994	16:30	----	
N	06/01/1994	08:35	----	
N	06/17/1994	15:35	----	
N	07/19/1994	09:56	----	Strong odor noted; no product
N	08/17/1994	08:06	----	
N	09/16/1994	07:58	----	Hydrocarbon odor
N	10/17/1994	09:25	----	
N	11/21/1994	12:26	----	Hydrocarbon odor
N	12/19/1994	11:42	----	Hydrocarbon odor
N	01/18/1995	11:48	----	
N	02/21/1995	13:54	----	
N	03/21/1995	13:21	----	
N	04/19/1995	13:15	----	Hydrocarbon odor
N	05/19/1995	14:04	----	
N	07/17/1995	14:15	----	
N	08/22/1995	08:16	----	
N	09/22/1995	09:05	----	
N	11/20/1995	08:26	----	
N	12/01/1995	09:01	----	
N	12/19/1995	07:53	----	
N	01/19/1996	09:06	----	
N	02/20/1996	11:14	----	
N	03/19/1996	09:41	----	
N	04/19/1996	12:12	0.12	Free product
N	07/22/1996	14:50	0.04	1/2" oil
N	08/20/1996	14:54	0.06	3/4" oil
N	09/24/1996	09:39	----	Odor, sheen, no product
N	10/28/1996	12:03	----	Strong hydrocarbon odor
N	12/13/1996	11:55	----	Thin product layer <0.01'; odor noted on opening wells
N	03/25/1997	11:48	----	
N	03/31/1997	08:59	----	Hydrocarbon odor, product
N	07/16/1997	07:20	1.20	Light brown color; thick coating on probe
N	10/21/1997	16:09	----	No product - strong petroleum odor
N	10/23/1997	17:20	----	No product - strong petroleum odor
N	01/27/1998	11:13	0.02	
N	05/18/1998	17:20	0.06	
N	08/17/1998	10:40	0.02	Thin coat of thick product
N	11/13/1998	09:48	0.01	
N	02/16/1999	12:55	0.27	Strong petroleum odor
N	05/18/1999	14:47	0.04	
N	09/21/1999	11:23	0.01	
N	12/06/1999	14:00	----	
N	02/16/2000	10:10	----	
N	05/23/2000	16:24	----	Strong petroleum odor, no product
N	08/29/2000	13:07	----	
N	11/09/2000	12:26	0.03	
N	02/12/2001	15:49	----	
N	06/04/2001	11:31	----	
N	08/16/2001	10:29	----	Trace product
N	11/28/2001	11:27	----	Trace product
N	02/27/2002	13:25	----	
N	04/05/2002	08:09	----	
N	05/29/2002	00:00	----	
N	06/27/2002	14:12	----	
N	08/26/2002	15:56	----	
N	11/13/2002	07:27	0.03	Product present
N	02/11/2003	08:49	----	
N	05/08/2003	06:51	----	
N	08/27/2003	13:33	----	
N	10/23/2003	12:08	----	
N	02/19/2004	12:21	----	
N	06/09/2004	07:36	----	
N	08/10/2004	10:55	----	
N	11/18/2004	08:38	----	
N	02/15/2005	10:38	----	Slight product odor
N	06/07/2005	19:15	----	
N	08/16/2005	16:27	----	
N	11/14/2005	10:05	----	
P	05/31/1994	16:34	----	
P	06/01/1994	08:39	----	Strong odor; heavy sheen; no measurable free phase product
P	06/17/1994	15:41	----	
P	07/19/1994	10:08	----	Strong odor noted; no product
P	08/17/1994	08:09	----	
P	09/16/1994	08:00	----	Hydrocarbon odor

TABLE 2
LNAPL MEASUREMENTS AND OBSERVATIONS IN GROUNDWATER
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	NOTES
P	10/17/1994	09:27	----	
P	11/21/1994	12:29	----	Hydrocarbon odor
P	12/19/1994	11:44	----	Hydrocarbon odor
P	01/18/1995	11:49	----	
P	02/21/1995	13:58	----	
P	03/21/1995	13:22	----	
P	04/19/1995	13:17	----	
P	05/19/1995	14:06	----	
P	07/17/1995	14:16	----	
P	08/22/1995	08:17	----	
P	09/22/1995	09:07	----	
P	11/20/1995	08:28	----	
P	12/01/1995	09:02	----	
P	12/19/1995	07:56	----	
P	01/19/1996	09:07	----	Hydrocarbon odor
P	02/20/1996	11:16	----	Hydrocarbon odor
P	03/19/1996	09:43	----	Well has spots of oil on gauge
P	04/19/1996	12:21	0.08	Free product
P	07/22/1996	14:54	0.20	2-3/8" oil
P	08/20/1996	15:01	0.08	1" oil
P	09/24/1996	09:46	0.23	2-3/4" oil, product 1.5" on tape and bob
P	10/28/1996	12:07	----	Strong hydrocarbon odor
P	12/13/1996	11:58	----	Thin product layer <0.01'; odor noted on opening wells
P	03/25/1997	11:45	----	
P	03/31/1997	08:55	----	Hydrocarbon odor, product
P	07/16/1997	07:15	0.17	Light coating on probe; light brown color
P	10/21/1997	16:05	----	No product - strong petroleum odor
P	10/23/1997	17:25	----	No product - strong petroleum odor
P	01/27/1998	11:09	----	
P	05/18/1998	17:18	----	Trace of product on probe
P	08/17/1998	10:37	0.01	Sheen on probe, strong petroleum odor
P	11/13/1998	09:46	0.05	Strong gasoline odor
P	02/16/1999	12:52	0.06	Strong petroleum odor
P	05/18/1999	14:43	0.13	
P	09/21/1999	11:20	0.01	
P	12/06/1999	13:55	----	
P	02/16/2000	10:08	----	
P	05/23/2000	16:21	----	Trace of product on surface
P	08/29/2000	13:04	0.01	
P	11/09/2000	12:24	0.03	
P	02/12/2001	15:46	----	
P	06/04/2001	11:27	----	Trace product
P	08/16/2001	10:28	----	
P	11/28/2001	11:24	----	
P	02/27/2002	13:22	0.10	Strong ethanol-like odor
P	04/05/2002	08:07	0.10	
P	05/29/2002	00:00	----	Trace product
P	06/27/2002	14:11	----	
P	08/26/2002	15:54	----	
P	11/13/2002	07:25	0.04	Product present
P	02/11/2003	08:44	0.01	Product present
P	05/08/2003	06:47	0.01	Product barely present
P	08/27/2003	13:30	----	
P	10/23/2003	12:05	0.02	Trace product
P	02/19/2004	12:19	----	
P	06/09/2004	07:35	----	New reference elevation July 2004
P	08/10/2004	10:53	----	
P	11/18/2004	08:37	----	
P	02/15/2005	10:43	----	Slight product odor
P	06/07/2005	19:20	----	
P	08/16/2005	16:23	----	Strong petro odor
P	11/14/2005	10:08	----	
Q	05/31/1994	16:35	----	
Q	06/01/1994	08:50	0.01	Free product
Q	06/17/1994	15:49	----	No product
Q	07/19/1994	10:14	----	Strong odor noted; no product
Q	08/17/1994	08:11	----	
Q	09/16/1994	08:02	----	Hydrocarbon odor
Q	10/17/1994	09:29	----	
Q	11/21/1994	12:33	----	Hydrocarbon odor
Q	12/19/1994	11:45	----	Hydrocarbon odor
Q	01/18/1995	11:51	----	
Q	02/21/1995	14:02	----	
Q	03/21/1995	13:23	----	

TABLE 2
LNAPL MEASUREMENTS AND OBSERVATIONS IN GROUNDWATER
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	NOTES
Q	04/19/1995	13:18	----	
Q	05/19/1995	14:07	----	
Q	07/17/1995	14:17	----	
Q	08/22/1995	08:18	----	
Q	09/22/1995	09:11	----	
Q	11/20/1995	08:30	----	
Q	12/01/1995	09:03	----	
Q	12/19/1995	07:58	----	
Q	01/19/1996	09:08	----	
Q	02/20/1996	11:18	----	
Q	03/19/1996	09:45	0.51	Free product
Q	04/19/1996	12:24	0.52	Free product
Q	07/22/1996	15:00	0.01	1/8" oil
Q	08/20/1996	15:06	0.04	1/2" oil
Q	09/24/1996	09:59	----	Odor, sheen, no product
Q	10/28/1996	12:09	----	Strong hydrocarbon odor
Q	12/13/1996	12:01	----	Thin product layer <0.01'; odor noted on opening wells
Q	03/25/1997	11:42	----	
Q	03/31/1997	08:52	----	Hydrocarbon odor
Q	07/16/1997	07:10	0.02	Light coating on probe; light brown color
Q	10/21/1997	16:04	----	No product - strong petroleum odor
Q	10/23/1997	17:29	----	No product - strong petroleum odor
Q	01/27/1998	11:05	----	
Q	05/18/1998	17:16	----	
Q	08/17/1998	10:35	----	Slight sheen on probe; no product, strong petroleum odor
Q	11/13/1998	09:44	0.01	Strong gasoline odor
Q	02/16/1999	12:49	0.01	Strong petroleum odor
Q	05/18/1999	14:40	----	Strong odor when cap removed
Q	09/21/1999	11:17	----	
Q	12/06/1999	13:53	----	
Q	02/16/2000	10:06	----	Film of product
Q	05/23/2000	16:19	----	Strong petroleum odor, no product
Q	08/29/2000	13:01	----	
Q	11/09/2000	12:23	----	Trace of product
Q	02/12/2001	15:45	----	
Q	06/04/2001	11:25	----	
Q	08/16/2001	10:26	----	Trace product
Q	11/28/2001	11:21	0.42	
Q	02/27/2002	13:20	----	Strong petroleum odor, no product
Q	04/05/2002	08:05	----	Trace product
Q	05/29/2002	00:00	----	Trace product
Q	06/27/2002	14:10	----	Trace product
Q	08/26/2002	15:52	----	
Q	11/13/2002	07:30	0.01	Product present
Q	02/11/2003	08:47	----	
Q	05/08/2003	06:48	0.22	
Q	08/27/2003	13:28	----	
Q	10/23/2003	12:03	0.24	
Q	02/19/2004	12:17	----	Trace product
Q	06/09/2004	07:34	----	
Q	08/10/2004	10:52	----	
Q	11/18/2004	08:35	0.25	
Q	02/15/2005	10:46	----	Strong product odor
Q	06/07/2005	19:25	----	
Q	08/16/2005	16:20	----	Strong petro odor
Q	11/14/2005	10:10	----	
LW008S	05/18/1999	14:55	----	
LW008S	09/21/1999	12:24	----	
LW008S	12/06/1999	14:40	----	
LW008S	02/16/2000	10:16	----	
LW008S	05/23/2000	17:42	----	
LW008S	08/29/2000	14:26	----	
LW008S	11/09/2000	13:32	----	
LW008S	02/12/2001	15:58	----	
LW008S	06/04/2001	13:05	----	
LW008S	08/16/2001	12:00	----	
LW008S	11/28/2001	12:57	0.04	
LW008S	02/27/2002	14:37	----	
LW008S	03/05/2002	11:09	----	
LW008S	04/05/2002	08:17	----	
LW008S	05/29/2002	00:00	----	
LW008S	06/27/2002	15:21	----	
LW008S	08/26/2002	16:38	----	
LW008S	11/13/2002	08:50	----	

TABLE 2
LNAPL MEASUREMENTS AND OBSERVATIONS IN GROUNDWATER
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	NOTES
LW008S	02/11/2003	09:48	----	
LW008S	05/08/2003	08:00	----	
LW008S	08/27/2003	14:25	----	
LW008S	10/23/2003	12:42	----	
LW008S	02/19/2004	15:03	----	
LW008S	06/09/2004	08:43	----	
LW008S	08/10/2004	12:05	----	
LW008S	11/18/2004	09:15	----	
LW008S	02/15/2005	09:59	----	
LW008S	06/07/2005	19:51	----	
LW008S	08/16/2005	16:25	----	
LW008S	11/14/2005	09:33	----	
LW011S	05/18/1999	15:10	----	
LW011S	09/21/1999	11:51	----	
LW011S	12/06/1999	15:05	----	
LW011S	02/16/2000	11:01	----	
LW011S	05/23/2000	11:01	----	
LW011S	08/29/2000	14:55	----	
LW011S	11/09/2000	13:36	0.37	First occurrence of product in well.
LW011S	02/12/2001	15:18	----	
LW011S	06/04/2001	13:12	----	
LW011S	08/16/2001	11:24	0.28	
LW011S	11/28/2001	12:51	----	Trace product
LW011S	02/27/2002	14:59	----	
LW011S	03/05/2002	11:40	----	
LW011S	04/05/2002	08:34	----	
LW011S	05/29/2002	00:00	----	
LW011S	06/27/2002	15:09	----	
LW011S	08/26/2002	16:48	----	
LW011S	11/13/2002	08:54	----	
LW011S	02/11/2003	10:03	----	
LW011S	05/08/2003	08:07	----	
LW011S	08/27/2003	14:36	----	
LW011S	10/23/2003	14:12	----	
LW011S	02/19/2004	14:02	----	
LW011S	06/09/2004	08:56	----	
LW011S	08/10/2004	12:08	----	
LW011S	11/18/2004	09:08	0.09	
LW011S	02/15/2005	11:03	----	Product odor
LW011S	06/07/2005	20:05	----	
LW011S	08/16/2005	17:10	----	
LW011S	11/14/2005	08:16	----	
LW021S	10/23/2003	12:16	----	
LW021S	02/19/2004	14:54	1.03	
LW021S	06/09/2004	07:44	0.11	
LW021S	08/10/2004	11:02	0.17	
LW021S	11/18/2004	08:43	0.11	
LW021S	02/15/2005	10:52	0.02	
LW021S	06/09/2005	16:00	0.09	Product observed
LW021S	08/16/2005	17:33	0.16	
LW021S	11/14/2005	10:20	0.04	
LW027S	10/23/2003	12:20	----	
LW027S	02/19/2004	12:44	0.69	
LW027S	06/09/2004	07:39	----	
LW027S	08/10/2004	10:58	0.12	
LW027S	11/18/2004	07:39	0.02	
LW027S	02/15/2005	10:58	0.02	
LW027S	06/06/2005	19:10	0.10	Product observed
LW027S	08/16/2005	16:30	0.03	
LW027S	11/14/2005	10:02	----	Strong petroleum odor
PZ2	06/27/2002	15:18	----	
PZ2	08/26/2002	16:34	----	
PZ2	11/13/2002	08:25	----	
PZ2	02/11/2003	09:44	----	
PZ2	05/08/2003	07:45	----	
PZ2	08/27/2003	14:03	----	
PZ2	10/23/2003	13:21	0.06	
PZ2	02/19/2004	13:50	----	
PZ2	06/09/2004	08:33	----	
PZ2	08/10/2004	12:02	----	
PZ2	11/18/2004	09:20	----	

TABLE 2
LNAPL MEASUREMENTS AND OBSERVATIONS IN GROUNDWATER
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	NOTES
PZ2	06/07/2005	18:35	----	
PZ2	08/16/2005	15:52	----	
PZ2	11/14/2005	09:20	----	
OX001S	06/27/2002	15:13	----	
OX001S	08/26/2002	16:45	----	
OX001S	11/13/2002	08:30	----	
OX001S	02/11/2003	09:59	----	
OX001S	05/08/2003	08:04	----	
OX001S	08/27/2003	14:38	----	
OX001S	10/23/2003	14:09	----	
OX001S	02/19/2004	14:10	----	
OX001S	06/09/2004	08:45	----	
OX001S	08/10/2004	12:07	----	
OX001S	11/18/2004	09:07	0.03	
OX001S	02/15/2005	11:11	----	Strong product odor
OX001S	06/07/2005	19:35	----	
OX001S	08/16/2005	16:35	----	
OX001S	11/14/2005	08:53	----	
OX002S	06/27/2002	15:12	----	
OX002S	08/26/2002	16:44	----	
OX002S	11/13/2002	08:33	----	New reference elevation September 2002
OX002S	02/11/2003	10:06	----	
OX002S	05/08/2003	08:09	----	
OX002S	08/27/2003	14:33	----	
OX002S	10/23/2003	14:14	0.31	
OX002S	02/19/2004	14:07	----	
OX002S	06/09/2004	08:52	----	New reference elevation July 2004
OX002S	08/10/2004	12:09	----	
OX002S	11/18/2004	09:10	0.13	
OX002S	02/15/2005	11:09	0.03	
OX002S	06/07/2005	20:00	----	
OX002S	08/16/2005	00:00	0.23	
OX002S	11/14/2005	08:09	0.07	Strong odor
OX003S	06/27/2002	15:14	----	
OX003S	08/26/2002	16:42	----	
OX003S	11/13/2002	08:31	----	
OX003S	02/11/2003	09:58	----	
OX003S	05/08/2003	08:03	----	
OX003S	08/27/2003	14:40	----	
OX003S	10/23/2003	14:10	----	
OX003S	02/19/2004	14:09	----	
OX003S	06/09/2004	08:51	----	
OX003S	08/10/2004	12:06	----	
OX003S	11/18/2004	09:13	0.33	
OX003S	02/15/2005	11:18	----	Slight product odor
OX003S	06/07/2005	19:50	----	
OX003S	08/16/2005	17:20	----	
OX003S	11/14/2005	11:23	----	

Notes:
NM Not measured.
NA Not available.
-- No measurable product or odor observed.
* Well Point
(a) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference el conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the reference eleva measured at a marked location on the south side of the dock on the Willamette River.
(b) Depth to water (DTW) measured from surveyed reference elevation [see note (1)].
(c) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in using the method in " *Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells* " [Lenh Groundwater 28(1):57-67].

TABLE 3
SUMMARY OF STORM DRAIN ANALYTICAL RESULTS
TIME OIL NORTHWEST TERMINAL

Location	Lab ID	Date Collected	TOTAL PETROLEUM HYDROCARBONS (a) Gasoline (mg/L)	Mineral Spirits (mg/L)	Kerosene (mg/L)	Diesel (mg/L)	Lube Oil (mg/L)	PENTACHLOROPHENOL (µg/L)
SDM-1	0109005-02	9/4/2001	0.250 U	0.250 U	0.630 U	0.630 U	0.630 U	**11.5**
	0111183-02	11/30/2001	NA	NA	NA	0.250 U	0.500 U	**0.700**
	ED34K	2/28/2002	NA	NA	NA	**0.3**	0.50 U	**100**
	EG43A	4/5/2002	NA	NA	NA	NA	NA	**82**
	EN01A	6/27/2002	NA	NA	NA	NA	NA	**190**
	ES04I	8/28/2002	NA	NA	NA	NA	NA	**25**
	FU31G	8/27/2003	NA	NA	NA	NA	NA	**120** (b)
	FY64A	10/20/2003	NA	NA	NA	NA	NA	**43** (b)
	0402113-12	2/23/2004	NA	NA	NA	NA	NA	**791** (b)
	0405022-07	5/4/2004	NA	NA	NA	NA	NA	**1000** (b)
	0406059-04	6/9/2004	NA	NA	NA	NA	NA	**595** (b)
	0408036-10	8/5/2004	NA	NA	NA	NA	NA	**158** (b)
	0411066-13	11/11/2004	NA	NA	NA	NA	NA	**1.61** (b)
	0502087-10	2/18/2005	NA	NA	NA	NA	NA	**7.2** (b)
SDM-2	0109005-01	9/4/2001	0.250 U	0.250 U	0.630 U	0.630 U	0.630 U	0.500 U
	0111183-01	11/30/2001	NA	NA	NA	**0.261**	0.500 U	0.500 U
	ED34L	2/28/2002	NA	NA	NA	0.25 U	0.50 U	**0.46**
	EN01B	6/27/2002	NA	NA	NA	NA	NA	0.25 U
	ES04J	8/28/2002	NA	NA	NA	NA	NA	0.30 U
	FY64B	10/20/2003	NA	NA	NA	NA	NA	**0.79**
RIVER OUTFALL (c)	0210111-01	10/16/2002	NA	NA	NA	NA	NA	5 U
	0408057-01	8/9/2004	NA	NA	NA	NA	NA	0.507 U

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
NA = Not Analyzed
(a) Samples collected in September, 2001 were analyzed using total petroleum hydrocarbon (TPH) method, NWTPH-HCID. Samples collected in November 2001 were analyzed using NWTPH-Dx.
(b) PCP results after October 2002 represent concentrations intercepted by the stormwater intercept system for treatment at the onsite wastewater treatment plant.
(c) River outfall samples only collected when outfall is exposed during quarterly events.

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW036D 0411059-08 11/10/2004	LW036D 0502088-01 02/17/2005	LW036D P5F0441-04 06/08/2005	LW036D P5H0734-08 08/17/2005	LW036D P5K0698-05 11/15/2005	LW037D 0411059-09 11/10/2004	LW037D 0502088-02 02/17/2005	LW037D P5F0441-05 06/08/2005
SEMIVOLATILES (µg/L)									
EPA 8270C									
Bis(2-ethylhexyl)phthalate	0.22 (g)	0.99 U	0.951 U	10.0 U	10.0 U	9.90 U	1.01 U	1.01 U	10.0 U
PAHs (µg/L)									
EPA 8270SIM									
Acenaphthene	0.2	0.0505 U	0.0478 U	0.100 U	0.100 U	0.0990 U	0.054 U	0.0499 U	0.100 U
Fluoranthene	0.2	0.0505 U	0.0478 U	0.100 U	0.100 U	0.0990 U	**0.0756**	0.0499 U	0.100 U
Fluorene	0.2	0.0505 U	0.0478 U	0.100 U	0.100 U	0.0990 U	0.054 U	0.0499 U	0.100 U
Naphthalene	0.2	0.0505 U	0.0478 U	0.100 U	0.300 U	0.0990 U	0.054 U	0.0499 U	0.100 U
Pyrene	0.2	0.0505 U	0.0478 U	0.100 U	0.100 U	0.0990 U	**0.0864**	0.0499 U	0.100 U
NWTPH-G (µg/L)									
Gasoline-Range Hydrocarbons	--	100 U	100 U	80.0 U	80.0 U	80.0 U	100 U	100 U	80.0 U
NWTPH-Dx (µg/L)									
Diesel-Range Hydrocarbons	--	**252**	243 U	250 U	250 U	250 U	250 U	248 U	250 U
TPH-Motor Oil Range	--	**580**	NA	NA	NA	NA	500 U	NA	NA

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW036D 0411059-08 11/10/2004	LW036D 0502088-01 02/17/2005	LW036D P5F0441-04 06/08/2005	LW036D P5H0734-08 08/17/2005	LW036D P5K0698-05 11/15/2005	LW037D 0411059-09 11/10/2004	LW037D 0502088-02 02/17/2005	LW037D P5F0441-05 06/08/2005
TOTAL METALS (µg/L)									
EPA 6020									
Arsenic	0.014 (g)	1 U	1 U	**1.06**	1 U	1 U	**5.78**	1 U	1 U
Chromium	100	5 U	**6.4**	1 U	1 U	1 U	**26.1**	**7.8**	1 U
Copper	2.7	10 U	10 U	2 U	**1.11**	2 U	**19.6**	10 U	2 U
Lead	0.54	**0.25**	0.1 U	1 U	1 U	1 U	**9.8**	**0.728**	1 U
Nickel	16	5 U	5 U	2 U	**5.61**	2 U	**11.7**	5 U	2 U
Zinc	33	10 U	10 U	5 U	10 U	5 U	**50.5**	10 U	5 U
DISSOLVED METALS (µg/L)									
EPA 6020									
Arsenic	0.014 (g)	NA	1 U	1 U	1 U	1 U	NA	1 U	1 U
Chromium	100	NA	**6**	2 U	1 U	1 U	NA	**5**	2 U
Copper	2.7	NA	10 U	2 U	1 U	2 U	NA	10 U	2 U
	16	NA	5 U	2 U	**4.73**	2 U	NA	5 U	2 U

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW037D P5H0734-09 08/17/2005	LW037D P5K0698-02 11/15/2005	LW038D 0411059-10 11/10/2004	LW038D 0502088-03 02/17/2005	LW038D P5F0441-03 06/08/2005
SEMIVOLATILES (µg/L)						
EPA 8270C						
Bis(2-ethylhexyl)phthalate	0.22 (g)	10.0 U	9.71 U	0.984 U	0.997 U	10.0 U
PAHs (µg/L)						
EPA 8270SIM						
Acenaphthene	0.2	0.100 U	0.0962 U	**0.12**	**0.0515**	0.100 U
Fluoranthene	0.2	0.100 U	0.0962 U	0.05 U	0.0515 U	0.100 U
Fluorene	0.2	0.100 U	0.0962 U	**0.19**	**0.0515**	0.100 U
Naphthalene	0.2	0.100 U	0.0962 U	**0.08**	0.0515 U	0.100 U
Pyrene	0.2	0.100 U	0.0962 U	0.05 U	0.0515 U	0.100 U
NWTPH-G (µg/L)						
Gasoline-Range Hydrocarbons	--	80.0 U	80.0 U	**120**	100 U	80.0 U
NWTPH-Dx (µg/L)						
Diesel-Range Hydrocarbons	--	250 U	245 U	**954**	**375**	250 U
TPH-Motor Oil Range	--	NA	NA	**702**	NA	NA

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW037D P5H0734-09 08/17/2005	LW037D P5K0698-02 11/15/2005	LW038D 0411059-10 11/10/2004	LW038D 0502088-03 02/17/2005	LW038D P5F0441-03 06/08/2005
TOTAL METALS (µg/L)						
EPA 6020						
Arsenic	0.014 (g)	1 U	1 U	**8.67**	**3.91**	**4.38**
Chromium	100	**1.58**	1 U	**13.8**	**8**	1 U
Copper	2.7	**1.96**	2 U	10 U	10 U	2 U
Lead	0.54	1 U	1 U	**0.2**	**0.117**	1 U
Nickel	16	**2.49**	2 U	5 U	5 U	2 U
Zinc	33	10 U	5 U	10 U	10 U	5 U
DISSOLVED METALS (µg/L)						
EPA 6020						
Arsenic	0.014 (g)	1 U	1 U	NA	**3.7**	**3.49**
Chromium	100	1 U	1 U	NA	**7.6**	2 U
Copper	2.7	1 U	2 U	NA	10 U	2 U
	16	**1.16**	2 U	NA	5 U	2 U

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW038D P5H0734-10 08/17/2005	Dup of LW038D Y P5H0734-12 08/17/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D 0411059-11 11/10/2004	LW039D 0502088-04 02/17/2005	Dup of LW039D Y 0502088-05 02/17/2005	LW039D P5F0441-02 06/08/2005
SEMIVOLATILES (µg/L)									
EPA 8270C									
Bis(2-ethylhexyl)phthalate	0.22 (g)	10.0 U	10.0 U	9.9 U	9.9 U	1.06 U	0.978 U	**1.25**	10.0 U
PAHs (µg/L)									
EPA 8270SIM									
Acenaphthene	0.2	0.100 U	0.111 U	0.098 U	0.0971 U	**0.145**	**0.061**	**0.0612**	0.100 U
Fluoranthene	0.2	0.100 U	0.111 U	0.098 U	0.0971 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Fluorene	0.2	0.100 U	0.111 U	0.098 U	0.0971 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Naphthalene	0.2	0.200 U	0.222 U	0.098 U	0.0971 U	**0.114**	0.0509 U	0.051 U	0.100 U
Pyrene	0.2	0.100 U	0.111 U	0.098 U	0.0971 U	0.0517 U	0.0509 U	0.051 U	0.100 U
NWTPH-G (µg/L)									
Gasoline-Range Hydrocarbons	--	80.0 U	80.0 U	80.0 U	80.0 U	**133**	100 U	100 U	80.0 U
NWTPH-Dx (µg/L)									
Diesel-Range Hydrocarbons	--	250 UJ	250 U	248 U	245 U	**455**	247 U	**758**	250 U
TPH-Motor Oil Range	--	NA	NA	NA	NA	**520**	NA	NA	NA

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW038D P5H0734-10 08/17/2005	Dup of LW038D Y P5H0734-12 08/17/2005	LW038D P5K0698-03 11/15/2005	Dup of LW038D Y P5K0698-01 11/15/2005	LW039D 0411059-11 11/10/2004	LW039D 0502088-04 02/17/2005	Dup of LW039D Y 0502088-05 02/17/2005	LW039D P5F0441-02 06/08/2005
TOTAL METALS (µg/L)									
EPA 6020									
Arsenic	0.014 (g)	**5.07**	**4.93**	**1.64**	**1.57**	**10.7**	**2.92**	**2.74**	**1.05**
Chromium	100	1 U	1 U	1 U	1 U	**12.4**	**6.3**	**6.4**	1 U
Copper	2.7	1 U	1 U	2 U	2 U	10 U	10 U	10 U	2 U
Lead	0.54	1 U	1 U	1 U	1 U	**0.3**	**0.132**	**0.1**	1 U
Nickel	16	**3.34**	**3.24**	2 U	2 U	5 U	5 U	5 U	**3.65**
Zinc	33	10 U	10 U	5 U	**5.12**	10 U	10 U	10 U	5 U
DISSOLVED METALS (µg/L)									
EPA 6020									
Arsenic	0.014 (g)	**5.86**	**5.17**	**1.45**	**1.51**	NA	**2.70**	**3.00**	**1.16**
Chromium	100	1 U	1 U	1 U	1 U	NA	**8.8**	**8.1**	2 U
Copper	2.7	1 U	1 U	**2.36**	2 U	NA	10 U	10 U	2 U
	16	**2.96**	**3.07**	2 U	2 U	NA	5 U	5 U	**3.11**

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW039D P5H0734-11 08/17/2005	LW039D P5K0698-04 11/15/2005
SEMIVOLATILES (µg/L)			
EPA 8270C			
Bis(2-ethylhexyl)phthalate	0.22 (g)	10.0 U	10.0 U
PAHs (µg/L)			
EPA 8270SIM			
Acenaphthene	0.2	0.100 U	0.100 U
Fluoranthene	0.2	0.100 U	0.100 U
Fluorene	0.2	0.100 U	0.100 U
Naphthalene	0.2	0.100 U	0.100 U
Pyrene	0.2	0.100 U	0.100 U
NWTPH-G (µg/L)			
Gasoline-Range Hydrocarbons	--	80.0 U	80.0 U
NWTPH-Dx (µg/L)			
Diesel-Range Hydrocarbons	--	250 U	243 U
TPH-Motor Oil Range	--	NA	NA

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TABLE 4
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVS
SHORELINE WELLS - NOVEMBER 2004 TO NOVEMBER 2005
TIME OIL NORTHWEST TERMINAL

	Minimum SLV From Table 3-1 of JSCS	LW039D P5H0734-11 08/17/2005	LW039D P5K0698-04 11/15/2005
TOTAL METALS (µg/L)			
EPA 6020			
Arsenic	0.014 (g)	**4.06**	**7.76**
Chromium	100	1 U	1 U
Copper	2.7	**1.47**	2 U
Lead	0.54	1 U	1 U
Nickel	16	**24.3**	**6.12**
Zinc	33	10 U	5 U
DISSOLVED METALS (µg/L)			
EPA 6020			
Arsenic	0.014 (g)	**4.59**	**7.99**
Chromium	100	1 U	1 U
Copper	2.7	1 U	2 U
	16	**28.3**	**8.85**

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Red value indicates exceedance of screening level values (SLVs) from Table 3-1 of Joint Source Control Strategy (JSCS).
Bold indicates detected constituent.
RI Preliminary Screening Levels:

(a) Oregon Screening Level Values (SLVs) - surface water, aquatic.
(b) Oregon Screening Level Values (SLVs), surface water - aquatic and Oregon Ambient Water Quality Criteria (AWQC), Tables 20 and 33A, fresh water, acute.
(c) Oregon AWQC, Tables 20 and 33A, fish consumption only and National Recommended Water Quality Criteria, organism only.
(d) Site-specific background concentrations (Phase I and II Contaminants of Potential Concern Screening Report, Time Oil Northwest Terminal, Landau Associates, September 10, 1999).
(e) Oregon Screening Level Values (SLVs), surface water - aquatic and National Recommended Water Quality Criteria, fresh water chronic.
(f) Oregon AWQC, fresh water acute and fresh chronic.
(g) Screening level less than laboratory reporting limit.

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

		Upper Zone Wells:							
	Minimum SLV From Table 3-1 of JSCS	LW028S P5F0441-09 6/9/2005	LW029S 0411047-02 11/8/2004	LW029S 0502059-02 2/15/2005	LW029S P5F0343-04 6/8/2005	LW029S P5H0625-08 8/15/2005	LW030S 0411047-04 11/8/2004	LW030S 0502059-03 2/15/2005	LW030S P5F0441-07 6/9/2005
TOTAL METALS									
EPA 6010/7000 Series (µg/L)									
Arsenic	0.014	1 U	3.29	2.34	1.96	2.05	14.1	15.5	17
Beryllium	--	1 U			1 U				1 U
Cadmium	0.094	1 U			1 U				1 U
Chromium	100	1 U	**16.9**	**8.8**	1 U	1 U	**22.9**	**5.9**	1 U
Copper	2.7	2 U	10 U	10 U	2 U	1 U	10 U	10 U	2 U
Lead	0.54	1 U	0.1 U	0.1 U	1 U	1 U	0.76	1.41	1 U
Magnesium	--			**2470**				**3180**	
Mercury	0.012	0.20 U			0.20 U				0.20 U
Nickel	16	**12.4**	5 U	5 U	**3.28**	**2.74**	5 U	5 U	**2.10**
Selenium	5	2 U			2 U				2 U
Silver	0.12	1 U			1 U				1 U
Thallium	--	1 U			1 U				1 U
Zinc	33	5 U	10 U	10 U	5 U	10 U	10 U	10 U	**5.60**
PETROLEUM HYDROCARBONS									
NWTPH-Dx (mg/L)									
Diesel	--	250 U	**360**	242 U	250 U	250 U	**747**	**1340**	**427**
Motor Oil	--		503 U				491 U		
Lube Oil	--			484 U				496 U	
NWTPH-G (mg/L)									
Gasoline	--	80 U	100 U	**108**	80 U	80 U	**637**	**927**	**225**
BTEX									
EPA Method 8260 (µg/L)									
Benzene	0.35	1 U	0.3 U	0.3 U	1 U	1 U	0.3 U	0.3 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW028S P5F0441-09 6/9/2005	LW029S 0411047-02 11/8/2004	LW029S 0502059-02 2/15/2005	LW029S P5F0343-04 6/8/2005	LW029S P5H0625-08 8/15/2005	LW030S 0411047-04 11/8/2004	LW030S 0502059-03 2/15/2005	LW030S P5F0441-07 6/9/2005
cPAHs									
EPA Method 8270SIM (µg/L)									
Pentachlorophenol	0.3								
Benzo(a)anthracene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Benzo(a)pyrene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Benzo(b)fluoranthene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Benzo(g,h,i)perylene	0.2	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Benzo(k)fluoranthene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Chrysene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
Dibenzo(a,h)anthracene	0.0018	0.20 U	0.0529 U	0.0507 U	0.20 U	0.20 U	0.0481 U	0.0483 U	0.20 U
Indeno(1,2,3-cd)pyrene	0.0018	0.10 U	0.0529 U	0.0507 U	0.10 U	0.10 U	0.0481 U	0.0483 U	0.10 U
SVOCs									
EPA Method 8270 (µg/L)									
Pentachlorophenol	0.3	10 U	5.18 U	4.9 U	10 U	6.00 UJ	4.89 U	5.11 U	10 U
2,3,4,6-Tetrachlorophenol	1100								
2,4,5-Trichlorophenol	360	5 U	5.18 U	4.9 U	5 U	5.71 U	4.89 U	5.11 U	5 U
2,4,6-Trichlorophenol	0.24	5 U	5.18 U	4.9 U	5 U	5.71 U	4.89 U	5.11 U	5 U
2,4-Dichlorophenol	29	5 U	3.11 U	2.94 U	5 U	5.71 U	2.93 U	3.06 U	5 U
2-Chlorophenol	15	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
4-Chloro-3-methylphenol	--	5 U	2.07 U	1.96 U	5 U	5.71 U	1.96 U	2.04 U	5 U
Benzo(a)anthracene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Benzo(a)pyrene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Benzo(b)fluoranthene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Benzo(g,h,i)perylene	0.2	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Benzo(k)fluoranthene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Chrysene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Dibenzo(a,h)anthracene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U
Indeno(1,2,3-cd)pyrene	0.0018	5 U	1.04 U	0.98 U	5 U	5.71 U	0.978 U	1.02 U	5 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW030S P5H0625-03 8/15/2005	LW031S 0411052-02 11/9/2004	LW031S 0502056-01 2/14/2005	LW031S P5F0441-11 6/9/2005	LW031S P5H0734-01 8/17/2005	LW032S 0411052-03 11/9/2004	LW032S 0502056-04 2/14/2005	LW032S P5F0343-01 6/8/2005
TOTAL METALS									
EPA 6010/7000 Series (µg/L)									
Arsenic	0.014	14	1.36	1.09	1 U	1.03	30.3	30.2	20.2
Beryllium	--				1 U				1 U
Cadmium	0.094				1 U				1 U
Chromium	100	1 U	**18.2**	**5.6**	1 U	1 U	**17.5**	5 U	1 U
Copper	2.7	1 U	10 U	10 U	2 U	1 U	10 U	10 U	2 U
Lead	0.54	1 U	**0.18**	0.1 U	1 U	1 U	0.1 U	0.1 U	1 U
Magnesium	--			**4170**				**7200**	
Mercury	0.012				0.20 U				0.20 U
Nickel	16	1 U	5 U	5 U	**2.40**	**1.99**	5 U	5 U	**14.7**
Selenium	5				2 U				2 U
Silver	0.12				1 U				1 U
Thallium	--				1 U				1 U
Zinc	33	10 U	10 U	10 U	5 U	10 U	10 U	10 U	5 U
PETROLEUM HYDROCARBONS									
NWTPH-Dx (mg/L)									
Diesel	--	**349**	**568**	**261**	250 U	250 U	**4440**	**3130**	**562**
Motor Oil	--		**593**				**721**		
Lube Oil	--			500 U				500 U	
NWTPH-G (mg/L)									
Gasoline	--	**271**	100 U	100 U	80 U	80 U	**2870**	**4670**	**971**
BTEX									
EPA Method 8260 (µg/L)									
Benzene	0.35	1 U	0.3 U	0.3 U	1 U	1 U	0.3 U	0.3 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	13	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW030S P5H0625-03 8/15/2005	LW031S 0411052-02 11/9/2004	LW031S 0502056-01 2/14/2005	LW031S P5F0441-11 6/9/2005	LW031S P5H0734-01 8/17/2005	LW032S 0411052-03 11/9/2004	LW032S 0502056-04 2/14/2005	LW032S P5F0343-01 6/8/2005
cPAHs									
EPA Method 8270SIM (µg/L)									
Pentachlorophenol	0.3								
Benzo(a)anthracene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Benzo(a)pyrene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Benzo(b)fluoranthene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Benzo(g,h,i)perylene	0.2	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Benzo(k)fluoranthene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Chrysene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
Dibenzo(a,h)anthracene	0.0018	0.20 U	0.0521 U	0.0479 U	0.222 U	0.20 U	0.0489 U	0.0497 U	0.20 U
Indeno(1,2,3-cd)pyrene	0.0018	0.10 U	0.0521 U	0.0479 U	0.111 U	0.10 U	0.0489 U	0.0497 U	0.10 U
SVOCs									
EPA Method 8270 (µg/L)									
Pentachlorophenol	0.3	5 UJ	4.93 U	4.83 U	10 U	5 UJ	4.96 U	4.93 U	10 U
2,3,4,6-Tetrachlorophenol	1100								
2,4,5-Trichlorophenol	360	5 U	4.93 U	4.83 U	5 U	5 U	4.96 U	4.93 U	5 U
2,4,6-Trichlorophenol	0.24	5 U	4.93 U	4.83 U	5 U	5 U	4.96 U	4.93 U	5 U
2,4-Dichlorophenol	29	5 U	2.96 U	2.9 U	5 U	5 U	2.97 U	2.96 U	5 U
2-Chlorophenol	15	5 U	0.985 U	0.965 U	5 U	5 U	0.991 U	0.986 U	5 U
4-Chloro-3-methylphenol	--	5 U	1.97 U	1.93 U	5 U	5 U	1.98 U	1.97 U	5 U
Benzo(a)anthracene	0.0018	5 U	0.985 U	0.965 U	5 U	5 U	0.991 U	0.986 U	5 U
Benzo(a)pyrene	0.0018	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U
Benzo(b)fluoranthene	0.0018	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U
Benzo(g,h,i)perylene	0.2	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U
Benzo(k)fluoranthene	0.0018	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U
Chrysene	0.0018	5 U	0.985 U	0.965 U	5 U	5 U	0.991 U	0.986 U	5 U
Dibenzo(a,h)anthracene	0.0018	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U
Indeno(1,2,3-cd)pyrene	0.0018	5 U	0.985 U	0.965 U	15 U	5 U	0.991 U	0.986 U	5 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW032S P5H0701-03 8/16/2005	LW033S 0502099-06 2/22/2005	LW033S P5F0343-03 6/8/2005	LW033S P5H0701-02 8/16/2005	LW034S 0411047-01 11/8/2004	LW034S 0502099-07 2/22/2005	LW034S P5F0441-06 6/9/2005	LW034S P5H0701-01 8/16/2005
TOTAL METALS									
EPA 6010/7000 Series (µg/L)									
Arsenic	0.014	**25.4**	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Beryllium	--			1 U				1 U	
Cadmium	0.094			1 U				1 U	
Chromium	100	1 U	**7.9**	1 U	1 U	5 U	**8**	1 U	1 U
Copper	2.7	**1.17**	10 U	2 U	1 U	10 U	10 U	2 U	1 U
Lead	0.54	1 U	**0.251**	1 U	1 U	**0.15**	0.1 U	1 U	1 U
Magnesium	--		**4700**				**14000**		
Mercury	0.012			0.20 U				0.20 U	
Nickel	16	**2.05**	5 U	**2.70**	**2.78**	5 U	5 U	**3.77**	**3.37**
Selenium	5			2 U				2 U	
Silver	0.12			1 U				1 U	
Thallium	--			1 U				1 U	
Zinc	33	10 U	10 U	5 U	10 U	10 U	10 U	5 U	10 U
PETROLEUM HYDROCARBONS									
NWTPH-Dx (mg/L)									
Diesel	--	**987**	243 U	250 U	250 U	251 U	248 U	250 U	250 U
Motor Oil	--					501 U			
Lube Oil	--		669 U				495 U		
NWTPH-G (mg/L)									
Gasoline	--	**807**	100 U	80 U	80 U	100 U	100 U	80 U	80 U
BTEX									
EPA Method 8260 (µg/L)									
Benzene	0.35	1 U	0.3 U	1 U	1 U	0.3 U	0.3 U	1 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW032S P5H0701-03 8/16/2005	LW033S 0502099-06 2/22/2005	LW033S P5F0343-03 6/8/2005	LW033S P5H0701-02 8/16/2005	LW034S 0411047-01 11/8/2004	LW034S 0502099-07 2/22/2005	LW034S P5F0441-06 6/9/2005	LW034S P5H0701-01 8/16/2005
cPAHs									
EPA Method 8270SIM (µg/L)									
Pentachlorophenol	0.3								
Benzo(a)anthracene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Benzo(a)pyrene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Benzo(b)fluoranthene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Benzo(g,h,i)perylene	0.2	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Benzo(k)fluoranthene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Chrysene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
Dibenzo(a,h)anthracene	0.0018	0.40 U	0.0486 U	0.222 U	0.20 U	0.0498 U	0.0489 U	0.20 U	0.20 U
Indeno(1,2,3-cd)pyrene	0.0018	0.20 U	0.0486 U	0.111 U	0.10 U	0.0498 U	0.0489 U	0.10 U	0.10 U
SVOCs									
EPA Method 8270 (µg/L)									
Pentachlorophenol	0.3	5 UJ	4.84 U	10 U	5 UJ	5 U	4.81 U	10 U	5 UJ
2,3,4,6-Tetrachlorophenol	1100								
2,4,5-Trichlorophenol	360	5 U	4.84 U	5 U	5 U	5 U	4.81 U	5 U	5 U
2,4,6-Trichlorophenol	0.24	5 U	4.84 U	5 U	5 U	5 U	4.81 U	5 U	5 U
2,4-Dichlorophenol	29	5 U	2.9 U	5 U	5 U	3 U	2.88 U	5 U	5 U
2-Chlorophenol	15	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
4-Chloro-3-methylphenol	--	5 U	1.94 U	5 U	5 U	2 U	1.92 U	5 U	5 U
Benzo(a)anthracene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Benzo(a)pyrene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Benzo(b)fluoranthene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Benzo(g,h,i)perylene	0.2	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Benzo(k)fluoranthene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Chrysene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Dibenzo(a,h)anthracene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	0.0018	5 U	0.968 U	5 U	5 U	1 U	0.962 U	5 U	5 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

		Lower Zone Wells:							
	Minimum SLV From Table 3-1 of JSCS	LW029D 0411047-03 11/8/2004	LW029D 0502059-01 2/15/2005	LW029D P5F0343-05 6/8/2005	LW029D P5H0625-10 8/15/2005	LW030D 0411047-05 11/8/2004	LW030D 0502059-04 2/15/2005	LW030D P5F0441-08 6/9/2005	LW030D P5H0625-09 8/15/2005
TOTAL METALS									
EPA 6010/7000 Series (µg/L)									
Arsenic	0.014	6.58	8.23	11.1	7.19	12.8	11.4	14.4	14.8
Beryllium	--			1 U				1 U	
Cadmium	0.094			1 U				1 U	
Chromium	100	**24**	**8.8**	**1.77**	**3.71**	**44.2**	**8.4**	**13.40**	**24.5**
Copper	2.7	11.5	10 U	2 U	4.58	38.5	10 U	25.8	34.7
Lead	0.54	2.74	1.32	1 U	1.13	7.85	0.81	5.01	7.85
Magnesium	--		**35600**				**18500**		
Mercury	0.012			0.20 U				0.20 U	
Nickel	16	5 U	5 U	**4.59**	**5.33**	5 U	5 U	**15.4**	19.7
Selenium	5			2 U				2 U	
Silver	0.12			1 U				1 U	
Thallium	--			1 U				1 U	
Zinc	33	**21.6**	10 U	**8.09**	**14.10**	73.6	**10.7**	42.1	56.7
PETROLEUM HYDROCARBONS									
NWTPH-Dx (mg/L)									
Diesel	--	252 U	239 U	250 U	250 U	**319**	**370**	250 U	250 U
Motor Oil	--	503 U				525 U			
Lube Oil	--		478 U				**545**		
NWTPH-G (mg/L)									
Gasoline	--	100 U	**106**	80 U	80 U	100 U	**211**	80 UJ	80 U
BTEX									
EPA Method 8260 (µg/L)									
Benzene	0.35	0.3 U	0.3 U	1 U	1 U	0.3 U	0.3 U	1 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW029D 0411047-03 11/8/2004	LW029D 0502059-01 2/15/2005	LW029D P5F0343-05 6/8/2005	LW029D P5H0625-10 8/15/2005	LW030D 0411047-05 11/8/2004	LW030D 0502059-04 2/15/2005	LW030D P5F0441-08 6/9/2005	LW030D P5H0625-09 8/15/2005
cPAHs									
EPA Method 8270SIM (µg/L)									
Pentachlorophenol	0.3								
Benzo(a)anthracene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Benzo(a)pyrene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Benzo(b)fluoranthene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Benzo(g,h,i)perylene	0.2	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Benzo(k)fluoranthene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Chrysene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
Dibenzo(a,h)anthracene	0.0018	0.0495 U	0.0479 U	0.20 U	0.200 U	0.05 U	0.0508 U	0.20 U	0.20 U
Indeno(1,2,3-cd)pyrene	0.0018	0.0495 U	0.0479 U	0.10 U	0.100 U	0.05 U	0.0508 U	0.10 U	0.10 U
SVOCs									
EPA Method 8270 (µg/L)									
Pentachlorophenol	0.3	5.05 U	4.79 U	10 U	5 UJ	4.99 U	5.11 U	10 U	5 UJ
2,3,4,6-Tetrachlorophenol	1100								
2,4,5-Trichlorophenol	360	5.05 U	4.79 U	5 U	5 U	4.99 U	5.11 U	5 U	5 U
2,4,6-Trichlorophenol	0.24	5.05 U	4.79 U	5 U	5 U	4.99 U	5.11 U	5 U	5 U
2,4-Dichlorophenol	29	3.03 U	2.88 U	5 U	5 U	2.99 U	3.07 U	5 U	5 U
2-Chlorophenol	15	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
4-Chloro-3-methylphenol	--	2.02 U	1.92 U	5 U	5 U	1.99 U	2.04 U	5 U	5 U
Benzo(a)anthracene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Benzo(a)pyrene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Benzo(b)fluoranthene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Benzo(g,h,i)perylene	0.2	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Benzo(k)fluoranthene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Chrysene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Dibenzo(a,h)anthracene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	0.0018	1.01 U	0.959 U	5 U	5 U	0.997 U	1.02 U	5 U	5 U

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TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW032D 0411052-04 11/9/2004	LW032D 0502056-03 2/14/2005	LW032D P5F0343-02 6/8/2005	LW032D P5H0701-04 8/16/2005
TOTAL METALS					
EPA 6010/7000 Series (µg/L)					
Arsenic	0.014	10.4	9.56	9.59	11.1
Beryllium	--			1 U	
Cadmium	0.094			1 U	
Chromium	100	**44.6**	**9.3**	**1.75**	**30**
Copper	2.7	30.5	10 U	**2.49**	34.9
Lead	0.54	5.82	1.3	1.62	8.21
Magnesium	--		**31800**		
Mercury	0.012			0.20 U	
Nickel	16	**13**	5 U	**2.83**	23.6
Selenium	5			2 U	
Silver	0.12			1 U	
Thallium	--			1 U	
Zinc	33	73.4	10 U	**9.92**	69.2
PETROLEUM HYDROCARBONS					
NWTPH-Dx (mg/L)					
Diesel	--	**600**	579	250 U	250 U
Motor Oil	--	**501**			
Lube Oil	--		500 U		
NWTPH-G (mg/L)					
Gasoline	--	**105**	**221**	80 U	80 UJ
BTEX					
EPA Method 8260 (µg/L)					
Benzene	0.35	0.3 U	0.3 U	1 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U
o-Xylene	13	1 U	1 U	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U

TABLE 5
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
BELL TERMINAL TANK FARM WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW032D 0411052-04 11/9/2004	LW032D 0502056-03 2/14/2005	LW032D P5F0343-02 6/8/2005	LW032D P5H0701-04 8/16/2005
cPAHs					
EPA Method 8270SIM (µg/L)					
Pentachlorophenol	0.3				
Benzo(a)anthracene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
Benzo(a)pyrene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
Benzo(b)fluoranthene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
Benzo(g,h,i)perylene	0.2	0.0498 U	0.0478 U	0.100 U	0.10 U
Benzo(k)fluoranthene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
Chrysene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
Dibenzo(a,h)anthracene	0.0018	0.0498 U	0.0478 U	0.200 U	0.20 U
Indeno(1,2,3-cd)pyrene	0.0018	0.0498 U	0.0478 U	0.100 U	0.10 U
SVOCs					
EPA Method 8270 (µg/L)					
Pentachlorophenol	0.3	4.89 U	4.76 U	10 U	6.00 UJ
2,3,4,6-Tetrachlorophenol	1100				
2,4,5-Trichlorophenol	360	4.89 U	4.76 U	5 U	5.56 U
2,4,6-Trichlorophenol	0.24	4.89 U	4.76 U	5 U	5.56 U
2,4-Dichlorophenol	29	2.93 U	2.86 U	5 U	5.56 U
2-Chlorophenol	15	0.978 U	0.952 U	5 U	5.56 U
4-Chloro-3-methylphenol	--	1.96 U	1.9 U	5 U	5.56 U
Benzo(a)anthracene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Benzo(a)pyrene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Benzo(b)fluoranthene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Benzo(g,h,i)perylene	0.2	0.978 U	0.952 U	5 U	5.56 U
Benzo(k)fluoranthene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Chrysene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Dibenzo(a,h)anthracene	0.0018	0.978 U	0.952 U	5 U	5.56 U
Indeno(1,2,3-cd)pyrene	0.0018	0.978 U	0.952 U	5 U	5.56 U

Notes:
mg/L = milligrams per liter (ppm).
µg/L = micrograms per liter (ppb).
U = Indicates the compound was not detected at the given reporting limit
UJ = Indicates the compound was not detected; the given reporting limit is an estimate
J = Indicates the compound was identified; the given concentration is an estimate
Bold font indicates the compound was detected above the laboratory reporting limits
Red values indicate an exceedance of SLVs from Table 3-1 of Joint Source Control Strategy (JSCS)

TABLE 6
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
PCP PLUME DOWNGRADIENT WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW006D 0411051-07 11/9/2004	LW006D 0502087-06 2/18/2005	LW006D P5F0553-03 6/14/2005	LW006D P5H1000-13 8/23/2005	LW006D P5K0820-06 11/17/2005	LW009D 0411051-02 11/9/2004	LW009D 0502087-07 2/18/2005	LW009D P5F0553-04 6/14/2005
TOTAL METALS									
EPA 6010/7000 Series (µg/L)									
Arsenic	0.014	14	11.3	10.9	14.3	10.80	45.8	32.1	36.6
Beryllium	--			1 U		1 U			1 U
Cadmium	0.094			1 U		1 U			1 U
Chromium	100	**18.2**	**7.7**	1 U	**2.06**	1 U	**18.2**	**8.6**	1 U
Copper	2.7	10 U	10 U	2 U	2.98	2 U	10 U	10 U	2 U
Lead	0.54	**0.42**	0.168 U	1 U	1.20	1 U	0.68	1.44	1 U
Magnesium	--		**17200**					**12900**	
Mercury	0.012			0.20 U		0.20 U			0.20 U
Nickel	16	5 U	5 U	**4.18**	**7.55**	**15.5**	5 U	5 U	**2.33**
Selenium	5			2 U		2 U			2 U
Silver	0.12			1 U		1 U			1 U
Thallium	--			1 U		1 U			1 U
Zinc	33	10 U	10 U	**5.23**	10 U	**8.29**	**12.4**	**14.6**	**8.08**
PETROLEUM HYDROCARBONS									
NWTPH-Dx (mg/L)									
Diesel	--	**1900**	**1570**	**326**	**383**	**452** J	**289**	255 U	250 U
Motor Oil	--	509 U					514 U		
Lube Oil	--		517 U					511 U	
NWTPH-G (mg/L)									
Gasoline	--				918	**329**		**436**	**109**
BTEX									
EPA Method 8260 (µg/L)									
Benzene	0.35	0.3 U	0.3 U	1 U	1 U	1 U	0.3 U	0.3 U	1 U
Ethylbenzene	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	1.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	13	**1.38**	**1.6**	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE 6
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
PCP PLUME DOWNGRADIENT WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW006D 0411051-07 11/9/2004	LW006D 0502087-06 2/18/2005	LW006D P5F0553-03 6/14/2005	LW006D P5H1000-13 8/23/2005	LW006D P5K0820-06 11/17/2005	LW009D 0411051-02 11/9/2004	LW009D 0502087-07 2/18/2005	LW009D P5F0553-04 6/14/2005
cPAHs									
EPA Method 8270/8270 SIM (µg/L)									
Benzo(a)anthracene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Benzo(a)pyrene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Benzo(b)fluoranthene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Benzo(g,h,i)perylene	0.2	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Benzo(k)fluoranthene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Chrysene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
Dibenzo(a,h)anthracene	0.0018	1.04 U	1.02 U	5 U	0.2 U	3.96 U	1 U	1.01 U	5 U
Indeno(1,2,3-cd)pyrene	0.0018	1.04 U	1.02 U	5 U	0.1 U	3.96 U	1 U	1.01 U	5 U
SVOCs									
EPA Method 8270/8270 SIM (µg/L)									
Pentachlorophenol	0.3	0.495 U	0.607	0.5 U	0.490 U	0.485 U	0.504 U	0.507 U	0.5 U
2,3,4,6-Tetrachlorophenol	1100					19.8 U			
2,4,5-Trichlorophenol	360	5.21 U	5.12 U	5 U	5 U	19.8 U	5.01 U	5.06 U	5 U
2,4,6-Trichlorophenol	0.24	5.21 U	5.12 U	5 U	5 U	19.8 U	5.01 U	5.06 U	5 U
2,4-Dichlorophenol	29	3.12 U	3.07 U	5 U	5 U	11.9 U	3.01 U	3.03 U	5 U
2-Chlorophenol	15	1.04 U	1.02 U	5 U	5 U	3.96 U	1 U	1.01 U	5 U
4-Chloro-3-methylphenol	--	2.08 U	2.05 U	5 U	5 U	7.92 U	2 U	2.02 U	5 U

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TABLE 6
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
PCP PLUME DOWNGRADIENT WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW009D P5H1000-12 8/23/2005	LW009D P5K0820-05 11/17/2005
TOTAL METALS			
EPA 6010/7000 Series (µg/L)			
Arsenic	0.014	32.1	32.6
Beryllium	--		1 U
Cadmium	0.094		1 U
Chromium	100	1 U	**1.04**
Copper	2.7	1 U	2 U
Lead	0.54	1 U	1 U
Magnesium	--		
Mercury	0.012		0.20 U
Nickel	16	**1.09**	2 U
Selenium	5		2 U
Silver	0.12		1 U
Thallium	--		1 U
Zinc	33	10 U	5 U
PETROLEUM HYDROCARBONS			
NWTPH-Dx (mg/L)			
Diesel	--	250 U	248 U
Motor Oil	--		
Lube Oil	--		
NWTPH-G (mg/L)			
Gasoline	--	**127**	80 U
BTEX			
EPA Method 8260 (µg/L)			
Benzene	0.35	1 U	1 U
Ethylbenzene	7.3	1 U	1 U
m,p-Xylene	1.8	2 U	2 U
o-Xylene	13	1 U	1 U
Toluene	9.8	1 U	1 U

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TABLE 6
COMPARISON OF GROUNDWATER RESULTS TO JSCS SLVs
PCP PLUME DOWNGRADIENT WELLS
NOVEMBER 2004 TO NOVEMBER 2005

	Minimum SLV From Table 3-1 of JSCS	LW009D P5H1000-12 8/23/2005	LW009D P5K0820-05 11/17/2005
cPAHs			
EPA Method 8270/8270 SIM (µg/L)			
Benzo(a)anthracene	0.0018	0.1 U	1.98 U
Benzo(a)pyrene	0.0018	0.1 U	1.98 U
Benzo(b)fluoranthene	0.0018	0.1 U	1.98 U
Benzo(g,h,i)perylene	0.2	0.1 U	1.98 U
Benzo(k)fluoranthene	0.0018	0.1 U	1.98 U
Chrysene	0.0018	0.1 U	1.98 U
Dibenzo(a,h)anthracene	0.0018	0.2 U	1.98 U
Indeno(1,2,3-cd)pyrene	0.0018	0.1 U	1.98 U
SVOCs			
EPA Method 8270/8270 SIM (µg/L)			
Pentachlorophenol	0.3	0.490 U	0.505 U
2,3,4,6-Tetrachlorophenol	1100		9.90 U
2,4,5-Trichlorophenol	360	5 U	9.90 U
2,4,6-Trichlorophenol	0.24	5 U	9.90 U
2,4-Dichlorophenol	29	5 U	5.94 U
2-Chlorophenol	15	5 U	1.98 U
4-Chloro-3-methylphenol	--	5 U	3.96 U

Notes:
mg/L = milligrams per liter (ppm).
µg/L = micrograms per liter (ppb).
U = Indicates the compound was not detected at the given reporting limit
UJ = Indicates the compound was not detected; the given reporting limit is an estimate
J = Indicates the compound was identified; the given concentration is an estimate
Red values indicate an exceedance of SLVs from Table 3-1 of Joint Source Control Strategy (JSCS)

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APPENDIX A

Monitored Natural Attenuation Evaluation

APPENDIX A
MONITORED NATURAL ATTENUATION EVALUATION

As part of the source control evaluation, an evaluation was conducted to assess the potential for light non-aqueous phase liquid (LNAPL) from the Main Terminal Tank Farm to migrate and reach the Willamette River. The assessment used monitored natural attenuation (MNA) parameters and fate and transport modeling to determine the migration potential of the LNAPL and evaluate the effectiveness of MNA as a source control option. The MNA parameter results [e.g., pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), nitrate, and sulfate] were used to evaluate the potential for biodegradation to occur under current aquifer conditions. The specific objective of the fate and transport modeling was to assess the potential for an upland petroleum hydrocarbon source, present as LNAPL on upper zone groundwater in the Main Terminal Tank Farm area, to impact the Willamette River after taking into consideration the MNA conditions. The following sections describe the results of the MNA evaluation.

MNA Parameter Measurements

Water quality parameters, including pH, DO, and ORP, were measured for six months between July and December 2005 at 24 wells within the Main Terminal Tank Farm area and 14 wells within the Bell Terminal Tank Farm area to evaluate MNA processes at the Terminal (Table A-1). The water quality parameters were collected prior to purging the wells using a water quality meter probe inserted into the well. In addition, nitrate and sulfate were sampled and analyzed in select wells in February and August 2005; these results are provided in Table A-2 of this appendix. MNA parameters for the August 2005 event are shown on Figure A-1.

The following paragraphs discuss trends observed in the MNA data. For purposes of the MNA evaluation, the discussion focuses on two groundwater flow paths within the Main Terminal Tank Farm area: the first flow path (flow path 1) includes wells LW-21S (where product has consistently been observed), N (where product has been observed intermittently, but not currently), LW-22D, and LW-36D (shoreline well); the second flow path (flow path 2) includes wells LW-27S (where product has consistently been observed), LW-24D and LW-37D (shoreline well). For both flow paths, well LW-40D (for pH, DO, and ORP) or well LW-1S (for nitrate and sulfate) are included to represent groundwater conditions outside the area of impacted groundwater. The MNA data were evaluated in two ways: 1) concentrations over time and relative to groundwater elevation to determine if there are seasonal influences related to these factors, and 2) concentrations along the two flow paths to assess whether

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changes occurred between wells outside and within the area of impacted groundwater (referred to herein as the "plume area").

Generally, pH values ranging from 6 to 8 are considered favorable for microbial populations known to degrade petroleum hydrocarbons (Chevron 1995). The pH measurements collected in the Main Terminal Tank Farm area during the 6-month period between July and December 2005 for the two flow paths ranged from 6.16 to 7.72 (Figures A-2 and A-3), which are within the favorable range for biodegradation to occur. A rise or fall in pH values within the area of the dissolved phase plume for petroleum hydrocarbons (e.g., gasoline- and diesel-range), as compared to the area outside the dissolved phase plume, may be indicative of biodegradation since respiration and decomposition processes have a tendency to alter pH. As shown on Figures A-1 through A-5, pH values in the downgradient shoreline wells tend to have higher pH values than those within the area of dissolved phase contamination for most of the measurement events, particularly for flow path 2. Values in well LW-40D located outside the area of impacted groundwater are less definitive in determining trends along the flow paths. The pH values may indicate that biodegradation is occurring; however, because there is not a definitive indication of change in pH values between wells inside and outside of the dissolved plume area, pH cannot be used to conclusively determine MNA conditions.

A reduction in the concentration of DO in groundwater within the dissolved phase plume, as compared to the area outside the dissolved phase plume, can also be indicative of biodegradation processes occurring, since microbes utilize oxygen during aerobic biodegradation of petroleum hydrocarbons (Chevron 1995). Aerobic biodegradation can typically occur at concentrations as low as 1.0 mg/L; a DO concentration below 0.5 mg/L typically indicates an environment more suitable for anaerobic degradation (EPA 1995). The DO concentrations measured in the Main Terminal Tank Farm area between July and December 2005 (Figures A-6 through A-9) indicate that groundwater within the area of dissolved petroleum contamination (with exceptions during the July 22, 2005 event) is predominantly in an anaerobic state (DO less than 0.5 mg/L) and is slightly aerobic (DO greater than 1.0 mg/L) within the wells outside the area of impacted groundwater (Figures A-8 and A-9). The slightly aerobic conditions in the shoreline wells may also be a reflection of the influence by the river water chemistry during periods of river recharge which may create a more oxygen-rich environment. As shown on Figures A-8 and A-9, DO concentrations tend to decrease as the groundwater passes through the area of dissolved contamination and then "rebound" at the downgradient locations outside of the area of contamination and near the river, which may be indicative of aerobic biodegradation occurring during this time period. For some events, the DO appears to represent more anaerobic conditions (August 30 and October 26, 2005 events), as reflected by the less dramatic change in DO between the wells within and outside of the area of impacted groundwater. The nitrate and sulfate results provide further evidence of

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anaerobic biodegradation, as discussed below. The variability in DO concentrations over time between measurement events may reflect some seasonal fluctuations as demonstrated by the slight correlation between the DO measurements and groundwater elevations, but may also reflect some equipment variability because of instrument sensitivity (Figures A-6 and A-7). These observations are supporting evidence that biodegradation processes are likely occurring within the area where petroleum hydrocarbons are observed in groundwater.

Following depletion of DO in a system, nitrate may be used as an anaerobic electron acceptor for biodegradation through the process of denitrification. Similar to DO, areas within the dissolved phase plume with lowered nitrate concentrations, compared to background, would indicate that anaerobic biodegradation is occurring in those areas. After DO and nitrate have been depleted, sulfate may be used as an anaerobic electron acceptor for anaerobic biodegradation via sulfate reduction. During the process of sulfate reduction, sulfide is produced and sulfate concentrations in groundwater decrease within the dissolved phase plume. Nitrate and sulfate concentrations were measured during events in February and August 2005 for wells along an approximate groundwater flow path between wells LW-1S and LW-36D (Figures A-1 and A-10 and Table A-2). Well LW-1S represents upgradient conditions, wells LW-21S, N, P, Q represent conditions within the dissolved plume (the extent of the benzene plume is shown on Figure A-10), and wells LW-22D and LW-36D represent conditions downgradient of the plume. As shown on Figure A-10, nitrate and sulfate concentrations decrease dramatically between the upgradient well (LW-1S) and within the plume area (N). For the August 2005 event, a rebound in nitrate and sulfate concentrations is also evident downgradient of the plume in the shoreline well. These results likely indicate that anaerobic biodegradation was occurring during this time frame. For the February 2005 event, nitrate concentrations were not detected within the plume area and at the downgradient wells, while sulfate increases dramatically in the downgradient well and then decreases again at the shoreline well. These results may indicate that anaerobic biodegradation processes may have sufficiently depleted the limited amount of nitrate available in the groundwater which precludes denitrification processes from being an effective means of anaerobic biodegradation. However, based on the upgradient and downgradient concentrations of sulfate, anaerobic biodegradation utilizing sulfate reduction may be an ongoing process. The decrease in the sulfate concentration at the shoreline well may indicative of the influence of dilution from river water. Other anaerobic biodegradation processes (e.g., iron reduction and methanogenesis) have not been fully evaluated and may provide additional means for decreasing petroleum impacts.

The ORP measured in groundwater is generally positive under oxidizing conditions and negative under reducing conditions (Chevron 1995). As biodegradation occurs and oxygen is consumed, the groundwater becomes more reducing and the ORP of the water decreases. Therefore, a decrease in ORP

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values within the area of a dissolved phase plume, as compared to the area outside the dissolved phase plume should indicate the occurrence of aerobic biodegradation. As would be expected with low DO concentrations, ORP measurements were typically negative throughout the terminal, indicating mostly reducing conditions in the upper and lower zones with the higher values occurring at locations closer to the river and outside the area where petroleum constituents were detected in groundwater, and the lower values occurring within the area where petroleum constituents are detected (Figure A-11 through A-14). As shown on Figures A-13 and A-14 for the two flow paths described earlier, ORP measurements in the shoreline wells located closest to the river (LW-36D, LW-37D) and in wells located outside of the dissolved phase plume (e.g., LW-40D) typically tend to be higher than those within the plume area or at locations where petroleum constituents are observed at detected concentrations, indicating that groundwater is in a reduced state. Similar to DO, the wells adjacent to the river may be influenced by river recharge which may create more oxidizing conditions, and the wells outside of the plume area may be more oxidative because of the higher DO concentrations.

The combined results for the MNA parameters indicate that anaerobic biodegradation processes (and possibly some aerobic biodegradation during certain times of the year) have occurred within the areas where petroleum hydrocarbons are observed in upper and lower zone groundwater within the Main Terminal Tank Farm area. The biodegradation processes appear to have attenuated migration of LNAPL and petroleum constituents before reaching downgradient locations near the point of groundwater discharge to the river. Additional MNA measurements are necessary to determine whether anaerobic biodegradation will continue without augmentation of the supply of electron acceptors.

FATE AND TRANSPORT MODELING

To evaluate whether there is a potential for LNAPL observed in upland wells to migrate to the river, a fate and transport model was used that takes into account the effects of natural attenuation. A description of the model software and the modeling results are provided in the following sections. The results of the model are then used with the results of the MNA measurements to assess whether there is a potential for natural attenuation to prohibit migration of LNAPL from the Main Terminal Tank Farm area to the river.

Description of Natural Attenuation Software

The Natural Attenuation Software (NAS) model was used for the fate and transport modeling for the MNA evaluation (Widdowson et. al). The NAS model was developed by Virginia Institute of Technology and the United States Geological Survey for the U.S. Navy, and was designed to calculate the

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period of time required to achieve site-specific remediation goals at sites contaminated with either fuels or chlorinated solvents. The NAS model can be used to estimate distance of stabilization (DOS), time of stabilization (TOS) or time of remediation (TOR) for a particular contaminant. The DOS function can be used to estimate a required target source concentration to meet preliminary screening levels at a designated point of compliance within the required time for the plume to meet the screening levels after a source cleanup. The TOS function can be used to estimate the maximum distance from the source at which preliminary screening levels can be met without remediation. The TOR function can also be used to estimate the required time to meet preliminary screening levels in the source area with or without partial or full removal of LNAPL.

The following parameters are entered into the model:

- Site specific hydrogeology (hydraulic conductivity, hydraulic gradient, total porosity, effective porosity, and groundwater velocity)
- MNA parameters (e.g., DO, nitrate, and sulfate)
- Contaminant concentrations (benzene, toluene, ethylbenzene, xylenes, and naphthalene)
- Preliminary screening levels at the point of compliance (for the model, equivalent to the JSCS screening levels at the shoreline wells).

The model estimates groundwater flow rates, biodegradation rates, and sorption properties. Analytical solutions are used to calculate the DOS/TOS. Using the preliminary screening levels at the point of compliance, the NAS model calculates the maximum allowed source zone concentration and estimates the required time (TOS) to reach that concentration after the source area has been remediated. In contrast, a numerical solution (SEAM3D and MODFLOW) is used for the TOR approach to determine the required time for LNAPL to dissolve and a source compliance concentration to be reached with or without partial or full removal of the LNAPL.

NAS Model Parameters and Assumptions

Site-specific data, including hydraulic conductivity, hydraulic gradient, and porosity, collected during the Phase II and Phase III remedial investigations (RI) was used for the model. Previous field data collected during the Phase II RI was used to approximate the hydrogeologic conditions. Hydraulic conductivity data that were previously estimated through slug/bail tests and pumping tests were used in the model, including a minimum value of 44 ft/d, a maximum of 156 ft/d, and an average value of 82.3 ft/day (Landau Associates 2001). The overall horizontal hydraulic gradient was established by estimating the gradient between the wells along the pathway for the August 2005 event. The minimum and maximum values (0.0014 and 0.0158 ft/ft, respectively) were directly used for the model. The average

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for the entire flow path (0.009 ft/ft) was estimated by calculating the average for the upper and lower zone along the pathway and thereafter predicting a normalized total value. Furthermore, total organic carbon (soil) measured in March 1997 at LW-006D (0.084%) and LW-001S (0.65%) was used as the best estimate for the model. Freeze and Cherry (1979) estimates the total porosity of sand to be between 0.25 and 0.50, and for this model a porosity of 0.4 was chosen. The effective porosity number chosen was 0.3, as estimated in the Phase II RI report (Landau Associates 2001) for calculation of groundwater velocities. For the purposes of the model, the source zone was estimated to have a length and width of 50 ft for both N and LW-21S. Boring logs and groundwater elevation data history was utilized to determine the source depth which was estimated to be equivalent to the saturated thickness of the upper zone, 4.55 ft at LW-021S and 2.31 ft at N.

Similar to the evaluation for the MNA parameters, a groundwater flow path (flow path 1), including wells LW-21S (where LNAPL is currently observed), N, P, and Q (where LNAPL has historically been observed), LW-22D, and LW-36D was used. The point of compliance was considered as the shoreline well (LW-36D), located downgradient of wells LW-21S, N, P, Q, and LW-22D. Flow path 2, used for the MNA parameter discussion in the previous section, was not used for the fate and transport model because two of the three wells along the flow path had nondetected concentrations of BTEX and naphthalene and the model could not run reliably with these concentrations.

Using flow path 1, two model scenarios were run: one scenario where well LW-21S was considered representative of the source zone, and a second scenario where well N was considered representative of the source zone. The source zone wells were chosen based on the historical or current presence of LNAPL in these wells and their location upgradient of the point of compliance well. For the purposes of the model, the area including the wells within the flow path was assumed to be a single hydrogeologic unit (i.e., not to be divided into an upper and lower zone) under the assumption that upper zone groundwater in the area where LNAPL is observed flows across the confining unit into the lower zone and discharges to the river near where the point of compliance well is located. Model parameters and model results are presented in Appendix B.

For the purposes of the model, the remediation goals are analogous to the JSCS SLVs for BTEX and naphthalene, as presented in the following table.

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JSCS SLVS USED AT POINT OF COMPLIANCE, WELL LW-36D

Compound	JSCS SLVs (µg/L)[a]
Benzene	5.1
Toluene	9.8
Ethylbenzene	7.3
Xylenes	13
Naphthalene	0.2

(a) DEQ and EPA 2005

Product has consistently been detected in well LW-21S and therefore, groundwater samples have not been collected and BTEX and naphthalene have not been measured. The NAS model does not estimate transportation of LNAPL; therefore, saturated aqueous concentrations for the constituents were assumed and used in the model. Five different sets of contaminant data measured between August 2004 and November 2005 were used to set up the model. The data collected in during the August 2005 (third quarter) sampling event was mainly used for this discussion, because that event included the largest and most complete data set.

The August 2005 MNA data indicate very low levels of oxygen and nitrate at concentrations near or below the laboratory reporting limit; sulfate concentrations are low within the area of impacted groundwater, but increase at the wells located upgradient and downgradient of the impacted area (Figures A-1 and A-10). These data indicate that sulfate-reducing anaerobic biodegradation processes may be occurring along the flow path and the higher concentrations of petroleum constituents correlate with the lowest concentrations of sulfate It is possible that two redox zones exist in the area of the plume, and measured data at other dates have indicated that slightly aerobic zones might exist outside the area of impacted groundwater or at the shoreline well (LW-36D), possibly due to river influences. However, using redox data from only five wells, NAS will be able to provide the best approximation if the area is treated as one zone. For example, if only LW-36D is considered aerobic in the model, NAS tries to calculate the decay rate for that condition, but with only one well in the aerobic zone the model extrapolates from that point using only one point, and can therefore not produce reliable results.

After data along the pathway is entered into the NAS model, the model is used to estimate if the preliminary screening levels (JSCS SLVs) would be met at the point of compliance, which would be the case if the DOS was less than the distance between the source and the point of compliance. If the model estimates that they will not be met, the next step for NAS is to estimate reduction goals at the source zone and the time requirement after reduction until 50 percent breakthrough and equilibrium has been met at

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the point of compliance (TOS). If a known amount of NAPL exists at the source zone, an option is to calculate the time to reach a chosen aqueous concentration after a known amount of NAPL is removed from the source zone (TOR).

NAS Model Results

The NAS model results indicate that no reduction in concentrations of the compounds modeled at any wells along the designated pathway (LW-21S, N, P, Q, LW-22D) is required to meet preliminary screening levels at LW-36D, whether the source well is considered to be LW-21S or N (Appendix B). Well N is located about 225 ft closer to the river along the groundwater flow path than LW-21S. The contaminant data supports this conclusion, showing a rapid consistent decay of total BTEX and petroleum constituents along the flow path. This conclusion is also supported by the MNA parameter data that indicate that anaerobic biodegradation (sulfate reduction) is likely occurring within the area of the dissolved contamination.

Furthermore, to test the sensitivity for measurement errors and other factors that might influence the results, a few different scenarios were evaluated. The hydraulic conductivity, hydraulic gradient, source volume and contaminant concentrations were each increased by 20, 50 and 100 percent. The output results were still the same (i.e., no reduction in groundwater concentrations required). In addition, contaminant concentrations for well LW-36D were excluded to evaluate if the model would be more conservative, but the results still indicated that no reduction in groundwater concentration is required. Finally, different redox conditions were chosen (still only using one zone, i.e., same condition in all wells) with no change in the results.

Because the model predicts that no reduction in concentration is required to meet the preliminary screening levels, TOS and TOR are not estimated. The DOS was determined for individual BTEX constituents and naphthalene using both wells LW-21S and N to represent the source zone. As shown on Figures A-15 through A-24, in every case the model predicts that the distances between the source zone and where preliminary screening levels are estimated to be met are less than the distance between the source and the point of compliance or shoreline well. Using well LW-21S to represent the source zone, with the distance between the source zone and the point of compliance equal to about 440 ft, predicted DOS values ranged from 240 to 360 ft. Using well N to represent the source zone, with the distance between the source zone and the point of compliance equal to about 265 ft, predicted DOS values ranged from about 32 to 130 ft. The use of saturated aqueous concentrations for contaminants within the source zone at LW-21S versus measured groundwater concentrations at N is likely the reason why the predicted DOS values are greater for the case where the source zone is farthest from the point of compliance.

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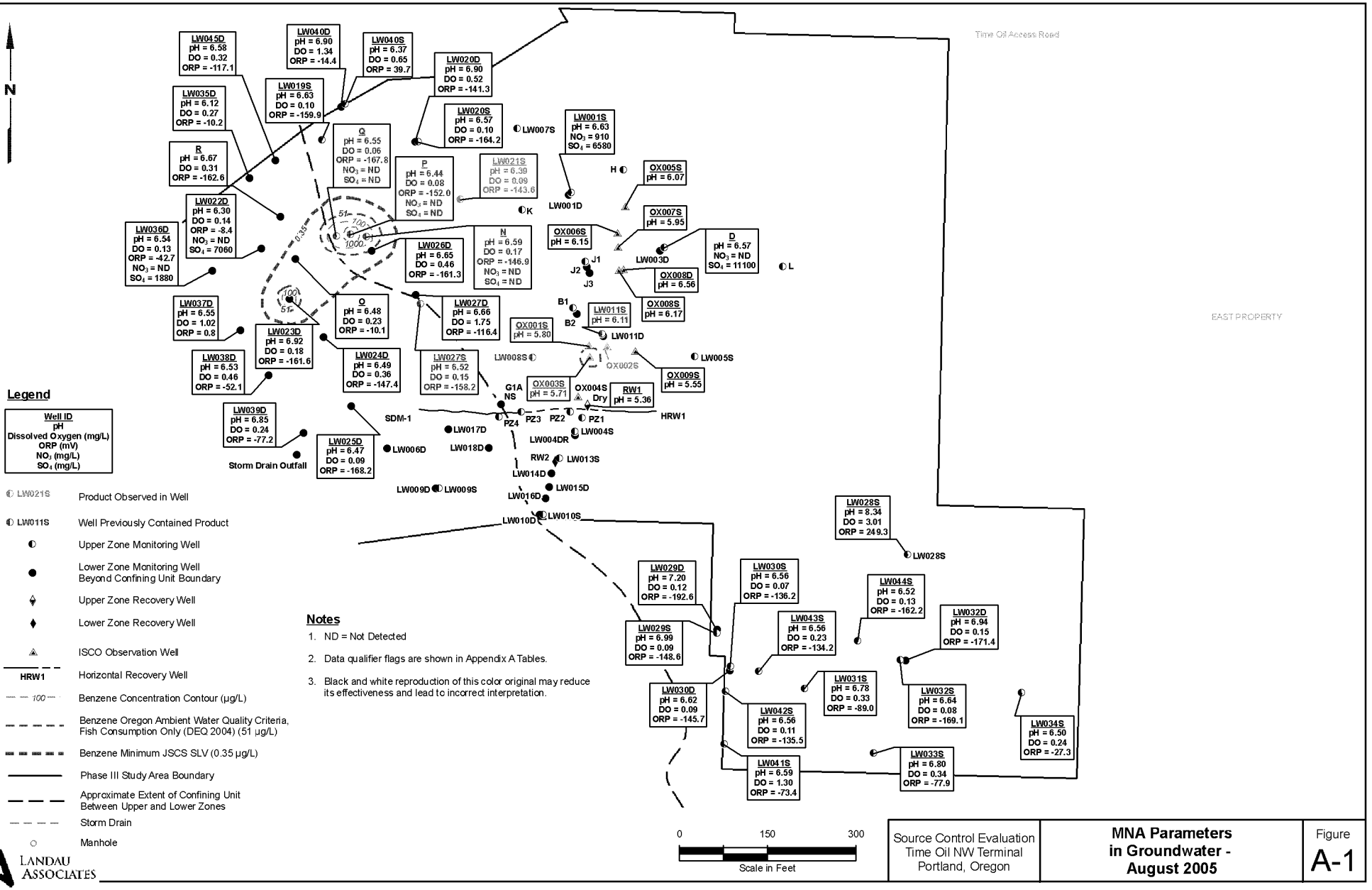
N
Time Oil Access Road
EAST PROPERTY
LW045D pH = 6.58 DO = 0.32 ORP = -117.1
LW040D pH = 6.90 DO = 1.34 ORP = -14.4
LW040S pH = 6.37 DO = 0.65 ORP = 39.7
LW020D pH = 6.90 DO = 0.52 ORP = -141.3
LW019S pH = 6.63 DO = 0.10 ORP = -159.9
LW035D pH = 6.12 DO = 0.27 ORP = -10.2
LW020S pH = 6.57 DO = 0.10 ORP = -164.2
LW007S
LW001S pH = 6.63 NO3 = 910 SO4 = 6580
Q pH = 6.55 DO = 0.06 ORP = -167.8 NO3 = ND SO4 = ND
R pH = 6.67 DO = 0.31 ORP = -162.6
P pH = 6.44 DO = 0.08 ORP = -152.0 NO2 = ND SO4 = ND
LW021S pH = 6.39 DO = 0.09 ORP = -143.6
H
OX005S pH = 6.07
LW001D
K
OX007S pH = 5.95
LW022D pH = 6.30 DO = 0.14 ORP = -8.4 NO3 = ND SO4 = 7060
LW036D pH = 6.54 DO = 0.13 ORP = -42.7 NO3 = ND SO4 = 1880
LW026D pH = 6.65 DO = 0.46 ORP = -161.3
N pH = 6.59 DO = 0.17 ORP = -146.9 NO3 = ND SO4 = ND
OX006S pH = 6.15
D pH = 6.57 NO3 = ND SO4 = 11100
J1
J2
J3
LW003D
L
OX008D pH = 6.56
OX008S pH = 6.17
B1
B2
LW011S pH = 6.11
LW011D
LW037D pH = 6.55 DO = 1.02 ORP = 0.8
Q pH = 6.48 DO = 0.23 ORP = -10.1
LW027D pH = 6.66 DO = 1.75 ORP = -116.4
OX001S pH = 5.80
LW023D pH = 6.92 DO = 0.18 ORP = -161.6
LW038D pH = 6.53 DO = 0.46 ORP = -52.1
LW024D pH = 6.49 DO = 0.36 ORP = -147.4
LW027S pH = 6.52 DO = 0.15 ORP = -158.2
LW008S
OX002S
LW005S
OX009S pH = 5.55
OX003S pH = 5.71
G1A
NS
OX004S Dry
RW1 pH = 5.36
HRW1
PZ4
PZ3
PZ2
PZ1
SDM-1
LW039D pH = 6.85 DO = 0.24 ORP = -77.2
LW017D
LW004S
LW004DR
LW025D pH = 6.47 DO = 0.09 ORP = -168.2
LW006D
LW018D
RW2
LW013S
Storm Drain Outfall
LW014D
LW009D
LW009S
LW016D
LW015D
LW010D
LW010S
LW028S pH = 8.34 DO = 3.01 ORP = 249.3
LW028S
LW029D pH = 7.20 DO = 0.12 ORP = -192.6
LW030S pH = 6.56 DO = 0.07 ORP = -136.2
LW044S pH = 6.52 DO = 0.13 ORP = -162.2
LW029S pH = 6.99 DO = 0.09 ORP = -148.6
LW043S pH = 6.56 DO = 0.23 ORP = -134.2
LW032D pH = 6.94 DO = 0.15 ORP = -171.4
LW030D pH = 6.62 DO = 0.09 ORP = -145.7
LW031S pH = 6.78 DO = 0.33 ORP = -89.0
LW032S pH = 6.64 DO = 0.08 ORP = -169.1
LW042S pH = 6.56 DO = 0.11 ORP = -135.5
LW034S pH = 6.50 DO = 0.24 ORP = -27.3
LW041S pH = 6.59 DO = 1.30 ORP = -73.4
LW033S pH = 6.80 DO = 0.34 ORP = -77.9
100
51
1000
0.35
Legend
Well ID
pH
Dissolved Oxygen (mg/L)
ORP (mV)
NO3 (mg/L)
SO4 (mg/L)
LW021S Product Observed in Well
LW011S Well Previously Contained Product
Upper Zone Monitoring Well
Lower Zone Monitoring Well Beyond Confining Unit Boundary
Upper Zone Recovery Well
Lower Zone Recovery Well
ISCO Observation Well
HRW1 Horizontal Recovery Well
100 Benzene Concentration Contour (µg/L)
Benzene Oregon Ambient Water Quality Criteria, Fish Consumption Only (DEQ 2004) (51 µg/L)
Benzene Minimum JSCS SLV (0.35 µg/L)
Phase III Study Area Boundary
Approximate Extent of Confining Unit Between Upper and Lower Zones
Storm Drain
Manhole
Notes
1. ND = Not Detected
2. Data qualifier flags are shown in Appendix A Tables.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
0
150
300
Scale in Feet
LANDAU ASSOCIATES
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon
MNA Parameters in Groundwater - August 2005
Figure
A-1
Y:\Projects\231001\SourceControlMapDocs\FigA-1.mxd June 20, 2006
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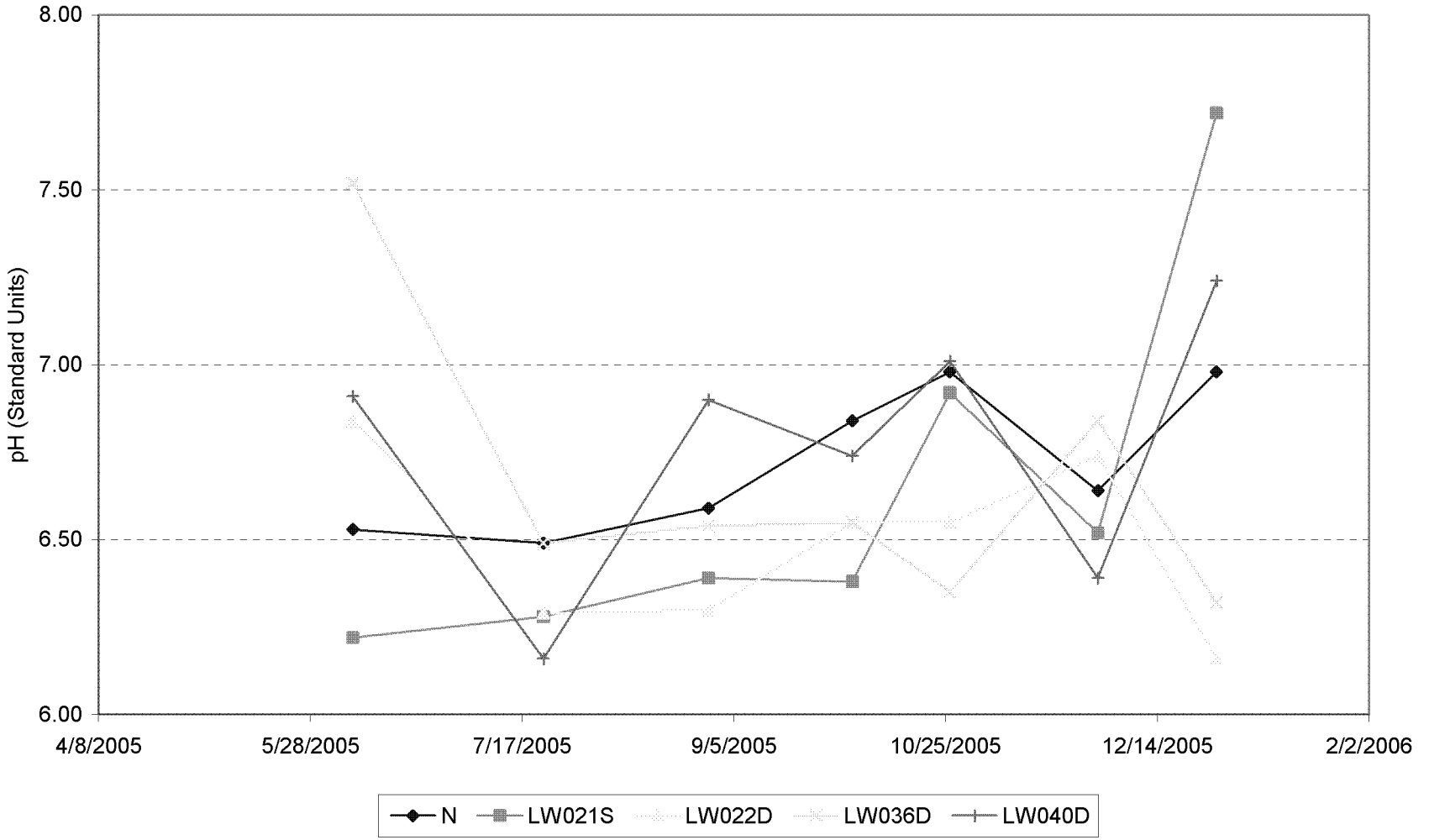

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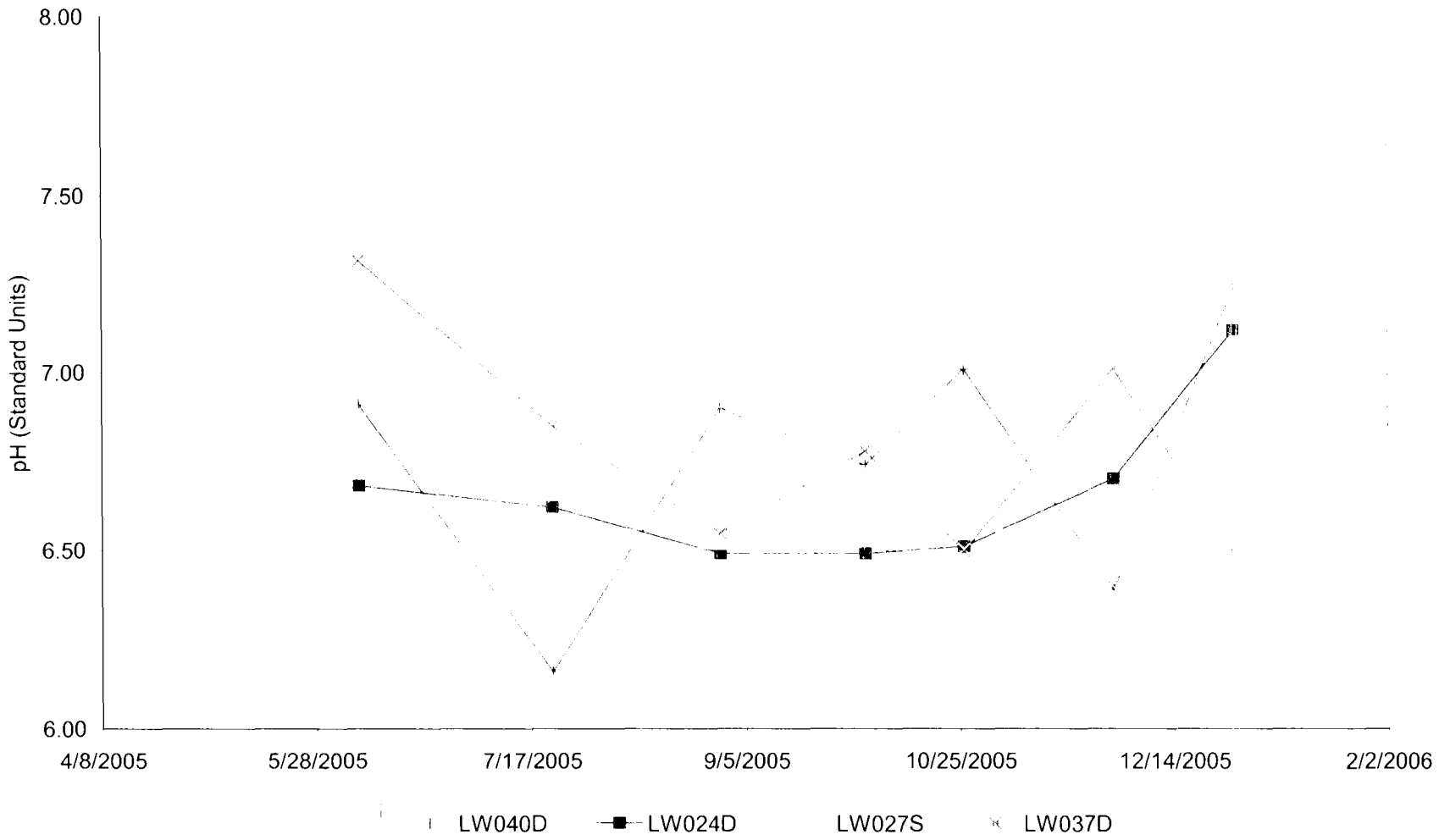
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**pH Values, June-December 2005 Flow Path 1**	Figure A-2



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Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**pH Values, June-December 2005 Flow Path 2**	Figure A-3

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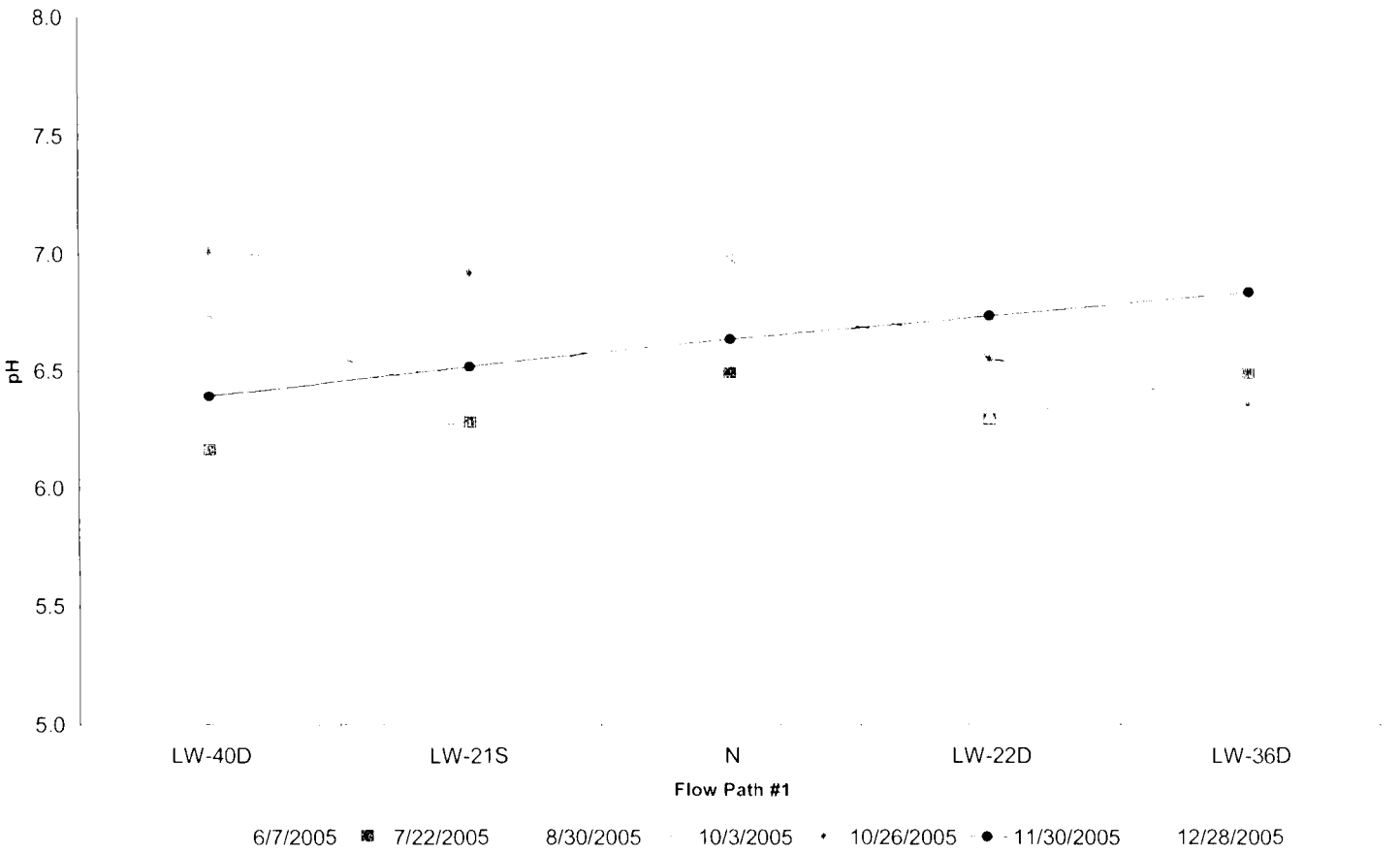
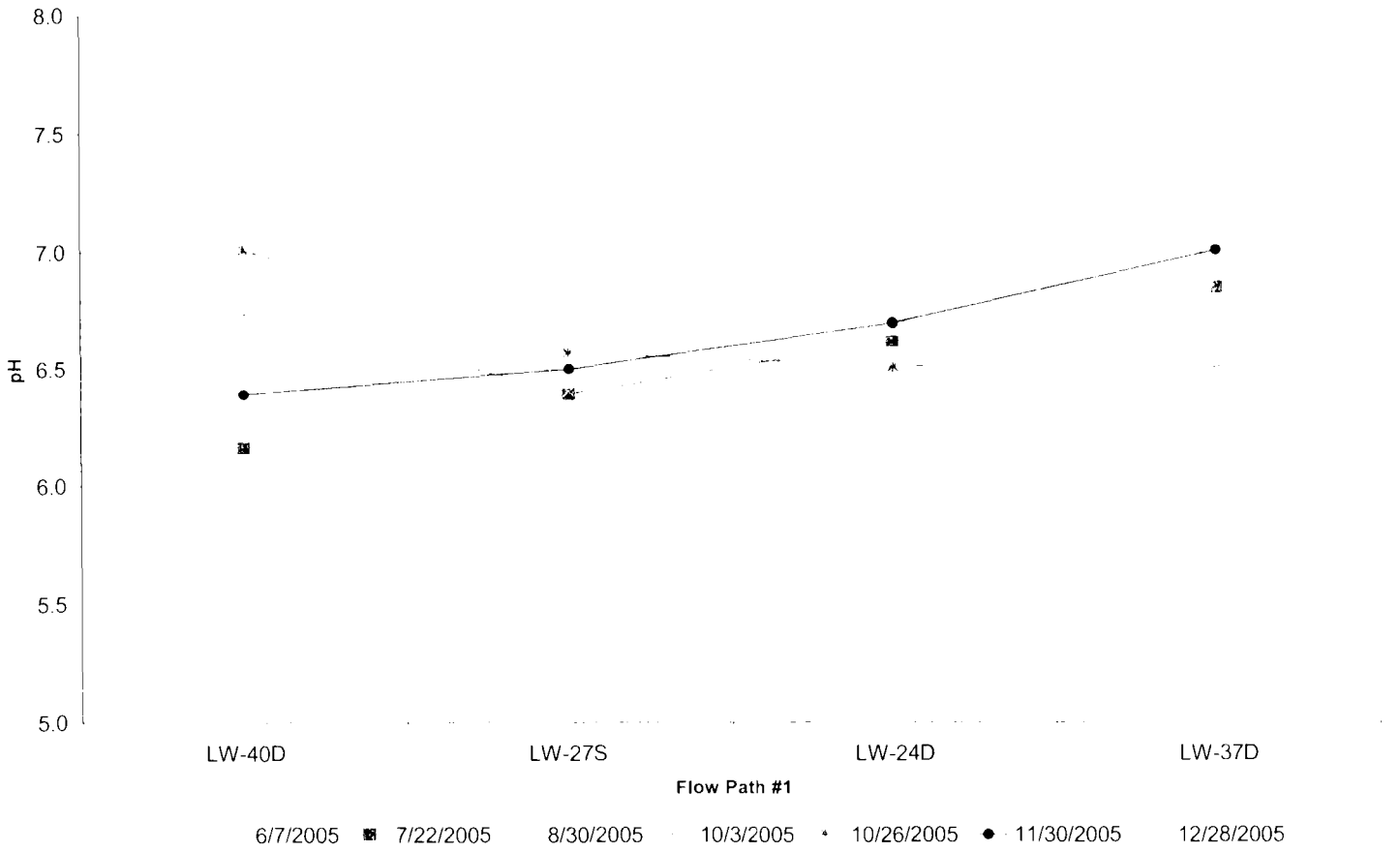


LANDAU ASSOCIATES

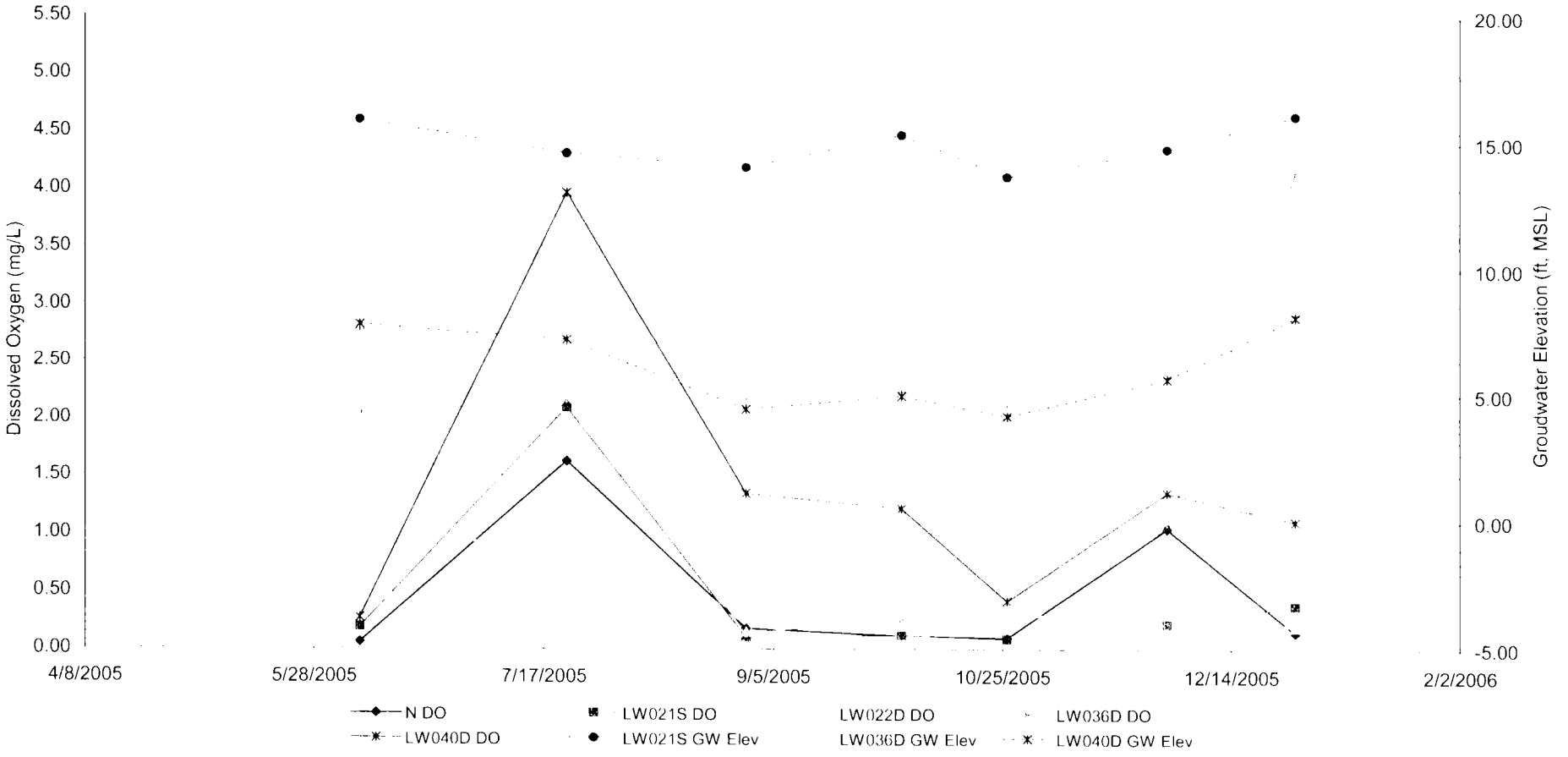
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**pH Trends - Flow Path 1**	Figure A-4



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**pH Trends - Flow Path 2**	Figure A-5

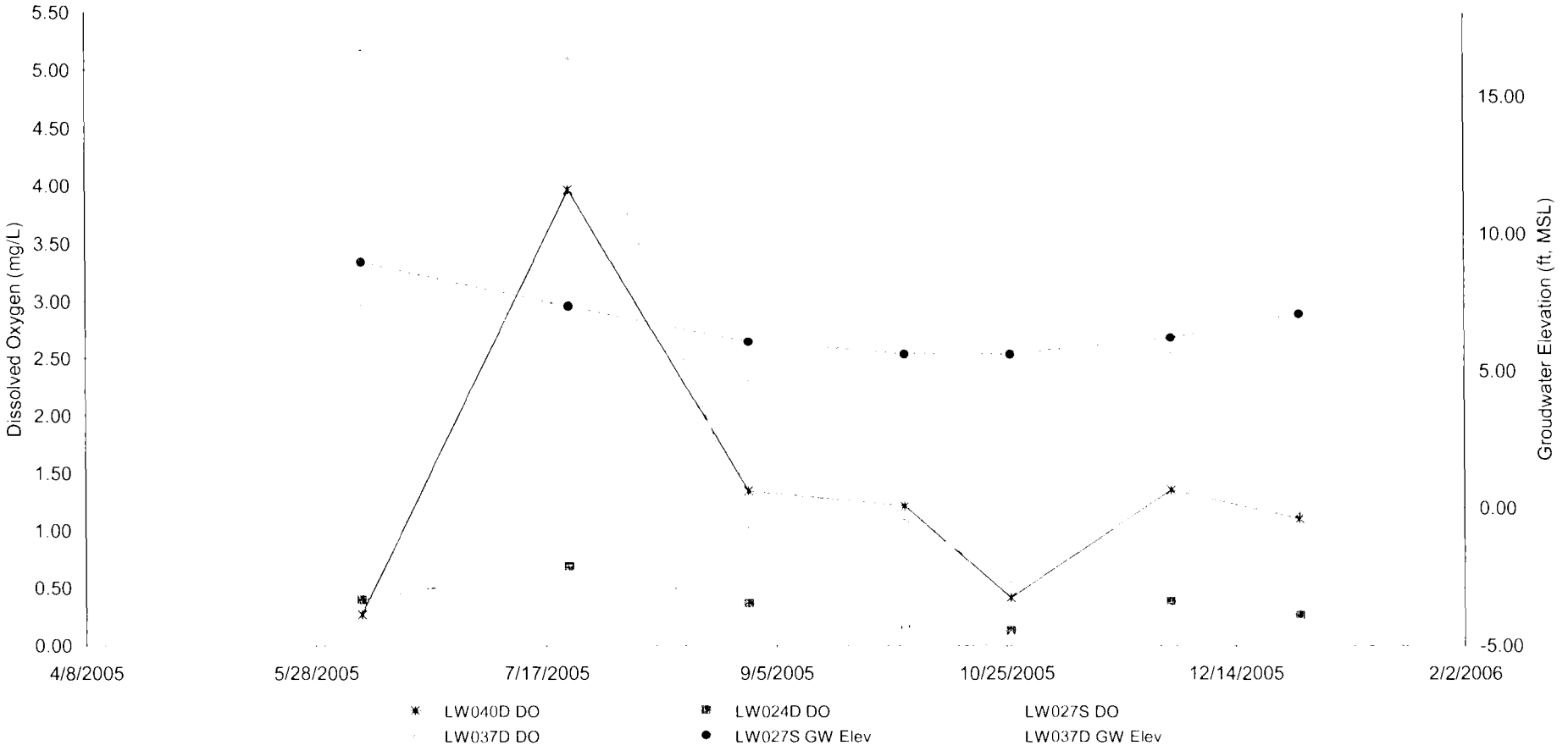
BZTO104(e)027369



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Dissolved Oxygen vs. Time June-December 2005, Flow Path 1**	Figure A-6

BZTO104(e)027370



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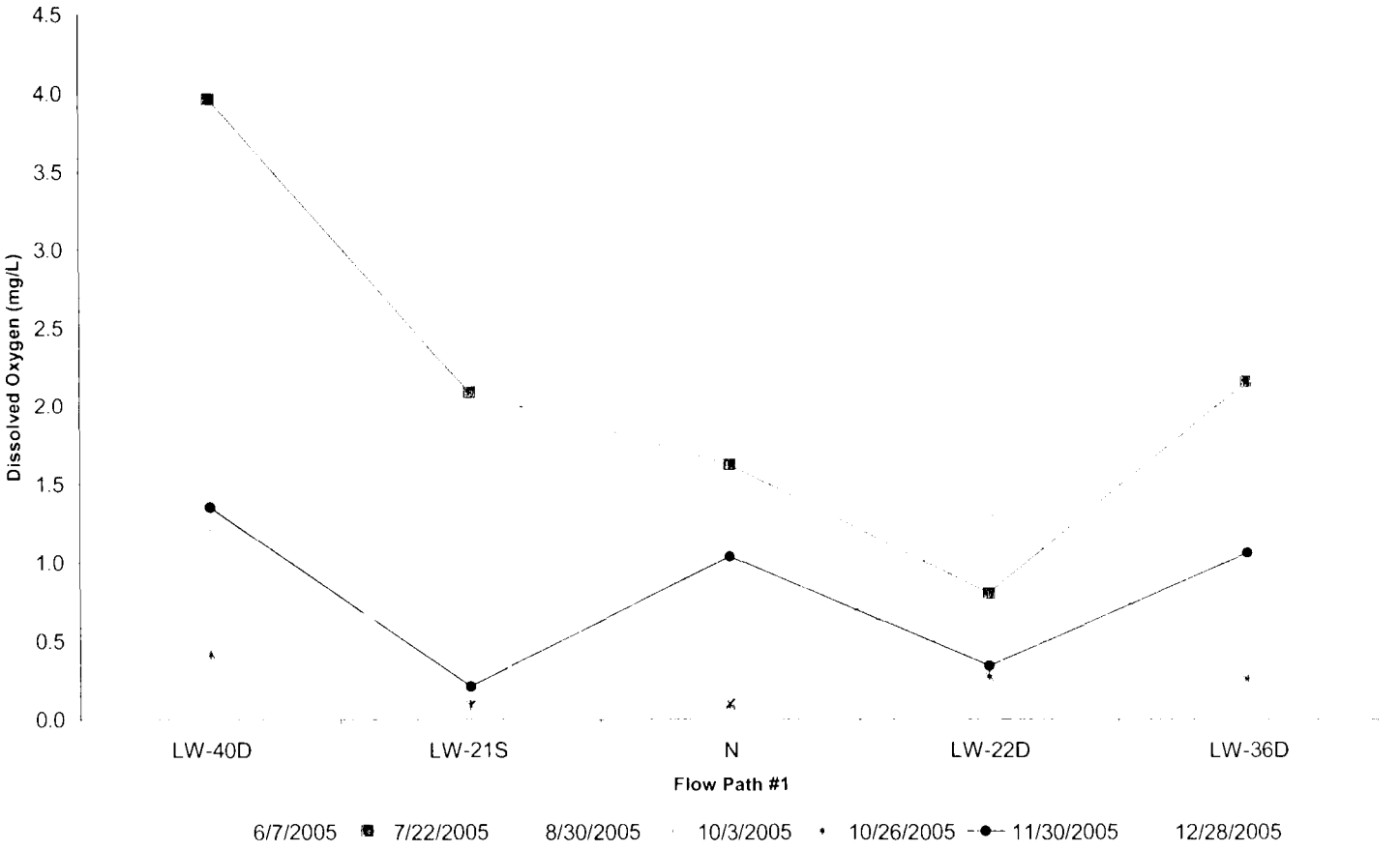
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Dissolved Oxygen vs. Time June-December 2005, Flow Path 2**	Figure A-7

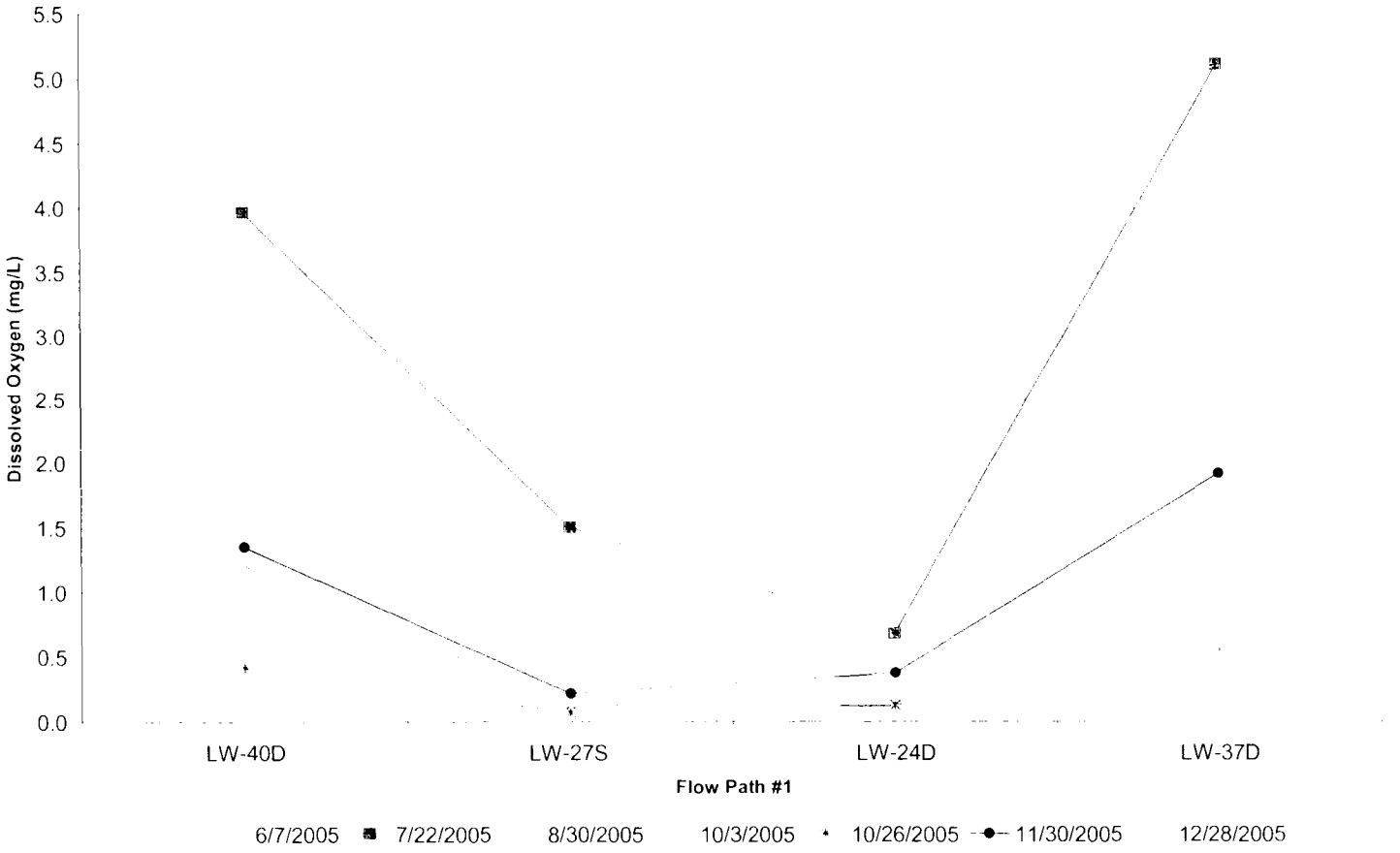
BZTO104(e)027371



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Dissolved Oxygen Trends Flow Path 1**	Figure A-8

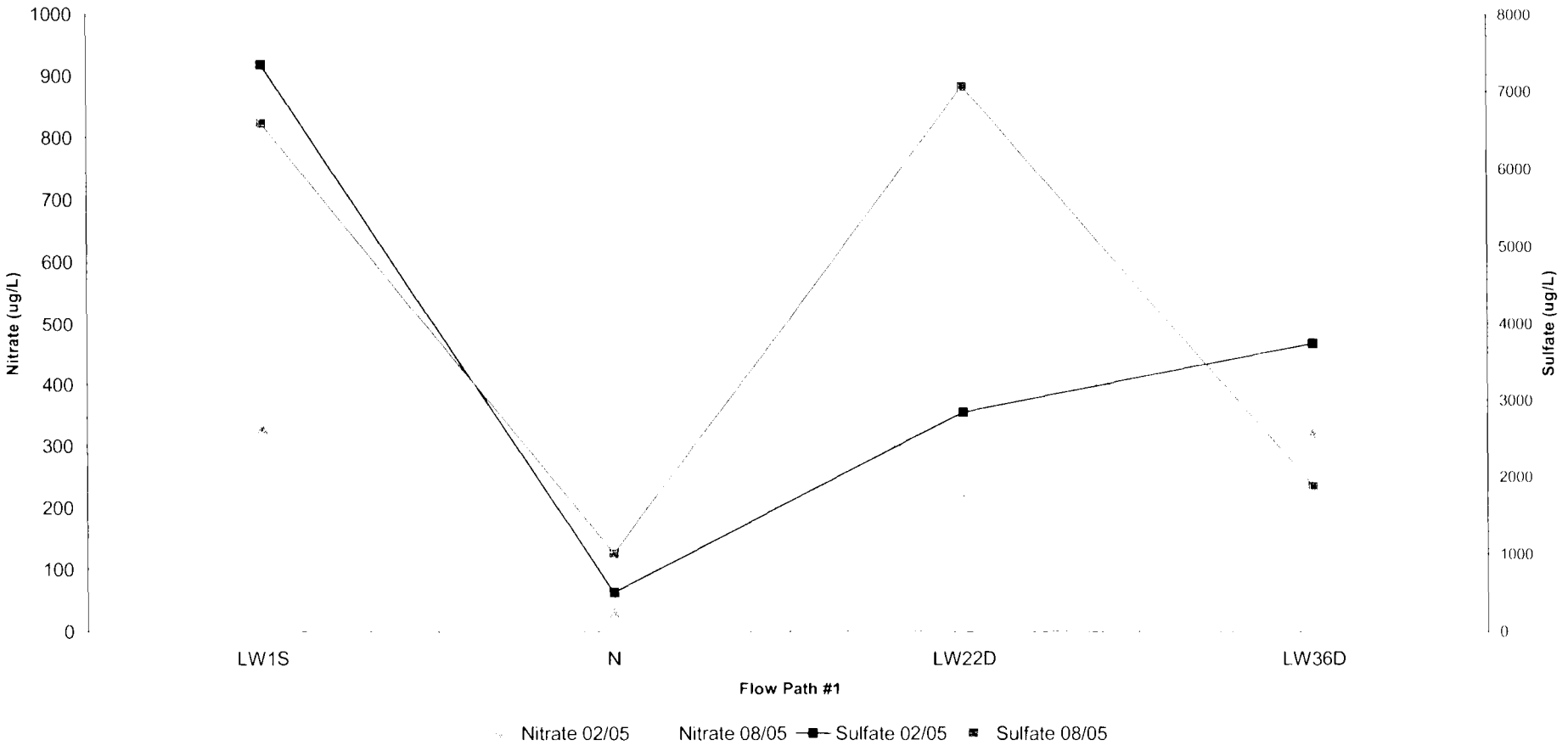
BZTO104(e)027372



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Dissolved Oxygen Trends Flow Path 2**	Figure A-9

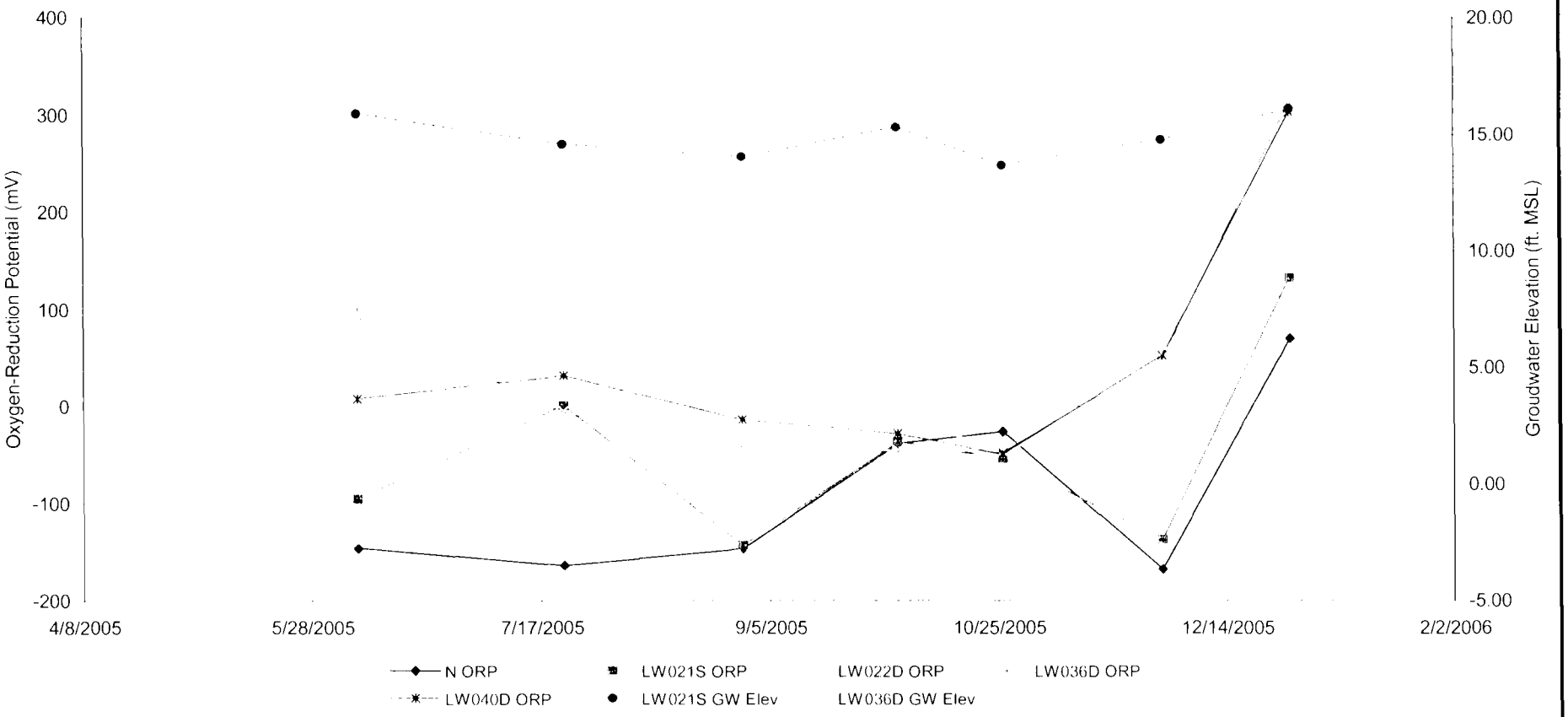
BZTO104(e)027373



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Nitrate and Sulfate Trends Flow Path 1**	Figure A-10

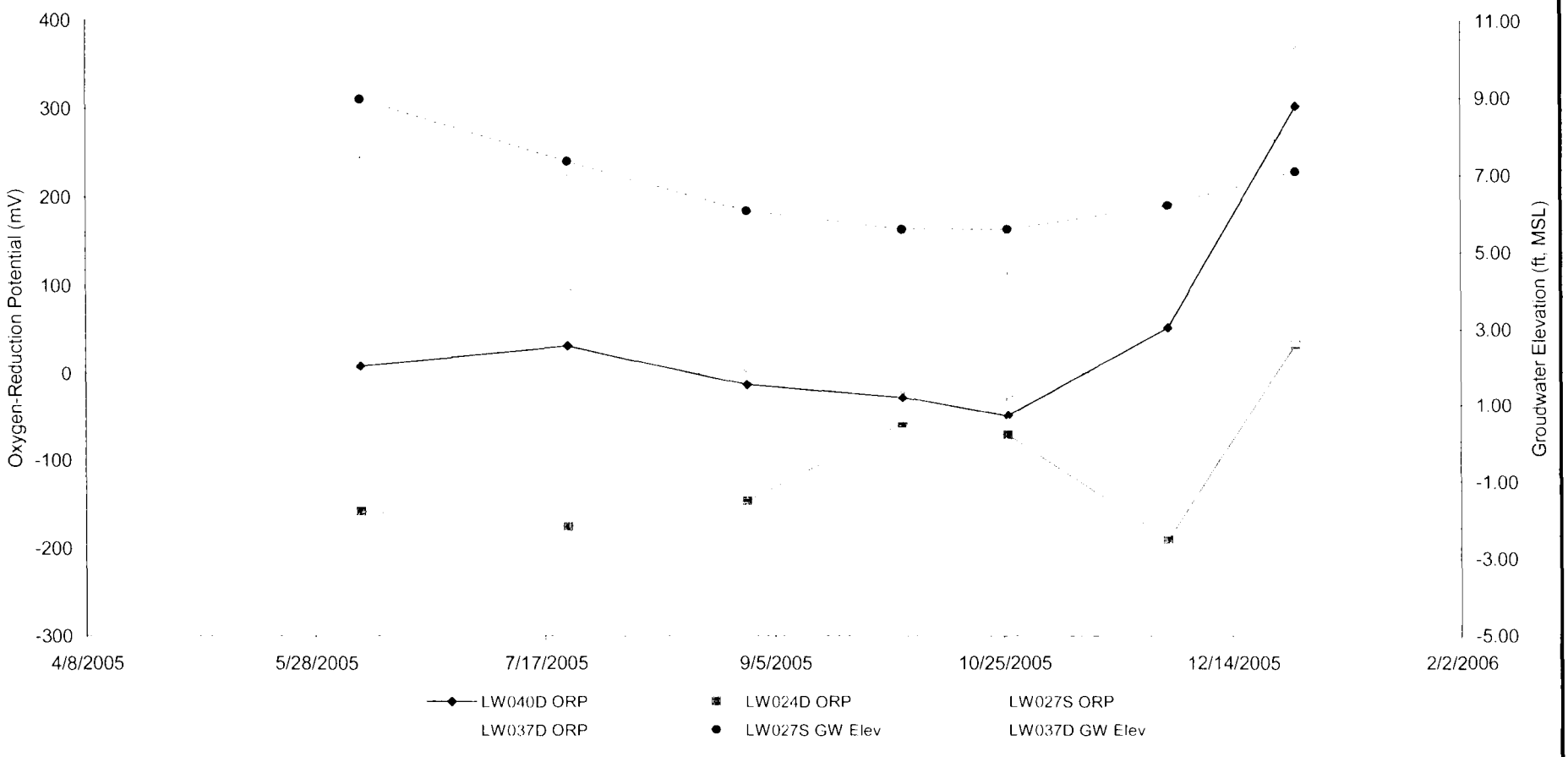
BZTO104(e)027374



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Oxygen-Reduction Potential vs. Time June-December 2005, Flow Path 1**	Figure A-11

BZTO104(e)027375



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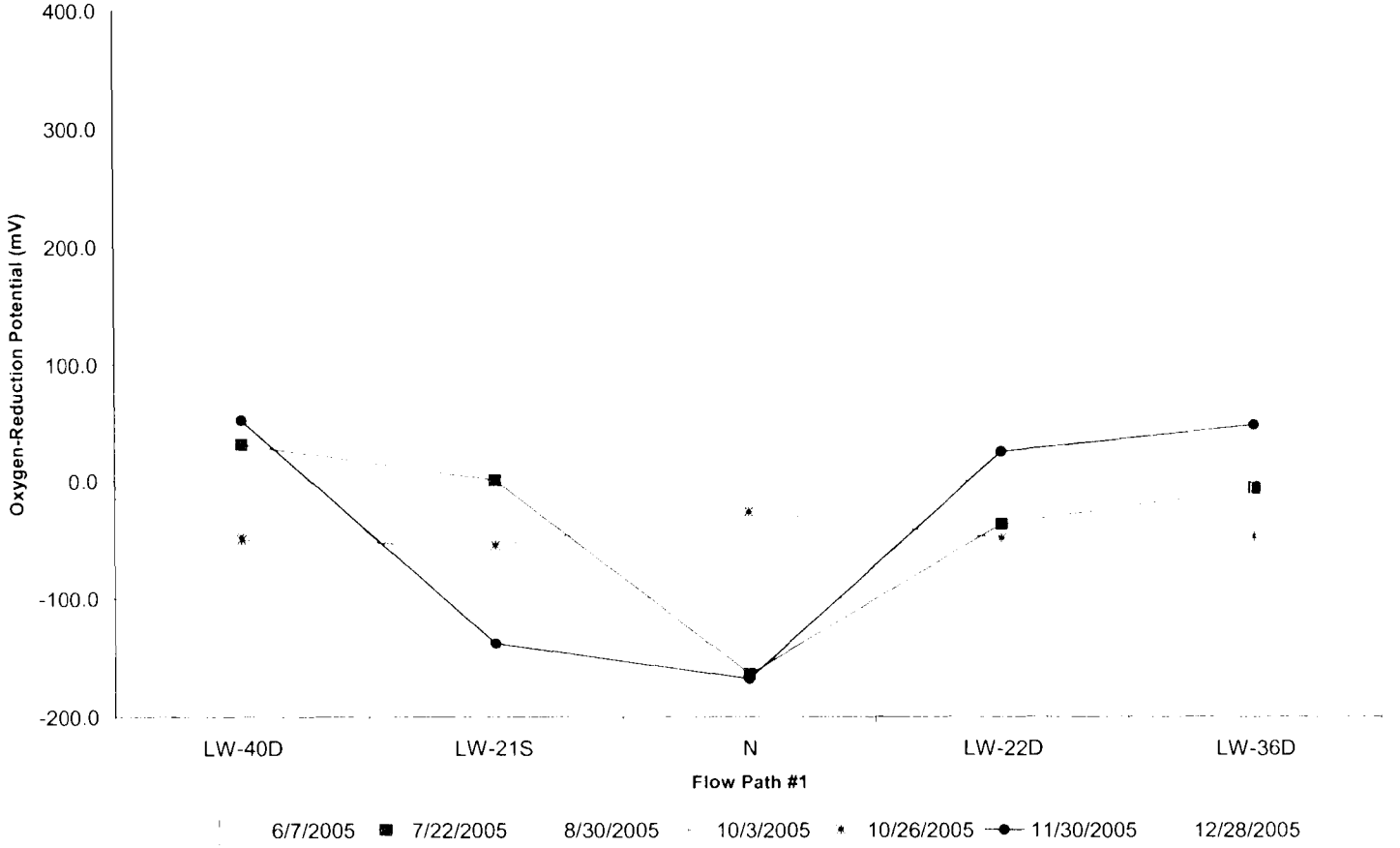
Source Control Evaluation
Time Oil NW Terminal
Portland, Oregon

Oxygen-Reduction Potential vs. Time June-December 2005, Flow Path 2

Figure
A-12

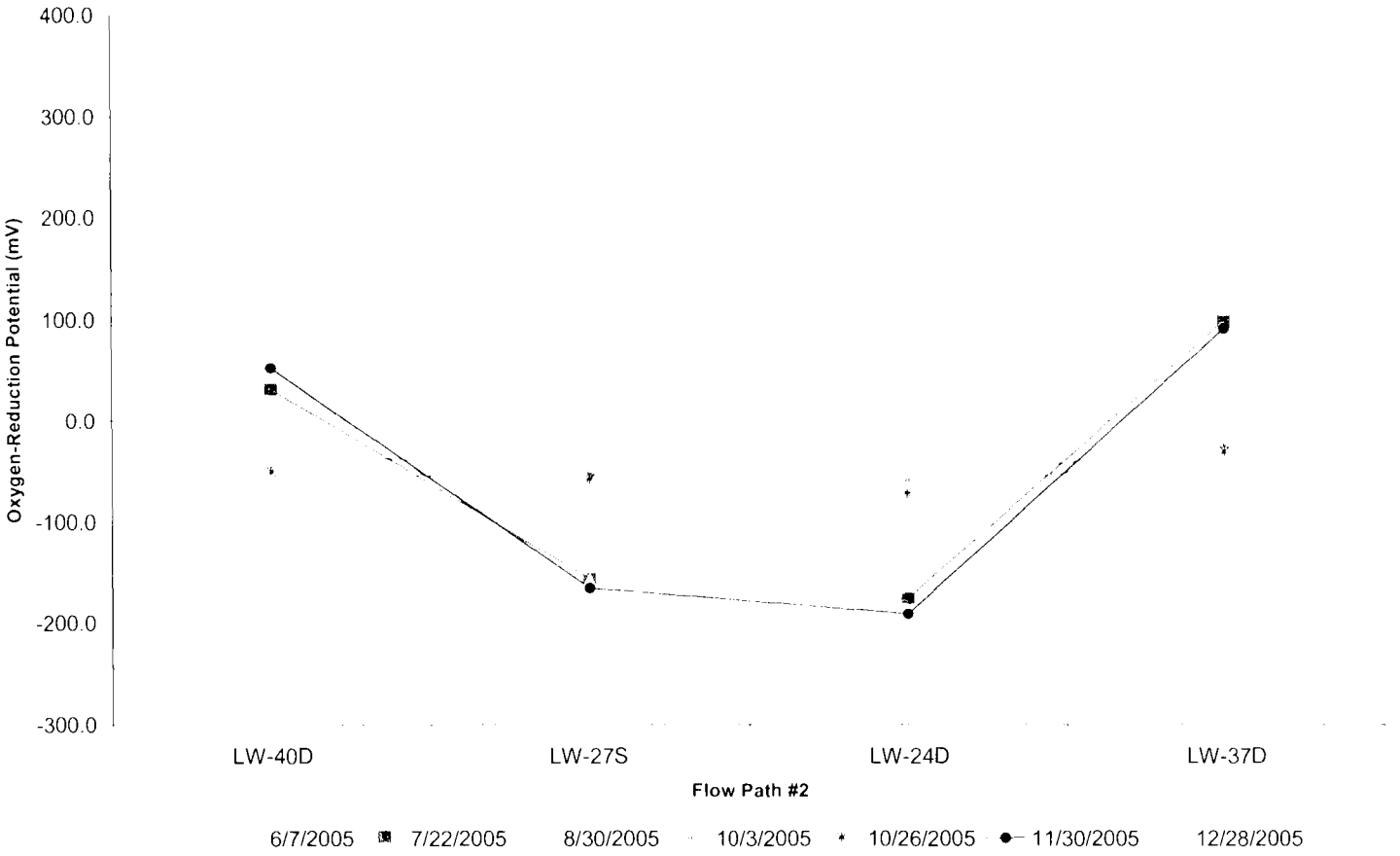
BZTO104(e)027376



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Oxygen-Reduction Potential Trends Flow Path 1**	Figure A-13

BZTO104(e)027377



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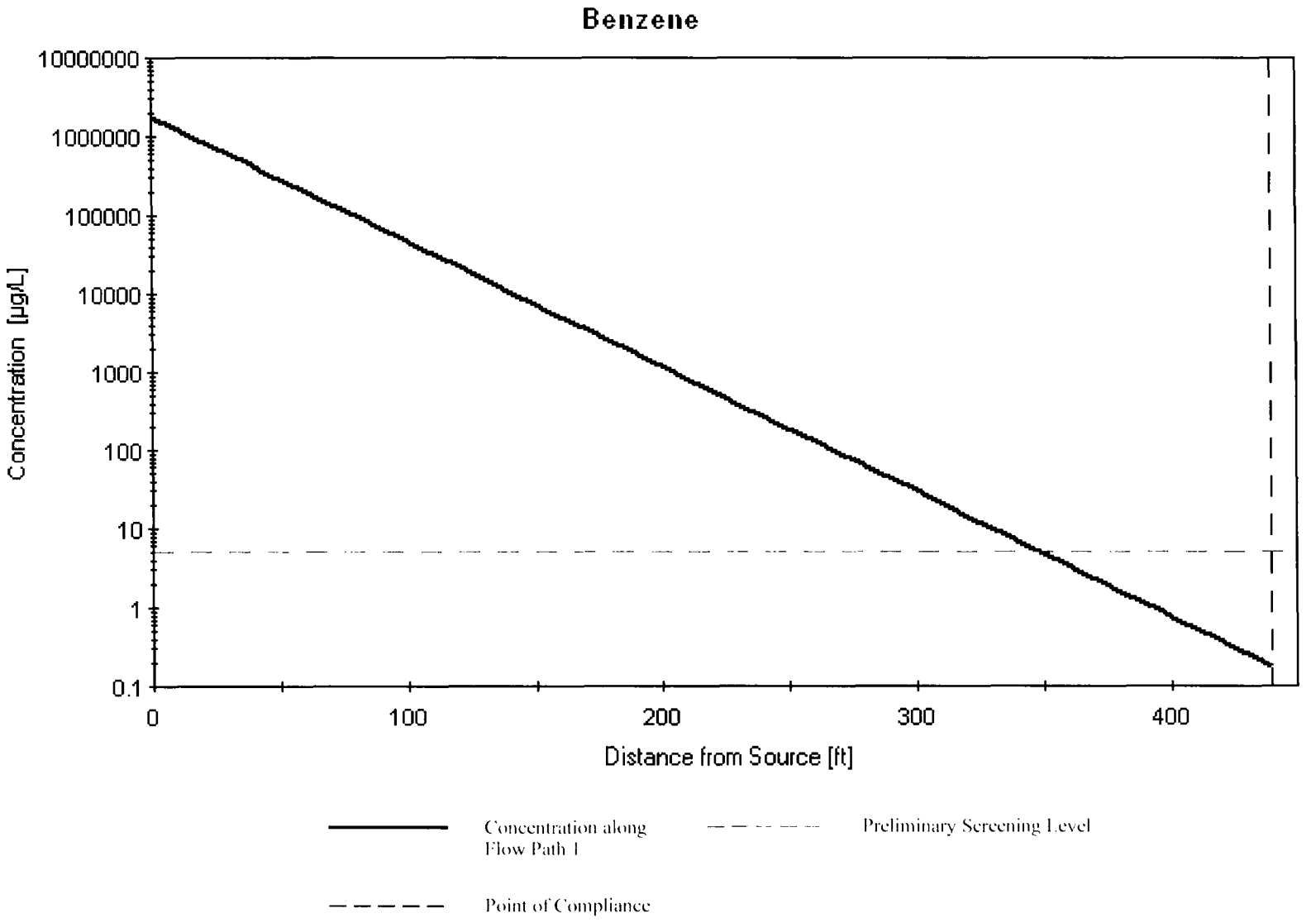
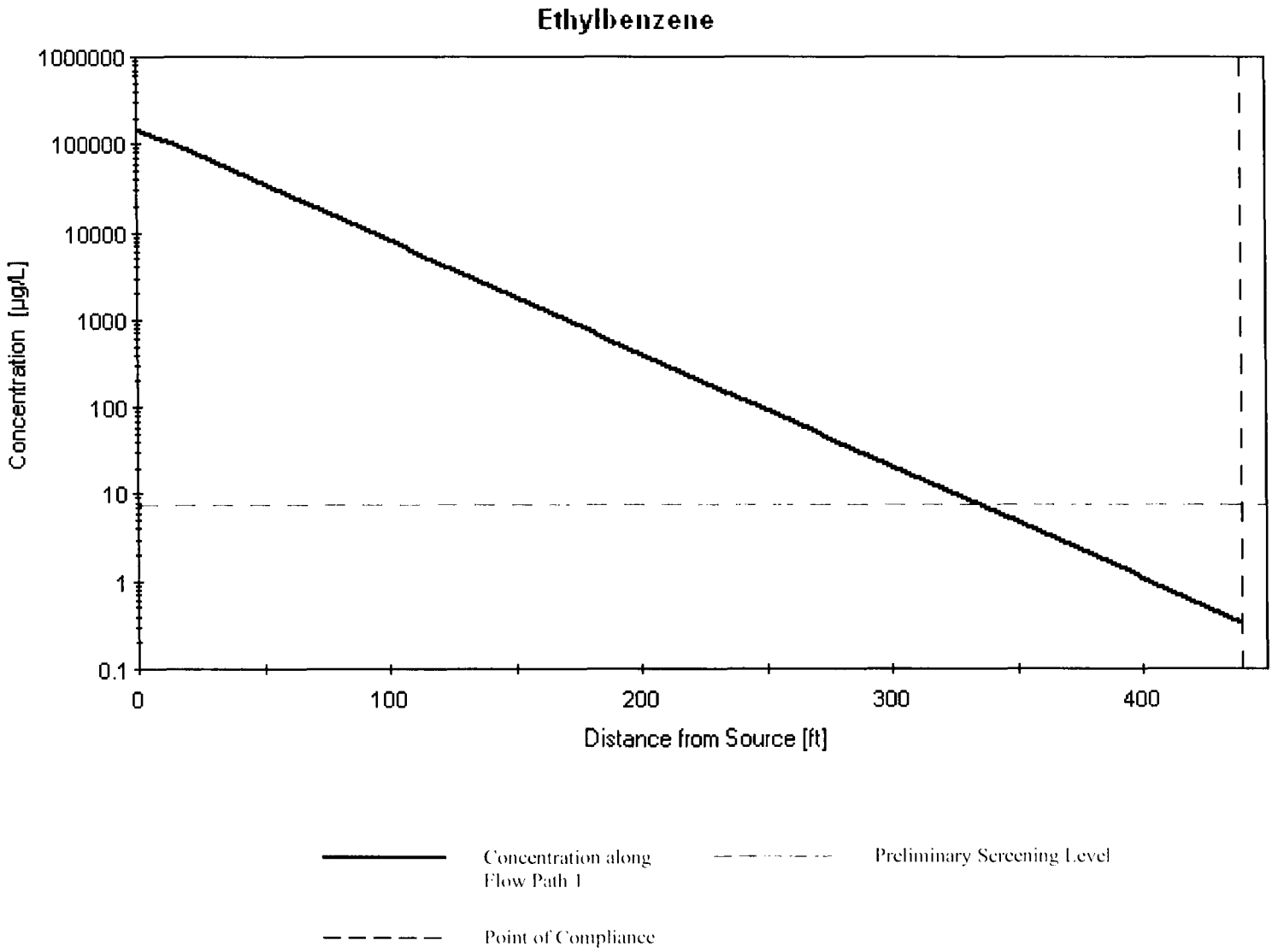
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Oxygen-Reduction Potential Trends Flow Path 2**	Figure A-14

BZTO104(e)027378



LANDAU ASSOCIATES

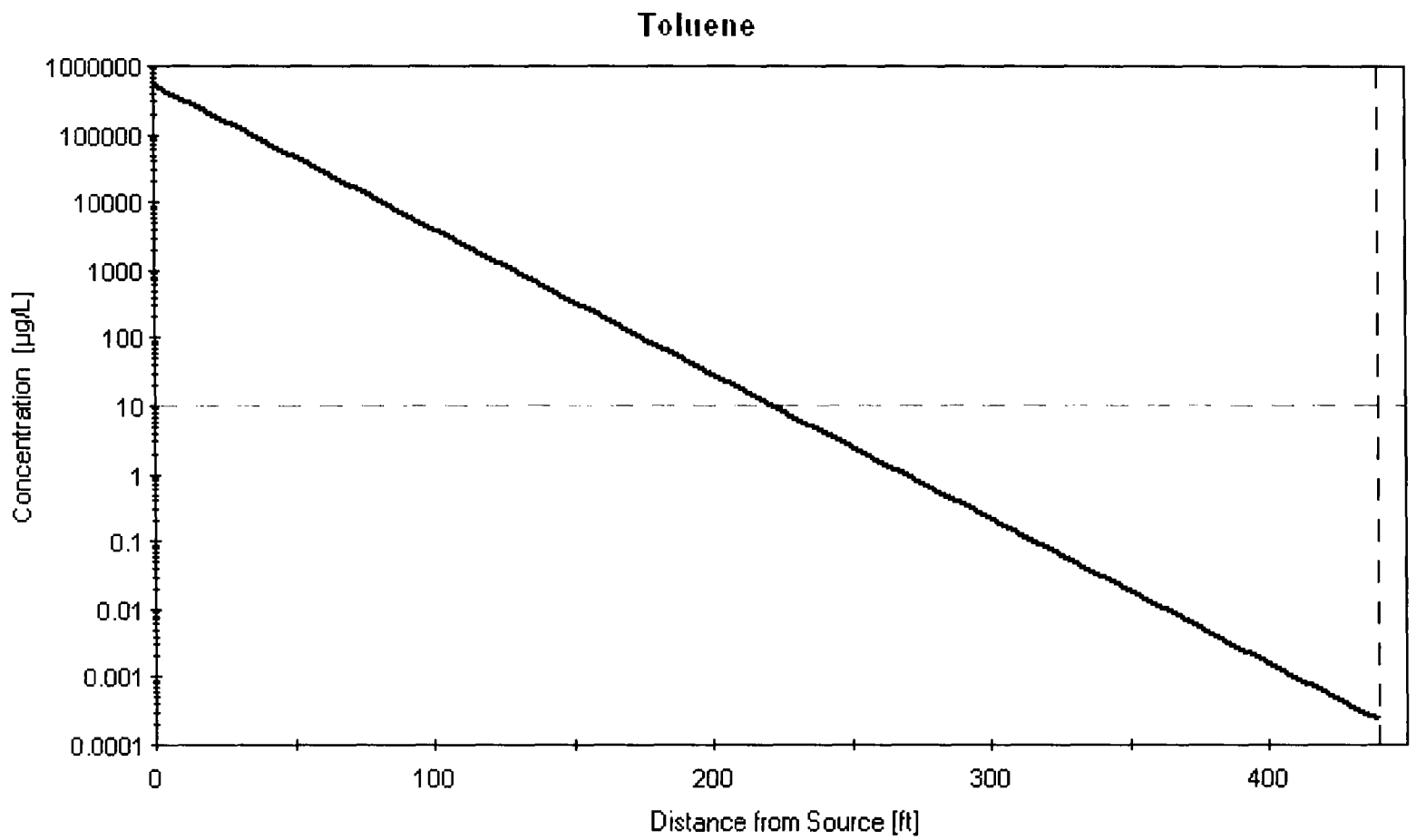
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Benzene Well LW021S as Source Zone**	Figure A-15



LANDAU ASSOCIATES

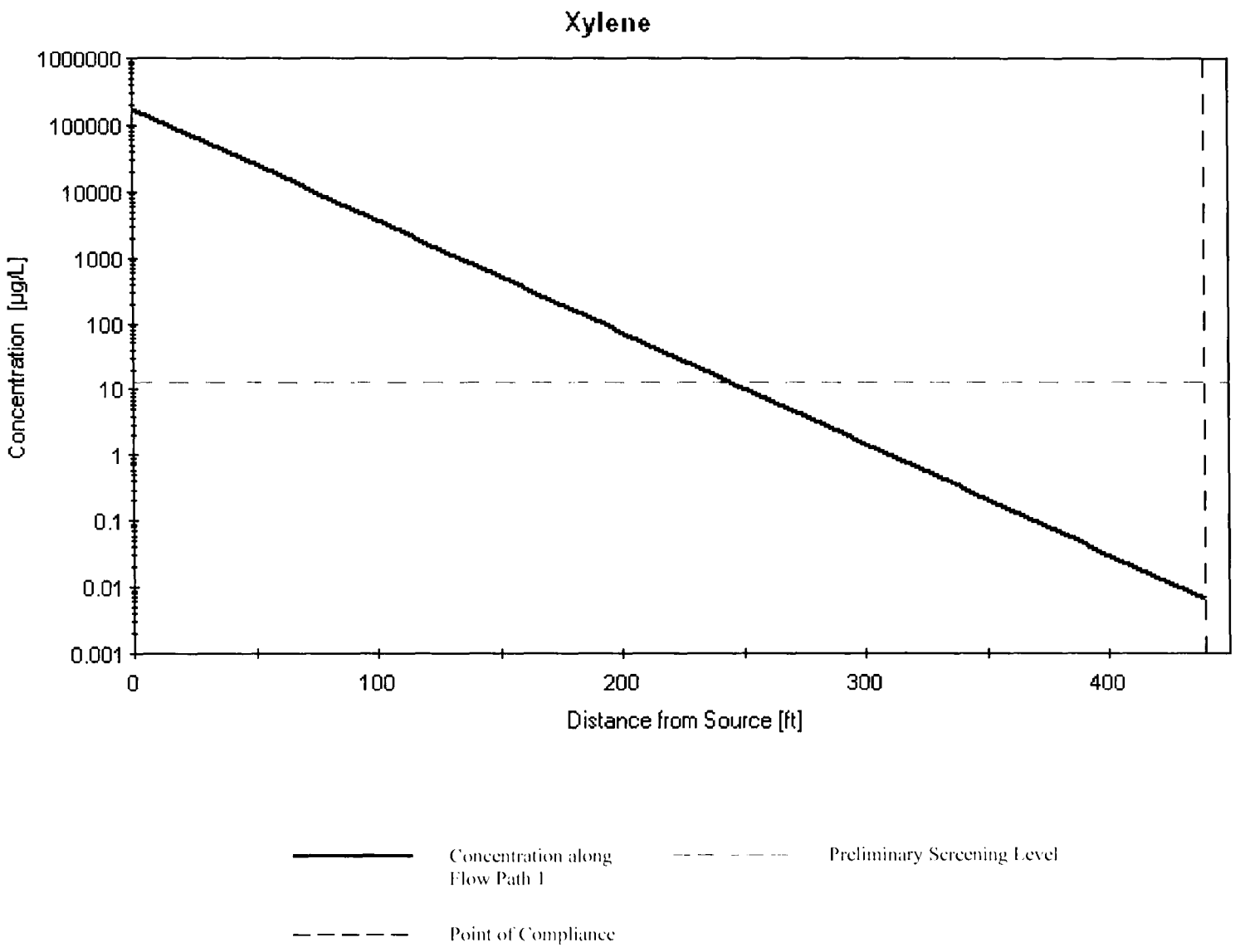
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Ethylbenzene Well LW021S as Source Zone**	Figure A-16

BZTO104(e)027380



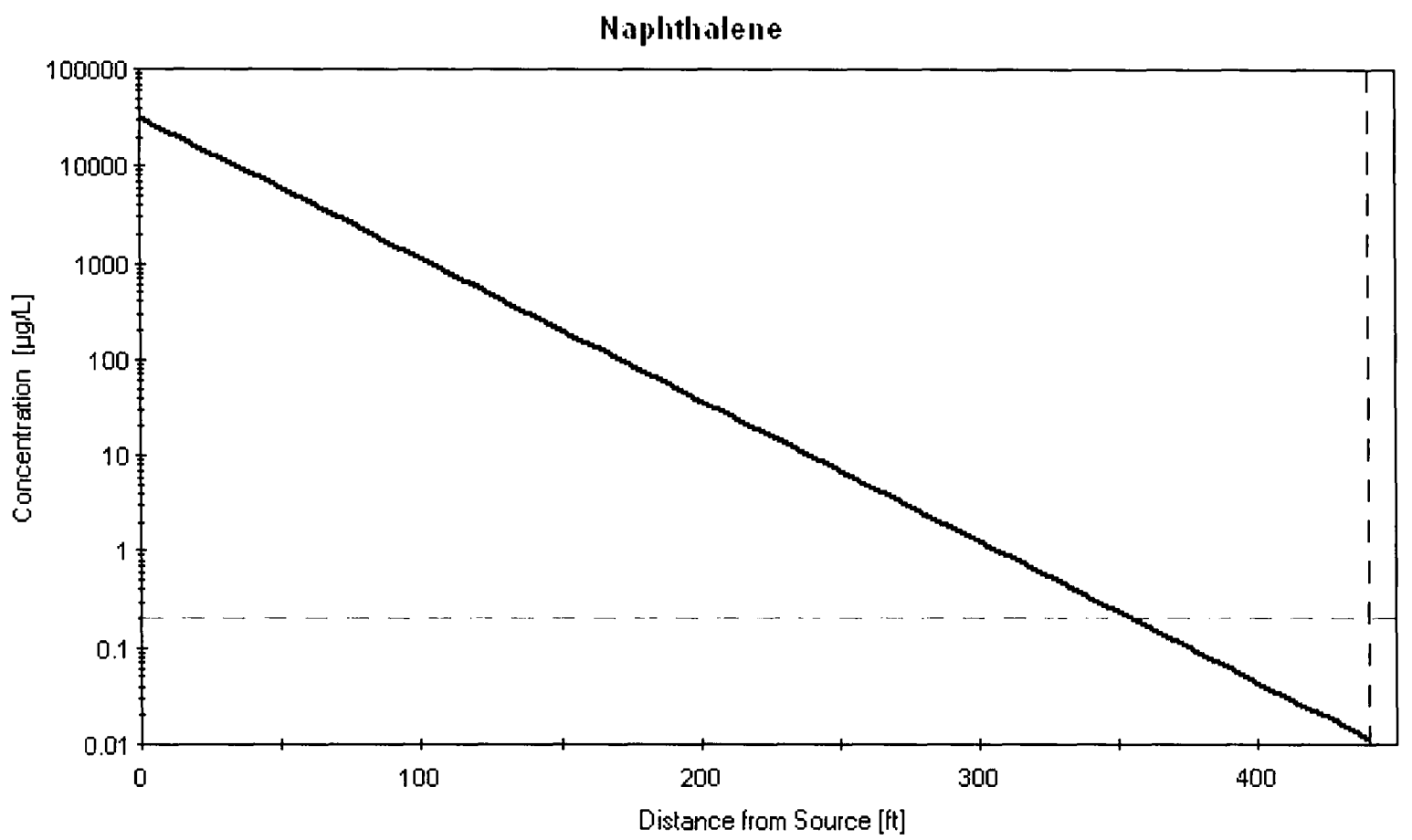
LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Toluene Well LW021S as Source Zone**	Figure A-17



LANDAU ASSOCIATES

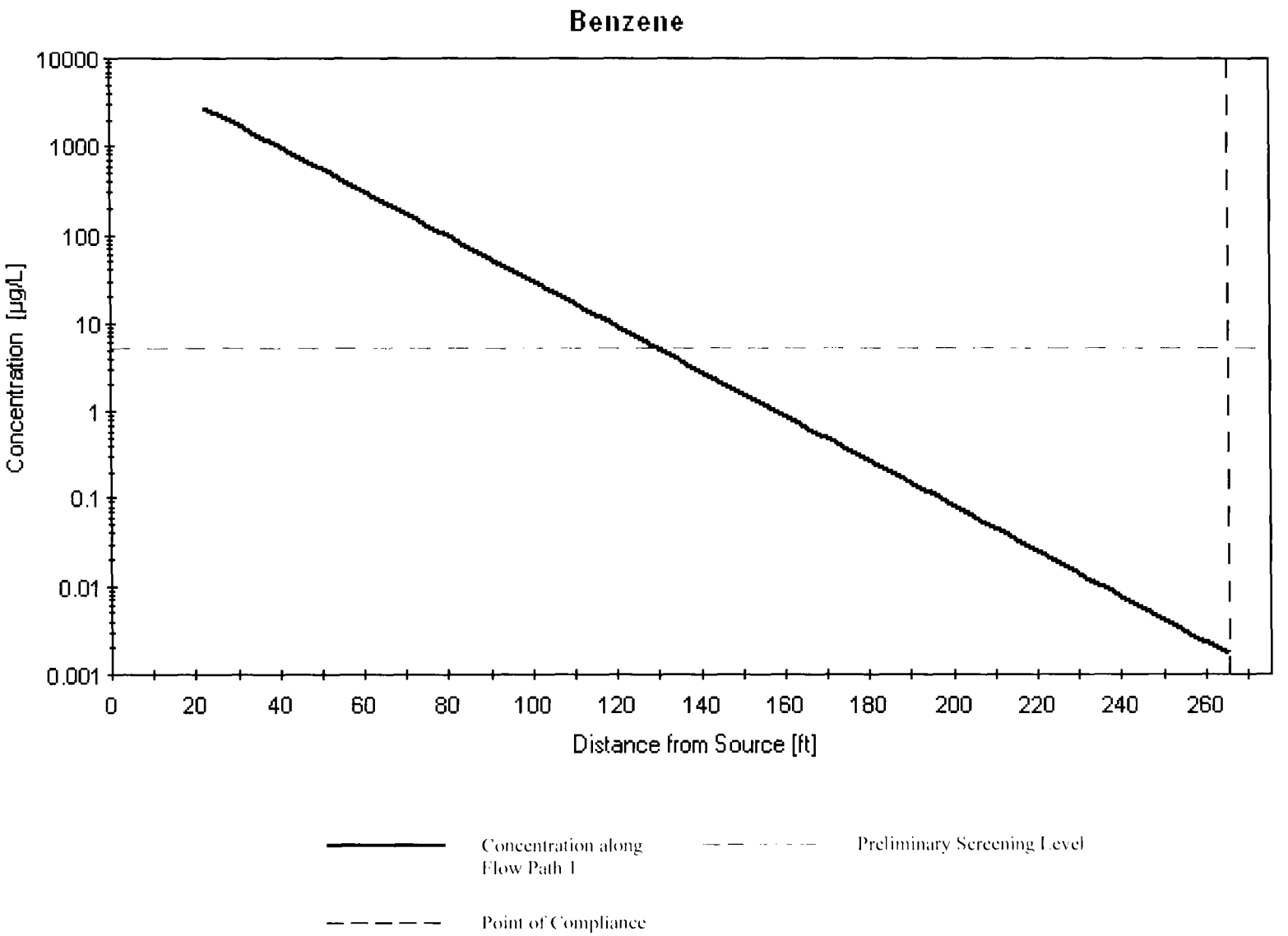
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Xylene Well LW021S as Source Zone**	Figure A-18



LANDAU ASSOCIATES

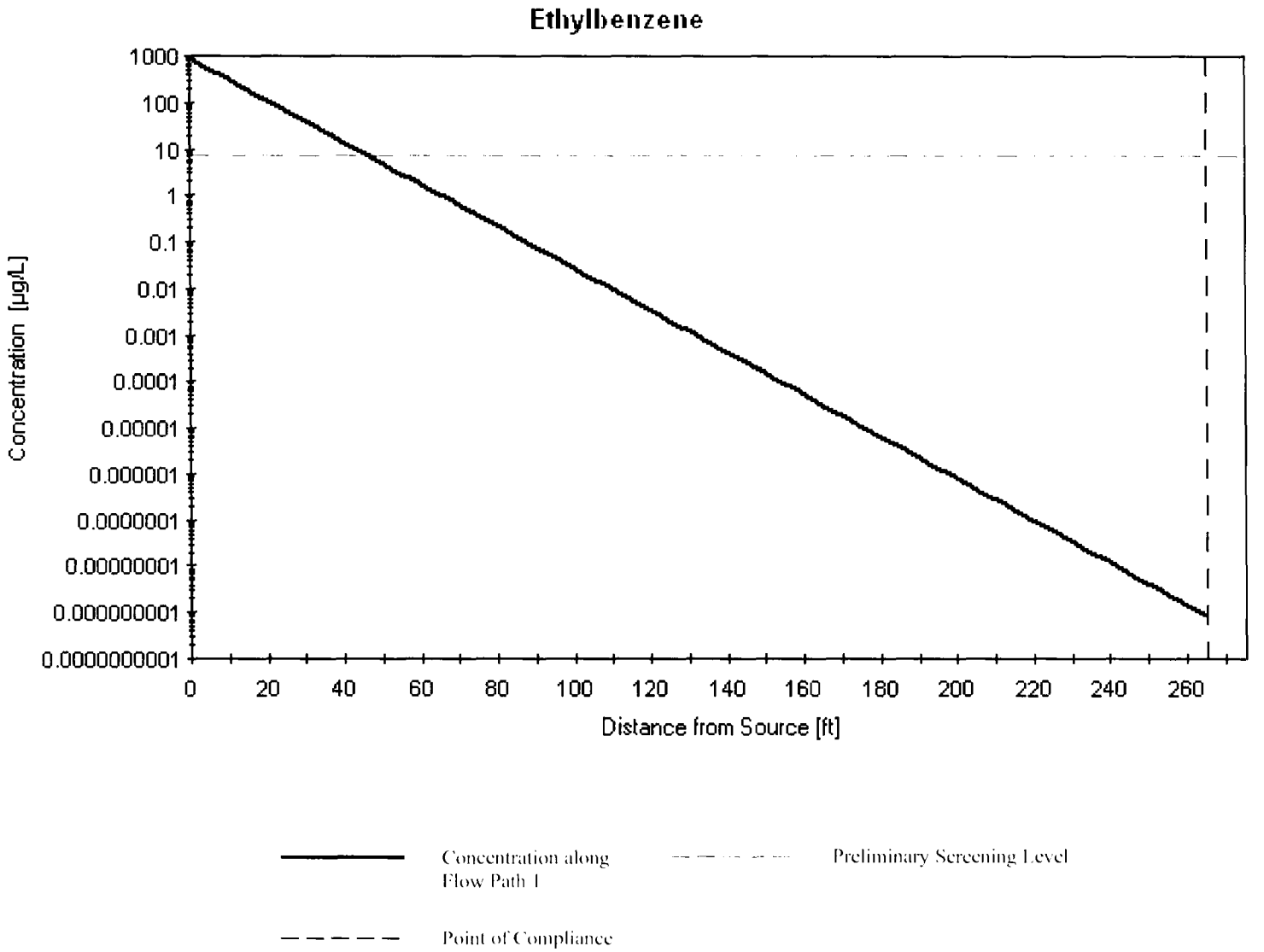
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Naphthalene Well LW021S as Source Zone**	Figure A-19

BZTO104(e)027383



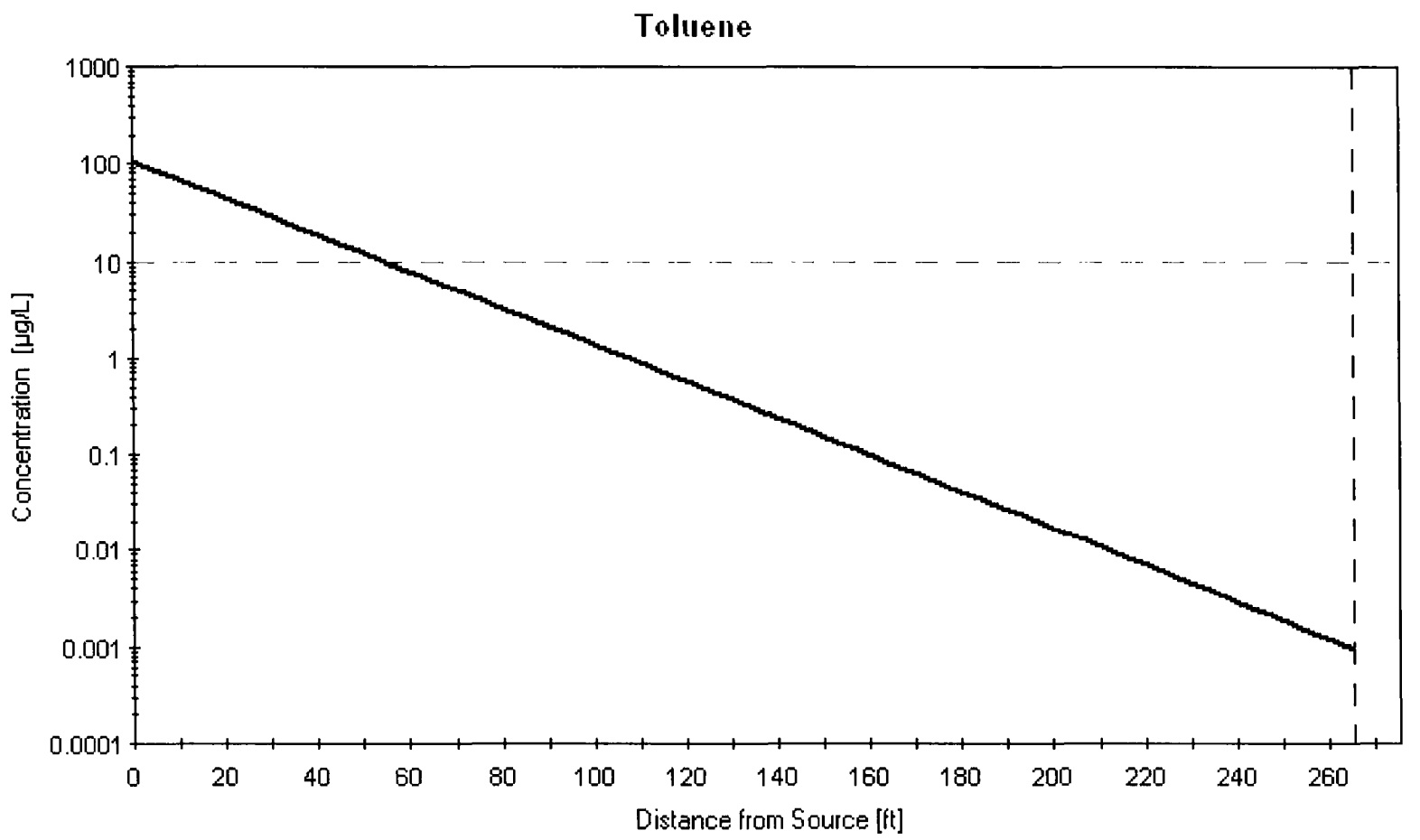
LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Benzene Well N as Source Zone**	Figure A-20



LANDAU ASSOCIATES

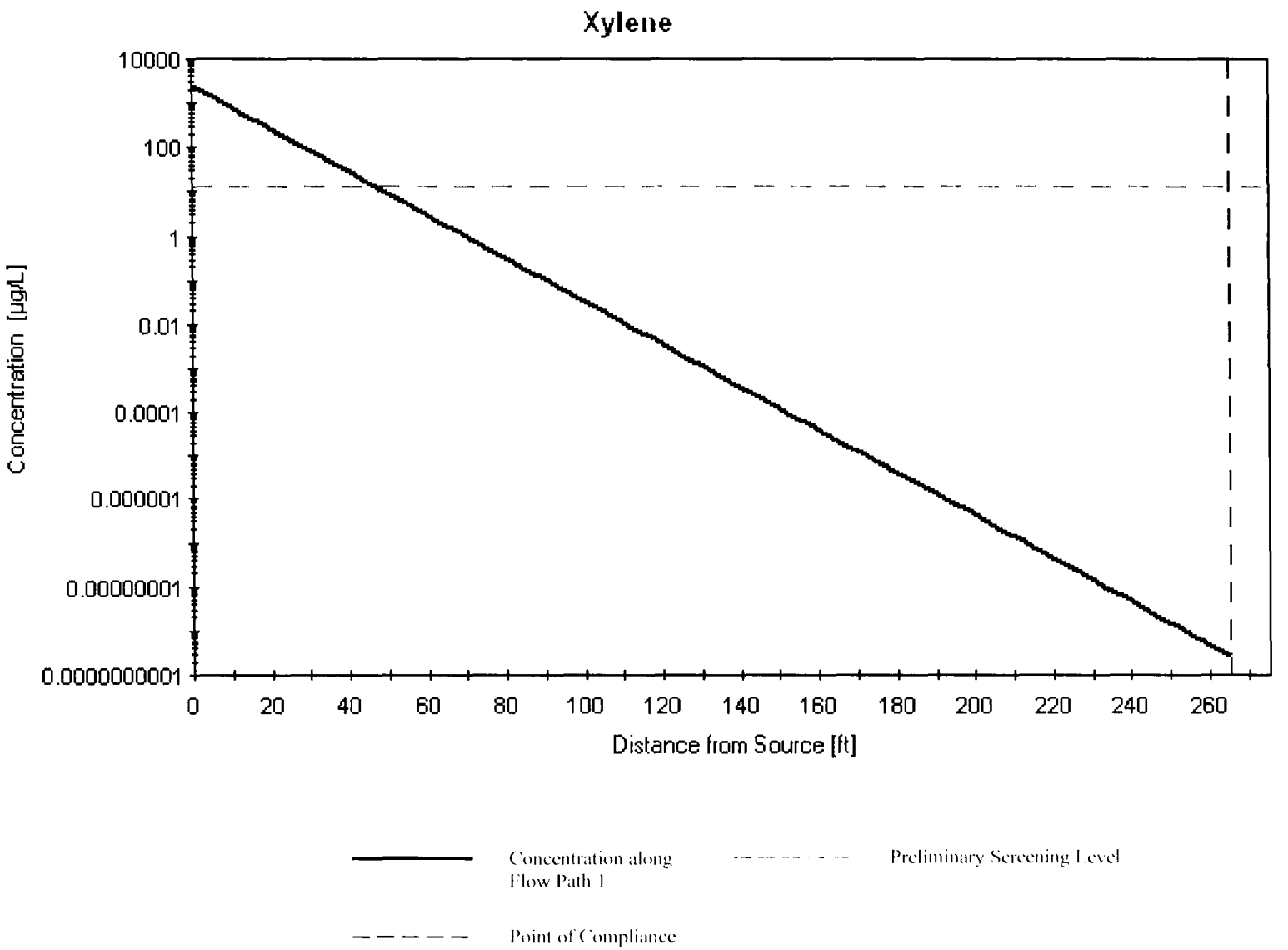
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Ethylbenzene Well N as Source Zone**	Figure A-21



LANDAU ASSOCIATES

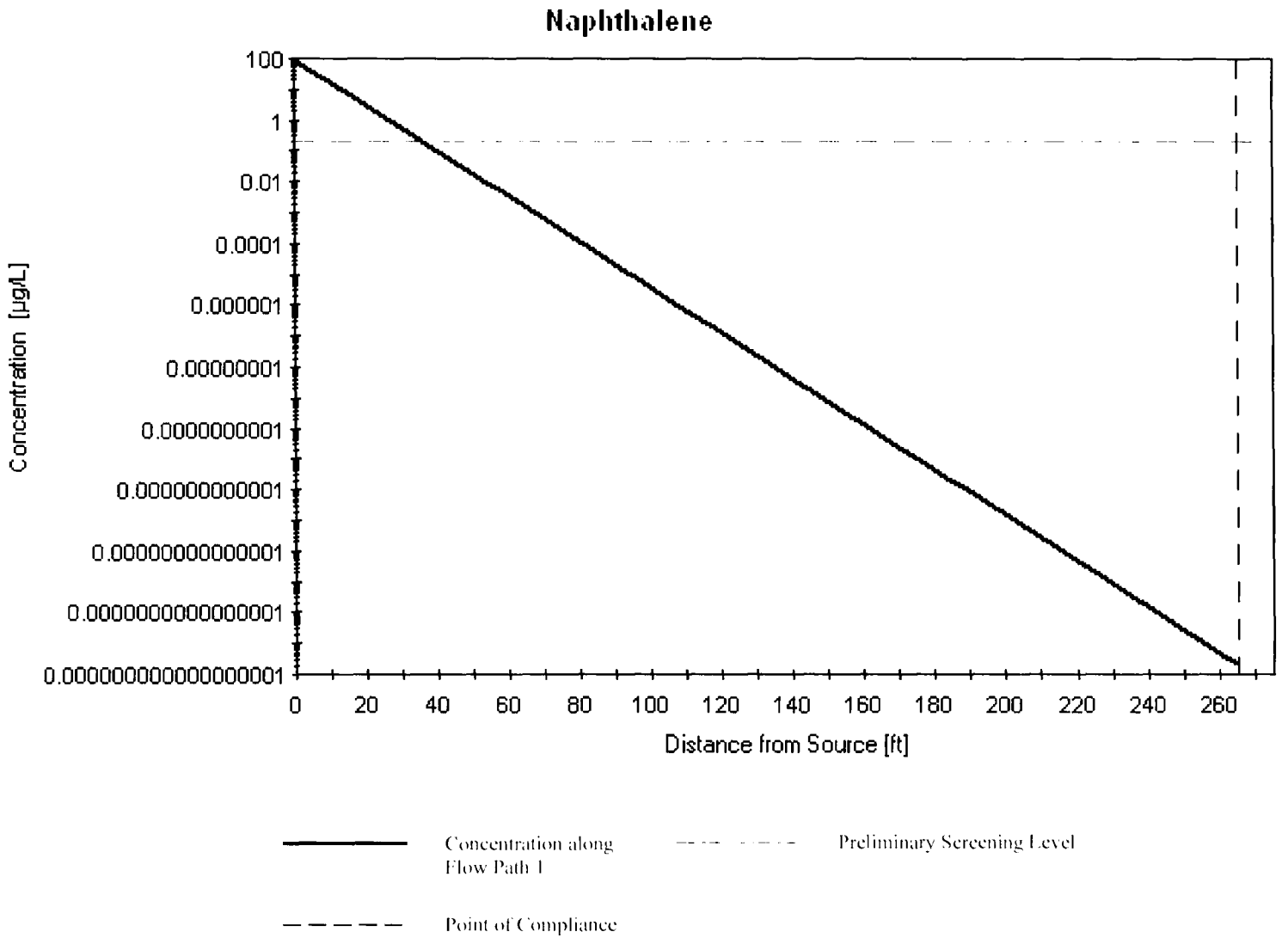
Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Toluene Well N as Source Zone**	Figure A-22

BZTO104(e)027386



LANDAU ASSOCIATES

Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Xylene Well N as Source Zone**	Figure A-23



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Source Control Evaluation Time Oil NW Terminal Portland, Oregon	**Distance of Stabilization – Naphthalene Well N as Source Zone**	Figure A-24

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APPENDIX B

Fate and Transport Model Results

Facility Name: Time Oil Northwest Terminal
Site Name:
Additional Description: LW-021S as source zone

Length: feet
Time: days
Mass: pounds

Hydrogeologic Data and Contaminant Transport Calculations

	Maximum	Average	Minimum		NAPL Source
Hydr. Conductivity [ft/d]	156.0	82.3	44.0	NAPL Source Length [ft]	50.0
Hydraulic Gradient [ft/ft]	0.0158	0.009	0.0014	NAPL Source Width [ft]	50.0
Total Porosity [-]		0.4		Contaminated Aquifer Thickness [ft]	4.6
Effective Porosity [-]		0.3			
Groundwater Vel. [ft/d]	8.216	2.469	0.205		

Contaminant Source Specifications

Source Component	Conc Profile	NAPL Constituent
Total BTEX	True	True
Benzene	True	True
Toluene	True	True
Ethylbenzene	True	True
Xylene	True	True
Naphthalene	True	True
Other Aromatics	False	True
Aliphatics	False	True

Dispersion Parameters

Estimated Plume Length [ft]	406.0
Longitudinal Dispersivity [ft]	16.19
Dispersivity Ratio [-]	20.0
Transverse Dispersivity [ft]	0.81

Sorption Parameters

Fraction Org. Carbon [-]

Maximum	0.0065
Average	0.001
Minimum	0.0008

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	Total BTEX	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene
Koc [L/kg]	300	83	300	1100	830	1300
Retardation Factor [-]						
Maximum	11.34	3.86	11.34	38.9	29.59	45.79
Average	2.59	1.44	2.59	6.83	5.4	7.89
Minimum	2.34	1.37	2.34	5.9	4.7	6.79

Contaminant Concentration Profiles (8/21/2005)

Well Name	Distance [ft]	Total BTEX [µg/L]	Benzene [µg/L]	Toluene [µg/L]	Ethylbenzene [µg/L]	Xylene [µg/L]	Naphthalene [µg/L]
LW-21S	0	2612000.	1750000.	535000.	152000.	175000.	31700.
N	174	3902.	419.	107.	898.	2478.	91.2
P	196.5	2859.2	2780.	BD	BD	79.2	BD
Q	220	741.2	706.	13.9	7.1	14.2	BD
LW-22D	347.5	BD	BD	BD	BD	BD	BD
LW-36D	439.5	BD	BD	BD	BD	BD	BD

Redox Indicator Concentration Profiles (8/21/2005)

Well Name	Distance [ft]	Oxygen [mg/L]	Nitrate [mg/L]	Iron(II) [mg/L]	Sulfate [mg/L]	Redox Condition
N	174	0.17	BD	NS	BD	SO4/CO2-red.
P	196.5	0.08	BD	NS	BD	SO4/CO2-red.
Q	220	0.06	BD	NS	BD	SO4/CO2-red.
LW-22D	347.5	0.14	BD	NS	7.06	SO4/CO2-red.
LW-36D	439.5	0.13	BD	NS	1.88	SO4/CO2-red.

Attenuation Rates

	Total BTEX	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene
NAC (Single Zone) [1/ft]	0.0355	0.0356	0.0481	0.0286	0.038	0.0328
Decay Rate [1/d]						
Maximum	0.459	0.4617	0.703	0.3445	0.5035	0.4123
Average	0.1379	0.1388	0.2113	0.1035	0.1513	0.1239
Minimum	0.0115	0.0115	0.0176	0.0086	0.0126	0.0103

Time of Stabilization(TOS) and Max Source Conc. Calculations

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Distance to POC [ft]	439.5									
			Source Reduction			Time of Stabilization [years]				
	RCC		Conc [µg/L]			Breakthrough Time			Time to Equilibrium	
Contaminant	[µg/L]	Well	Current	Target	Maximum	Average	Minimum	Maximum	Average	Minimum
Total BTEX	50000.0	1	2612000	No Reduction Required						
Benzene	5.1	1	1750000	No Reduction Required						
Toluene	9.8	1	535000	No Reduction Required						
Ethylbenzene	7.3	1	152000	No Reduction Required						
Xylene	13.0	1	175000	No Reduction Required						
Naphthalene	0.2	1	31700	No Reduction Required						

Time of Remediation(TOR) Calculations

NAPL Component	Mass Fraction[-]	Solubility [mg/L]	Molecular Wght[g/mole]
Total BTEX	0.00	0.0	0.0
Benzene	0.01	1750.0	78.1
Toluene	0.08	535.0	92.1
Ethylbenzene	0.05	152.0	106.2
Xylene	0.12	175.0	106.2
Naphthalene	0.01	31.7	128.2

BZTO104(e)027392

Facility Name: Time Oil Northwest Terminal
Site Name:
Additional Description: N as source zone

Length: feet
Time: days
Mass: pounds

Hydrogeologic Data and Contaminant Transport Calculations

	Maximum	Average	Minimum		NAPL Source
Hydr. Conductivity [ft/d]	156.0	82.3	44.0	NAPL Source Length [ft]	50.0
Hydraulic Gradient [ft/ft]	0.0158	0.009	0.0014	NAPL Source Width [ft]	50.0
Total Porosity [-]		0.4		Contaminated Aquifer Thickness [ft]	2.3
Effective Porosity [-]		0.3			
Groundwater Vel. [ft/d]	8.216	2.469	0.205		

Contaminant Source Specifications

Source Component	Conc Profile	NAPL Constituent
Total BTEX	True	True
Benzene	True	True
Toluene	True	True
Ethylbenzene	True	True
Xylene	True	True
Naphthalene	True	True
Other Aromatics	False	True
Aliphatics	False	True

Dispersion Parameters

Estimated Plume Length [ft]	232.7
Longitudinal Dispersivity [ft]	12.04
Dispersivity Ratio [-]	20.0
Transverse Dispersivity [ft]	0.60

Sorption Parameters

Fraction Org. Carbon [-]

Maximum	0.0065
Average	0.001
Minimum	0.0008

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	Total BTEX	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene
Koc [L/kg]	300	83	300	1100	830	1300
Retardation Factor [-]						
Maximum	11.34	3.86	11.34	38.9	29.59	45.79
Average	2.59	1.44	2.59	6.83	5.4	7.89
Minimum	2.34	1.37	2.34	5.9	4.7	6.79

Contaminant Concentration Profiles (8/21/2005)

Well Name	Distance [ft]	Total BTEX [µg/L]	Benzene [µg/L]	Toluene [µg/L]	Ethylbenzene [µg/L]	Xylene [µg/L]	Naphthalene [µg/L]
N	0	3902.	419.	107.	898.	2478.	91.2
P	22.5	2861.2	2780.	1.	1.	79.2	2.
Q	46	741.2	706.	13.9	7.1	14.2	BD
LW-22D	173.5	BD	BD	BD	BD	BD	BD
LW-36D	265.5	BD	BD	BD	BD	BD	BD

Redox Indicator Concentration Profiles (8/21/2005)

Well Name	Distance [ft]	Oxygen [mg/L]	Nitrate [mg/L]	Iron(II) [mg/L]	Sulfate [mg/L]	Redox Condition
N	0	0.17	BD	NS	BD	SO4/CO2-red.
P	22.5	0.08	BD	NS	BD	SO4/CO2-red.
Q	46	0.06	BD	NS	BD	SO4/CO2-red.
LW-22D	173.5	0.14	BD	NS	7.06	SO4/CO2-red.
LW-36D	265.5	0.13	BD	NS	1.88	SO4/CO2-red.

Attenuation Rates

	Total BTEX	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene
NAC (Single Zone) [1/ft]	0.0362	0.0583	0.0432	0.1038	0.1119	0.1698
Decay Rate [1/d]						
Maximum	0.4278	0.8149	0.5394	1.9185	2.158	4.2453
Average	0.1285	0.2449	0.1621	0.5765	0.6485	1.2758
Minimum	0.0107	0.0204	0.0135	0.0479	0.0539	0.1061

Time of Stabilization(TOS) and Max Source Conc. Calculations

Distance to POC [ft]	265.5

BZTO104(e)027394

			Source Reduction			Time of Stabilization [years]					
	RCC		Conc [µg/L]			Breakthrough Time			Time to Equilibrium		
Contaminant	[µg/L]	Well	Current	Target	Maximum	Average	Minimum	Maximum	Average	Minimum	
Total BTEX	1.0	1	3902	No Reduction Required							
Benzene	5.1	2	2780	No Reduction Required							
Toluene	9.8	1	107	No Reduction Required							
Ethylbenzene	7.3	1	898	No Reduction Required							
Xylene	13.0	1	2478	No Reduction Required							
Naphthalene	0.2	1	91	No Reduction Required							

Time of Remediation(TOR) Calculations

	Mass	Solubility	Molecular
NAPL Component	Fraction[-]	[mg/L]	Wght[g/mole]
Total BTEX	0.00	0.0	0.0
Benzene	0.01	1750.0	78.1
Toluene	0.08	535.0	92.1
Ethylbenzene	0.05	152.0	106.2
Xylene	0.12	175.0	106.2
Naphthalene	0.01	31.7	128.2

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From: Rebekah Brooks <RBrooks@landauinc.com>
Sent: Friday, July 21, 2006 3:00 PM
To: ROICK.Tom@deq.state.or.us
Cc: mchandler@timeoil.com; Dost, Patty <PDost@SCHWABE.com>; Tischuk, Mike (Pittsburgh) NA <tischuk@hgm.com>; Rhonda Moon <rgmoon@landauinc.com>
Subject: DEQ quarterly status report - Time Oil NW Terminal
Attach: Apr-Jun06 DEQQUARTERLY_RPT.doc

Tom,
Attached is the DEQ quarterly status report for the Time Oil NW Terminal for April through June, 2006. An original, hard copy will follow by mail.

Have a great weekend!
Rebekah

<<Apr-Jun06 DEQQUARTERLY_RPT.doc>>
Rebekah Brooks, L.G.
Associate Hydrogeologist
Landau Associates, Inc.
425-329-0271

QUARTERLY REPORT TO DEQ
TIME OIL - NORTHWEST TERMINAL
April through June, 2006

SUMMARY OF WORK PERFORMED

- Prepared and submitted the January-March 2006 quarterly report to DEQ.
- Continued operation of the groundwater interim action in the lower zone at RW-2 at an average flow rate of 6.01 gpm.
- Continued operation of groundwater recovery in the upper zone at the groundwater intercept system at the east-west trending storm drain line (SDM-1) at an average flow rate of 6.67 gpm.
- Due to low groundwater elevation conditions, no groundwater was recovered from horizontal recovery well (HRW-1) in the period from April through June 2006.
- A total of approximately 25.83 million gallons of groundwater have been treated and discharged from the interim action system, with a total of about 1.56 million gallons treated during this quarter.
- Continued review of the system operations performance for the groundwater interim action system at RW-2 and HRW-1, the groundwater intercept system at SDM-1, and the onsite wastewater treatment plant (WWTP).
- Collected effluent samples from the WWTP throughout the quarter to evaluate the treatment system efficiency. Laboratory analysis of the effluent samples collected indicated that the system was operating within the established permit limitations.
- Prepared the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report* to DEQ, including results from the third full scale *in situ* chemical oxidation (ISCO) event, conducted in January-February 2006.
- Conducted the second quarter 2006 groundwater monitoring event, June 6-9, 2006, and began receiving second quarter 2006 (June 2005) groundwater monitoring data.
- Continued passive LNAPL recovery in wells LW-21S and LW-27S using passive bailers. LNAPL was observed in LW-27S during the second quarter 2006 and only a trace of LNAPL (0.01 ft) was observed at LW-21S. For the second consecutive quarter, LNAPL was observed in well LW-20S (0.03ft), but not in LW-19S. Product socks were replaced in these wells for LNAPL recovery. Recovered product and the spent product socks are temporarily being stored in a 55-gallon drum in a designated location at the terminal pending disposal.
- Submitted the *Source Control Evaluation Report* to DEQ.
- Revised the Stormwater Pollution Control Plan for the terminal based on comments received from DEQ and re-submitted plan to DEQ and City of Portland in May 2006.
- Submitted Self Monitoring Report (SMR) for WWTP to the City of Portland in June 2006.
- Received and provided a response to DEQ's comments on the *Risk Assessment Work Plan*. Awaiting approval and authorization to proceed on the risk assessment.

- Submitted electronic version of the entire Phase III RI report, dated July 19, 2006, to DEQ.

- Sent Terminal T-5 groundwater data, collected during the first quarter 2006 event on the Port of Portland property to the north of the terminal, to the Port of Portland.

RESULTS COLLECTED

- Influent/effluent samples from the WWTP for April, May, and June 2006. The analytical results from the sampling events indicated that the WWTP was operating within the established permit limits. The data results will be presented in the *Second Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

- Final groundwater data for the second quarter 2006 groundwater sampling events. Data results will be presented in the *Second Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Status Report.*

PROBLEMS ENCOUNTERED AND STEPS TO RESOLVE

- During May 2006, the pump in SDM-1 required inspection and maintenance because pump discharge indicated that solids (possibly iron bacteria) were clogging the flow meter. The discharge pipe between the pump and the flowmeter was replaced and the flowmeter was also replaced. The water recovery from SDM-1 was interrupted for six days (May 17 to May 23) for the maintenance and repair activities.

- An influent water batch tank overflowed in June 2006 due to a faulty float switch which failed to activate the pump that discharges water from the batch tank to the bioreactor tanks. The spill was collected in the spill containment system and the entire treatment system was temporarily shut down. The float switch was replaced and the system was returned to operation. The treatment system operation was interrupted for three days (June 19 to June 22) to complete the necessary repairs. Recovery of water from SDM-1 and RW-2 continued while the repairs were made.

WORK TO BE PERFORMED NEXT QUARTER

- Prepare and submit quarterly report to DEQ.

- Continue implementation of the groundwater interim action in the lower zone at RW-2. Continue to operate the groundwater intercept system at the storm drain (SDM-1). Continue groundwater treatment and discharge to POTW. Continue review of the system operations performance for the groundwater interim action system at RW-2, HRW-1, SDM-1 and the onsite wastewater treatment system.

- Continue to monitor the effluent from the WWTP.

- Submit the *First Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Report* to DEQ.

- Prepare the *Second Quarter 2006 Groundwater Monitoring and Groundwater Interim Action Report* and submit to DEQ.

- Continue passive product recovery in wells in the Main Tank Farm Area, as appropriate.
- Conduct the third quarter 2006 groundwater monitoring event in August 2006.
- Begin conducting the risk assessment, following approval of the work plan by DEQ.
- Receive comments or approval from DEQ on the *Source Control Evaluation Report*.

APPENDIX C

Measurement and Evaluation Procedures

APPENDIX C
MEASUREMENT AND EVALUATION PROCEDURES

This appendix discusses the procedures for conducting groundwater level and product (where observed) measurements during the quarterly groundwater events and the method used to evaluate the groundwater elevations.

MEASUREMENT PROCEDURES

Groundwater level measurements and the check for the presence of product were conducted using an electronic oil-water interface probe. Measurements were taken from the top of the PVC well casing at a marked survey point or at the north side of the casing, and recorded to the nearest 0.01 ft. Measurements in the Willamette River were taken from a surveyed PK nail with washer located on the south side of the dock. Surveyed reference elevations for each water level measurement location, obtained by a licensed land surveyor (ZTec Engineers, Inc., Portland, Oregon), are shown in Table A-2 of this report.

Water level measurements for the quarterly event were obtained over about a 2.5-hour period beginning at about 2.5 hours after a predicted mean river stage, based on predictions for the St. Johns station on the Willamette River. The timing for water level measurements was scheduled to estimate a mean water level elevation or elevation minimally influenced by river stage, and to reduce the time-dependent variation between wells screened in the same water-bearing zone. The timing of the water level measurements was based on average time lag calculations presented in the additional groundwater investigation technical memorandum (Landau Associates 1998), aquifer test report (Landau Associates 1999), and previous quarterly measurements.

GROUNDWATER LEVEL EVALUATION METHODS

For evaluation purposes, the groundwater level measurements were converted from depth-to-water readings to groundwater elevations using the survey information for each location. At locations where product was observed, the groundwater elevations were adjusted to account for the presence of product using the method defined by Lenhard and Parker (1990). Groundwater elevations for the upper and lower zones were contoured using GIS/Key or manually in conjunction with the evaluations conducted to evaluate the capture zone of the groundwater interim action for the upper and lower zones.

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GROUNDWATER SAMPLING PROCEDURES

Groundwater samples were collected from the shallow wells using a peristaltic pump attached to dedicated polyethylene tubing immediately following purging. The deep wells were sampled with disposable bailers, with the following exceptions: the sample from RW-2 was collected from the in-line sampling port on the groundwater interim action system, and the sample from the groundwater intercept system at SDM-1 was collected from the discharge line at the output into Tank 16804. Wells were purged using a peristaltic pump or a centrifugal purge pump. Purging continued until at least 3 casing volumes of water had been removed and specific conductance and temperature had stabilized or until the well purged dry. Four replicate measurements of field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature) were collected at each well during sampling. To prevent degassing of volatile organic compounds during sampling, the pumping rate was maintained below about 100 milliliters per minute. All sampling was conducted in accordance with the Phase I/II RI/FS work plan (Landau Associates 1996) and appropriate provisions of the revised quality assurance project plan and project health and safety plan (Landau Associates 2001). A more detailed description of groundwater sampling procedures is provided in the Phase II RI report (Landau Associates 2000).

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APPENDIX B

Groundwater Interim Action Recovery Summary

TABLE B-1
GROUNDWATER INTERIM ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Fourth Quarter 2000																
October 2000	439,003			0.35									0			Mass removal calculated using November 2000 PCP concentration.
November 2000	305,601	11/9/2000	95	0.24									467,478	11/7/2000	ND (a)	
December 2000	348,720	12/20/2000	39	0.11									497,656	12/6/2000	5.89	
														12/20/2000	9.73	
Quarterly Totals	*1,093,324*			*0.70*									*965,134*			
First Quarter 2001																
January 2001	416,140	1/18/2001	38.8	0.13									239,207	1/18/2001	14.3	
February 2001	335,008	2/13/2001	30	0.08									184,192			
March 2001	332,963	3/7/2001	ND (b)	0.03									517,332	3/7/2001	ND (b)	
Quarterly Totals	*1,084,111*			*0.25*									*940,731*			
Second Quarter 2001																
April 2001	377,931			0.04									275,519			Mass removal calculated using May 2001 PCP concentration.
May 2001	344,252	5/22/2001	12.3	0.04									195,522	5/22/2001	5.29	
June 2001	361,846	6/4/2001	0.68	0.00									563,853			
Quarterly Totals	*1,084,029*			*0.08*									*1,034,894*			
Third Quarter 2001																
July 2001	351,509			0.01									559,015			Mass removal calculated using August 2001 PCP concentration.
August 2001	486,123	8/13/2001	5	0.02									66,876			
Quarterly Totals	*837,632*			*0.03*									*625,891*			
Fourth Quarter 2001																
October 2001	393,168	10/11/2001	ND (a)	0.01									484,158	10/11/2001	ND (a)	
November 2001	319,798			0.01									118,786	11/1 & 11/15/01	ND (a)	Mass removal calculated using December 2001 PCP concentration.
December 2001	361,058	12/6/2001	ND (c)	0.01									717,769	12/6/2001	ND (c)	
Quarterly Totals	*1,074,024*			*0.02*									*836,555*			
First Quarter 2002																
January 2002	331,224			0.02	1,812			0.01					340,688			Recovered groundwater from HRW-1 from January 22-29. Re-initiated groundwater recovery from HRW-1 on February 28.
February 2002	282,480	2/27/2002	8.6	0.02	58			0.00					437,943			HRW-1 mass removal estimates for January and February are based on the March 12 sampling event.
March 2002	280,814			0.02	40,294	3/12/2002	786	0.26					234,816			RW-2 mass removal estimates for January and March are based on February 27 sampling event.
Quarterly Totals	*894,518*			*0.06*	*42,164*			*0.28*					*1,013,447*			
Second Quarter 2002																
April 2002	292,099			0.19	74,996	4/5/2002	94	0.06					391,263	4/5/02	34.4	RW-2 mass removal estimates for April and May are based on June 27 sampling event.
														4/22/02	9.33	
May 2002	310,584			0.20	23,427	5/29/2002	452	0.09					247,440			
June 2002	272,393	6/27/2002	76	0.17	25,484	6/25/2002	410	0.09					307,810			
Quarterly Totals	*875,076*			*0.56*	*123,907*			*0.23*					*946,513*			

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TABLE B-1
GROUNDWATER INTERIM ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Third Quarter 2002																
July 2002	272,771			0.08	51,111			0.18					188,300	7/24/2002	2.09	
August 2002	270,746	8/27/2002	36	0.08	7								301,613	8/20/2002	9.15	HRW-1 shut down on July 24 due to dry pumping conditions and potential biofouling of the well. HRW-1 mass removal rate estimate based on June 2002 data.
September 2002	143,662			0.04	0				110,000	9/23/2002	47.0		369,469	9/23/2002	11.8	RW-2 temporarily shut down on September 25. Water being intercepted from SDM-1 and pumped to treatment system beginning on September 16.
Quarterly Totals	*687,179*				*51,118*				*110,000*		*47.0*		*859,382*			RW-2 mass removal rates based on August 27 sampling event. Total Volume pumped from SDM-1 estimated based on throughout of WWTP and volume recovered from RW-2; Flowmeter to be installed for SDM-1 in October 2002.
Fourth Quarter 2002																
October 2002	177,937			0.06 0.09	0				Not metered				112,129	10/3/2002	8.84	
November 2002	275,033	11/13/2002	37		0				95,157				399,747			The storage tank gauge was moved to groundwater sump SDM-1 on November 1.
December 2002	418,846			0.13	0				124,894				507,766			
Quarterly Totals	*871,816*			*0.27*	*0*				*220,051*				*1,019,642*			RW-2 mass removal rates based on November 13 sampling event.
First Quarter 2003																
January 2003	417,646			0.12	0				166,663			0.40	574,451	1/15/2003	11.6	
February 2003	398,299	2/11/2003	33	0.11	0				192,395	2/13/2003	290	0.47	483,579			
March 2003	458,160			0.13	0				210,400			0.51	624,807			SDM-1 mass removal rates based on February 13 sampling event.
Quarterly Totals	*1,274,105*			*0.35*	*0*				*569,458*			*1.38*	*1,371,258*			RW-2 mass removal rates based on February 11 sampling event.
Second Quarter 2003																
April 2003	445,275			0.04	0				55,037			0.00	481,816	4/9/2003	22.2	
May 2003	455,994	5/7/2003	12	0.05	0	Not Analyzed			0	5/7/2003	0.93	0.00	469,079			
June 2003	385,658			0.04	4,175				89,243			0.00	446,127			RW-2 mass removal rates based on April 8, 2003 sampling event.
Quarterly Totals	*1,286,927*			*0.13*	*4,175*				*144,280*			*0.00*	*1,397,022*			
Third Quarter 2003																
July 2003	330,738	7/28/2003	<5.0	0.01	30,104	7/28/2003	370	0.09	128,562	7/28/2003	409	0.44	441,023	7/11/2003	87.4	Multiple treatment system discharge samples collected and analyzed due to upset
														7/30/2003	8.6	concentration (87.4 ug/L) reported for July 11, 2003 sampling event. Additional discharge samples in response to request from City of Portland
August 2003	366,307	8/27/2003	10	0.03	7,388			0.02	119,831	8/27/2003	120	0.12	397,748	8/4/2003	<5.0	
														8/6/2003	<5.0	HRW-1 mass removal rates based on July 28 sampling event.
														8/11/2003	<4.76	
														8/13/2003	<4.83	SDM-1 mass removal rates based on July 28 sampling event.
														8/18/2003	<4.75	
														8/20/2003	<5.16	RW-2 mass removal rates based on August 27 sampling event.
														8/25/2003	23.8	
														8/27/2003	36.5	
September 2003	262,403			0.02	0			0.00	87,439			0.09	479,703	9/3/2003	19.3	
														9/5/2003	19.6	
														9/9/2003	7.09	
														9/23/2003	16.9	
														9/29/2003	5.96	
Quarterly Totals	*959,448*			*0.07*	*37,492*			*0.12*	*335,832*			*0.65*	*1,318,474*			

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TABLE B-1
GROUNDWATER INTERIM ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Fourth Quarter 2003																
October 2003	298,092	10/23/2003	8.1	0.02					74,025	10/20/2003	43	0.03	350,921	10/6/2003	<4.75	Multiple treatment system discharge samples collected and analyzed due to upset
														10/13/2003	<4.76	concentration (87.4 ug/L) reported for July 11, 2003 sampling event. Additional
														10/20/2003	<4.84	discharge samples in response to request from City of Portland
														10/30/2003	<5.19	
November 2003	216,630			0.01					45,472			0.02	216,711	11/3/2003	<4.73	
														11/10/2003	<4.78	SDM-1 mass removal rates based on October 20 sampling event.
														11/17/2003	<4.84	
														11/21/2003	<4.79	RW-2 mass removal rates based on October 23 sampling event.
December 2003	367,462			0.02					95,504			0.03	488,055	12/1/2003	<4.79	
														12/15/2003	<4.92	
														12/29/2003	30.4	
Quarterly Totals	*882,184*			*0.06*					*335,832*			*0.08*	*3,692,635*			
First Quarter 2004																
January 2004	348,926	2/23/2004	8.69	0.03					141,282	2/23/2004	791	0.93	367,831	1/15/2004	32.1	
														1/23/2004	45.7	
														1/26/2004	31.9	
February 2004	267,665			0.02					197,525			1.31	321,085	2/19/2004	57.2	
March 2004	246,667			0.02					17,825			0.12	197,621	3/2/2004	112	
														3/4/2004	48.5	Multiple treatment system discharge samples collected due to upset
														3/16/2004	113	
														3/19/2004	85.9	
														3/24/2004	6.23	
														3/26/2004	7.07	
Quarterly Totals	*863,258*			*0.06*					*356,632*			*2.36*	*886,537*			
Second Quarter 2004																
April 2004	190,512	6/9/2004	47.3	0.08	0	6/9/2004	278	0.00					315,554	4/22/2004	194	
May 2004	87,481			0.03	3,624			0.01	146	6/9/2004	595	0.001	242,530	5/19/2004	39.3	SDM-1 flow meter replaced May 28, 2004
														5/27/2004	5.81	
June 2004	168,615			0.07	6,681			0.02	44,155			0.22	263,730	6/3/2004	ND	
														6/9/2004	7.55	
														6/15/2004	8.78	
Quarterly Totals	*446,608*			*0.18*	*10,305*			*0.02*	*44,301*			*0.22*	*821,814*			
Third Quarter 2004																
July 2004	210,710	8/5/2004	13.5	0.02	0	8/5/2004	16.6	0.00	58,561	8/5/2004	158	0.08	343,028	7/7/2004	37.5	
August 2004	299,000			0.03	1,700			0.0002	56,900			0.08	667,180	8/10/2004	ND	
September 2004	329,619			0.04	719			0.0001	36,500			0.05	348,620	9/17/2004	ND	
														9/30/2004	ND	
Quarterly Totals	*839,329*			*0.09*	*2,419*			*0.00*	*151,961*			*0.20*	*1,358,828*			

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TABLE B-1
GROUNDWATER INTERIM ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Fourth Quarter 2004																
October 2004	226,975	11/9/2004	2.12	0.004	62	11/11/2004	ND (d)	0	30,347	11/11/2004	1.61	0.0004	137,056			
November 2004	290,700			0.005	0			0	42,400			0.001	395,562	11/10/2004 11/19/2004	ND ND	
December 2004	391,500			0.007	1,200			0	65,000			0.001	470,334	12/17/2004	6.92	
Quarterly Totals	*909,175*			*0.016*	*1,262*			*0.00*	*137,747*			*0.002*	*1,002,952*			
First Quarter 2005																
January 2005	478,600			0.005	4,000			0.0003	110,400			0.007	548,870	1/10/2005	ND	
February 2005	275,000	2/23/2005	1.13	0.003	4,700	2/18/2005	10.2	0.0004	68,800	2/18/2005	7.2	0.004	301,515	2/17/2005	ND	
March 2005	485,200			0.005	9,300			0.0008	148,400			0.009	449,041	3/17/2005	ND	
Quarterly Totals	*1,238,800*			*0.012*	*18,000*			*0.002*	*327,600*			*0.020*	*1,299,426*			
Second Quarter 2005																
April 2005	317,600				10,000				102,400				333,215	4/7/2005	ND	
May 2005	246,400				9,000				27,300				364,419	5/11/2005	ND	
June 2005	153,800	6/6/2005	ND	0	21,300	NA		0	0	NA		0	176,860	6/15/2005	ND	SDM-1 pump broken, no volume pumped, no sample collected. HRW-1 dry, no sample collected.
Quarterly Totals	*717,800*			*0*	*40,300*			*0*	*129,700*			*0*	*874,494*			
Third Quarter 2005																
July 2005	116,300				200			0	47,300			0	206,287	7/7/2005	ND	
August 2005	290,100	8/19/2005	ND	0	100	NA		0	67,400	NA		0	220,533	8/15/2005	1.05	
September 2005	289,900			0	0			0	0			0	211,180	9/14/2005	ND	
Quarterly Totals	*696,300*			*0*	*300*			*0*	*114,700*			*0*	*638,000*			
Grand Totals	***18,615,643***			***2.950***	***331,442***			***0.6534***	***2,978,094***			***4.9037***	***22,903,629***			

ND = Not Detected.

(a) PCP not detected above the detection limit of 5 µg/L; concentration-dependent calculations based on half the detection limit.
(b) PCP not detected above the detection limit of 25 µg/L; concentration-dependent calculations based on half the detection limit.
(c) PCP not detected above the detection limit of 5.25 µg/L; concentration-dependent calculations based on half the detection limit.
(d) PCP not detected above the detection limit of 0.473 µg/L.

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APPENDIX A

Groundwater Level Measurements and Quality Data

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
Shallow Wells:							
B	03/25/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	03/31/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	07/16/1997	08:30	29.04	11.02	18.02	----	
B	10/21/1997	16:35	29.04	13.39	15.65	----	
B	01/27/1998	12:15	29.04	11.53	17.51	----	
B	05/18/1998	17:56	29.04	12.51	16.53	----	
B	08/17/1998	11:02	29.04	14.40	14.64	----	
B	11/13/1998	10:24	29.04	14.38	14.66	----	
B	02/16/1999	13:36	29.04	9.69	19.35	----	
B	05/18/1999	15:52	29.04	11.72	17.32	----	
B	09/21/1999	12:21	29.04	15.18	13.86	----	
B	12/06/1999	14:37	29.04	13.00	16.04	----	
B	02/16/2000	10:57	29.04	11.84	17.20	----	
B	05/23/2000	17:31	29.04	13.22	15.82	----	
B	08/29/2000	14:23	29.04	15.32	13.72	----	
B	11/09/2000	13:31	29.04	15.29	13.75	----	
B	02/12/2001	15:25	29.04	13.68	15.36	----	
B	06/04/2001	12:49	29.04	14.18	14.86	----	
B	08/16/2001	11:54	29.04	15.80	13.24	----	
B	11/28/2001	12:44	29.04	13.80	15.24	----	
B	02/27/2002	14:33	29.04	12.27	16.77	----	
B	06/27/2002	15:05	29.04	13.38	15.66	----	
B	08/26/2002	16:59	29.04	14.02	15.02	----	
B	11/13/2002	09:01	29.04	13.90	15.14	----	
B	02/11/2003	10:13	29.04	12.85	16.19	----	
B	05/08/2003	08:11	29.04	12.27	16.77	----	
B	08/27/2003	15:30	29.04	14.70	14.34	----	
B1	08/11/1993	09:47	29.74	13.71	16.03	----	Slight sheen, strong "organic" odor
B1	10/26/1993	----	29.74	NM	----	----	Could not access - cap stuck
B1	11/17/1993	----	29.74	NM	----	----	Could not access - cap stuck
B1	12/17/1993	13:03	29.74	14.52	15.22	----	
B1	01/17/1994	13:14	29.74	13.86	15.88	----	
B1	02/18/1994	14:22	29.74	13.76	15.98	----	
B1	03/18/1994	13:01	29.74	12.81	16.93	----	
B1	04/18/1994	14:43	29.74	12.94	16.80	----	
B1	05/18/1994	15:23	29.74	13.42	16.32	----	
B1	06/17/1994	14:55	29.74	13.91	15.83	----	
B1	07/19/1994	09:21	29.74	14.40	15.34	----	
B1	08/17/1994	07:36	29.74	14.85	14.89	----	
B1	09/16/1994	07:38	29.74	15.15	14.59	----	
B1	10/17/1994	09:04	29.74	15.50	14.24	----	
B1	11/21/1994	11:52	29.74	14.19	15.55	----	
B1	12/19/1994	11:12	29.74	12.88	16.86	----	
B1	01/18/1995	11:19	29.74	11.45	18.29	----	
B1	02/21/1995	13:24	29.74	10.65	19.09	----	
B1	03/21/1995	13:06	29.74	10.87	18.87	----	
B1	04/19/1995	12:49	29.74	11.56	18.18	----	
B1	05/19/1995	13:40	29.74	12.03	17.71	----	
B1	07/17/1995	13:56	29.74	13.15	16.59	----	
B1	08/22/1995	07:54	29.74	13.92	15.82	----	
B1	09/22/1995	08:31	29.74	14.53	15.21	----	
B1	11/20/1995	07:58	29.74	13.95	15.79	----	
B1	12/01/1995	08:30	29.74	13.00	16.74	----	
B1	12/19/1995	07:28	29.74	11.08	18.66	----	
B1	01/19/1996	08:39	29.74	10.82	18.92	----	
B1	02/20/1996	10:43	29.74	4.77	24.97	----	
B1	03/19/1996	09:25	29.74	7.06	22.68	----	
B1	04/19/1996	11:54	29.74	9.64	20.10	----	
B1	07/22/1996	14:25	29.74	11.93	17.81	----	
B1	08/20/1996	14:21	29.74	13.10	16.64	----	
B1	09/24/1996	08:13	29.74	13.89	15.85	----	Floating rusty particulates
B1	10/28/1996	11:14	29.74	14.03	15.71	----	
B1	12/13/1996	10:48	29.74	11.50	18.24	----	
B1	03/25/1997	10:48	29.74	----	----	----	Couldn't remove cap
B1	03/31/1997	----	29.74	----	----	----	Couldn't remove cap
B1	07/16/1997	07:49	29.74	11.01	18.73	----	
B1	10/21/1997	16:33	29.74	13.56	16.18	----	
B1	01/27/1998	12:10	29.74	11.68	18.06	----	
B1	05/18/1998	17:55	29.74	12.76	16.98	----	
B1	08/17/1998	11:04	29.74	14.15	15.59	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
B1	11/13/1998	10:21	29.74	15.05	14.69	----	
B1	02/16/1999	13:33	29.74	9.59	20.15	----	
B1	05/18/1999	15:51	29.74	11.79	17.95	----	
B1	09/21/1999	12:19	29.74	14.63	15.11	----	
B1	12/06/1999	14:38	29.74	14.25	15.49	----	
B1	02/16/2000	10:55	29.74	12.20	17.54	----	
B1	05/23/2000	17:32	29.74	13.25	16.49	----	
B1	08/29/2000	14:22	29.74	14.93	14.81	----	
B1	11/09/2000	13:30	29.74	15.56	14.18	----	
B1	02/12/2001	15:26	29.74	15.19	14.55	----	
B1	06/04/2001	12:50	29.74	15.06	14.68	----	
B1	08/16/2001	11:55	29.74	15.72	14.02	----	
B1	11/28/2001	12:45	29.74	15.47	14.27	----	
B1	02/27/2002	14:34	29.74	12.15	17.59	----	
B1	03/05/2002	11:06	29.74	12.28	17.46	----	
B1	04/05/2002	08:42	29.74	12.40	17.34	----	
B1	05/29/2002	00:00	29.74	13.20	16.54	----	
B1	06/27/2002	15:06	29.74	13.77	15.97	----	
B1	08/26/2002	17:00	29.74	14.79	14.95	----	
B1	11/13/2002	09:02	29.74	16.00	13.74	----	
B1	02/11/2003	10:15	29.74	12.86	16.88	----	
B1	05/08/2003	08:12	29.74	12.25	17.49	----	
B1	08/27/2003	15:31	29.74	14.79	14.95	----	
B1	10/23/2003	14:07	29.74	15.61	14.13	----	
B1	02/19/2004	14:13	29.74	12.39	17.35	----	
B1	06/09/2004	09:01	29.74	14.10	15.64	----	
B1	08/10/2004	12:21	29.74	15.18	14.56	----	
B1	11/18/2004	09:04	29.74	15.70	14.04	----	
B1	02/15/2005	10:04	29.74	14.83	14.91	----	Slight product odor
B1	06/07/2005	19:35	29.74	13.95	15.79	----	
B1	08/16/2005	17:14	29.74	14.98	14.76	----	
C	03/25/1997	12:32	28.89	5.56	23.33	----	
C	03/31/1997	11:38	28.89	6.16	22.73	----	
C	07/16/1997	08:47	28.89	8.28	20.61	----	
C	10/21/1997	15:15	28.89	10.00	18.89	----	
C	01/27/1998	13:41	28.89	7.98	20.91	----	
C	05/18/1998	18:08	28.89	9.54	19.35	----	
C	08/17/1998	11:11	28.89	dry	----	----	
C	11/13/1998	10:36	28.89	10.36	18.53	----	
C	02/16/1999	13:58	28.89	5.91	22.98	----	
C	05/18/1999	16:04	28.89	7.90	20.99	----	
C	09/21/1999	12:44	28.89	dry	----	----	
C	12/06/1999	14:50	28.89	9.82	----	----	Water in endcap
C	02/16/2000	09:51	28.89	8.78	20.11	----	
C	05/23/2000	17:55	28.89	dry	----	----	
C	08/29/2000	14:33	28.89	dry	----	----	
C	11/09/2000	13:47	28.89	9.94	18.95	----	Dry?
C	02/12/2001	15:08	28.89	dry	----	----	
C	06/04/2001	13:25	28.89	dry	----	----	
C	08/16/2001	12:11	28.89	dry	----	----	
C	11/28/2001	13:03	28.89	dry	----	----	
C	02/27/2002	14:44	28.89	8.94	19.95	----	
C	06/27/2002	15:36	28.89	dry	----	----	
C	08/26/2002	17:31	28.89	dry	----	----	
C	11/13/2002	09:25	28.89	dry	----	----	
C	02/11/2003	10:46	28.89	dry	----	----	1" water
C	05/08/2003	08:35	28.89	8.53	20.36	----	
C	08/27/2003	15:08	28.89	dry	----	----	
D	03/25/1997	12:25	30.04	8.32	21.72	----	
D	03/31/1997	11:31	30.04	8.66	21.38	----	
D	07/16/1997	08:35	30.04	10.45	19.59	----	
D	10/21/1997	17:10	30.04	13.27	16.77	----	
D	01/27/1998	13:31	30.04	10.72	19.32	----	
D	05/18/1998	17:36	30.04	12.23	17.81	----	
D	08/17/1998	10:57	30.04	13.83	16.21	----	
D	11/13/1998	09:05	30.04	15.01	15.03	----	
D	02/16/1999	13:45	30.04	8.50	21.54	----	
D	05/18/1999	15:59	30.04	11.00	19.04	----	
D	09/21/1999	12:37	30.04	14.41	15.63	----	
D	12/06/1999	14:46	30.04	14.04	16.00	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
D	02/16/2000	09:55	30.04	11.50	18.54	----	
D	05/23/2000	12:56	30.04	12.74	17.30	----	
D	08/29/2000	14:35	30.04	14.70	15.34	----	
D	11/09/2000	13:43	30.04	15.49	14.55	----	
D	02/12/2001	15:12	30.04	14.99	15.05	----	
D	06/04/2001	12:35	30.04	14.95	15.09	----	
D	08/16/2001	11:46	30.04	15.64	14.40	----	
D	11/28/2001	12:43	30.04	15.45	14.59	----	
D	02/27/2002	14:21	30.04	11.37	18.67	----	
D	03/05/2002	11:00	30.04	11.51	18.53	----	
D	04/05/2002	08:45	30.04	11.65	18.39	----	
D	05/29/2002	00:00	30.04	12.73	17.31	----	
D	06/27/2002	15:00	30.04	13.43	16.61	----	
D	08/26/2002	17:04	30.04	14.68	15.36	----	
D	11/13/2002	09:19	30.04	15.96	14.08	----	
D	02/11/2003	10:41	30.04	12.10	17.94	----	
D	05/08/2003	08:30	30.04	11.48	18.56	----	
D	08/27/2003	15:03	30.04	14.60	15.44	----	
D	10/23/2003	13:50	30.04	15.54	14.50	----	
D	02/19/2004	14:22	30.04	11.83	18.21	----	
D	06/09/2004	09:28	30.04	13.78	16.26	----	
D	08/10/2004	12:13	30.04	15.02	15.02	----	
D	11/18/2004	09:30	30.04	15.69	14.35	----	
D	02/15/2005	09:42	30.04	14.62	15.42	----	
D	06/07/2005	19:28	30.04	13.58	16.46	----	
D	08/16/2005	17:30	30.04	14.80	15.24	----	
F	08/18/1998	08:10	NA	14.77	NA		
F							
F	08/10/1993	16:10	----	NM	----	NM	Covered by soil stockpile
F							Abandoned August 2003
G	03/25/1997	11:57	30.24	14.49	15.75	----	
G	03/31/1997	09:13	30.24	14.01	16.23	----	
G	07/16/1997	07:37	30.24	14.30	15.94	----	
G	10/21/1997	16:20	30.24	dry	----	----	
G	01/27/1998	11:49	30.24	dry	----	----	
G	05/18/1998	17:30	30.24	dry	----	----	
G	08/17/1998	11:06	30.24	dry	----	----	
G	11/13/1998	09:53	30.24	dry	----	----	
G	02/16/1999	13:14	30.24	dry	----	----	
G	05/18/1999	14:50	30.24	dry	----	----	
G	09/21/1999	11:30	30.24	dry	----	----	
G	12/06/1999	14:07	30.24	dry	----	----	
G	02/16/2000	10:19	30.24	dry	----	----	
G	05/23/2000	16:33	30.24	dry	----	----	
G	08/29/2000	13:18	30.24	dry	----	----	
G	11/09/2000	12:30	30.24	dry	----	----	
G	02/12/2001	16:02	30.24	dry	----	----	
G	06/04/2001	11:41	30.24	dry	----	----	
G	08/16/2001	10:50	30.24	dry	----	----	
G	11/28/2001	11:33	30.24	dry	----	----	
G	02/27/2002	13:38	30.24	dry	----	----	
G	06/27/2002	14:13	30.24	dry	----	----	
G	08/26/2002	16:05	30.24	dry	----	----	
G	11/13/2002	07:37	30.24	dry	----	----	
G	02/11/2003	08:58	30.24	dry	----	----	
G	05/08/2003	06:57	30.24	dry	----	----	
G	08/27/2003	13:38	30.24	dry	----	----	
G	10/23/2003	12:38	30.24	dry	----	----	
G	02/19/2004	12:58	30.24	dry	----	----	
G	06/09/2004	07:54	30.24	dry	----	----	
G	08/10/2004	12:01	30.24	dry	----	----	
G	11/18/2004	09:16	30.24	dry	----	----	
H	03/31/1997	11:51	27.08	5.42	21.66	----	
H	07/16/1997	08:44	27.08	7.29	19.79	----	
H	10/21/1997	17:45	27.08	10.08	17.00	----	
H	01/27/1998	13:45	27.08	7.56	19.52	----	
H	05/18/1998	17:50	27.08	9.06	18.02	----	
H	08/17/1998	09:15	27.08	10.68	16.40	----	
H	11/13/1998	10:54	27.08	11.84	15.24	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
H	02/16/1999	13:50	27.08	5.35	21.73	----	
H	05/18/1999	15:41	27.08	7.78	19.30	----	
H	09/21/1999	12:15	27.08	11.23	15.85	----	
H	12/06/1999	15:13	27.08	10.91	16.17	----	
H	02/16/2000	10:52	27.08	8.28	18.80	----	
H	05/23/2000	17:20	27.08	9.48	17.60	----	
H	08/29/2000	14:06	27.08	11.55	15.53	----	
H	11/09/2000	13:23	27.08	12.34	14.74	----	
H	02/12/2001	15:36	27.08	11.88	15.20	----	
H	06/04/2001	12:27	27.08	11.81	15.27	----	
H	08/16/2001	11:41	27.08	12.57	14.51	----	
H	11/28/2001	12:34	27.08	12.39	14.69	----	
H	02/27/2002	14:18	27.08	8.14	18.94	----	
H	03/05/2002	10:58	27.08	8.28	18.80	----	
H	04/05/2002	09:10	27.08	8.45	18.63	----	
H	05/29/2002	00:00	27.08	9.38	17.70	----	
H	06/27/2002	14:51	27.08	10.25	16.83	----	
H	08/26/2002	17:00	27.08	11.54	15.54	----	
H	11/13/2002	09:12	27.08	12.83	14.25	----	
H	02/11/2003	10:33	27.08	8.96	18.12	----	
H	05/08/2003	08:24	27.08	8.24	18.84	----	
H	08/27/2003	15:02	27.08	11.48	15.60	----	
H	10/23/2003	13:42	27.08	12.41	14.67	----	
H	02/19/2004	14:35	27.08	9.71	17.37	----	
H	06/09/2004	09:16	27.08	10.61	16.47	----	
H	08/10/2004	11:33	27.08	11.93	15.15	----	
H	11/18/2004	09:36	27.08	12.54	14.54	----	
H	06/09/2005	16:10	27.08	10.42	16.66	----	
H	08/16/2004	17:25	27.08	11.42	15.66	----	
J1	03/25/1997	12:15	29.70	8.78	20.92	----	Orange/brown algae
J1	03/31/1997	11:19	29.70	9.02	20.68	----	
J1	07/16/1997	08:22	29.70	10.49	19.21	----	
J1	10/21/1997	16:58	29.70	13.10	16.60	----	
J1	01/27/1998	13:15	29.70	11.03	18.67	----	
J1	05/18/1998	18:01	29.70	12.27	17.43	----	
J1	08/17/1998	11:00	29.70	13.78	15.92	----	
J1	11/13/1998	10:30	29.70	14.77	14.93	----	
J1	02/16/1999	13:37	29.70	8.91	20.79	----	
J1	05/18/1999	15:46	29.70	11.19	18.51	----	
J1	09/21/1999	12:28	29.70	14.36	15.34	----	
J1	12/06/1999	15:07	29.70	13.95	15.75	----	
J1	02/16/2000	11:05	29.70	11.67	18.03	----	
J1	05/23/2000	17:27	29.70	12.78	16.92	----	
J1	08/29/2000	14:14	29.70	14.58	15.12	----	
J1	11/09/2000	13:25	29.70	15.30	14.40	----	
J1	02/12/2001	15:22	29.70	14.87	14.83	----	
J1	06/04/2001	12:39	29.70	14.83	14.87	----	
J1	08/16/2001	11:52	29.70	15.48	14.22	----	
J1	11/28/2001	12:35	29.70	15.23	14.47	----	
J1	02/27/2002	14:30	29.70	11.62	18.08	----	
J1	03/05/2002	11:04	29.70	11.76	17.94	----	
J1	04/05/2002	08:40	29.70	11.87	17.83	----	
J1	05/29/2002	00:00	29.70	12.77	16.93	----	
J1	06/27/2002	15:02	29.70	13.40	16.30	----	
J1	08/26/2002	16:54	29.70	14.51	15.19	----	
J1	11/13/2002	09:00	29.70	15.71	13.99	----	
J1	02/11/2003	10:18	29.70	12.33	17.37	----	
J1	05/08/2003	08:14	29.70	11.65	18.05	----	
J1	08/27/2003	14:47	29.70	14.46	15.24	----	
J1	10/23/2003	13:52	29.70	15.31	14.39	----	
J1	02/19/2004	14:18	29.70	11.88	17.82	----	
J1	06/09/2004	09:08	29.70	13.71	15.99	----	
J1	08/10/2004	12:20	29.70	14.86	14.84	----	On 8/03, DTW was 14.75; 8/10/04 reading changed from 15.86 to 14.86
J1	11/18/2004	09:03	29.70	15.45	14.25	----	
J1	02/15/2005	09:50	29.70	14.53	15.17	----	
J1	06/07/2005	19:17	29.70	13.56	16.14	----	
J1	08/16/2005	17:06	29.70	14.65	15.05	----	
K	03/25/1997	12:08	29.42	8.20	21.22	----	
K	03/31/1997	09:32	29.42	8.46	20.96	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
K	07/16/1997	08:00	29.42	10.03	19.39	----	
K	10/21/1997	16:45	29.42	12.71	16.71	----	
K	01/27/1998	12:37	29.42	10.46	18.96	----	
K	05/18/1998	17:52	29.42	11.77	17.65	----	
K	08/17/1998	10:50	29.42	13.34	16.08	----	
K	11/13/1998	10:14	29.42	14.30	15.12	----	
K	02/16/1999	13:55	29.42	8.41	21.01	----	
K	05/18/1999	15:30	29.42	10.68	18.74	----	
K	09/21/1999	12:08	29.42	13.91	15.51	----	
K	12/06/1999	14:32	29.42	13.44	15.98	----	
K	02/16/2000	10:48	29.42	11.15	18.27	----	
K	05/23/2000	17:12	29.42	12.25	17.17	----	
K	08/29/2000	13:56	29.42	14.16	15.26	----	
K	11/09/2000	13:16	29.42	14.84	14.58	----	
K	02/12/2001	15:41	29.42	14.35	15.07	----	
K	06/04/2001	12:20	29.42	14.22	15.20	----	
K	08/16/2001	11:35	29.42	15.12	14.30	----	
K	11/28/2001	12:26	29.42	14.68	14.74	----	
K	02/27/2002	14:17	29.42	11.05	18.37	----	
K	03/05/2002	10:55	29.42	11.25	18.17	----	
K	04/05/2002	08:55	29.42	11.30	18.12	----	
K	05/29/2002	00:00	29.42	12.22	17.20	----	
K	06/27/2002	14:47	29.42	12.92	16.50	----	
K	08/26/2002	17:17	29.42	14.12	15.30	----	
K	11/13/2002	09:11	29.42	15.18	14.24	----	
K	02/11/2003	10:29	29.42	11.80	17.62	----	
K	05/08/2003	08:21	29.42	11.14	18.28	----	
K	08/27/2003	14:52	29.42	14.08	15.34	----	
K	10/23/2003	13:40	29.42	14.91	14.51	----	
K	02/19/2004	14:39	29.42	11.41	18.01	----	
K	06/09/2004	09:23	29.42	13.26	16.16	----	
K	08/10/2004	11:28	29.42	14.35	15.07	----	
K	11/18/2004	09:31	29.42	15.01	14.41	----	
K	06/07/2005	19:20	29.42	13.07	16.35	----	
K	08/16/2005	16:45	29.42	14.23	15.19	----	
L	03/25/1997	12:35	28.10	4.98	23.12	----	
L	03/31/1997	11:40	28.10	5.24	22.86	----	
L	07/16/1997	08:49	28.10	7.50	20.60	----	
L	10/21/1997	15:18	28.10	9.55	18.55	----	
L	01/27/1998	13:39	28.10	6.45	21.65	----	
L	05/18/1998	18:07	28.10	9.21	18.89	----	
L	08/17/1998	11:10	28.10	11.59	16.51	----	
L	11/13/1998	10:35	28.10	13.02	15.08	----	
L	02/16/1999	13:57	28.10	4.78	23.32	----	
L	05/18/1999	16:03	28.10	7.62	20.48	----	
L	09/21/1999	12:43	28.10	12.30	15.80	----	
L	12/06/1999	14:49	28.10	9.51	18.59	----	
L	02/16/2000	09:49	28.10	7.13	20.97	----	
L	05/23/2000	17:54	28.10	9.11	18.99	----	
L	08/29/2000	14:32	28.10	12.66	15.44	----	
L	11/09/2000	13:46	28.10	13.56	14.54	----	
L	02/12/2001	15:07	28.10	13.04	15.06	----	
L	06/04/2001	13:24	28.10	12.78	15.32	----	
L	08/16/2001	12:10	28.10	13.66	14.44	----	
L	11/28/2001	13:02	28.10	12.34	15.76	----	
L	02/27/2002	14:42	28.10	7.16	20.94	----	
L	03/05/2002	11:12	28.10	7.39	20.71	----	
L	04/05/2002	08:39	28.10	7.63	20.47	----	
L	05/29/2002	00:00	28.10	9.09	19.01	----	
L	06/27/2002	10:38	28.10	10.11	17.99	----	
L	08/26/2002	17:30	28.10	12.56	15.54	----	
L	11/13/2002	09:26	28.10	14.00	14.10	----	
L	02/11/2003	10:47	28.10	7.17	20.93	----	
L	05/08/2003	08:34	28.10	7.01	21.09	----	
L	08/27/2003	15:09	28.10	15.20	12.90	----	
L	10/23/2003	14:20	28.10	13.56	14.54	----	
L	02/19/2004	13:57	28.10	6.84	21.26	----	
L	06/09/2004	09:35	28.10	11.10	17.00	----	
L	08/10/2004	12:27	28.10	13.00	15.10	----	
L	11/18/2004	09:42	28.10	13.77	14.33	----	
L	06/07/2005	19:22	28.10	9.51	18.59	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
L	08/16/2005	16:22	28.10	13.72	14.38	----	
N	03/25/1997	11:48	31.40	14.05	17.35	----	
N	03/31/1997	08:59	31.40	14.26	17.14	----	Hydrocarbon odor, product
N	07/16/1997	07:20	31.40	16.03	16.33	1.20	Light brown color; thick coating on probe
N	10/21/1997	16:09	31.40	16.46	14.94	----	No product - strong petroleum odor
N	10/23/1997	17:20	31.40	16.48	14.92	----	No product - strong petroleum odor
N	01/27/1998	11:13	31.40	15.01	16.41	0.02	
N	05/18/1998	17:20	31.40	16.39	15.06	0.06	
N	08/17/1998	10:40	31.40	17.16	14.26	0.02	Thin coat of thick product
N	11/13/1998	09:48	31.40	17.83	13.58	0.01	
N	02/16/1999	12:55	31.40	14.09	17.53	0.27	Strong petroleum odor
N	05/18/1999	14:47	31.40	15.79	15.64	0.04	
N	09/21/1999	11:23	31.40	17.39	14.02	0.01	
N	12/06/1999	14:00	31.40	16.57	14.83	----	
N	02/16/2000	10:10	31.40	15.69	15.71	----	
N	05/23/2000	16:24	31.40	16.42	14.98	----	Strong petroleum odor, no product
N	08/29/2000	13:07	31.40	17.61	13.79	----	
N	11/09/2000	12:26	31.40	18.23	13.19	0.03	
N	02/12/2001	15:49	31.40	17.64	13.76	----	
N	06/04/2001	11:31	31.40	17.58	13.82	----	
N	08/16/2001	10:29	31.40	18.08	13.32	----	Trace product
N	11/28/2001	11:27	31.40	18.06	13.34	----	Trace product
N	02/27/2002	13:25	31.40	15.76	15.64	----	
N	04/05/2002	08:09	31.40	15.88	15.52	----	
N	05/29/2002	00:00	31.40	16.42	14.98	----	
N	06/27/2002	14:12	31.40	16.80	14.60	----	
N	08/26/2002	15:56	31.40	17.51	13.89	----	
N	11/13/2002	07:27	31.40	18.44	12.98	0.03	Product present
N	02/11/2003	08:49	31.40	15.33	16.07	----	
N	05/08/2003	06:51	31.40	15.71	15.69	----	
N	08/27/2003	13:33	31.40	17.54	13.86	----	
N	10/23/2003	12:08	31.40	18.18	13.22	----	
N	02/19/2004	12:21	31.40	15.79	15.61	----	
N	06/09/2004	07:36	31.40	17.04	14.36	----	
N	08/10/2004	10:55	31.40	17.72	13.68	----	
N	11/18/2004	08:38	31.40	dry	----	----	
N	02/15/2005	10:38	31.40	17.40	14.00	----	Slight product odor
N	06/07/2005	19:15	31.40	16.54	14.86	----	
N	08/16/2005	16:27	31.40	17.45	13.95	----	
P	03/25/1997	11:45	29.96	12.88	17.08	----	
P	03/31/1997	08:55	29.96	12.94	17.02	----	Hydrocarbon odor, product
P	07/16/1997	07:15	29.96	14.02	16.08	0.17	Light coating on probe; light brown color
P	10/21/1997	16:05	29.96	15.23	14.73	----	No product - strong petroleum odor
P	10/23/1997	17:25	29.96	15.21	14.75	----	No product - strong petroleum odor
P	01/27/1998	11:09	29.96	13.87	16.09	----	
P	05/18/1998	17:18	29.96	13.08	16.88	----	Trace of product on probe
P	08/17/1998	10:37	29.96	15.82	14.15	0.01	Sheen on probe, strong petroleum odor
P	11/13/1998	09:46	29.96	16.63	13.37	0.05	Strong gasoline odor
P	02/16/1999	12:52	29.96	12.91	17.10	0.06	Strong petroleum odor
P	05/18/1999	14:43	29.96	14.68	15.38	0.13	
P	09/21/1999	11:20	29.96	16.08	13.89	0.01	
P	12/06/1999	13:55	29.96	15.41	14.55	----	
P	02/16/2000	10:08	29.96	14.51	15.45	----	
P	05/23/2000	16:21	29.96	15.15	14.81	----	Trace of product on surface
P	08/29/2000	13:04	29.96	16.26	13.71	0.01	
P	11/09/2000	12:24	29.96	16.98	13.00	0.03	
P	02/12/2001	15:46	29.96	16.31	13.65	----	
P	06/04/2001	11:27	29.96	16.26	13.70	----	Trace product
P	08/16/2001	10:28	29.96	16.75	13.21	----	
P	11/28/2001	11:24	29.96	17.01	12.95	----	
P	02/27/2002	13:22	29.96	14.60	15.44	0.10	Strong ethanol-like odor
P	04/05/2002	08:07	29.96	14.70	15.34	0.10	
P	05/29/2002	00:00	29.96	15.00	14.96	----	Trace product
P	06/27/2002	14:11	29.96	15.49	14.47	----	
P	08/26/2002	15:54	29.96	16.15	13.81	----	
P	11/13/2002	07:25	29.96	16.99	13.00	0.04	Product present
P	02/11/2003	08:44	29.96	14.13	15.84	0.01	Product present
P	05/08/2003	06:47	29.96	15.53	14.44	0.01	Product barely present
P	08/27/2003	13:30	29.96	16.19	13.77	----	
P	10/23/2003	12:05	29.96	16.60	13.38	0.02	Trace product

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
P	02/19/2004	12:19	29.96	14.56	15.40	----	
P	06/09/2004	07:35	29.98	15.70	14.28	----	New reference elevation July 2004
P	08/10/2004	10:53	29.98	16.40	13.58	----	
P	11/18/2004	08:37	29.98	dry	----	----	
P	02/15/2005	10:43	29.98	16.08	13.90	----	Slight product odor
P	06/07/2005	19:20	29.98	15.65	14.33	----	
P	08/16/2005	16:23	29.98	16.10	13.88	----	Strong petro odor
Q	03/25/1997	11:42	30.36	13.55	16.81	----	
Q	03/31/1997	08:52	30.36	13.54	16.82	----	Hydrocarbon odor
Q	07/16/1997	07:10	30.36	14.55	15.83	0.02	Light coating on probe; light brown color
Q	10/21/1997	16:04	30.36	15.70	14.66	----	No product - strong petroleum odor
Q	10/23/1997	17:29	30.36	15.69	14.67	----	No product - strong petroleum odor
Q	01/27/1998	11:05	30.36	14.48	15.88	----	
Q	05/18/1998	17:16	30.36	15.58	14.78	----	
Q	08/17/1998	10:35	30.36	16.27	14.09	----	Slight sheen on probe; no product, strong petroleum odor
Q	11/13/1998	09:44	30.36	17.01	13.36	0.01	Strong gasoline odor
Q	02/16/1999	12:49	30.36	13.61	16.76	0.01	Strong petroleum odor
Q	05/18/1999	14:40	30.36	15.13	15.23	----	Strong odor when cap removed
Q	09/21/1999	11:17	30.36	16.51	13.85	----	
Q	12/06/1999	13:53	30.36	15.88	14.48	----	
Q	02/16/2000	10:06	30.36	15.02	15.34	----	Film of product
Q	05/23/2000	16:19	30.36	15.64	14.72	----	Strong petroleum odor, no product
Q	08/29/2000	13:01	30.36	16.69	13.67	----	
Q	11/09/2000	12:23	30.36	17.50	12.86	----	Trace of product
Q	02/12/2001	15:45	30.36	16.71	13.65	----	
Q	06/04/2001	11:25	30.36	16.66	13.70	----	
Q	08/16/2001	10:26	30.36	17.15	13.21	----	Trace product
Q	11/28/2001	11:21	30.36	17.76	12.94	0.42	
Q	02/27/2002	13:20	30.36	15.07	15.29	----	Strong petroleum odor, no product
Q	04/05/2002	08:05	30.36	15.23	15.13	----	Trace product
Q	05/29/2002	00:00	30.36	15.53	14.83	----	Trace product
Q	06/27/2002	14:10	30.36	15.95	14.41	----	Trace product
Q	08/26/2002	15:52	30.36	16.60	13.76	----	
Q	11/13/2002	07:30	30.36	17.50	12.87	0.01	Product present
Q	02/11/2003	08:47	30.36	14.67	15.69	----	
Q	05/08/2003	06:48	30.36	15.00	15.54	0.22	
Q	08/27/2003	13:28	30.36	16.60	13.76	----	
Q	10/23/2003	12:03	30.36	17.50	13.05	0.24	
Q	02/19/2004	12:17	30.36	15.07	15.29	----	Trace product
Q	06/09/2004	07:34	30.36	16.15	14.21	----	
Q	08/10/2004	10:52	30.36	16.81	13.55	----	
Q	11/18/2004	08:35	30.36	17.55	13.01	0.25	
Q	02/15/2005	10:46	30.36	16.50	13.86	----	Strong product odor
Q	06/07/2005	19:25	30.36	15.70	14.66	----	
Q	08/16/2005	16:20	30.36	16.51	13.85	----	Strong petro odor
LW001S	03/31/1997	11:12	27.96	6.65	21.31		
LW001S	07/16/1997	08:15	27.96	8.34	19.62	----	
LW001S	10/21/1997	16:53	27.96	11.02	16.94	----	
LW001S	01/27/1998	13:00	27.96	8.75	19.21	----	
LW001S	05/18/1998	17:40	27.96	9.15	18.81	----	
LW001S	08/17/1998	10:54	27.96	11.67	16.29	----	
LW001S	11/13/1998	10:02	27.96	12.76	15.20	----	
LW001S	02/16/1999	13:24	27.96	6.60	21.36	----	
LW001S	05/18/1999	15:38	27.96	8.92	19.04	----	
LW001S	09/21/1999	12:10	27.96	12.20	15.76	----	
LW001S	12/06/1999	14:33	27.96	11.86	16.10	----	
LW001S	02/16/2000	10:50	27.96	9.42	18.54	----	
LW001S	05/23/2000	17:18	27.96	10.52	17.44	----	
LW001S	08/29/2000	13:58	27.96	12.51	15.45	----	
LW001S	11/09/2000	13:17	27.96	13.26	14.70	----	
LW001S	02/12/2001	15:33	27.96	12.82	15.14	----	
LW001S	06/04/2001	12:24	27.96	12.77	15.19	----	
LW001S	08/16/2001	11:37	27.96	13.45	14.51	----	
LW001S	11/28/2001	12:28	27.96	13.25	14.71	----	
LW001S	02/27/2002	14:19	27.96	9.31	18.65	----	
LW001S	03/05/2002	10:56	27.96	9.45	18.51	----	
LW001S	04/05/2002	09:08	27.96	9.60	18.36	----	
LW001S	05/29/2002	00:00	27.96	10.49	17.47	----	
LW001S	06/27/2002	14:50	27.96	11.26	16.70	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW001S	08/26/2002	17:11	27.96	12.47	15.49	----	
LW001S	11/13/2002	09:07	27.96	13.72	14.24	----	
LW001S	02/11/2003	10:25	27.96	10.11	17.85	----	
LW001S	05/08/2003	08:20	27.96	9.41	18.55	----	
LW001S	08/27/2003	14:51	27.96	12.46	15.50	----	
LW001S	10/23/2003	13:58	27.96	13.32	14.64	----	
LW001S	02/19/2004	14:28	27.96	9.81	18.15	----	
LW001S	06/09/2004	09:20	27.96	11.60	16.36	----	
LW001S	08/10/2004	11:30	27.96	12.86	15.10	----	
LW001S	11/18/2004	08:57	27.96	13.42	14.54	----	
LW001S	02/15/2005	09:24	27.96	12.47	15.49	----	
LW001S	06/07/2005	19:08	27.96	11.45	16.51	----	
LW001S	08/16/2005	17:15	27.96	12.58	15.38	----	
LW002S	03/25/1997	12:22	29.56	8.06	21.50	----	
LW002S	03/31/1997	11:27	29.56	8.34	21.22	----	
LW002S	07/16/1997	08:33	29.56	10.05	19.51	----	
LW002S	10/21/1997	17:04	29.56	12.77	16.79	----	
LW002S	01/27/1998	13:25	29.56	10.39	19.17	----	
LW002S	05/18/1998	18:02	29.56	11.78	17.78	----	
LW002S	08/17/1998	10:56	29.56	13.38	16.18	----	
LW002S	11/13/1998	10:32	29.56	14.47	15.09	----	
LW002S	02/16/1999	13:42	29.56	8.27	21.29	----	
LW002S	05/18/1999	15:45	29.56	10.63	18.93	----	
LW002S	09/21/1999	12:34	29.56	13.95	15.61	----	
LW002S	12/06/1999	15:11	29.56	13.54	16.02	----	
LW002S	02/16/2000	10:38	29.56	11.08	18.48	----	
LW002S	05/23/2000	17:24	29.56	12.29	17.27	----	
LW002S	08/29/2000	14:12	29.56	14.23	15.33	----	
LW002S	11/09/2000	13:04	29.56	15.00	14.56	----	
LW002S	02/12/2001	15:30	29.56	14.52	15.04	----	
LW002S	06/04/2001	12:34	29.56	14.46	15.10	----	
LW002S	08/16/2001	11:45	29.56	15.16	14.40	----	
LW002S	11/28/2001	12:41	29.56	14.90	14.66	----	
LW002S	02/27/2002	14:19	29.56	11.02	18.54	----	
LW002S	03/05/2002	10:59	29.56	11.17	18.39	----	
LW002S	04/05/2002	08:47	29.56	11.33	18.23	----	
LW002S	05/29/2002	00:00	29.56	12.22	17.34	----	
LW002S	06/27/2002	14:56	29.56	13.00	16.56	----	
LW004S	03/31/1997	09:20	30.26	12.77	17.49	----	
LW004S	07/16/1997	07:40	30.26	14.66	15.60	----	
LW004S	10/21/1997	16:25	30.26	16.88	13.38	----	
LW004S	01/27/1998	12:00	30.26	15.13	15.13	----	
LW004S	05/18/1998	17:32	30.26	16.08	14.18	----	
LW004S	08/17/1998	11:07	30.26	17.30	12.96	----	
LW004S	11/13/1998	09:56	30.26	17.96	12.30	----	
LW004S	02/16/1999	13:16	30.26	13.10	17.16	----	
LW004S	05/18/1999	15:03	30.26	15.43	14.83	----	
LW004S	09/21/1999	11:44	30.26	17.61	12.65	----	
LW004S	12/06/1999	14:19	30.26	17.08	13.18	----	
LW004S	02/16/2000	10:31	30.26	15.84	14.42	----	
LW004S	05/23/2000	16:55	30.26	16.71	13.55	----	
LW004S	08/29/2000	13:39	30.26	17.78	12.48	----	
LW004S	11/09/2000	12:53	30.26	18.17	12.09	----	
LW004S	02/12/2001	16:38	30.26	17.08	13.18	----	
LW004S	06/04/2001	12:08	30.26	17.81	12.45	----	
LW004S	08/16/2001	11:14	30.26	18.39	11.87	----	
LW004S	11/28/2001	12:05	30.26	17.84	12.42	----	
LW004S	02/27/2002	14:01	30.26	15.82	14.44	----	
LW004S	03/05/2002	11:35	30.26	15.95	14.31	----	
LW004S	04/05/2002	08:20	30.26	16.02	14.24	----	
LW004S	05/29/2002	00:00	30.26	16.74	13.52	----	
LW004S	06/27/2002	14:39	30.26	16.89	13.37	----	
LW004S	08/26/2002	16:31	30.26	17.68	12.58	----	
LW004S	11/13/2002	08:22	30.26	19.04	11.22	----	
LW004S	02/11/2003	09:31	30.26	16.03	14.23	----	
LW004S	05/08/2003	07:43	30.26	15.75	14.51	----	
LW004S	08/27/2003	13:59	30.26	17.87	12.39	----	
LW004S	10/23/2003	13:18	30.26	18.52	11.74	----	
LW004S	02/19/2004	13:46	30.26	16.49	13.77	----	
LW004S	06/09/2004	08:31	30.32	17.24	13.08	----	New reference elevation July 200

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW004S	08/10/2004	11:57	30.32	18.03	12.29	----	
LW004S	11/18/2004	09:23	30.32	18.61	11.71	----	
LW004S	02/15/2005	10:21	30.32	17.68	12.64	----	
LW004S	06/07/2005	18:30	30.32	16.90	13.42	----	
LW004S	08/16/2005	15:48	30.32	17.75	12.57	----	
LW005S	03/25/1997	12:29	30.79	10.57	20.22	----	
LW005S	03/31/1997	11:35	30.79	10.84	19.95	----	
LW005S	07/16/1997	08:53	30.79	12.29	18.50	----	
LW005S	10/21/1997	15:16	30.79	15.00	15.79	----	
LW005S	01/27/1998	13:36	30.79	12.90	17.89	----	
LW005S	05/18/1998	18:05	30.79	14.19	16.60	----	
LW005S	08/17/1998	11:09	30.79	15.54	15.25	----	
LW005S	11/13/1998	10:38	30.79	16.55	14.24	----	
LW005S	02/16/1999	13:16	30.79	10.59	20.20	----	
LW005S	05/18/1999	16:01	30.79	13.12	17.67	----	
LW005S	09/21/1999	12:40	30.79	16.00	14.79	----	
LW005S	12/06/1999	14:47	30.79	15.64	15.15	----	
LW005S	02/16/2000	09:56	30.79	13.54	17.25	----	
LW005S	05/23/2000	17:51	30.79	14.80	15.99	----	
LW005S	08/29/2000	14:37	30.79	16.35	14.44	----	
LW005S	11/09/2000	13:45	30.79	16.98	13.81	----	
LW005S	02/12/2001	15:13	30.79	16.51	14.28	----	
LW005S	06/04/2001	13:23	30.79	16.43	14.36	----	
LW005S	08/16/2001	12:07	30.79	17.03	13.76	----	
LW005S	11/28/2001	13:01	30.79	16.94	13.85	----	
LW005S	02/27/2002	14:39	30.79	13.48	17.31	----	
LW005S	03/05/2002	11:13	30.79	13.62	17.17	----	
LW005S	04/05/2002	08:38	30.79	13.60	17.19	----	
LW005S	05/29/2002	00:00	30.79	14.81	15.98	----	
LW005S	06/27/2002	10:43	30.79	15.15	15.64	----	
LW005S	08/26/2002	17:08	30.79	16.12	14.67	----	
LW005S	11/13/2002	09:22	30.79	17.39	13.40	----	
LW005S	02/11/2003	10:43	30.79	13.95	16.84	----	
LW005S	05/08/2003	08:32	30.79	13.58	17.21	----	
LW005S	08/27/2003	15:07	30.79	16.11	14.68	----	
LW005S	10/23/2003	14:17	30.79	16.92	13.87	----	
LW005S	02/19/2004	14:00	30.79	13.76	17.03	----	
LW005S	06/09/2004	09:34	30.79	15.50	15.29	----	
LW005S	08/10/2004	12:25	30.79	16.48	14.31	----	
LW005S	11/18/2004	09:40	30.79	17.05	13.74	----	
LW005S	06/07/2005	19:38	30.79	15.34	15.45	----	
LW005S	08/16/2005	16:13	30.79	16.35	14.44	----	
LW007S	03/31/1997	11:05	28.10	6.75	21.35	----	
LW007S	07/16/1997	08:05	28.10	8.62	19.48	----	
LW007S	10/21/1997	16:45	28.10	11.26	16.84	----	
LW007S	01/27/1998	12:47	28.10	8.85	19.25	----	
LW007S	05/18/1998	17:48	28.10	10.34	17.76	----	
LW007S	08/17/1998	10:48	28.10	11.85	16.25	----	
LW007S	11/13/1998	10:12	28.10	12.90	15.20	----	Strong gasoline odor
LW007S	02/16/1999	13:53	28.10	6.81	21.29	----	
LW007S	05/18/1999	15:23	28.10	9.14	18.96	----	
LW007S	09/21/1999	12:03	28.10	12.37	15.73	----	
LW007S	12/06/1999	14:27	28.10	12.00	16.10	----	
LW007S	02/16/2000	10:46	28.10	9.60	18.50	----	
LW007S	05/23/2000	17:09	28.10	10.70	17.40	----	
LW007S	08/29/2000	13:53	28.10	12.64	15.46	----	
LW007S	11/09/2000	13:14	28.10	13.36	14.74	----	
LW007S	02/12/2001	15:39	28.10	12.94	15.16	----	
LW007S	06/04/2001	12:17	28.10	12.87	15.23	----	
LW007S	08/16/2001	11:33	28.10	13.58	14.52	----	
LW007S	11/28/2001	12:22	28.10	13.34	14.76	----	
LW007S	02/27/2002	14:15	28.10	9.47	18.63	----	
LW007S	03/05/2002	10:52	28.10	9.62	18.48	----	
LW007S	04/05/2002	08:57	28.10	9.73	18.37	----	
LW007S	05/29/2002	00:00	28.10	10.63	17.47	----	
LW007S	06/27/2002	14:45	28.10	11.36	16.74	----	
LW007S	08/26/2002	17:18	28.10	12.69	15.41	----	
LW007S	11/13/2002	09:16	28.10	13.82	14.28	----	
LW007S	02/11/2003	10:37	28.10	10.18	17.92	----	
LW007S	05/08/2003	08:27	28.10	9.54	18.56	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW007S	08/27/2003	14:58	28.10	12.62	15.48	----	
LW007S	10/23/2003	13:39	28.10	13.45	14.65	----	
LW007S	02/19/2004	14:42	28.10	10.01	18.09	----	
LW007S	06/09/2004	09:25	28.10	11.75	16.35	----	
LW007S	08/10/2004	11:26	28.10	13.00	15.10	----	
LW007S	11/18/2004	08:55	28.10	15.53	12.57	----	
LW007S	02/15/2005	09:02	28.10	12.57	15.53	----	
LW007S	06/07/2005	19:05	28.10	11.58	16.52	----	
LW007S	08/16/2005	16:04	28.10	12.72	15.38	----	
LW008S	05/18/1999	14:55	31.28	14.84	16.44	----	
LW008S	09/21/1999	12:24	31.28	16.94	14.34	----	
LW008S	12/06/1999	14:40	31.28	16.63	14.65	----	
LW008S	02/16/2000	10:16	31.28	15.18	16.10	----	
LW008S	05/23/2000	17:42	31.28	15.88	15.40	----	
LW008S	08/29/2000	14:26	31.28	17.06	14.22	----	
LW008S	11/09/2000	13:32	31.28	17.55	13.73	----	
LW008S	02/12/2001	15:58	31.28	17.24	14.04	----	
LW008S	06/04/2001	13:05	31.28	17.14	14.14	----	
LW008S	08/16/2001	12:00	31.28	17.70	13.58	----	
LW008S	11/28/2001	12:57	31.28	17.63	13.68	0.04	
LW008S	02/27/2002	14:37	31.28	15.12	16.16	----	
LW008S	03/05/2002	11:09	31.28	15.26	16.02	----	
LW008S	04/05/2002	08:17	31.28	15.34	15.94	----	
LW008S	05/29/2002	00:00	31.28	15.91	15.37	----	
LW008S	06/27/2002	15:21	31.28	16.21	15.07	----	
LW008S	08/26/2002	16:38	31.28	16.95	14.33	----	
LW008S	11/13/2002	08:50	31.28	17.88	13.40	----	
LW008S	02/11/2003	09:48	31.28	15.57	15.71	----	
LW008S	05/08/2003	08:00	31.28	15.11	16.17	----	
LW008S	08/27/2003	14:25	31.28	16.97	14.31	----	
LW008S	10/23/2003	12:42	31.28	17.54	13.74	----	
LW008S	02/19/2004	15:03	31.28	15.34	15.94	----	
LW008S	06/09/2004	08:43	31.28	16.50	14.78	----	
LW008S	08/10/2004	12:05	31.28	17.23	14.05	----	
LW008S	11/18/2004	09:15	31.28	17.56	13.72	----	
LW008S	02/15/2005	09:59	31.28	16.91	14.37	----	
LW008S	06/07/2005	19:51	31.28	16.30	14.98	----	
LW008S	08/16/2005	16:25	31.28	17.08	14.20	----	
LW009S	05/18/1999	14:57	31.04	19.58	11.46	----	Water level appears to be more representative of lower zone
LW009S	09/21/1999	11:36	31.04	dry	----	----	
LW009S	12/06/1999	14:13	31.04	19.64	----	----	Water in endcap
LW009S	02/16/2000	10:24	31.04	19.59	----	----	Water in endcap
LW009S	05/23/2000	16:39	31.04	dry	----	----	
LW009S	08/29/2000	13:28	31.04	dry	----	----	
LW009S	11/09/2000	12:42	31.04	dry	----	----	
LW009S	02/12/2001	16:12	31.04	dry	----	----	
LW009S	06/04/2001	11:50	31.04	dry	----	----	
LW009S	08/16/2001	11:01	31.04	dry	----	----	
LW009S	11/28/2001	11:52	31.04	dry	----	----	
LW009S	02/27/2002	13:48	31.04	dry	----	----	
LW009S	03/05/2002	11:15	31.04	dry	----	----	
LW009S	04/05/2002	08:26	31.04	dry	----	----	
LW009S	05/29/2002	00:00	31.04	dry	----	----	
LW009S	06/27/2002	14:24	31.04	dry	----	----	
LW009S	08/26/2002	16:09	31.04	dry	----	----	
LW009S	11/13/2002	07:49	31.04	dry	----	----	
LW009S	02/11/2003	09:06	31.04	dry	----	----	Recorded DTW of 19.58; well most likely dry
LW009S	05/08/2003	07:11	31.04	dry	----	----	
LW009S	08/27/2003	13:48	31.04	dry	----	----	
LW009S	10/23/2003	12:46	31.04	dry	----	----	
LW009S	02/19/2004	13:04	31.04	dry	----	----	
LW009S	06/09/2004	08:12	31.04	dry	----	----	
LW009S	08/10/2004	11:53	31.04	dry	----	----	
LW009S	11/18/2004	09:28	31.04	dry	----	----	
LW009S	02/15/2005	----	31.04	dry	----	----	
LW009S	06/07/2005	17:22	31.04	dry	----	----	
LW009S	08/16/2005	15:40	31.04	dry	----	----	
LW010S	05/18/1999	14:59	30.75	17.24	13.51	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW010S	09/21/1999	11:38	30.75	19.13	11.62	----	
LW010S	12/06/1999	14:14	30.75	18.54	12.21	----	
LW010S	02/16/2000	10:26	30.75	17.62	13.13	----	
LW010S	05/23/2000	16:41	30.75	18.25	12.50	----	
LW010S	08/29/2000	13:30	30.75	dry	----	----	
LW010S	11/09/2000	12:45	30.75	dry	----	----	
LW010S	02/12/2001	16:14	30.75	dry	----	----	
LW010S	06/04/2001	11:53	30.75	dry	----	----	
LW010S	08/16/2001	11:03	30.75	dry	----	----	
LW010S	11/28/2001	11:54	30.75	dry	----	----	
LW010S	02/27/2002	13:50	30.75	17.77	12.98	----	
LW010S	03/05/2002	11:32	30.75	17.84	12.91	----	
LW010S	04/05/2002	08:24	30.75	17.82	12.93	----	
LW010S	05/29/2002	00:00	30.75	18.22	12.53	----	
LW010S	06/27/2002	14:28	30.75	18.27	12.48	----	
LW010S	08/26/2002	16:15	30.75	dry	----	----	
LW010S	11/13/2002	08:00	30.75	dry	----	----	
LW010S	02/11/2003	09:20	30.75	17.50	13.25	----	
LW010S	05/08/2003	07:32	30.75	17.68	13.07	----	
LW010S	08/27/2003	13:51	30.75	dry	----	----	
LW010S	10/23/2003	12:51	30.75	dry	----	----	
LW010S	02/19/2004	13:26	30.75	17.77	12.98	----	
LW010S	06/09/2004	08:22	30.75	18.67	12.08	----	
LW010S	08/10/2004	11:54	30.75	dry	----	----	
LW010S	11/18/2004	09:26	30.75	dry	----	----	
LW010S	02/15/2005	10:09	30.75	18.86	11.89	----	
LW010S	06/07/2005	18:20	30.75	18.35	12.40	----	
LW010S	08/16/2005	15:46	30.75	dry	----	----	
LW011S	05/18/1999	15:10	29.10	11.47	17.63	----	
LW011S	09/21/1999	11:51	29.10	14.23	14.87	----	
LW011S	12/06/1999	15:05	29.10	14.00	15.10	----	
LW011S	02/16/2000	11:01	29.10	11.94	17.16	----	
LW011S	05/23/2000	11:01	29.10	13.01	16.09	----	
LW011S	08/29/2000	14:55	29.10	14.51	14.59	----	
LW011S	11/09/2000	13:36	29.10	15.48	13.92	0.37	First occurrence of product in well.
LW011S	02/12/2001	15:18	29.10	14.62	14.48	----	
LW011S	06/04/2001	13:12	29.10	14.65	14.45	----	
LW011S	08/16/2001	11:24	29.10	15.46	13.86	0.28	
LW011S	11/28/2001	12:51	29.10	15.10	14.00	----	Trace product
LW011S	02/27/2002	14:59	29.10	11.86	17.24	----	
LW011S	03/05/2002	11:40	29.10	11.96	17.14	----	
LW011S	04/05/2002	08:34	29.10	12.07	17.03	----	
LW011S	05/29/2002	00:00	29.10	13.00	16.10	----	
LW011S	06/27/2002	15:09	29.10	13.40	15.70	----	
LW011S	08/26/2002	16:48	29.10	14.37	14.73	----	
LW011S	11/13/2002	08:54	29.10	15.53	13.57	----	
LW011S	02/11/2003	10:03	29.10	12.46	16.64	----	
LW011S	05/08/2003	08:07	29.10	11.91	17.19	----	
LW011S	08/27/2003	14:36	29.10	14.32	14.78	----	
LW011S	10/23/2003	14:12	29.10	15.12	13.98	----	
LW011S	02/19/2004	14:02	29.10	12.13	16.97	----	
LW011S	06/09/2004	08:56	29.10	13.72	15.38	----	
LW011S	08/10/2004	12:08	29.10	14.66	14.44	----	
LW011S	11/18/2004	09:08	29.10	15.33	13.84	0.09	
LW011S	02/15/2005	11:03	29.10	14.39	14.71	----	Product odor
LW011S	06/07/2005	20:05	29.10	13.53	15.57	----	
LW011S	08/16/2005	17:10	29.10	14.55	14.55	----	
LW013S	05/23/2000	16:51	30.17	17.23	12.94	----	
LW013S	08/29/2000	13:37	30.17	18.27	11.90	----	
LW013S	11/09/2000	12:51	30.17	18.75	11.42	----	
LW013S	02/12/2001	16:30	30.17	18.26	11.91	----	
LW013S	06/04/2001	12:06	30.17	18.30	11.87	----	
LW013S	08/16/2001	11:13	30.17	18.81	11.36	----	
LW013S	11/28/2001	12:03	30.17	18.37	11.80	----	
LW013S	02/27/2002	13:58	30.17	16.60	13.57	----	
LW013S	03/05/2002	11:33	30.17	16.68	13.49	----	
LW013S	04/05/2002	08:22	30.17	16.73	13.44	----	
LW013S	05/29/2002	00:00	30.17	17.30	12.87	----	
LW013S	06/27/2002	14:37	30.17	17.38	12.79	----	
LW013S	08/26/2002	16:30	30.17	18.11	12.06	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW013S	11/13/2002	08:14	30.17	19.04	11.13	----	
LW013S	02/11/2003	09:30	30.17	16.57	13.60	----	
LW013S	05/08/2003	07:41	30.17	16.53	13.64	----	
LW013S	08/27/2003	13:57	30.17	18.27	11.90	----	
LW013S	10/23/2003	13:14	30.17	18.81	11.36	----	
LW013S	02/19/2004	13:40	30.17	16.62	13.55	----	
LW013S	06/09/2004	08:30	30.17	17.66	12.51	----	
LW013S	08/10/2004	11:55	30.17	18.33	11.84	----	
LW013S	11/18/2004	09:24	30.17	18.92	11.25	----	
LW013S	02/15/2005	10:13	30.17	18.00	12.17	----	
LW013S	06/07/2005	18:25	30.17	17.31	12.86	----	
LW013S	08/16/2005	15:46	30.17	18.12	12.05	----	
LW019S	10/23/2003	11:54	27.72	16.62	11.10	----	
LW019S	02/19/2004	15:00	27.72	13.84	13.88	----	
LW019S	06/09/2004	07:27	27.72	15.46	12.26	----	
LW019S	08/10/2004	11:07	27.72	16.35	11.37	----	
LW019S	11/18/2004	08:51	27.72	17.18	10.54	----	
LW019S	02/15/2005	08:20	27.72	16.10	11.62	----	
LW019S	06/07/2005	15:39	27.72	14.82	12.90	----	
LW019S	08/16/2005	16:12	27.72	15.86	11.86	----	Petro odor
LW020S	10/23/2003	12:14	29.51	14.86	14.65	----	
LW020S	02/19/2004	14:45	29.51	12.55	16.96	----	
LW020S	06/09/2004	07:47	29.51	14.18	15.33	----	
LW020S	08/10/2004	11:05	29.51	14.90	14.61	----	
LW020S	11/18/2004	08:46	29.51	14.42	15.09	----	
LW020S	02/15/2005	08:28	29.51	14.23	15.28	----	
LW020S	06/07/2005	15:27	29.51	13.70	15.81	----	
LW020S	08/16/2005	16:08	29.51	14.68	14.83	----	Petro odor
LW021S	10/23/2003	12:16	30.29	16.57	13.72	----	
LW021S	02/19/2004	14:54	30.29	13.82	17.29	1.03	
LW021S	06/09/2004	07:44	30.29	15.36	15.02	0.11	
LW021S	08/10/2004	11:02	30.29	16.40	14.03	0.17	
LW021S	11/18/2004	08:43	30.29	16.51	13.87	0.11	
LW021S	02/15/2005	10:52	30.29	15.63	14.68	0.02	
LW021S	06/09/2005	16:00	30.29	14.42	15.94	0.09	Product observed
LW021S	08/16/2005	17:33	30.29	16.02	14.40	0.16	
LW027S	10/23/2003	12:20	30.59	25.40	5.19	----	
LW027S	02/19/2004	12:44	30.59	22.07	9.07	0.69	
LW027S	06/09/2004	07:39	30.59	21.26	9.33	----	
LW027S	08/10/2004	10:58	30.59	24.56	6.13	0.12	
LW027S	11/18/2004	07:39	30.59	24.68	5.93	0.02	
LW027S	02/15/2005	10:58	30.59	23.66	6.95	0.02	
LW027S	06/06/2005	19:10	30.59	21.65	9.02	0.10	Product observed
LW027S	08/16/2005	16:30	30.59	24.24	6.37	0.03	
LW028S	10/23/2003	14:26	30.98	dry	----	----	
LW028S	02/19/2004	15:17	30.98	12.87	18.11	----	
LW028S	06/09/2004	09:52	30.98	15.15	15.83	----	
LW028S	08/10/2004	11:45	30.98	dry	----	----	
LW028S	11/18/2004	09:45	30.98	dry	----	----	
LW028S	02/15/2005	11:13	30.98	15.31	15.67	----	
LW028S	06/07/2005	12:17	30.98	14.80	16.18	----	
LW028S	08/16/2005	15:32	30.98	dry	----	----	
LW029S	10/23/2003	14:39	31.34	18.88	12.46	----	
LW029S	02/19/2004	15:30	31.34	16.52	14.82	----	
LW029S	06/09/2004	09:43	31.34	17.85	13.49	----	
LW029S	08/10/2004	11:50	31.34	18.56	12.78	----	
LW029S	11/18/2004	09:58	31.34	18.97	12.37	----	
LW029S	02/15/2005	11:35	31.34	18.15	13.19	----	
LW029S	06/07/2005	14:19	31.34	17.61	13.73	----	
LW029S	08/16/2005	15:34	31.34	18.45	12.89	----	
LW030S	10/23/2003	14:41	30.08	17.91	12.17	----	
LW030S	02/19/2004	15:32	30.08	15.58	14.50	----	
LW030S	06/09/2004	09:46	30.08	16.91	13.17	----	
LW030S	08/10/2004	11:52	30.08	17.62	12.46	----	
LW030S	11/18/2004	09:59	30.08	17.96	12.12	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW030S	02/15/2005	11:33	30.08	17.24	12.84	----	
LW030S	06/07/2005	14:23	30.08	16.71	13.37	----	
LW030S	08/16/2005	15:36	30.08	17.52	12.56	----	
LW031S	10/23/2003	14:30	31.26	18.87	12.39	----	
LW031S	02/19/2004	15:21	31.26	16.07	15.19	----	
LW031S	06/09/2004	09:56	31.26	17.67	13.59	----	
LW031S	08/10/2004	11:42	31.26	16.52	14.74	----	
LW031S	11/18/2004	09:50	31.26	18.93	12.33	----	
LW031S	02/15/2005	11:08	31.26	18.14	13.12	----	
LW031S	06/07/2005	13:57	31.26	17.45	13.81	----	
LW031S	08/16/2005	13:24	31.26	18.40	12.86	----	
LW032S	10/23/2003	14:32	30.71	17.02	13.69	----	
LW032S	02/19/2004	15:29	30.71	13.59	17.12	----	
LW032S	06/09/2004	09:58	30.71	15.66	15.05	----	
LW032S	08/10/2004	11:46	30.71	16.67	14.04	----	
LW032S	11/18/2004	09:52	30.71	17.04	13.67	----	
LW032S	02/15/2005	10:58	30.71	16.26	14.45	----	
LW032S	06/07/2005	13:33	30.71	15.50	15.21	----	
LW032S	08/16/2005	15:28	30.71	16.53	14.18	----	
LW033S	10/23/2003	14:35	29.89	dry	----	----	
LW033S	02/19/2004	15:23	29.89	13.89	16.00	----	
LW033S	06/09/2004	10:02	29.89	15.60	14.29	----	
LW033S	08/10/2004	11:44	29.89	16.69	13.20	----	
LW033S	11/18/2004	09:51	29.89	dry	----	----	
LW033S	02/15/2005	11:05	29.89	16.36	13.53	----	
LW033S	06/07/2005	12:00	29.89	15.44	14.45	----	
LW033S	08/16/2005	13:47	29.89	16.54	13.35	----	
LW034S	10/23/2003	14:24	30.93	16.99	13.94	----	
LW034S	02/19/2004	15:15	30.93	13.29	17.64	----	
LW034S	06/09/2004	09:50	30.93	15.53	15.40	----	
LW034S	08/10/2004	11:39	30.93	16.61	14.32	----	
LW034S	11/18/2004	09:46	30.93	17.00	13.93	----	
LW034S	02/15/2005	11:16	30.93	16.20	14.73	----	
LW034S	06/07/2005	11:30	30.93	15.38	15.55	----	
LW034S	08/16/2005	16:16	30.93	16.49	14.44	----	
LW040S	11/18/2004	08:59	33.70	dry	----	----	
LW040S	02/15/2005	08:45	33.70	dry	----	----	
LW040S	06/07/2005	15:55	33.70	19.84	13.86	----	
LW040S	08/16/2005	16:15	33.70	dry	----	----	
LW041S	11/18/2004	10:02	29.85	dry	----	----	
LW041S	02/15/2005	11:26	29.85	dry	----	----	
LW041S	06/07/2005	14:43	29.85	19.05	10.80	----	
LW041S	08/16/2005	15:38	29.85	dry	----	----	
LW042S	11/18/2004	10:00	30.45	18.89	11.56	----	
LW042S	02/15/2005	11:30	30.45	18.25	12.20	----	
LW042S	06/07/2005	14:40	30.45	17.88	12.57	----	
LW042S	08/16/2005	15:36	30.45	18.52	11.93	----	
LW043S	11/18/2004	09:49	30.66	18.44	12.22	----	
LW043S	02/15/2005	11:10	30.66	17.67	12.99	----	
LW043S	06/07/2005	14:02	30.66	17.07	13.59	----	
LW043S	08/16/2005	15:21	30.66	17.96	12.70	----	
LW044S	11/18/2004	09:53	30.86	17.44	13.42	----	
LW044S	02/15/2005	10:53	30.86	16.60	14.26	----	
LW044S	06/07/2005	14:06	30.86	15.90	14.96	----	
LW044S	08/16/2005	15:30	30.86	16.95	13.91	----	
LW101S	03/31/1997	09:54	29.41	4.51	24.90	----	
LW101S	07/16/1997	09:01	29.41	6.81	22.60	----	
LW101S	10/21/1997	18:01	29.41	7.28	22.13	----	
LW101S	01/27/1998	14:15	29.41	4.10	25.31	----	
LW101S	05/18/1998	18:18	29.41	6.68	22.73	----	
LW101S	08/17/1998	11:21	29.41	8.14	21.27	----	
LW101S	11/13/1998	10:48	29.41	8.61	20.80	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW101S	02/16/1999	14:11	29.41	3.21	26.20	----	
LW101S	05/18/1999	16:17	29.41	6.00	23.41	----	
LW101S	09/21/1999	12:54	29.41	8.60	20.81	----	
LW101S	12/06/1999	14:58	29.41	6.98	22.43	----	
LW101S	02/16/2000	09:44	29.41	4.96	24.45	----	
LW101S	05/23/2000	18:06	29.41	6.83	22.58	----	
LW101S	08/29/2000	14:47	29.41	8.67	20.74	----	
LW101S	11/09/2000	13:56	29.41	9.39	20.02	----	
LW101S	02/12/2001	15:02	29.41	8.02	21.39	----	
LW101S	06/04/2001	13:35	29.41	8.40	21.01	----	
LW101S	08/16/2001	12:20	29.41	9.44	19.97	----	
LW101S	11/28/2001	13:12	29.41	8.58	20.83	----	
LW101S	02/27/2002	14:52	29.41	5.70	23.71	----	
LW101S	06/27/2002	15:32	29.41	7.80	21.61	----	
LW101S	08/26/2002	17:34	29.41	8.85	20.56	----	
LW101S	11/13/2002	09:35	29.41	9.92	19.49	----	
LW101S	02/11/2003	10:59	29.41	5.27	24.14	----	
LW101S	05/08/2003	08:43	29.41	5.40	24.01	----	
LW101S	08/27/2003	15:14	29.41	8.59	20.82	----	
LW102S	03/31/1997	10:01	25.77	1.86	23.91	----	
LW102S	07/16/1997	09:09	25.77	3.91	21.86	----	
LW102S	10/21/1997	17:59	25.77	4.03	21.74	----	
LW102S	01/27/1998	14:07	25.77	1.26	24.51	----	
LW102S	05/18/1998	18:15	25.77	3.57	22.20	----	
LW102S	08/17/1998	11:18	25.77	4.88	20.89	----	
LW102S	11/13/1998	10:45	25.77	5.14	20.63	----	
LW102S	02/16/1999	14:08	25.77	0.45	25.32	----	
LW102S	05/18/1999	16:12	25.77	3.24	22.53	----	
LW102S	09/21/1999	12:52	25.77	5.33	20.44	----	
LW102S	12/06/1999	14:56	25.77	3.67	22.10	----	
LW102S	02/16/2000	09:41	25.77	1.91	23.86	----	
LW102S	05/23/2000	18:03	25.77	3.72	22.05	----	
LW102S	08/29/2000	14:45	25.77	5.40	20.37	----	
LW102S	11/09/2000	13:53	25.77	5.94	19.83	----	
LW102S	02/12/2001	15:00	25.77	4.52	21.25	----	
LW102S	06/04/2001	13:32	25.77	4.93	20.84	----	
LW102S	08/16/2001	12:17	25.77	5.96	19.81	----	
LW102S	11/28/2001	13:10	25.77	5.15	20.62	----	
LW102S	02/27/2002	14:48	25.77	2.14	23.63	----	
LW102S	06/27/2002	15:30	25.77	4.50	21.27	----	
LW102S	08/26/2002	17:39	25.77	5.48	20.29	----	
LW102S	11/13/2002	09:32	25.77	6.50	19.27	----	
LW102S	02/11/2003	10:55	25.77	1.88	23.89	----	
LW102S	05/08/2003	08:40	25.77	2.22	23.55	----	
LW102S	08/27/2003	15:17	25.77	5.24	20.53	----	
LW103S	03/31/1997	09:50	29.07	5.50	23.57	----	
LW103S	07/16/1997	08:59	29.07	6.93	22.14	----	
LW103S	10/21/1997	18:03	29.07	7.08	21.99	----	
LW103S	01/27/1998	14:20	29.07	5.11	23.96	----	
LW103S	05/18/1998	18:21	29.07	6.57	22.50	----	
LW103S	08/17/1998	11:24	29.07	7.80	21.27	----	
LW103S	11/13/1998	10:51	29.07	7.91	21.16	----	
LW103S	02/16/1999	14:14	29.07	4.54	24.53	----	
LW103S	05/18/1999	16:20	29.07	6.20	22.87	----	
LW103S	09/21/1999	12:57	29.07	8.30	20.77	----	
LW103S	12/06/1999	15:00	29.07	6.60	22.47	----	
LW103S	02/16/2000	09:46	29.07	5.50	23.57	----	
LW103S	05/23/2000	18:10	29.07	6.64	22.43	----	
LW103S	08/29/2000	14:50	29.07	8.41	20.66	----	
LW103S	11/09/2000	13:58	29.07	8.78	20.29	----	
LW103S	02/12/2001	15:04	29.07	7.39	21.68	----	
LW103S	06/04/2001	13:37	29.07	7.83	21.24	----	
LW103S	08/16/2001	12:23	29.07	9.07	20.00	----	
LW103S	11/28/2001	13:16	29.07	8.02	21.05	----	
LW103S	02/27/2002	14:50	29.07	5.26	23.81	----	
LW103S	06/27/2002	15:34	29.07	7.42	21.65	----	
LW103S	08/26/2002	17:36	29.07	8.57	20.50	----	
LW103S	11/13/2002	09:37	29.07	9.48	19.59	----	
LW103S	02/11/2003	11:03	29.07	5.65	23.42	----	
LW103S	05/08/2003	08:46	29.07	5.86	23.21	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW103S	08/27/2003	15:15	29.07	8.33	20.74	----	
LW104S	03/31/1997	10:06	26.57	3.55	23.02	----	
LW104S	07/16/1997	08:54	26.57	5.71	20.86	----	
LW104S	10/21/1997	16:22	26.57	5.71	20.86	----	
LW104S	01/27/1998	14:00	26.57	2.84	23.73	----	
LW104S	05/18/1998	18:11	26.57	5.17	21.40	----	
LW104S	08/17/1998	11:15	26.57	6.64	19.93	----	
LW104S	11/13/1998	10:41	26.57	6.72	19.85	----	
LW104S	02/16/1999	14:03	26.57	2.11	24.46	----	
LW104S	05/18/1999	16:08	26.57	4.97	21.60	----	
LW104S	09/21/1999	12:48	26.57	7.18	19.39	----	
LW104S	12/06/1999	14:54	26.57	5.00	21.57	----	
LW104S	02/16/2000	09:39	26.57	3.61	22.96	----	
LW104S	05/23/2000	17:59	26.57	5.61	20.96	----	
LW104S	08/29/2000	14:43	26.57	7.08	19.49	----	
LW104S	11/09/2000	13:51	26.57	7.49	19.08	----	
LW104S	02/12/2001	14:57	26.57	6.28	20.29	----	
LW104S	06/04/2001	13:30	26.57	6.64	19.93	----	
LW104S	08/16/2001	12:15	26.57	7.56	19.01	----	
LW104S	11/28/2001	13:06	26.57	6.30	20.27	----	
LW104S	02/27/2002	14:46	26.57	4.07	22.50	----	
LW104S	06/27/2002	15:27	26.57	6.28	20.29	----	
LW104S	08/26/2002	17:41	26.57	7.13	19.44	----	
LW104S	11/13/2002	09:30	26.57	7.85	18.72	----	
LW104S	02/11/2003	10:51	26.57	3.72	22.85	----	
LW104S	05/08/2003	08:38	26.57	4.94	21.63	----	
LW104S	08/27/2003	15:19	26.57	6.87	19.70	----	
RW1	05/18/1999	15:06	31.46	15.70	15.76	----	
RW1	09/21/1999	11:46	31.46	18.02	13.44	----	
RW1	12/06/1999	14:43	31.46	17.73	13.73	----	
RW1	02/16/2000	10:33	31.46	16.14	15.32	----	
RW1	05/23/2000	17:46	31.46	17.09	14.37	----	
RW1	08/29/2000	14:28	31.46	18.29	13.17	----	
RW1	11/09/2000	12:57	31.46	18.67	12.79	----	
RW1	02/12/2001	16:44	31.46	18.30	13.16	----	
RW1	06/04/2001	13:17	31.46	18.22	13.24	----	
RW1	08/16/2001	10:55	31.46		31.46	----	Vapor/water recovery system test running - not measure
RW1	11/28/2001	12:02	31.46	18.55	12.91	----	
RW1	02/27/2002	14:03	31.46	16.12	15.34	----	
RW1	03/05/2002	11:38	31.46	16.33	15.13	----	
RW1	04/05/2002	08:27	31.46	16.28	15.18	----	
RW1	05/29/2002	00:00	31.46	17.00	14.46	----	
RW1	06/27/2002	15:16	31.46	17.33	14.13	----	
RW1	08/26/2002	16:40	31.46	18.00	13.46	----	
RW1	11/13/2002	08:26	31.46	18.85	12.61	----	
RW1	02/11/2003	09:34	31.46	16.50	14.96	----	
RW1	05/08/2003	07:46	31.46	16.23	15.23	----	
RW1	08/27/2003	14:04	31.46	18.09	13.37	----	
RW1	10/23/2003	13:23	31.46	18.55	12.91	----	
RW1	02/19/2004	13:52	31.46	16.31	15.15	----	
RW1	06/09/2004	08:35	31.46	17.60	13.86	----	
RW1	08/10/2004	12:03	31.46	18.22	13.24	----	
RW1	11/18/2004	09:21	31.46	18.61	12.85	----	
RW1	02/15/2005	10:24	31.46	17.95	13.51	----	
RW1	06/07/2005	19:55	31.46	17.20	14.26	----	
RW1	08/16/2005	15:50	31.46	18.07	13.39	----	
RW3	12/06/1999	15:24	29.96	14.20	15.76	----	
RW3	02/16/2000	10:37	29.96	11.88	18.08	----	
RW3	05/23/2000	17:26	29.96	13.02	16.94	----	
RW3	08/29/2000	13:42	29.96	14.88	15.08	----	
RW3	11/09/2000	13:03	29.96	15.58	14.38	----	
RW3	02/12/2001	15:28	29.96	15.13	14.83	----	
RW3	06/04/2001	12:30	29.96	15.09	14.87	----	
RW3	08/16/2001	11:44	29.96	15.74	14.22	----	
RW3	11/28/2001	12:40	29.96	15.52	14.44	----	
RW3	02/27/2002	14:26	29.96	11.80	18.16	----	
RW3	03/05/2002	11:02	29.96	11.94	18.02	----	
RW3	04/05/2002	08:44	29.96	12.06	17.90	----	
RW3	05/29/2002	00:00	29.96	13.00	16.96	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RW3	06/27/2002	14:59	29.96	13.64	16.32	----	
RW3							Abandoned August 2003
PZ1	05/23/2000	17:47	28.04	14.21	13.83	----	
PZ1	08/29/2000	14:30	28.04	15.33	12.71	----	
PZ1	11/09/2000	12:55	28.04	15.68	12.36	----	
PZ1	02/12/2001	16:42	28.04	15.30	12.74	----	
PZ1	06/04/2001	13:20	28.04	15.29	12.75	----	
PZ1	08/16/2001	11:17	28.04	15.94	12.10	----	
PZ1	11/28/2001	12:09	28.04	15.48	12.56	----	
PZ1	02/27/2002	14:02	28.04	13.28	14.76	----	
PZ1	03/05/2002	11:34	28.04	13.40	14.64	----	
PZ1	04/05/2002	08:32	28.04	13.44	14.60	----	
PZ1	05/29/2002	00:00	28.04	14.16	13.88	----	
PZ1	06/27/2002	15:17	28.04	14.50	13.54	----	
PZ1	08/26/2002	16:33	28.04	15.17	12.87	----	
PZ1	11/13/2002	08:42	28.04	15.83	12.21	----	
PZ1	02/11/2003	09:36	28.04	13.58	14.46	----	
PZ1	05/08/2003	07:58	28.04	13.25	14.79	----	
PZ1	08/27/2003	14:20	28.04	15.32	12.72	----	
PZ1	10/23/2003	13:19	28.04	15.75	12.29	----	
PZ1	02/19/2004	13:56	28.04	13.41	14.63	----	
PZ1	06/09/2004	08:37	28.04	14.75	13.29	----	
PZ1	08/10/2004	12:00	28.04	15.42	12.62	----	
PZ1	11/18/2004	09:22	28.04	15.46	12.58	----	
PZ1	06/07/2005	18:45	28.04	14.30	13.74	----	
PZ1	08/16/2005	15:54	28.04	15.13	12.91	----	
PZ2	06/27/2002	15:18	31.97	18.31	13.66	----	
PZ2	08/26/2002	16:34	31.97	18.88	13.09	----	
PZ2	11/13/2002	08:25	31.97	19.40	12.57	----	
PZ2	02/11/2003	09:44	31.97	17.46	14.51	----	
PZ2	05/08/2003	07:45	31.97	17.15	14.82	----	
PZ2	08/27/2003	14:03	31.97	19.02	12.95	----	
PZ2	10/23/2003	13:21	31.97	19.27	12.75	0.06	
PZ2	02/19/2004	13:50	31.97	17.36	14.61	----	
PZ2	06/09/2004	08:33	31.97	18.51	13.46	----	
PZ2	08/10/2004	12:02	31.97	19.12	12.85	----	
PZ2	11/18/2004	09:20	31.97	19.24	12.73	----	
PZ2	06/07/2005	18:35	31.97	18.19	13.78	----	
PZ2	08/16/2005	15:52	31.97	18.90	13.07	----	
PZ3	06/27/2002	15:19	31.12	19.35	11.77	----	
PZ3	08/26/2002	16:35	31.12	19.74	11.38	----	
PZ3	11/13/2002	08:45	31.12	16.87	----	----	
PZ3	02/11/2003	09:40	31.12	19.05	12.07	----	
PZ3	05/08/2003	07:53	31.12	18.95	12.17	----	
PZ3	08/27/2003	14:26	31.12	19.82	11.30	----	
PZ3	10/23/2003	12:39	31.12	dry	----	----	
PZ3	02/19/2004	15:09	31.12	19.07	12.05	----	
PZ3	06/09/2004	08:39	31.12	19.53	11.59	----	
PZ3	08/10/2004	12:04	31.12	19.86	11.26	----	
PZ3	11/18/2004	09:19	31.12	dry	----	----	
PZ3	06/07/2005	18:40	31.12	18.33	12.79	----	
PZ3	08/16/2005	16:00	31.12	19.73	11.39	----	
PZ4	06/27/2002	15:20	28.47	dry	----	----	
PZ4	08/26/2002	16:36	28.47	dry	----	----	
PZ4	11/13/2002	08:48	28.47	16.87	11.60	----	
PZ4	02/11/2003	09:41	28.47	dry	----	----	
PZ4	05/08/2003	07:52	28.47	17.78	10.69	----	
PZ4	08/27/2003	14:27	28.47	dry	----	----	
PZ4	10/23/2003	12:36	28.47	dry	----	----	
PZ4	02/19/2004	15:08	28.47	dry	----	----	
PZ4	06/09/2004	08:41	28.47	dry	----	----	
PZ4	08/10/2004	12:03	28.47	dry	----	----	
PZ4	11/18/2004	09:18	28.47	dry	----	----	
PZ4	06/07/2005	19:00	28.47	dry	----	----	
PZ4	08/16/2005	16:04	28.47	dry	----	----	
OX001S	06/27/2002	15:13	33.38	17.85	15.53	----	
OX001S	08/26/2002	16:45	33.38	18.75	14.63	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
OX001S	11/13/2002	08:30	33.38	19.92	13.46	----	
OX001S	02/11/2003	09:59	33.38	16.96	16.42	----	
OX001S	05/08/2003	08:04	33.38	16.48	16.90	----	
OX001S	08/27/2003	14:38	33.38	18.76	14.62	----	
OX001S	10/23/2003	14:09	33.38	19.51	13.87	----	
OX001S	02/19/2004	14:10	33.38	16.64	16.74	----	
OX001S	06/09/2004	08:45	33.38	18.16	15.22	----	
OX001S	08/10/2004	12:07	33.38	19.08	14.30	----	
OX001S	11/18/2004	09:07	33.38	19.63	13.77	0.03	
OX001S	02/15/2005	11:11	33.38	18.77	14.61	----	Strong product odor
OX001S	06/07/2005	19:35	33.38	17.97	15.41	----	
OX001S	08/16/2005	16:35	33.38	18.94	14.44	----	
OX002S	06/27/2002	15:12	28.69	13.22	15.47	----	
OX002S	08/26/2002	16:44	28.69	14.26	14.43	----	
OX002S	11/13/2002	08:33	28.81	15.39	13.42	----	New reference elevation September 2002
OX002S	02/11/2003	10:06	28.81	12.39	16.42	----	
OX002S	05/08/2003	08:09	28.81	11.90	16.91	----	
OX002S	08/27/2003	14:33	28.81	14.55	14.26	----	
OX002S	10/23/2003	14:14	28.81	15.22	13.84	0.31	
OX002S	02/19/2004	14:07	28.81	12.06	16.75	----	
OX002S	06/09/2004	08:52	28.95	13.61	15.34	----	New reference elevation July 2004
OX002S	08/10/2004	12:09	28.95	14.53	14.42	----	
OX002S	11/18/2004	09:10	28.95	15.18	13.87	0.13	
OX002S	02/15/2005	11:09	28.95	14.25	14.72	0.03	
OX002S	06/07/2005	20:00	28.95	13.45	15.50	----	
OX002S	08/16/2005	00:00	28.95	14.58	14.55	0.23	
OX003S	06/27/2002	15:14	30.01	14.65	15.36	----	
OX003S	08/26/2002	16:42	30.01	15.50	14.51	----	
OX003S	11/13/2002	08:31	30.01	16.65	13.36	----	
OX003S	02/11/2003	09:58	30.01	13.78	16.23	----	
OX003S	05/08/2003	08:03	30.01	13.30	16.71	----	
OX003S	08/27/2003	14:40	30.01	15.52	14.49	----	
OX003S	10/23/2003	14:10	30.01	16.22	13.79	----	
OX003S	02/19/2004	14:09	30.01	13.47	16.54	----	
OX003S	06/09/2004	08:51	30.01	14.96	15.05	----	
OX003S	08/10/2004	12:06	30.01	15.81	14.20	----	
OX003S	11/18/2004	09:13	30.01	16.61	13.66	0.33	
OX003S	02/15/2005	11:18	30.01	15.53	14.48	----	Slight product odor
OX003S	06/07/2005	19:50	30.01	15.78	14.23	----	
OX003S	08/16/2005	17:20	30.01	15.70	14.31	----	
OX004S	06/27/2002	15:15	33.42	19.07	14.35	----	
OX004S	08/26/2002	16:39	33.42	19.74	13.68	----	
OX004S	11/13/2002	08:24	33.54	20.73	12.81	----	New reference elevation September 2002
OX004S	02/11/2003	09:38	33.54	18.39	15.15	----	
OX004S	05/08/2003	07:47	33.54	19.07	14.47	----	
OX004S	08/27/2003	14:07	33.54	19.95	13.59	----	
OX004S	10/23/2003	12:43	33.54	dry	----	----	
OX004S	02/19/2004	13:54	33.54	18.21	15.33	----	
OX004S	06/09/2004	08:38	33.51	19.44	14.07	----	New reference elevation July 2004
OX004S	08/10/2004	12:06	33.51	20.12	13.39	----	
OX004S	11/18/2004	09:17	33.51	dry	----	----	
OX004S	02/15/2005	10:27	33.51	19.82	13.69	----	
OX004S	06/07/2005	19:40	33.51	19.15	14.36	----	
OX004S	08/16/2005	15:52	33.51	20.00	13.51	----	
OX005S	10/23/2003	13:44	30.74	16.15	14.59	----	
OX005S	02/19/2004	14:25	30.74	12.46	18.28	----	
OX005S	06/09/2004	09:14	30.74	14.35	16.39	----	
OX005S	08/10/2004	12:18	30.74	15.65	15.09	----	
OX005S	11/18/2004	08:58	30.74	16.26	14.48	----	
OX005S	02/15/2005	09:28	30.74	15.22	15.52	----	
OX005S	06/07/2005	19:12	30.74	14.20	16.54	----	
OX005S	08/16/2005	17:18	30.74	15.40	15.34	----	
OX006S	10/23/2003	13:45	30.92	16.43	14.49	----	
OX006S	02/19/2004	14:24	30.92	12.85	18.07	----	
OX006S	06/09/2004	09:12	31.03	14.71	16.32	----	New reference elevation July 2004
OX006S	08/10/2004	12:17	31.03	16.09	14.94	----	
OX006S	11/18/2004	09:00	31.03	16.66	14.37	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
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Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
OX006S	02/15/2005	09:30	31.03	15.72	15.31	----	
OX006S	06/07/2005	20:15	31.03	14.65	16.38	----	
OX006S	08/16/2005	17:20	31.03	15.84	15.19	----	
OX007S	10/23/2003	13:46	30.68	16.25	14.43	----	
OX007S	02/19/2004	14:23	30.68	12.67	18.01	----	
OX007S	06/09/2004	09:11	30.68	14.55	16.13	----	
OX007S	08/10/2004	12:16	30.68	15.79	14.89	----	
OX007S	11/18/2004	09:02	30.68	16.34	14.34	----	
OX007S	02/15/2005	09:32	30.68	15.45	15.23	----	
OX007S	06/07/2005	20:10	30.68	14.37	16.31	----	
OX007S	08/16/2005	17:23	30.68	15.55	15.13	----	
OX008S	10/23/2003	13:47	30.74	16.41	14.33	----	
OX008S	02/19/2004	14:19	30.74	12.96	17.78	----	
OX008S	06/09/2004	09:09	30.74	14.81	15.93	----	
OX008S	08/10/2004	12:15	30.74	15.96	14.78	----	
OX008S	11/18/2004	08:23	30.74	16.52	14.22	----	
OX008S	02/15/2005	09:35	30.74	15.63	15.11	----	
OX008S	06/07/2005	19:45	30.74	14.63	16.11	----	
OX008S	08/16/2005	06:28	30.74	15.77	14.97	----	
OX009S	08/10/2004	12:12	31.14	16.92	14.22	----	Reference elevation July 200
OX009S	02/15/2005	10:15	31.14	16.61	14.53	----	
OX009S	06/07/2005	19:37	31.14	15.84	15.30	----	
OX009S	08/16/2005	16:07	31.14	17.80	13.34	----	
Deep Wells:							
B2	03/25/1997	12:02	30.31	15.85	14.46	----	
B2	03/31/1997	09:27	30.31	14.91	15.40	----	
B2	07/16/1997	07:45	30.31	19.91	10.40	----	
B2	10/21/1997	16:30	30.31	23.56	6.75	----	
B2	01/27/1998	12:06	30.31	19.32	10.99	----	
B2	05/18/1998	17:54	30.31	18.80	11.51	----	
B2	08/17/1998	10:23	30.31	24.38	5.93	----	
B2	11/13/1998	10:17	30.31	25.33	4.98	----	
B2	02/16/1999	13:34	30.31	19.64	10.67	----	
B2	05/18/1999	15:50	30.31	19.04	11.27	----	
B2	09/21/1999	12:18	30.31	25.34	4.97	----	
B2	12/06/1999	14:39	30.31	20.25	10.06	----	
B2	02/16/2000	10:56	30.31	20.57	9.74	----	
B2	05/23/2000	17:33	30.31	20.99	9.32	----	
B2	08/29/2000	14:20	30.31	25.38	4.93	----	
B2	11/09/2000	13:29	30.31	25.31	5.00	----	
B2	02/12/2001	15:27	30.31	24.62	5.69	----	
B2	06/04/2001	13:04	30.31	24.84	5.47	----	
B2	08/16/2001	11:58	30.31	26.75	3.56	----	
B2	11/28/2001	12:46	30.31	24.14	6.17	----	
B2	02/27/2002	14:35	30.31	22.90	7.41	----	
B2	06/27/2002	15:07	30.31	20.16	10.15	----	
B2	08/26/2002	17:01	30.31	25.32	4.99	----	
B2	11/13/2002	09:03	30.31	25.28	5.03	----	
B2	02/11/2003	10:14	30.31	23.58	6.73	----	
B2	05/08/2003	08:13	30.31	21.33	8.98	----	
B2	08/27/2003	15:32	30.31	24.25	6.06	----	
B2	10/23/2003	14:08	30.31	25.85	4.46	----	
B2	02/19/2004	14:12	30.31	22.21	8.10	----	
B2	06/09/2004	09:02	30.31	21.45	8.86	----	
B2	08/10/2004	08:50	30.31	25.73	4.58	----	
B2	08/10/2004	10:29	30.31	25.96	4.35	----	
B2	11/18/2004	08:13	30.31	25.08	5.23	----	
B2	02/15/2005	10:09	30.31	24.50	5.81	----	
B2	06/07/2005	19:28	30.31	22.72	7.59	----	
B2	08/16/2005	14:30	30.31	25.61	4.70	----	
G1A	03/25/1997	11:55	29.72	14.84	14.88	----	
G1A	03/31/1997	09:11	29.72	14.28	15.44	----	
G1A	07/16/1997	07:33	29.72	18.94	10.78	----	
G1A	10/21/1997	16:18	29.72	22.44	7.28	----	
G1A	01/27/1998	11:46	29.72	18.42	11.30	----	
G1A	05/18/1998	17:31	29.72	18.05	11.67	----	
G1A	08/17/1998	10:07	29.72	23.35	6.37	----	

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QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
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Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
G1A	11/13/1998	09:54	29.72	24.59	5.13	----	
G1A	02/16/1999	13:14	29.72	18.28	11.44	----	
G1A	05/18/1999	14:51	29.72	18.42	11.30	----	
G1A	09/21/1999	11:29	29.72	24.32	5.40	----	
G1A	12/06/1999	14:05	29.72	19.82	9.90	----	
G1A	02/16/2000	10:18	29.72	19.81	9.91	----	
G1A	05/23/2000	16:31	29.72	20.08	9.64	----	Replaced lock and tubing
G1A	08/29/2000	13:13	29.72	24.36	5.36	----	
G1A	11/09/2000	12:32	29.72	24.85	4.87	----	
G1A	02/12/2001	16:01	29.72	24.08	5.64	----	
G1A	06/04/2001	11:40	29.72	24.10	5.62	----	
G1A	08/16/2001	10:52	29.72	25.51	4.21	----	
G1A	11/28/2001	11:32	29.72	23.84	5.88	----	
G1A	02/27/2002	13:39	29.72	21.96	7.76	----	
G1A	06/27/2002	14:17	29.72	19.48	10.24	----	
G1A	08/26/2002	16:06	29.72	24.36	5.36	----	
G1A	11/13/2002	07:35	29.72	24.60	5.12	----	
G1A	02/11/2003	08:59	29.72	22.32	7.40	----	
G1A	05/08/2003	06:58	29.72	20.51	9.21	----	
G1A	08/27/2003	13:36	29.72	24.16	5.56	----	
G1A	10/23/2003	12:37	29.72	25.20	4.52	----	
G1A	02/19/2004	12:57	29.72	21.51	8.21	----	
G1A	06/09/2004	07:55	29.72	20.91	8.81	----	
G1A	08/10/2004	08:46	29.72	25.07	4.65	----	
G1A	08/10/2004	10:25	29.72	25.24	4.48	----	
G1A	11/18/2004	08:09	29.72	24.56	5.16	----	
G1A	02/15/2005	09:53	29.72	23.62	6.10	----	
G1A	06/07/2005	17:56	29.72	22.00	7.72	----	
G1A	08/16/2005	13:57	29.72	24.85	4.87	----	
J2	03/25/1997	12:18	29.65	15.22	14.43	----	
J2	03/31/1997	11:21	29.65	14.38	15.27	----	
J2	07/16/1997	08:24	29.65	19.28	10.37	----	
J2	10/21/1997	17:00	29.65	23.02	6.63	----	
J2	01/27/1998	13:19	29.65	18.69	10.96	----	
J2	05/18/1998	18:00	29.65	18.14	11.51	----	
J2	08/17/1998	10:21	29.65	23.70	5.95	----	
J2	11/13/1998	10:28	29.65	24.64	5.01	----	
J2	02/16/1999	13:40	29.65	19.00	10.65	----	
J2	05/18/1999	15:46	29.65	18.40	11.25	----	
J2	09/21/1999	12:30	29.65	24.73	4.92	----	
J2	12/06/1999	15:08	29.65	19.53	10.12	----	
J2	02/16/2000	11:07	29.65	19.89	9.76	----	
J2	05/23/2000	17:28	29.65	20.33	9.32	----	
J2	08/29/2000	14:15	29.65	24.67	4.98	----	
J2	11/09/2000	13:26	29.65	24.66	4.99	----	
J2	02/12/2001	15:23	29.65	23.92	5.73	----	
J2	06/04/2001	13:02	29.65	24.17	5.48	----	
J2	08/16/2001	11:51	29.65	25.57	4.08	----	
J2	11/28/2001	12:36	29.65	23.45	6.20	----	
J2	02/27/2002	14:31	29.65	22.21	7.44	----	
J2	06/27/2002	15:03	29.65	19.48	10.17	----	
J2	08/26/2002	16:56	29.65	24.67	4.98	----	
J2	11/13/2002	08:59	29.65	24.60	5.05	----	
J2	02/11/2003	10:19	29.65	22.95	6.70	----	
J2	05/08/2003	08:16	29.65	20.65	9.00	----	
J2	08/27/2003	14:48	29.65	24.12	5.53	----	
J2	10/23/2003	13:54	29.65	25.18	4.47	----	
J2	02/19/2004	14:17	29.65	21.52	8.13	----	
J2	06/09/2004	09:07	29.65	20.76	8.89	----	
J2	08/10/2004	08:40	29.65	25.00	4.65	----	
J2	08/10/2004	10:27	29.65	25.24	4.41	----	
J2	11/18/2004	08:20	29.65	24.39	5.26	----	
J2	02/15/2005	09:52	29.65	23.44	6.21	----	
J2	06/07/2005	17:20	29.65	22.07	7.58	----	
J2	08/16/2005	14:17	29.65	24.95	4.70	----	
J3	03/25/1997	12:20	29.58	14.70	14.88	----	
J3	03/31/1997	11:25	29.58	14.03	15.55	----	
J3	07/16/1997	08:25	29.58	18.91	10.67	----	
J3	10/21/1997	17:02	29.58	22.37	7.21	----	
J3	01/27/1998	13:21	29.58	18.28	11.30	----	

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QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
J3	05/18/1998	17:58	29.58	17.84	11.74	----	
J3	08/17/1998	10:22	29.58	23.12	6.46	----	
J3	11/13/1998	10:26	29.58	24.14	5.44	----	
J3	02/16/1999	13:41	29.58	18.32	11.26	----	
J3	05/18/1999	15:48	29.58	18.01	11.57	----	
J3	09/21/1999	12:31	29.58	24.12	5.46	----	
J3	12/06/1999	15:09	29.58	19.31	10.27	----	
J3	02/16/2000	10:07	29.58	19.50	10.08	----	
J3	05/23/2000	17:29	29.58	19.86	9.72	----	
J3	08/29/2000	14:17	29.58	24.05	5.53	----	
J3	11/09/2000	13:27	29.58	24.24	5.34	----	
J3	02/12/2001	15:24	29.58	23.45	6.13	----	
J3	06/04/2001	12:44	29.58	23.62	5.96	----	
J3	08/16/2001	11:50	29.58	24.98	4.60	----	
J3	11/28/2001	12:37	29.58	22.98	6.60	----	
J3	02/27/2002	14:32	29.58	21.52	8.06	----	
J3	06/27/2002	15:04	29.58	19.14	10.44	----	
J3	08/26/2002	16:57	29.58	23.99	5.59	----	
J3	11/13/2002	08:58	29.58	24.10	5.48	----	
J3	02/11/2003	10:20	29.58	22.28	7.30	----	
J3	05/08/2003	08:17	29.58	20.16	9.42	----	
J3	08/27/2003	14:49	29.58	23.60	5.98	----	
J3	10/23/2003	13:56	29.58	24.70	4.88	----	
J3	02/19/2004	14:16	29.58	21.18	8.40	----	
J3	06/09/2004	09:06	29.58	20.40	9.18	----	
J3	08/10/2004	08:41	29.58	24.50	5.08	----	
J3	08/10/2004	10:28	29.58	24.67	4.91	----	
J3	11/18/2004	08:17	29.58	23.86	5.72	----	
J3	06/07/2005	17:25	29.58	21.61	7.97	----	
J3	08/16/2005	13:58	29.58	24.33	5.25	----	
O	03/25/1997	11:40	32.03	17.01	15.02	----	
O	03/31/1997	08:48	32.03	16.39	15.64	----	
O	07/16/1997	07:05	32.03	21.93	10.10	----	
O	10/21/1997	16:01	32.03	22.23	9.80	----	
O	01/27/1998	11:03	32.03	20.51	11.52	----	
O	05/18/1998	17:14	32.03	20.25	11.78	----	
O	08/17/1998	10:13	32.03	25.42	6.61	----	
O	11/13/1998	09:31	32.03	26.49	5.54	----	
O	02/16/1999	12:45	32.03	20.25	11.78	----	
O	05/18/1999	14:36	32.03	21.23	10.80	----	
O	09/21/1999	11:09	32.03	26.22	5.81	----	
O	12/06/1999	13:48	32.03	21.90	10.13	----	
O	02/16/2000	10:04	32.03	22.21	9.82	----	
O	05/23/2000	16:15	32.03	22.18	9.85	----	
O	08/29/2000	12:56	32.03	26.49	5.54	----	
O	11/09/2000	12:18	32.03	27.01	5.02	----	
O	02/12/2001	15:52	32.03	26.12	5.91	----	
O	06/04/2001	11:22	32.03	26.08	5.95	----	
O	08/16/2001	10:22	32.03	27.58	4.45	----	
O	11/28/2001	11:18	32.03	26.15	5.88	----	
O	02/27/2002	13:15	32.03	24.08	7.95	----	
O	06/27/2002	14:09	32.03	21.29	10.74	----	
O	08/26/2002	15:47	32.03	25.91	6.12	----	
O	11/13/2002	07:21	32.03	26.56	5.47	----	
O	02/11/2003	08:38	32.03	22.81	9.22	----	
O	05/08/2003	06:44	32.03	22.70	9.33	----	
O	08/27/2003	13:23	32.03	26.43	5.60	----	
O	10/23/2003	12:02	32.03	27.11	4.92	----	
O	02/19/2004	12:15	32.03	23.71	8.32	----	
O	06/09/2004	07:32	32.03	22.76	9.27	----	
O	08/10/2004	08:23	32.03	26.51	5.52	----	
O	08/10/2004	10:02	32.03	26.52	5.51	----	
O	11/18/2004	07:33	32.03	26.13	5.90	----	
O	06/07/2005	17:06	32.03	23.68	8.35	----	
O	08/16/2005	13:22	33.03	26.33	6.70	----	
R	03/25/1997	11:36	30.47	15.56	14.91	----	
R	03/31/1997	08:43	30.47	14.85	15.62	----	
R	07/16/1997	07:00	30.47	20.37	10.10	----	
R	10/21/1997	15:56	30.47	22.54	7.93	----	
R	01/27/1998	10:57	30.47	18.98	11.49	----	

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QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
R	05/18/1998	17:15	30.47	18.73	11.74	----	
R	08/17/1998	10:12	30.47	23.93	6.54	----	
R	11/13/1998	09:35	30.47	25.17	5.30	----	
R	02/16/1999	13:05	30.47	18.79	11.68	----	
R	05/18/1999	14:37	30.47	19.64	10.83	----	
R	09/21/1999	11:15	30.47	24.53	5.94	----	
R	12/06/1999	13:46	30.47	20.33	10.14	----	
R	02/16/2000	10:12	30.47	20.65	9.82	----	
R	05/23/2000	16:17	30.47	20.64	9.83	----	
R	08/29/2000	12:58	30.47	24.97	5.50	----	
R	11/09/2000	12:20	30.47	25.47	5.00	----	
R	02/12/2001	15:54	30.47	24.46	6.01	----	
R	06/04/2001	11:36	30.47	24.53	5.94	----	
R	08/16/2001	10:35	30.47	26.02	4.45	----	
R	11/28/2001	11:19	30.47	24.57	5.90	----	
R	02/27/2002	13:17	30.47	22.50	7.97	----	
R	06/27/2002	14:08	30.47	19.75	10.72	----	
R	08/26/2002	15:58	30.47	24.38	6.09	----	
R	11/13/2002	07:22	30.47	25.04	5.43	----	
R	02/11/2003	08:41	30.47	21.22	9.25	----	
R	05/08/2003	06:46	30.47	21.14	9.33	----	
R	08/27/2003	13:25	30.47	24.91	5.56	----	
R	10/23/2003	11:56	30.47	25.60	4.87	----	
R	02/19/2004	12:05	30.47	22.15	8.32	----	
R	06/09/2004	07:30	30.47	21.21	9.26	----	
R	08/10/2004	08:21	30.47	24.99	5.48	----	
R	08/10/2004	10:00	30.47	24.99	5.48	----	
R	11/18/2004	07:34	30.47	24.61	5.86	----	
R	06/07/2005	17:46	30.47	22.11	8.36	----	
R	08/16/2005	13:18	30.47	24.82	5.65	----	
LW001D	03/31/1997	11:11	28.31	12.71	15.60	----	
LW001D	07/16/1997	08:12	28.31	17.65	10.66	----	
LW001D	10/21/1997	16:55	28.31	21.29	7.02	----	
LW001D	01/27/1998	13:07	28.31	17.06	11.25	----	
LW001D	05/18/1998	17:39	28.31	16.53	11.78	----	
LW001D	08/17/1998	10:30	28.31	21.82	6.49	----	
LW001D	11/13/1998	10:01	28.31	22.77	5.54	----	
LW001D	02/16/1999	13:21	28.31	17.30	11.01	----	
LW001D	05/18/1999	15:36	28.31	16.76	11.55	----	
LW001D	09/21/1999	12:12	28.31	22.91	5.40	----	
LW001D	12/06/1999	14:34	28.31	18.00	10.31	----	
LW001D	02/16/2000	10:49	28.31	18.16	10.15	----	
LW001D	05/23/2000	17:19	28.31	18.62	9.69	----	
LW001D	08/29/2000	13:59	28.31	22.81	5.50	----	
LW001D	11/09/2000	13:20	28.31	22.98	5.33	----	
LW001D	02/12/2001	15:35	28.31	22.23	6.08	----	
LW001D	06/04/2001	12:23	28.31	22.36	5.95	----	
LW001D	08/16/2001	11:38	28.31	23.73	4.58	----	
LW001D	11/28/2001	12:29	28.31	21.73	6.58	----	
LW001D	02/27/2002	14:17	28.31	20.31	8.00	----	
LW001D	06/27/2002	14:49	28.31	17.81	10.50	----	
LW001D	08/26/2002	17:12	28.31	22.85	5.46	----	
LW001D	11/13/2002	09:08	28.31	22.91	5.40	----	
LW001D	02/11/2003	10:27	28.31	21.11	7.20	----	
LW001D	05/08/2003	08:19	28.31	18.91	9.40	----	
LW001D	08/27/2003	14:50	28.31	22.40	5.91	----	
LW001D	10/23/2003	13:57	28.31	23.51	4.80	----	
LW001D	02/19/2004	14:30	28.31	19.91	8.40	----	
LW001D	06/09/2004	09:21	28.31	19.13	9.18	----	
LW001D	08/10/2004	08:45	28.31	23.30	5.01	----	
LW001D	08/10/2004	10:27	28.31	23.50	4.81	----	
LW001D	11/18/2004	08:27	28.31	22.69	5.62	----	
LW001D	02/15/2005	09:21	28.31	21.98	6.33	----	
LW001D	06/07/2005	19:10	28.31	20.44	7.87	----	
LW001D	08/16/2005	13:47	28.31	23.14	5.17	----	
LW003D	03/31/1997	11:45	30.80	19.38	11.42	----	Time estimated
LW003D	07/16/1997	08:38	30.80	28.09	2.71	----	
LW003D	10/21/1997	17:07	30.80	23.36	7.44	----	
LW003D	01/27/1998	13:30	30.80	21.66	9.14	----	
LW003D	05/18/1998	17:35	30.80	19.21	11.59	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW003D	08/17/1998	10:24	30.80	24.62	6.18	----	
LW003D	11/13/1998	09:03	30.80	25.56	5.24	----	
LW003D	02/16/1999	13:44	30.80	20.00	10.80	----	
LW003D	05/18/1999	15:58	30.80	19.42	11.38	----	Purged dry at 11:00
LW003D	09/21/1999	10:40	30.80	25.76	5.04	----	
LW003D	12/06/1999	14:45	30.80	20.69	10.11	----	
LW003D	02/16/2000	09:54	30.80	20.98	9.82	----	
LW003D	05/23/2000	14:40	30.80	21.16	9.64	----	Purged dry at 13:10
LW003D	08/29/2000	14:36	30.80	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW003D	11/09/2000	----	30.80	----	----	----	Well sampled 11/8/00 - water level not representative
LW003D	02/12/2001	15:11	30.80	24.85	5.95	----	
LW003D	06/04/2001	12:35	30.80	25.09	5.71	----	
LW003D	08/16/2001	11:47	30.80	26.43	4.37	----	
LW003D	11/28/2001	12:42	30.80	24.48	6.32	----	
LW003D	02/27/2002	14:20	30.80	23.13	7.67	----	
LW003D	06/27/2002	14:59	30.80	20.55	10.25	----	
LW003D	08/26/2002	17:03	30.80	25.63	5.17	----	
LW003D	11/13/2002	09:20	30.80	25.57	5.23	----	
LW003D	02/11/2003	10:40	30.80	24.03	6.77	----	
LW003D	05/08/2003	08:29	30.80	21.68	9.12	----	
LW003D	08/27/2003	15:04	30.80	25.10	5.70	----	
LW003D	10/23/2003	13:49	30.80	26.18	4.62	----	
LW003D	02/19/2004	14:21	30.80	22.65	8.15	----	
LW003D	06/09/2004	09:29	30.80	21.82	8.98	----	
LW003D	08/10/2004	08:39	30.80	25.95	4.85	----	
LW003D	08/10/2004	10:25	30.80	26.10	4.70	----	
LW003D	11/18/2004	08:24	30.80	25.42	5.38	----	
LW003D	02/15/2005	09:40	30.80	25.06	5.74	----	
LW003D	06/07/2005	19:40	30.80	23.12	7.68	----	
LW003D	08/16/2005	13:53	30.80	25.96	4.84	----	
LW004D	03/31/1997	09:18	30.17	14.73	15.44	----	
LW004D	07/16/1997	07:42	30.17	19.43	10.74	----	
LW004D	10/21/1997	16:27	30.17	23.02	7.15	----	
LW004D	01/27/1998	11:56	30.17	18.84	11.33	----	
LW004D	05/18/1998	17:33	30.17	18.54	11.63	----	
LW004D	08/17/1998	10:18	30.17	23.81	6.36	----	
LW004D	11/13/1998	09:57	30.17	24.99	5.18	----	
LW004D	02/16/1999	13:17	30.17	18.79	11.38	----	
LW004D	05/18/1999	15:04	30.17	18.77	11.40	----	Completed sampling at 13:40
LW004D	09/21/1999	11:41	30.17	24.78	5.39	----	
LW004D	12/06/1999	14:18	30.17	20.21	9.96	----	
LW004D	02/16/2000	10:30	30.17	20.23	9.94	----	
LW004D	05/23/2000	16:54	30.17	20.55	9.62	----	
LW004D	08/29/2000	13:38	30.17	24.78	5.39	----	
LW004D	11/09/2000	12:52	30.17	25.19	4.98	----	
LW004D	02/12/2001	16:39	30.17	24.71	5.46	----	
LW004D	06/04/2001	12:07	30.17	24.66	5.51	----	
LW004D	08/16/2001	11:15	30.17	26.27	3.90	----	
LW004D	11/28/2001	12:04	30.17	24.41	5.76	----	
LW004D	02/27/2002	14:00	30.17	22.65	7.52	----	
LW004D	03/05/2002	11:36	30.17	22.94	7.23	----	
LW004D	04/05/2002	08:19	30.17	23.75	6.42	----	
LW004D	05/29/2002	00:00	30.17	20.48	9.69	----	
LW004D	06/27/2002	14:41	30.17	20.15	10.02	----	
LW004D	08/26/2002	16:32	30.17	25.02	5.15	----	
LW004D	11/13/2002	08:23	30.17	25.26	4.91	----	
LW004D	02/11/2003	09:32	30.17	23.08	7.09	----	
LW004D	05/08/2003	07:44	30.17	21.21	8.96	----	
LW004D	08/27/2003	14:01	30.17	24.78	5.39	----	
LW004D	10/23/2003	13:16	30.17	25.85	4.32	----	
LW004D	02/19/2004	13:45	30.17	22.14	8.03	----	
LW004D	06/09/2004	08:32	30.17	21.60	8.57	----	
LW004D	08/10/2004	08:24	30.17	25.68	4.49	----	
LW004D	08/10/2004	10:09	30.17	25.87	4.30	----	
LW004DR	11/24/2004	11:00	30.11	26.23	3.88	----	Replacement well installed 11/19/04
LW004DR	02/15/2005	10:20	30.11	23.94	6.17	----	
LW004DR	06/07/2005	18:53	30.17	22.83	7.34	----	
LW004DR	08/16/2005	14:10	30.17	25.68	4.49	----	
LW006D	03/25/1997	11:52	30.84	16.51	14.33	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW006D	03/31/1997	09:05	30.84	15.53	15.31	----	Faint odor
LW006D	07/16/1997	07:30	30.84	20.74	10.10	----	
LW006D	10/21/1997	16:16	30.84	24.05	6.79	----	
LW006D	01/27/1998	11:38	30.84	19.94	10.90	----	
LW006D	05/18/1998	17:28	30.84	19.36	11.48	----	
LW006D	08/17/1998	10:05	30.84	24.92	5.92	----	
LW006D	11/13/1998	09:50	30.84	25.94	4.90	----	
LW006D	02/16/1999	13:11	30.84	20.40	10.44	----	
LW006D	05/18/1999	14:53	30.84	19.81	11.03	----	
LW006D	09/21/1999	11:32	30.84	25.92	4.92	----	
LW006D	12/06/1999	14:09	30.84	20.86	9.98	----	
LW006D	02/16/2000	10:20	30.84	21.27	9.57	----	
LW006D	05/23/2000	16:35	30.84	21.64	9.20	----	
LW006D	08/29/2000	13:20	30.84	25.93	4.91	----	
LW006D	11/09/2000	12:35	30.84	26.21	4.63	----	
LW006D	02/12/2001	16:03	30.84	25.37	5.47	----	
LW006D	06/04/2001	11:42	30.84	25.30	5.54	----	
LW006D	08/16/2001	10:54	30.84	26.72	4.12	----	
LW006D	11/28/2001	11:46	30.84	24.92	5.92	----	
LW006D	02/27/2002	13:35	30.84	23.62	7.22	----	
LW006D	06/27/2002	14:19	30.84	20.68	10.16	----	
LW006D	08/26/2002	16:04	30.84	25.79	5.05	----	
LW006D	11/13/2002	07:42	30.84	25.82	5.02	----	
LW006D	02/11/2003	09:01	30.84	24.08	6.76	----	
LW006D	05/08/2003	07:01	30.84	21.97	8.87	----	
LW006D	08/27/2003	13:40	30.84	25.37	5.47	----	
LW006D	10/23/2003	12:31	30.84	26.47	4.37	----	
LW006D	02/19/2004	12:37	30.84	23.00	7.84	----	
LW006D	06/09/2004	08:00	30.84	21.90	8.94	----	
LW006D	08/10/2004	08:42	30.84	26.22	4.62	----	
LW006D	08/10/2004	10:20	30.84	26.43	4.41	----	
LW006D	11/18/2004	07:51	30.84	25.61	5.23	----	
LW006D	02/15/2005	09:20	30.84	24.74	6.10	----	
LW006D	06/07/2005	17:25	30.84	23.50	7.34	----	
LW006D	08/16/2005	13:28	30.84	26.18	4.66	----	
LW009D	05/18/1999	14:56	30.98	20.02	10.96	----	
LW009D	09/21/1999	11:34	30.98	25.23	5.75	----	
LW009D	12/06/1999	14:11	30.98	21.04	9.94	----	
LW009D	02/16/2000	10:23	30.98	21.17	9.81	----	
LW009D	05/23/2000	16:39	30.98	21.15	9.83	----	
LW009D	08/29/2000	13:27	30.98	25.36	5.62	----	
LW009D	11/09/2000	12:43	30.98	25.96	5.02	----	
LW009D	02/12/2001	16:11	30.98	25.13	5.85	----	
LW009D	06/04/2001	11:49	30.98	25.15	5.83	----	
LW009D	08/16/2001	11:02	30.98	26.57	4.41	----	
LW009D	11/28/2001	11:53	30.98	25.40	5.58	----	
LW009D	02/27/2002	13:47	30.98	22.97	8.01	----	
LW009D	06/27/2002	14:25	30.98	20.38	10.60	----	
LW009D	08/26/2002	16:11	30.98	24.90	6.08	----	
LW009D	11/13/2002	07:48	30.98	25.73	5.25	----	
LW009D	02/11/2003	09:07	30.98	22.03	8.95	----	
LW009D	05/08/2003	07:12	30.98	21.65	9.33	----	
LW009D	08/27/2003	13:47	30.98	25.50	5.48	----	
LW009D	10/23/2003	12:50	30.98	26.22	4.76	----	
LW009D	02/19/2004	13:02	30.98	22.55	8.43	----	
LW009D	06/09/2004	08:11	30.98	21.91	9.07	----	
LW009D	08/10/2004	08:14	30.98	25.49	5.49	----	
LW009D	08/10/2004	09:59	30.98	25.54	5.44	----	
LW009D	11/18/2004	07:44	30.98	25.36	5.62	----	
LW009D	02/15/2005	09:24	30.98	24.46	6.52	----	
LW009D	06/07/2005	17:20	30.98	22.68	8.30	----	
LW009D	08/16/2005	13:26	30.98	25.25	5.73	----	
LW010D	05/18/1999	15:00	31.12	19.82	11.30	----	
LW010D	09/21/1999	11:37	31.12	25.81	5.31	----	
LW010D	12/06/1999	14:15	31.12	21.18	9.94	----	
LW010D	02/16/2000	10:27	31.12	21.20	9.92	----	
LW010D	05/23/2000	16:42	31.12	21.51	9.61	----	
LW010D	08/29/2000	13:29	31.12	25.86	5.26	----	
LW010D	11/09/2000	12:46	31.12	26.26	4.86	----	
LW010D	02/12/2001	16:15	31.12	25.63	5.49	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW010D	06/04/2001	11:52	31.12	25.62	5.50	----	
LW010D	08/16/2001	11:04	31.12	27.16	3.96	----	
LW010D	11/28/2001	11:55	31.12	25.46	5.66	----	
LW010D	02/27/2002	13:49	31.12	23.58	7.54	----	
LW010D	06/27/2002	14:29	31.12	21.03	10.09	----	
LW010D	08/26/2002	16:17	31.12	25.91	5.21	----	
LW010D	11/13/2002	08:01	31.12	26.17	4.95	----	
LW010D	02/11/2003	09:21	31.12	23.83	7.29	----	
LW010D	05/08/2003	07:33	31.12	22.10	9.02	----	
LW010D	08/27/2003	13:53	31.12	25.74	5.38	----	
LW010D	10/23/2003	13:10	31.12	26.79	4.33	----	
LW010D	02/19/2004	13:25	31.12	22.98	8.14	----	
LW010D	06/09/2004	08:23	31.12	22.46	8.66	----	
LW010D	08/10/2004	08:16	31.12	26.52	4.60	----	
LW010D	08/10/2004	10:02	31.12	26.70	4.42	----	
LW010D	11/18/2004	07:51	31.12	26.08	5.04	----	
LW010D	02/15/2005	10:07	31.12	25.07	6.05	----	
LW010D	06/07/2005	18:19	31.12	23.53	7.59	----	
LW010D	08/16/2005	13:40	31.12	26.38	4.74	----	
LW011D	05/18/1999	15:09	29.04	18.59	10.45	----	
LW011D	09/21/1999	11:50	29.04	20.76	8.28	----	
LW011D	12/06/1999	15:06	29.04	21.81	7.23	----	
LW011D	02/16/2000	11:02	29.04	20.35	8.69	----	
LW011D	05/23/2000	17:37	29.04	19.50	9.54	----	
LW011D	08/29/2000	14:54	29.04	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW011D	11/09/2000		29.04	----	----	----	Well sampled 11/8/00 - water level not representative
LW011D	02/12/2001	15:16	29.04	23.14	5.90	----	
LW011D	06/04/2001	13:11	29.04	23.35	5.69	----	
LW011D	08/16/2001	11:25	29.04	26.94	2.10	----	
LW011D	11/28/2001	12:53	29.04	24.54	4.50	----	
LW011D	02/27/2002	14:57	29.04	21.80	7.24	----	
LW011D	06/27/2002	15:11	29.04	18.84	10.20	----	
LW011D	08/26/2002	16:47	29.04	22.71	6.33	----	
LW011D	11/13/2002	08:55	29.04	23.87	5.17	----	
LW011D	02/11/2003	10:04	29.04	21.79	7.25	----	
LW011D	05/08/2003	08:08	29.04	19.28	9.76	----	
LW011D	08/27/2003	14:34	29.04	23.35	5.69	----	
LW011D	10/23/2003	14:11	29.04	23.98	5.06	----	
LW011D	02/19/2004	14:05	29.04	21.08	7.96	----	
LW011D	06/09/2004	08:55	29.04	20.04	9.00	----	
LW011D	08/10/2004	08:35	29.04	24.17	4.87	----	
LW011D	08/10/2004	10:20	29.04	24.46	4.58	----	
LW011D	11/18/2004	08:11	29.04	23.67	5.37	----	
LW011D	02/15/2005	10:19	29.04	22.02	7.02	----	
LW011D	06/07/2005	19:31	29.04	21.58	7.46	----	
LW011D	08/16/2005	14:08	29.04	24.11	4.93	----	
LW012D1	05/18/1999	15:13	30.02	18.45	11.57	----	
LW012D1	09/21/1999	11:54	30.02	24.44	5.58	----	
LW012D1	12/06/1999	14:21	30.02	19.72	10.30	----	
LW012D1	02/16/2000	10:35	30.02	19.89	10.13	----	
LW012D1	05/23/2000	17:00	30.02	20.23	9.79	----	
LW012D1	08/29/2000	13:45	30.02	24.38	5.64	----	
LW012D1	11/09/2000	13:00	30.02	24.66	5.36	----	
LW012D1	02/12/2001	15:57	30.02	23.92	6.10	----	
LW012D1	06/04/2001	12:32	30.02	23.99	6.03	----	
LW012D1	08/16/2001	11:42	30.02	25.39	4.63	----	
LW012D1	11/28/2001	12:38	30.02	23.33	6.69	----	
LW012D1	02/27/2002	14:28	30.02	21.88	8.14	----	
LW012D1	06/27/2002	14:57	30.02	19.58	10.44	----	
LW012D1							Abandoned August 2003
LW012D2	05/18/1999	15:14	29.24	18.23	11.01	----	
LW012D2	09/21/1999	11:53	29.24	24.69	4.55	----	
LW012D2	12/06/1999	14:22	29.24	19.40	9.84	----	
LW012D2	02/16/2000	10:36	29.24	19.90	9.34	----	
LW012D2	05/23/2000	16:59	29.24	20.38	8.86	----	
LW012D2	08/29/2000	13:44	29.24	24.68	4.56	----	
LW012D2	11/09/2000	13:01	29.24	24.56	4.68	----	
LW012D2	02/12/2001	15:56	29.24	23.88	5.36	----	
LW012D2	06/04/2001	12:31	29.24	24.10	5.14	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW012D2	08/16/2001	11:43	29.24	25.43	3.81	----	
LW012D2	11/28/2001	12:39	29.24	23.17	6.07	----	
LW012D2	02/27/2002	14:29	29.24	22.38	6.86	----	
LW012D2	06/27/2002	14:58	29.24	19.44	9.80	----	
LW012D2							Abandoned August 2003
LW014D	05/23/2000	16:50	30.54	21.26	9.28	----	
LW014D	08/29/2000	13:35	30.54	25.68	4.86	----	
LW014D	11/09/2000	12:49	30.54	25.90	4.64	----	
LW014D	02/12/2001	16:20	30.54	25.33	5.21	----	
LW014D	06/04/2001	12:00	30.54	25.37	5.17	----	
LW014D	08/16/2001	11:08	30.54	27.00	3.54	----	
LW014D	11/28/2001	11:56	30.54	25.03	5.51	----	
LW014D	02/27/2002	13:55	30.54	23.57	6.97	----	
LW014D	06/27/2002	14:33	30.54	20.70	9.84	----	
LW014D	08/26/2002	16:26	30.54	25.90	4.64	----	
LW014D	11/13/2002	08:07	30.54	25.76	4.78	----	
LW014D	02/11/2003	09:27	30.54	24.33	6.21	----	
LW014D	05/08/2003	07:38	30.54	21.92	8.62	----	
LW014D	08/27/2003	13:56	30.54	25.32	5.22	----	
LW014D	10/23/2003	13:13	30.54	26.56	3.98	----	
LW014D	02/19/2004	13:30	30.54	22.86	7.68	----	
LW014D	06/09/2004	08:27	30.54	22.11	8.43	----	
LW014D	08/10/2004	08:20	30.54	26.29	4.25	----	
LW014D	08/10/2004	10:05	30.54	26.58	3.96	----	
LW014D	11/18/2004	07:57	30.54	25.74	4.80	----	
LW014D	02/15/2005	10:03	30.54	24.61	5.93	----	
LW014D	06/07/2005	18:25	30.54	23.51	7.03	----	
LW014D	08/16/2005	13:46	30.54	26.30	4.24	----	
LW015D	05/23/2000	16:49	30.85	21.26	9.59	----	
LW015D	08/29/2000	13:34	30.85	25.54	5.31	----	
LW015D	11/09/2000	12:48	30.85	25.98	4.87	----	
LW015D	02/12/2001	16:18	30.85	25.43	5.42	----	
LW015D	06/04/2001	11:59	30.85	25.41	5.44	----	
LW015D	08/16/2001	11:07	30.85	27.05	3.80	----	
LW015D	11/28/2001	11:55	30.85	25.29	5.56	----	
LW015D	02/27/2002	13:52	30.85	23.42	7.43	----	
LW015D	06/27/2002	14:32	30.85	20.91	9.94	----	
LW015D	08/26/2002	16:25	30.85	25.77	5.08	----	
LW015D	11/13/2002	08:05	30.85	26.04	4.81	----	
LW015D	02/11/2003	09:23	30.85	23.65	7.20	----	
LW015D	05/08/2003	07:37	30.85	21.95	8.90	----	
LW015D	08/27/2003	13:55	30.85	25.58	5.27	----	
LW015D	10/23/2003	13:12	30.85	26.61	4.24	----	
LW015D	02/19/2004	13:30	30.85	22.83	8.02	----	
LW015D	06/09/2004	08:25	30.85	22.36	8.49	----	
LW015D	08/10/2004	08:19	30.85	26.43	4.42	----	
LW015D	08/10/2004	10:04	30.85	26.61	4.24	----	
LW015D	11/18/2004	07:55	30.85	25.98	4.87	----	
LW015D	06/07/2005	18:30	30.85	23.38	7.47	----	
LW015D	08/16/2005	13:43	30.85	26.24	4.61	----	
LW016D	05/23/2000	16:48	28.40	18.79	9.61	----	
LW016D	08/29/2000	13:32	28.40	23.07	5.33	----	
LW016D	11/09/2000	12:47	28.40	23.59	4.81	----	
LW016D	02/12/2001	16:17	28.40	22.94	5.46	----	
LW016D	06/04/2001	11:57	28.40	23.00	5.40	----	
LW016D	08/16/2001	11:05	28.40	24.43	3.97	----	
LW016D	11/28/2001	11:57	28.40	22.87	5.53	----	
LW016D	02/27/2002	13:54	28.40	20.94	7.46	----	
LW016D	06/27/2002	14:31	28.40	18.46	9.94	----	
LW016D	08/26/2002	16:23	28.40	23.24	5.16	----	
LW016D	11/13/2002	08:08	28.40	23.45	4.95	----	
LW016D	02/11/2003	09:25	28.40	21.14	7.26	----	
LW016D	05/08/2003	07:36	28.40	19.65	8.75	----	
LW016D	08/27/2003	13:54	28.40	23.08	5.32	----	
LW016D	10/23/2003	13:11	28.40	24.10	4.30	----	
LW016D	02/19/2004	13:31	28.40	20.30	8.10	----	
LW016D	06/09/2004	08:26	28.40	19.91	8.49	----	
LW016D	08/10/2004	08:17	28.40	23.88	4.52	----	
LW016D	08/10/2004	10:03	28.40	24.08	4.32	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW016D	11/18/2004	07:54	28.40	23.41	4.99	----	
LW016D	06/07/2005	18:35	28.40	20.87	7.53	----	
LW016D	08/16/2005	14:02	28.40	23.72	4.68	----	
LW017D	08/29/2000	13:21	27.82	22.96	4.86	----	
LW017D	11/09/2000	12:36	27.82	23.17	4.65	----	
LW017D	02/12/2001	16:04	27.82	22.44	5.38	----	
LW017D	06/04/2001	11:44	27.82	22.42	5.40	----	
LW017D	08/16/2001	10:55	27.82	23.80	4.02	----	
LW017D	11/28/2001	11:50	27.82	22.00	5.82	----	
LW017D	02/27/2002	13:37	27.82	19.82	8.00	----	
LW017D	03/05/2002	11:30	27.82	20.46	7.36	----	
LW017D	04/05/2002	08:15	27.82	21.34	6.48	----	
LW017D	05/29/2002	00:00	27.82	17.90	9.92	----	
LW017D	06/27/2002	14:20	27.82	17.64	10.18	----	
LW017D	08/26/2002	16:07	27.82	22.67	5.15	----	
LW017D	11/13/2002	07:45	27.82	22.80	5.02	----	
LW017D	02/11/2003	09:03	27.82	20.79	7.03	----	
LW017D	05/08/2003	07:05	27.82	18.82	9.00	----	
LW017D	08/27/2003	13:43	27.82	22.38	5.44	----	
LW017D	10/23/2003	12:34	27.82	23.46	4.36	----	
LW017D	02/19/2004	12:52	27.82	19.82	8.00	----	
LW017D	06/09/2004	08:04	27.82	19.00	8.82	----	
LW017D	08/10/2004	08:44	27.82	23.21	4.61	----	
LW017D	08/10/2004	10:23	27.82	23.41	4.41	----	
LW017D	11/18/2004	08:04	27.82	22.69	5.13	----	
LW017D	02/15/2005	09:33	27.82	21.65	6.17	----	
LW017D	06/07/2005	18:00	27.82	20.30	7.52	----	
LW017D	08/16/2005	13:54	27.82	23.07	4.75	----	
LW018D	08/29/2000	13:25	27.82	22.79	5.03	----	
LW018D	11/09/2000	12:40	27.82	22.91	4.91	----	
LW018D	02/12/2001	16:10	27.82	22.56	5.26	----	
LW018D	06/04/2001	11:47	27.82	22.28	5.54	----	
LW018D	08/16/2001	11:00	27.82	23.81	4.01	----	
LW018D	11/28/2001	11:51	27.82	22.00	5.82	----	
LW018D	02/27/2002	13:43	27.82	20.44	7.38	----	
LW018D	06/27/2002	14:23	27.82	17.72	10.10	----	
LW018D	08/26/2002	16:13	27.82	21.90	5.92	----	
LW018D	11/13/2002	07:51	27.82	22.71	5.11	----	
LW018D	02/11/2003	09:05	27.82	20.95	6.87	----	
LW018D	05/08/2003	07:10	27.82	18.75	9.07	----	
LW018D	08/27/2003	13:45	27.82	22.41	5.41	----	
LW018D	10/23/2003	12:45	27.82	23.46	4.36	----	
LW018D	02/19/2004	13:10	27.82	19.74	8.08	----	
LW018D	06/09/2004	08:07	27.82	19.45	8.37	----	
LW018D	08/10/2004	08:11	27.82	23.26	4.56	----	
LW018D	08/10/2004	09:54	27.82	23.46	4.36	----	
LW018D	11/18/2004	08:02	27.82	22.87	4.95	----	
LW018D	02/15/2005	09:39	27.82	21.80	6.02	----	
LW018D	06/07/2005	18:10	27.82	20.37	7.45	----	
LW018D	08/16/2005	13:50	27.82	23.05	4.77	----	
LW020D	10/23/2003	12:15	29.51	24.86	4.65	----	
LW020D	02/19/2004	14:46	29.51	21.00	8.51	----	
LW020D	06/09/2004	07:48	29.51	20.45	9.06	----	
LW020D	08/10/2004	08:32	29.51	24.70	4.81	----	
LW020D	08/10/2004	10:08	29.51	24.90	4.61	----	
LW020D	11/18/2004	07:48	29.51	24.17	5.34	----	
LW020D	02/15/2005	08:31	29.51	23.45	6.06	----	
LW020D	06/07/2005	19:11	29.51	21.70	7.81	----	
LW020D	08/16/2005	13:36	29.51	24.64	4.87	----	
LW022D	10/23/2003	11:58	32.56	27.72	4.84	----	
LW022D	02/19/2004	12:14	32.56	24.44	8.12	----	
LW022D	06/09/2004	07:22	32.56	23.35	9.21	----	
LW022D	08/10/2004	08:16	32.56	27.20	5.36	----	
LW022D	08/10/2004	09:55	32.56	27.21	5.35	----	
LW022D	11/18/2004	07:24	32.56	26.69	5.87	----	
LW022D	02/15/2005	08:55	32.56	26.08	6.48	----	
LW022D	06/07/2005	16:22	32.56	24.36	8.20	----	
LW022D	08/16/2005	13:15	32.56	27.03	5.53	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW023D	10/23/2003	12:00	31.41	26.56	4.85	----	
LW023D	02/19/2004	12:13	31.41	23.31	8.10	----	
LW023D	06/09/2004	07:21	31.41	22.24	9.17	----	
LW023D	08/10/2004	08:13	31.41	26.08	5.33	----	
LW023D	08/10/2004	09:53	31.41	26.09	5.32	----	
LW023D	11/18/2004	07:22	31.41	25.58	5.83	----	
LW023D	02/15/2005	09:10	31.41	24.94	6.47	----	
LW023D	06/07/2005	16:25	31.41	23.27	8.14	----	
LW023D	08/16/2005	13:13	31.41	25.91	5.50	----	
LW024D	10/23/2003	12:23	33.47	28.61	4.86	----	
LW024D	02/19/2004	12:40	33.47	25.28	8.19	----	
LW024D	06/09/2004	07:57	33.47	24.30	9.17	----	
LW024D	08/10/2004	08:36	33.47	28.02	5.45	----	
LW024D	08/10/2004	10:15	33.47	28.04	5.43	----	
LW024D	11/18/2004	07:54	33.47	27.65	5.82	----	
LW024D	02/15/2005	09:13	33.47	26.99	6.48	----	
LW024D	06/07/2005	17:33	33.47	25.25	8.22	----	
LW024D	08/16/2005	13:35	33.47	27.80	5.67	----	
LW025D	10/23/2003	12:28	35.38	30.50	4.88	----	
LW025D	02/19/2004	12:38	35.38	27.25	8.13	----	
LW025D	06/09/2004	07:59	35.38	26.26	9.12	----	
LW025D	08/10/2004	08:40	35.38	29.94	5.44	----	
LW025D	08/10/2004	10:17	35.38	29.96	5.42	----	
LW025D	11/18/2004	07:48	35.38	29.59	5.79	----	
LW025D	02/15/2005	09:16	35.38	28.91	6.47	----	
LW025D	06/07/2005	17:30	35.38	27.25	8.13	----	
LW025D	08/16/2005	13:31	35.38	29.71	5.67	----	
LW026D	10/23/2003	12:09	31.49	27.17	4.32	----	
LW026D	02/19/2004	12:22	31.49	23.64	7.85	----	
LW026D	06/09/2004	07:37	31.49	22.67	8.82	----	
LW026D	08/10/2004	08:26	31.49	27.03	4.46	----	
LW026D	08/10/2004	10:05	31.49	27.31	4.18	----	
LW026D	11/18/2004	07:36	31.49	26.49	5.00	----	
LW026D	02/15/2005	10:35	31.49	25.08	6.41	----	
LW026D	06/07/2005	17:44	31.49	24.24	7.25	----	
LW026D	08/16/2005	13:38	31.49	27.06	4.43	----	
LW027D	10/23/2003	12:21	29.71	25.47	4.24	----	
LW027D	02/19/2004	12:43	29.71	21.96	7.75	----	
LW027D	06/09/2004	07:38	29.71	20.97	8.74	----	
LW027D	08/10/2004	08:28	29.71	25.34	4.37	----	
LW027D	08/10/2004	10:12	29.71	25.65	4.06	----	
LW027D	11/18/2004	07:38	29.71	24.78	4.93	----	
LW027D	02/15/2005	10:31	29.71	23.39	6.32	----	
LW027D	06/07/2005	17:52	29.71	22.55	7.16	----	
LW027D	08/16/2005	13:42	29.71	25.40	4.31	----	
LW029D	10/23/2003	14:40	31.12	26.45	4.67	----	
LW029D	02/19/2004	15:31	31.12	22.55	8.57	----	
LW029D	06/09/2004	09:44	31.12	22.16	8.96	----	
LW029D	08/10/2004	08:28	31.12	26.28	4.84	----	
LW029D	08/10/2004	10:12	31.12	26.52	4.60	----	
LW029D	11/18/2004	08:13	31.12	25.80	5.32	----	
LW029D	02/15/2005	11:33	31.12	24.65	6.47	----	
LW029D	06/07/2005	18:56	31.12	23.42	7.70	----	
LW029D	08/16/2005	14:16	31.12	26.21	4.91	----	
LW030D	10/23/2003	14:52	30.06	25.58	4.48	----	
LW030D	02/19/2004	15:33	30.06	21.55	8.51	----	
LW030D	06/09/2004	09:47	30.06	21.21	8.85	----	
LW030D	08/10/2004	08:30	30.06	25.58	4.48	----	
LW030D	08/10/2004	10:14	30.06	25.87	4.19	----	
LW030D	11/18/2004	08:15	30.06	25.01	5.05	----	
LW030D	02/15/2005	11:35	30.06	23.68	6.38	----	
LW030D	06/07/2005	19:00	30.06	22.70	7.36	----	
LW030D	08/16/2005	14:20	30.06	25.50	4.56	----	
LW032D	10/23/2003	14:33	30.86	25.23	5.63	----	

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GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW032D	02/19/2004	15:28	30.86	21.95	8.91	----	
LW032D	06/09/2004	09:59	30.86	21.41	9.45	----	
LW032D	08/10/2004	08:33	30.86	25.24	5.62	----	
LW032D	08/10/2004	10:16	30.86	25.42	5.44	----	
LW032D	11/18/2004	08:18	30.86	24.63	6.23	----	
LW032D	02/15/2005	10:57	30.86	23.78	7.08	----	
LW032D	06/07/2005	19:03	30.86	22.61	8.25	----	
LW032D	08/16/2005	14:25	30.86	23.15	7.71	----	
LW035D	10/23/2003	11:48	33.19	28.33	4.86	----	
LW035D	02/19/2004	12:34	33.19	24.86	8.33	----	
LW035D	06/09/2004	07:24	33.19	23.88	9.31	----	
LW035D	08/10/2004	08:19	33.19	27.62	5.57	----	
LW035D	08/10/2004	09:57	33.19	27.65	5.54	----	
LW035D	11/18/2004	07:27	33.19	27.31	5.88	----	
LW035D	02/15/2005	09:02	33.19	26.63	6.56	----	
LW035D	06/07/2005	16:18	33.19	24.80	8.39	----	
LW035D	08/16/2005	13:25	33.19	27.47	5.72	----	
LW036D	11/18/2004	07:25	11.30	5.59	5.71	----	
LW036D	02/15/2005	08:28	11.30	5.26	6.04	----	
LW036D	06/07/2005	16:51	11.30	3.73	7.57	----	
LW036D	08/16/2005	13:09	11.30	6.12	5.18	----	
LW037D	11/18/2004	07:30	10.84	5.35	5.49	----	
LW037D	02/15/2005	08:36	10.84	4.84	6.00	----	
LW037D	06/07/2005	16:56	10.84	3.40	7.44	----	
LW037D	08/16/2005	13:15	10.84	6.00	4.84	----	
LW038D	11/18/2004	07:34	10.21	5.22	4.99	----	
LW038D	02/15/2005	08:43	10.21	4.29	5.92	----	
LW038D	06/07/2005	17:08	10.21	3.21	7.00	----	
LW038D	08/16/2005	13:18	10.21	5.58	4.63	----	
LW039D	11/18/2004	07:39	9.35	4.03	5.32	----	
LW039D	02/15/2005	08:51	9.35	3.53	5.82	----	
LW039D	06/07/2005	17:00	9.35	2.00	7.35	----	
LW039D	08/16/2005	13:21	9.35	4.50	4.85	----	
LW040D	02/15/2005	08:39	33.77	27.54	6.23	----	
LW040D	06/07/2005	16:05	33.77	25.97	7.80	----	
LW040D	08/16/2005	13:30	33.77	28.99	4.78	----	
LW045D	11/18/2004	07:29	33.36	27.53	5.83	----	
LW045D	02/15/2005	09:05	33.36	26.69	6.67	----	
LW045D	06/07/2005	16:13	33.36	24.77	8.59	----	
LW045D	08/16/2005	13:27	33.36	27.45	5.91		
OX008D	10/23/2003	13:48	30.84	26.12	4.72	----	
OX008D	02/19/2004	14:20	30.84	22.52	8.32	----	
OX008D	06/09/2004	09:10	30.84	21.77	9.07	----	
OX008D	08/10/2004	08:37	30.84	25.90	4.94	----	
OX008D	08/10/2004	10:23	30.84	26.09	4.75	----	
OX008D	11/18/2004	08:25	30.84	25.25	5.59	----	
OX008D	02/15/2005	09:37	30.84	24.54	6.30	----	
OX008D	06/07/2005	19:38	30.84	22.97	7.87	----	
OX008D	08/16/2005	13:50	30.84	25.80	5.04	----	
RW2	05/18/1999	15:02	30.68	19.50	11.18	----	
RW2	09/21/1999	11:40	30.68	25.75	4.93	----	
RW2	12/06/1999	14:17	30.68	20.77	9.91	----	
RW2	02/16/2000	10:29	30.68	20.99	9.69	----	
RW2	05/23/2000	16:52	30.68	21.37	9.31	----	
RW2	08/29/2000	13:36	30.68	25.36	5.32	----	Groundwater interim action pumping began 10/5/00 in the lower zone at this well. Pump not running at time of measurement.
RW2	11/09/2000	12:50	30.68	25.83	4.85	----	
RW2	02/12/2001	16:37	30.68	26.40	4.28	----	
RW2	06/04/2001	12:05	30.68	26.26	4.42	----	
RW2	08/16/2001	11:11	30.68	28.98	1.70	----	
RW2	11/28/2001	12:02	30.68	26.86	3.82	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RW2	02/27/2002	13:57	30.68	26.02	4.66	----	
RW2	06/27/2002	14:35	30.68	23.68	7.00	----	
RW2	08/26/2002	16:29	30.68	28.26	2.42	----	
RW2	11/13/2002	08:20	30.68	28.50	2.18	----	
RW2	02/11/2003	09:29	30.68	26.96	3.72	----	
RW2	05/07/2003	17:30	30.68	24.80	5.88	----	Date of measurement is day of sampling
RW2	08/27/2003	13:57	30.68	27.91	2.77	----	
RW2	10/23/2003	13:30	30.68	28.73	1.95	----	
RW2	02/19/2004	13:43	30.68	25.53	5.15	----	
RW2	06/10/2004	08:13	30.68	25.19	5.49	----	
RW2	08/10/2004	08:23	30.68	29.55	1.13	----	
RW2	08/10/2004	10:07	30.68	29.74	0.94	----	
RW2	11/18/2004	08:05	30.68	29.50	1.18	----	
RW2	02/15/2005	10:36	30.68	37.19	-6.51	----	Strong TPH odor
RW2	06/09/2005	16:20	30.68	22.94	7.74	----	
RW2	08/16/2005	14:57	30.68	30.33	0.35	----	
Other:							
RIVER_GAUGE	03/25/1997	11:33	28.13	14.60	13.53	----	
RIVER_GAUGE	03/31/1997		28.13	----	----	----	Locked
RIVER_GAUGE	07/16/1997	06:55	28.13	18.73	9.40	----	
RIVER_GAUGE	07/16/1997	07:55	28.13	18.84	9.29	----	
RIVER_GAUGE	07/16/1997	09:14	28.13	18.92	9.21	----	
RIVER_GAUGE	10/21/1997	15:52	28.13	23.38	4.75	----	
RIVER_GAUGE	10/21/1997	16:11	28.13	23.44	4.69	----	
RIVER_GAUGE	10/21/1997	17:55	28.13	23.59	4.54	----	
RIVER_GAUGE	01/27/1998	10:46	28.13	18.20	9.93	----	
RIVER_GAUGE	01/27/1998	12:25	28.13	18.31	9.82	----	
RIVER_GAUGE	01/27/1998	13:56	28.13	17.89	10.24	----	
RIVER_GAUGE	05/18/1998	17:12	28.13	16.97	11.16	----	
RIVER_GAUGE	05/18/1998	17:45	28.13	17.15	10.98	----	
RIVER_GAUGE	08/17/1998	09:58	28.13	23.98	4.15	----	
RIVER_GAUGE	08/17/1998	10:34	28.13	24.15	3.98	----	
RIVER_GAUGE	11/13/1998	09:30	28.13	24.64	3.49	----	
RIVER_GAUGE	11/13/1998	10:05	28.13	24.45	3.68	----	
RIVER_GAUGE	02/16/1999	12:40	28.13	19.36	8.77	----	
RIVER_GAUGE	02/16/1999	13:27	28.13	19.43	8.70	----	
RIVER_GAUGE	05/18/1999	14:33	28.13	17.24	10.89	----	
RIVER_GAUGE	05/18/1999	15:19	28.13	17.30	10.83	----	
RIVER_GAUGE	09/21/1999	11:10	28.13	24.94	3.19	----	
RIVER_GAUGE	09/21/1999	11:59	28.13	25.03	3.10	----	
RIVER_GAUGE	12/06/1999	13:43	28.13	18.24	9.89	----	
RIVER_GAUGE	12/06/1999	14:25	28.13	18.06	10.07	----	
RIVER_GAUGE	02/16/2000	10:03	28.13	19.18	8.95	----	
RIVER_GAUGE	02/16/2000	10:41	28.13	19.07	9.06	----	
RIVER_GAUGE	05/23/2000	16:12	28.13	19.80	8.33	----	
RIVER_GAUGE	05/23/2000	17:04	28.13	19.94	8.19	----	
RIVER_GAUGE	08/29/2000	12:54	28.13	24.63	3.50	----	
RIVER_GAUGE	08/29/2000	13:49	28.13	24.91	3.22	----	
RIVER_GAUGE	11/09/2000	12:19	28.13	24.26	3.87	----	
RIVER_GAUGE	11/09/2000	13:10	28.13	23.67	4.46	----	
RIVER_GAUGE	02/12/2001	15:45	28.13	23.75	4.38	----	
RIVER_GAUGE	02/12/2001	16:43	28.13	24.00	4.13	----	
RIVER_GAUGE	06/04/2001	11:20	28.13	23.62	4.51	----	
RIVER_GAUGE	06/04/2001	12:15	28.13	23.79	4.34	----	
RIVER_GAUGE	08/16/2001	10:20	28.13	24.83	3.30	----	
RIVER_GAUGE	08/16/2001	11:29	28.13	25.23	2.90	----	
RIVER_GAUGE	11/28/2001	11:16	28.13	22.50	5.63	----	
RIVER_GAUGE	11/28/2001	12:18	28.13	23.13	5.00	----	
RIVER_GAUGE	02/27/2002	13:11	28.13	22.24	5.89	----	
RIVER_GAUGE	02/27/2002	14:12	28.13	22.27	5.86	----	
RIVER_GAUGE	03/05/2002	11:25	28.13	21.42	6.71	----	
RIVER_GAUGE	04/05/2002	08:00	28.13	23.10	5.03	----	
RIVER_GAUGE	05/29/2002	14:07	28.13	17.31	10.82	----	
RIVER_GAUGE	06/27/2002	14:07	28.13	18.31	9.82	----	
RIVER_GAUGE	06/27/2002	14:43	28.13	18.36	9.77	----	
RIVER_GAUGE	08/26/2002	15:45	28.13	24.83	3.30	----	
RIVER_GAUGE	08/26/2002	16:13	28.13	24.85	3.28	----	
RIVER_GAUGE	11/13/2002	07:19	28.13	24.10	4.03	----	

TABLE A-2
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - SEPTEMBER 2005
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RIVER_GAUGE	11/13/2002	07:54	28.13	24.21	3.92	----	
RIVER_GAUGE	02/11/2003	08:34	28.13	23.70	4.43	----	
RIVER_GAUGE	02/11/2003	09:14	28.13	23.43	4.70	----	
RIVER_GAUGE	05/08/2003	06:40	28.13	20.02	8.11	----	
RIVER_GAUGE	05/08/2003	07:17	28.13	20.00	8.13	----	
RIVER_GAUGE	08/27/2003	13:18	28.13	23.36	4.77	----	
RIVER_GAUGE	08/27/2003	14:15	28.13	23.66	4.47	----	
RIVER_GAUGE	10/23/2003	11:46	28.13	25.00	3.13	----	
RIVER_GAUGE	10/23/2003	13:35	28.13	24.94	3.19	----	
RIVER_GAUGE	02/19/2004	12:10	28.13	21.14	6.99	----	
RIVER_GAUGE	02/19/2004	13:20	28.13	20.89	7.24	----	
RIVER_GAUGE	06/09/2004	07:18	28.13	19.79	8.34	----	
RIVER_GAUGE	06/09/2004	08:16	28.13	19.78	8.35	----	
RIVER_GAUGE	08/10/2004	08:10	28.13	24.85	3.28	----	
RIVER_GAUGE	08/10/2004	08:52	28.13	25.11	3.02	----	
RIVER_GAUGE	08/10/2004	09:51	28.13	25.43	2.70	----	
RIVER_GAUGE	08/10/2004	10:35	28.13	25.54	2.59	----	
RIVER_GAUGE	11/18/2004	07:20	28.13	24.25	3.88	----	
RIVER_GAUGE	11/18/2004	08:30	28.13	24.65	3.48	----	
RIVER_GAUGE	02/15/2005	08:18	28.13	22.91	5.22	----	
RIVER_GAUGE	08/16/2005	13:06	28.13	25.10	3.03	----	
RIVER_GAUGE	08/16/2005	14:37	28.13	24.30	3.83	----	

NM = Not measured.
NA = Not available.
-- No measurable product or odor observed.
* Well Point

(a) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference elevatic surveys were conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the referenc elevation was measured at a marked location on the south side of the dock on the Willamette Rive
(b) Depth to water (DTW) measured from surveyed reference elevation [see note (1)]
(c) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in the we using the method in *'Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Well'* [Lenhard and Parker 1990; Groundwater 28(1):57-67]

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol	0.476 U	0.500 U	0.490 U			0.500 U		0.500 U	0.481 U		0.476 U	
SEMIVOLATILES (µg/L)												
EPA 8270C												
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	25.0 U	**1550**	25.0 U	**258**		25.0 U	**84.8**	25.0 UJ	**126**
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U		50.0 U	50.0 U	50.0 UJ	50.0 U
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U		20.0 U	20.0 U	20.0 U	20.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 UJ	10.0 U
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 UJ	10.0 U
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		25.0 U	25.0 U	25.0 UJ	25.0 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**13.4**	5.00 U		5.00 U	**7.96**	5.00 U	5.00 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 UJ	10.0 U
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
Naphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**21.8**	5.00 U		5.00 U	**13.8**	5.00 U	5.00 U
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		25.0 U	25.0 U	25.0 UJ	25.0 U
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Pentachlorophenol	5 UJ	10.0 U	10.0 U	5 UJ	**1960**	10.0 U	**687**		10.0 U	**42.0**	10.0 UJ	**2030**
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Phenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 UJ	5.00 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene	0.100 U			0.111 U			2.50 U					
Acenaphthylene	0.100 U			0.111 U			2.50 U					
Anthracene	0.100 U			0.111 U			2.50 U					
Benzo(a)anthracene	0.100 U			0.111 U			0.100 U					
Benzo(a)pyrene	0.100 U			0.111 U			0.100 U					
Benzo(b)fluoranthene	0.100 U			0.111 U			0.100 U					
Benzo(g,h,i)perylene	0.100 U			0.111 U			0.100 U					
Benzo(k)fluoranthene	0.100 U			0.111 U			0.100 U					
Chrysene	0.100 U			0.111 U			0.100 U					

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
Dibenzo(a,h)anthracene	0.200 U			0.222 U			0.200 U					
Fluoranthene	0.100 U			**0.164**			2.50 U					
Fluorene	0.100 U			0.111 U			2.50 U					
Indeno(1,2,3-cd)pyrene	0.100 U			0.111 U			0.100 U					
Naphthalene	**0.384**			0.111 U			**3.97**					
Phenanthrene	0.100 U			0.111 U			2.50 U					
Pyrene	0.100 U			**0.184**			0.100 U					
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	50.0 U	25.0 U	25.0 U		25.0 U	50.0 U	25.0 U	25.0 U
Benzene	1.00 U	1.00 U	1.00 U	1.00 U	**11.3**	**1.70**	**4.58**		**48.1**	**79.2**	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	10.0 U	10.0 U		10.0 U	20.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	**8.56**	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	1.00 U	**1.00**	1.00 U	**15.5**	**23.9**	**3.15**		**6.12**	**8.80**	1.00 U	**3.68**
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	**3.10**	**9.11**	1.00 U		**1.74**	**2.36**	1.00 U	1.00 U
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	10.0 U	10.0 U		10.0 U	20.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Ethylbenzene	**1.80**	1.00 U	1.00 U	1.00 U	2.00 U	**34.8**	**17.6**		**70.2**	**132**	1.00 U	1.00 U
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	8.00 U	4.00 U	4.00 U		4.00 U	8.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	10.0 U	10.0 U		10.0 U	20.0 U	10.0 U	10.0 U
Isopropylbenzene	**3.01**	2.00 U	**7.76**	2.00 U	**46.3**	**197**	**7.34**		**26.7**	**40.6**	2.00 U	2.00 U
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	4.00 U	2.00 U	**2.08**		**3.71**	**7.54**	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U		5.00 U	10.0 U	5.00 U	5.00 U
Naphthalene	**2.86**	2.00 U	2.00 U	2.00 U	4.00 U	**28.2**	**6.79**		**12.7**	**28.3**	2.00 U	2.00 U
n-Propylbenzene	**4.61**	**1.71**	**8.28**	1.00 U	**18.4**	**179**	**9.85**		**34.7**	**58.3**	1.00 U	**1.17**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Toluene	**1.35**	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	**3.01**	1.00 U	1.00 U	1.00 U	**199**	1.00 U	**47.1**		**117**	**210**	1.00 U	**7.47**
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	**6.22**		**27.0**	**53.3**	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U		1.00 U	2.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	**231**	1.00 U	**27.5**		**14.3**	**114**	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	4.00 U	2.00 U	**15.6**		**108**	**129**	2.00 U	2.00 U
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	**415**				**1860**	**1880 J**	**1440**	80.0 U				
NWTPH-Dx (µg/L)												
Diesel Range Hydrocarbons	250 U			250 U	**1520**	**1180**	**463**	250 U				
Heavy Oil Range Hydrocarbons	500 U			500 U	500 U	500 U	500 U	500 U				

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
TOTAL METALS (µg/L)												
EPA 6020												
Arsenic	**3.53**	**18.8**	**8.3**	**8.98**	1 U	**25.4**	**3.03**		**17.6**	**11.6**	**12.4**	**3.52**
Chromium	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U
Copper	1 U	1 U	1 U	1 U	**57**	1 U	**1.09**		**2.55**	**2.56**	1 U	**12.5**
Lead	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U
Nickel	**2.36**	**1.52**	**3.35**	**2.32**	**158**	**7.56**	**143**		**51.9**	**153**	**2.52**	**61.6**
Selenium							1 U		1 U	1 U	1 U	1 U
Zinc	10 U	10 U	10 U	10 U	10 U	10 U	**12.7**		10 U	**12.8**	10 U	**17.4**
DIOXINS AND FURANS (ng/L)												
EPA 1613B												
2,3,7,8-TCDF									0.0099 U			0.0096 U
Total TCDF									0.0099 U			0.0096 U
2,3,7,8-TCDD									0.0099 U			0.0096 U
Total TCDD									0.0099 U			0.0096 U
1,2,3,7,8-PeCDF									0.049 U			0.048 U
2,3,4,7,8-PeCDF									0.049 U			0.048 U
Total PeCDF									0.049 U			0.048 U
1,2,3,7,8-PeCDD									0.049 U			0.048 U
Total PeCDD									0.049 U			0.048 U
1,2,3,4,7,8-HxCDF									0.049 U			0.048 U
1,2,3,6,7,8-HxCDF									0.049 U			0.048 U
2,3,4,6,7,8-HxCDF									0.049 U			0.048 U
1,2,3,7,8,9-HxCDF									0.049 U			0.048 U
Total HxCDF									0.049 U			**0.070**
1,2,3,4,7,8-HxCDD									0.049 U			0.048 U
1,2,3,6,7,8-HxCDD									0.049 U			0.048 U
1,2,3,7,8,9-HxCDD									0.049 U			0.048 U
Total HxCDD									0.049 U			0.048 U
1,2,3,4,6,7,8-HpCDF									0.049 U			**0.049**
1,2,3,4,7,8,9-HpCDF									0.049 U			0.048 U
Total HpCDF									**0.092**			**0.240**
1,2,3,4,6,7,8-HpCDD									**0.140**			**0.260**
Total HpCDD									**0.220**			**0.440**
OCDF									0.099 U			**0.180**
OCDD									**1.000**			**1.700**
Total TEQ									**0.0024**			**0.00497**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B1 P5H1000-11 8/23/2005	D P5H0853-07 8/19/2005	J1 P5H1000-10 8/23/2005	LW001S P5H0814-01 8/18/2005	LW004S P5H0814-05 8/18/2005	LW008S P5H0853-04 8/19/2005	LW011S P5H1000-09 8/23/2005	LW013S P5H0814-03 8/18/2005	OX001S P5H1000-03 8/23/2005	OX003S P5H1000-04 8/23/2005	OX005S P5H1000-01 8/23/2005	OX006S P5H1000-08 8/23/2005
CONVENTIONALS (µg/L)												
Chloride (300.0)	**2920**	**3370**	**4810**	**2970**	**5160**	**1550**	**3700**					
N-Nitrate (300.0)		100 U		**910**								
Sulfate (300.0)		**11100**		**6580**								
Sulfide (376.2)		200 U		200 U								
Total Dissolved Solids (160.1)	**186000**	**307000**	**193000**	**194000**	**364000**	**283000**	**450000**					
Total Organic Carbon (415.1/5310C)		**4490**		**1890**								
METHANE (µg/L)												
GC/FID												
Methane											**10700**	
FIELD PARAMETERS												
pH	**6.16**	**6.57**	**6.43**	**6.63**	**5.58**	**5.88**	**6.11**	**6.00**	**5.80**	**5.71**	**6.07**	**6.15**
Temperature (deg C)	**15.7**	**16.2**	**15.9**	**16.8**	**16.5**	**15.8**	**15.4**	**14.6**	**15.8**	**16.1**	**15.5**	**15.5**
Conductivity (uS/cm)	**199**	**377**	**207**	**222**	**509**	**454**	**468**	**155**	**420**	**416**	**262**	**335**
Dissolved oxygen (mg/l)												
Turbidity (NTU)		**0**	**3**	**0**				**0**		**0**		
Ferrous Iron (mg/L)							**6**		**4.4**	**3.2**	**2.5**	**3.8**

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S IP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
PENTACHLOROPHENOL (µg/L)					
EPA 8270SIM					
Pentachlorophenol			0.500 U		
SEMIVOLATILES (µg/L)					
EPA 8270C					
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	**229**	**257**
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	**9.87**	**8.86**
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S lP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pentachlorophenol	**81.0**	**19.2**	10.0 U	**108**	**111**
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Phenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
PAHs (µg/L)					
EPA 8270SIM					
Acenaphthene				1.00 U	
Acenaphthylene				1.00 U	
Anthracene				0.100 U	
Benzo(a)anthracene				0.100 U	
Benzo(a)pyrene				0.100 U	
Benzo(b)fluoranthene				0.100 U	
Benzo(g,h,i)perylene				0.100 U	
Benzo(k)fluoranthene				0.100 U	
Chrysene				0.100 U	

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S lP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
Dibenzo(a,h)anthracene				0.200 U	
Fluoranthene				0.100 U	
Fluorene				1.00 U	
Indeno(1,2,3-cd)pyrene				0.100 U	
Naphthalene				**1.21**	
Phenanthrene				0.150 U	
Pyrene				0.100 U	
VOLATILES (µg/L)					
EPA 8260B					
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	1.00 U	1.00 U	**9.25**	**9.30**
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	**1.29**	**2.78**	1.00 U	**5.64**	**5.39**
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	**1.78**	**1.82**
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	**1.04**	**1.15**
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S lP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	**10.7**	**10.4**
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	2.00 U	2.00 U	2.00 U	**23.6**	**22.5**
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene	1.00 U	**2.65**	1.00 U	**14.8**	**14.0**
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	**10.3**	1.00 U	**20.3**	**17.0**
1,3,5-Trimethylbenzene	1.00 U	**1.37**	1.00 U	**1.41**	**1.09**
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	**1.54**	1.00 U	**10.1**	**9.38**
m,p-Xylene	2.00 U	2.00 U	2.00 U	**6.30**	**5.75**
NWTPH-G (µg/L)					
Gasoline Range Hydrocarbons				**697**	**638**
NWTPH-Dx (µg/L)					
Diesel Range Hydrocarbons				**274**	**357**
Heavy Oil Range Hydrocarbons				500 U	556 U

TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S lP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
TOTAL METALS (µg/L)					
EPA 6020					
Arsenic	**4.17**	**21.0**	**1.61**	**2.35 J**	**3.42 J**
Chromium	1 U	1 U	1 U	**3.72**	**4.25**
Copper	**2.46**	**1.53**	1 U	**18.5**	**20.9**
Lead	1 U	1 U	1 U	**1.96**	**2.27**
Nickel	**118**	**208**	**15.8**	**25.0**	**27.7**
Selenium	1 U	1 U	1 U	2 U	2 U
Zinc	**26.6**	**12.3**	10 U	**18.5**	**20.4**
DIOXINS AND FURANS (ng/L)					
EPA 1613B					
2,3,7,8-TCDF				0.015 U	
Total TCDF				0.015 U	
2,3,7,8-TCDD				0.015 U	
Total TCDD				0.015 U	
1,2,3,7,8-PeCDF				0.074 U	
2,3,4,7,8-PeCDF				0.074 U	
Total PeCDF				0.074 U	
1,2,3,7,8-PeCDD				0.074 U	
Total PeCDD				0.074 U	
1,2,3,4,7,8-HxCDF				0.074 U	
1,2,3,6,7,8-HxCDF				0.074 U	
2,3,4,6,7,8-HxCDF				0.074 U	
1,2,3,7,8,9-HxCDF				0.074 U	
Total HxCDF				0.074 U	
1,2,3,4,7,8-HxCDD				0.074 U	
1,2,3,6,7,8-HxCDD				0.074 U	
1,2,3,7,8,9-HxCDD				0.074 U	
Total HxCDD				0.074 U	
1,2,3,4,6,7,8-HpCDF				0.074 U	
1,2,3,4,7,8,9-HpCDF				0.074 U	
Total HpCDF				0.074 U	
1,2,3,4,6,7,8-HpCDD				**0.080**	
Total HpCDD				**0.080**	
OCDF				0.15 U	
OCDD				**1.000 J**	
Total TEQ				**0.0018**	

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TABLE A-3
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	OX007S lP5H1000-07 8/23/2005	OX008S P5H1000-05 8/23/2005	OX009S P5H1000-02 8/23/2005	RW1 P5H1257-02 8/30/2005	Dup of RW1 W P5H1257-01 8/30/2005
CONVENTIONALS (µg/L)					
Chloride (300.0)				**3210**	**3400**
N-Nitrate (300.0)					
Sulfate (300.0)					
Sulfide (376.2)					
Total Dissolved Solids (160.1)				**347000**	**347000**
Total Organic Carbon (415.1/5310C)					
METHANE (µg/L)					
GC/FID					
Methane					
FIELD PARAMETERS					
pH	**5.95**	**6.17**	**5.55**	**5.36**	**5.36**
Temperature (deg C)	**15.7**	**16.1**	**15.7**	**16.2**	**16.2**
Conductivity (uS/cm)	**418**	**499**	**291**	**1073**	**1073**
Dissolved oxygen (mg/l)				**1.28**	**1.28**
Turbidity (NTU)			**0**		
Ferrous Iron (mg/L)	**3.5**	**5.8**	**1.6**	**3.0**	**3.0**

Bold indicates detected constituent.

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	K P5H0734-05 8/17/2005	LW007S P5H0734-04 8/17/2005	LW019S P5H0734-06 8/17/2005	LW020S P5H0813-01 8/18/2005	LW029S P5H0625-08 8/15/2005	LW030S P5H0625-03 8/15/2005	LW031S P5H0734-01 8/17/2005	LW032S P5H0701-03 8/16/2005	LW033S P5H0701-02 8/16/2005	LW034S P5H0701-01 8/16/2005	LW042S P5H0625-02 8/15/2005	Dup of LW042S Z P5H0625-01 8/15/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol		0.490 U										
SEMIVOLATILES (µg/L)												
EPA 8270C												
Tetrachlorophenols (2)		25.0 U	25.0 U	25.0 U	28.6 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Acenaphthene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Acenaphthylene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Anthracene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)anthracene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid		50.0 U	50.0 U	50.0 U	57.1 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Benzyl alcohol		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Butyl benzyl phthalate		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloro-3-methylphenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloroaniline		20.0 U	20.0 U	20.0 U	22.9 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bis(2-chloroethoxy)methane		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl)ether		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-chloroisopropyl)ether		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorophenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorophenylphenyl ether		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chrysene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-butyl phthalate		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl phthalate		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzo(a,h)anthracene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dichlorobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3,3-Dichlorobenzidine		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dichlorophenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Diethyl phthalate		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dimethylphenol		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dimethyl phthalate		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol		25.0 U	25.0 U	25.0 U	28.6 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	K P5H0734-05 8/17/2005	LW007S P5H0734-04 8/17/2005	LW019S P5H0734-06 8/17/2005	LW020S P5H0813-01 8/18/2005	LW029S P5H0625-08 8/15/2005	LW030S P5H0625-03 8/15/2005	LW031S P5H0734-01 8/17/2005	LW032S P5H0701-03 8/16/2005	LW033S P5H0701-02 8/16/2005	LW034S P5H0701-01 8/16/2005	LW042S P5H0625-02 8/15/2005	Dup of LW042S Z P5H0625-01 8/15/2005
2,4-Dinitrotoluene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,6-Dinitrotoluene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Fluorene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobutadiene		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isophorone		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylphenol		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3- & 4-Methylphenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitroaniline		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3-Nitroaniline		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitrophenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Nitrophenol		25.0 U	25.0 U	25.0 U	28.6 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
N-Nitroso-Di-N-Propylamine		10.0 U	10.0 U	10.0 U	11.4 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pentachlorophenol		10.0 U	5 UJ	5 UJ	6 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Phenanthrene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Phenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pyrene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2,4-Trichlorobenzene		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,6-Trichlorophenol		5.00 U	5.00 U	5.00 U	5.71 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene		0.0490 U	**1.19**	**1.05**	0.100 U	**0.456**	0.100 U	1.00 U	0.100 U	0.100 U	**1.83**	**1.85**
Acenaphthylene		0.0490 U	0.500 U	0.300 U	0.100 U	0.150 U	0.100 U	1.00 U	0.100 U	0.100 U	0.500 U	0.500 U
Anthracene		0.0490 U	0.500 U	0.150 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Benzo(a)anthracene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Benzo(a)pyrene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Benzo(b)fluoranthene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Benzo(g,h,i)perylene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Benzo(k)fluoranthene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Chrysene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	K P5H0734-05 8/17/2005	LW007S P5H0734-04 8/17/2005	LW019S P5H0734-06 8/17/2005	LW020S P5H0813-01 8/18/2005	LW029S P5H0625-08 8/15/2005	LW030S P5H0625-03 8/15/2005	LW031S P5H0734-01 8/17/2005	LW032S P5H0701-03 8/16/2005	LW033S P5H0701-02 8/16/2005	LW034S P5H0701-01 8/16/2005	LW042S P5H0625-02 8/15/2005	Dup of LW042S Z P5H0625-01 8/15/2005
Dibenzo(a,h)anthracene		0.0980 U	1.00 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400 U	0.200 U	0.200 U	1.00 U	1.00 U
Fluoranthene		0.0490 U	0.500 U	0.200 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Fluorene		0.0490 U	**3.69**	**2.62**	0.100 U	**0.744**	0.100 U	**1.03**	0.100 U	0.100 U	**3.16**	**3.31**
Indeno(1,2,3-cd)pyrene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Naphthalene		**2.21**	1.25 U	0.800 U	0.100 U	0.350 U	0.100 U	4.00 U	0.100 U	0.100 U	0.750 U	1.00 U
Phenanthrene		0.0490 U	**1.96**	**2.05**	0.100 U	**0.986**	0.100 U	0.300 U	0.100 U	0.100 U	**3.56**	**3.73**
Pyrene		0.0490 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
VOLATILES (µg/L)												
EPA 8260B												
Acetone		25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**10.6**	5.00 U	5.00 U	**6.17**	**6.14**
sec-Butylbenzene		**1.72**	**4.64**	**6.17**	1.00 U	**1.38**	1.00 U	**10.2**	1.00 U	1.00 U	**4.59**	**4.49**
tert-Butylbenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.81**	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane		**1.04**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	K P5H0734-05 8/17/2005	LW007S P5H0734-04 8/17/2005	LW019S P5H0734-06 8/17/2005	LW020S P5H0813-01 8/18/2005	LW029S P5H0625-08 8/15/2005	LW030S P5H0625-03 8/15/2005	LW031S P5H0734-01 8/17/2005	LW032S P5H0701-03 8/16/2005	LW033S P5H0701-02 8/16/2005	LW034S P5H0701-01 8/16/2005	LW042S P5H0625-02 8/15/2005	Dup of LW042S Z P5H0625-01 8/15/2005
1,3-Dichloropropane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	0.500 U	**11.9**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene		4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene		**10.3**	**6.35**	**8.06**	2.00 U	**3.70**	2.00 U	**20.2**	2.00 U	2.00 U	**18.4**	**17.8**
4-Isopropyltoluene		2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene		**3.34**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene		**12.5**	**8.49**	**10.3**	1.00 U	**9.96**	1.00 U	**22.9**	1.00 U	1.00 U	**38.8**	**38.1**
Styrene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.18**	1.00 U	1.00 U
1,3,5-Trimethylbenzene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene		**3.99**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Xylene (total)	1.00 U											
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	**269**	**752**	**145**	**353**	80.0 U	**271**	80.0 U	**807**	80.0 U	80.0 U	**628**	**622**
NWTPH-Dx (µg/L)												
Diesel Range Hydrocarbons	250 U	250 U	**991**	**712**	250 U	**349**	250 U	**987**	250 U	250 U	**810**	**880**
Heavy Oil Range Hydrocarbons	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
TOTAL METALS (µg/L)												
EPA 6020												
Arsenic		**14.7**	**38.2**	**31.3**	**2.05**	**14.0**	**1.03**	**25.4**	1 U	1 U	**17.1**	**16.8**
Chromium		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	K P5H0734-05 8/17/2005	LW007S P5H0734-04 8/17/2005	LW019S P5H0734-06 8/17/2005	LW020S P5H0813-01 8/18/2005	LW029S P5H0625-08 8/15/2005	LW030S P5H0625-03 8/15/2005	LW031S P5H0734-01 8/17/2005	LW032S P5H0701-03 8/16/2005	LW033S P5H0701-02 8/16/2005	LW034S P5H0701-01 8/16/2005	LW042S P5H0625-02 8/15/2005	Dup of LW042S Z P5H0625-01 8/15/2005
Copper		1 U	1 U	1 U	1 U	1 U	1 U	**1.17**	1 U	1 U	1 U	1 U
Lead		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.42**	**4.34**
Nickel		1 U	**1.93**	**3.40**	**2.74**	1 U	**1.99**	**2.05**	**2.78**	**3.37**	1 U	1 U
Zinc		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CONVENTIONALS (µg/L)												
Chloride (300.0)		**2150**	**1860**	**1830**	**1470**	**1280**	**930**	**8290**	**1740**	**1490**	**1540**	**1560**
N-Nitrate (300.0)												
Sulfate (300.0)												
Sulfide (376.2)												
Total Dissolved Solids (160.1)		**225000**	**232000**	**326000**	**149000**	**185000**	**120000**	**289000**	**130000**	**158000**	**201000**	**205000**
Total Organic Carbon (415.1/5310C)												
FIELD PARAMETERS												
pH	**6.14**	**6.80**	**6.52**	**6.15**	**6.73**	**5.89**	**5.69**	**6.65**	**5.97**	**6.20**	**5.37**	**5.37**
Temperature (deg C)	**15.7**	**15.7**	**14.7**	**15.5**	**16.8**	**15.3**	**14.7**	**13.8**	**15.9**	**15.5**	**17.7**	**17.7**
Conductivity (uS/cm)	**218**	**270**	**626**	**526**	**167**	**238**	**88**	**397**	**145**	**169**	**193**	**192**
Turbidity (NTU)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW043S P5H0734-02 8/17/2005	LW044S P5H0734-03 8/17/2005	N P5H0852-01 8/19/2005	P P5H1000-15 8/24/2005	Q P5H1000-16 8/24/2005
PENTACHLOROPHENOL (µg/L)					
EPA 8270SIM					
Pentachlorophenol					
SEMIVOLATILES (µg/L)					
EPA 8270C					
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	**9.18**
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	**6.24**
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dimethylphenol	10.0 U	10.0 U	**11.5**	10.0 U	10.0 U
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW043S P5H0734-02 8/17/2005	LW044S P5H0734-03 8/17/2005	N P5H0852-01 8/19/2005	P P5H1000-15 8/24/2005	Q P5H1000-16 8/24/2005
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	**8.70**
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene	5.00 U	5.00 U	**39.4**	**9.30**	5.00 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	**87.6**	**29.6**
Naphthalene	5.00 U	5.00 U	**77.3**	5.00 U	5.00 U
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pentachlorophenol	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Phenol	5.00 U	5.00 U	5.00 U	**45.0**	**19.4**
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
PAHs (µg/L)					
EPA 8270SIM					
Acenaphthene	**0.748**	0.400 U	**1.07**	**4.00**	**5.73**
Acenaphthylene	0.250 U	0.400 U	0.250 U	2.00 U	2.00 U
Anthracene	0.100 U	0.400 U	**0.118**	2.00 U	2.00 U
Benzo(a)anthracene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Benzo(a)pyrene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Benzo(b)fluoranthene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Benzo(g,h,i)perylene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Benzo(k)fluoranthene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Chrysene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW043S P5H0734-02 8/17/2005	LW044S P5H0734-03 8/17/2005	N P5H0852-01 8/19/2005	P P5H1000-15 8/24/2005	Q P5H1000-16 8/24/2005
Dibenzo(a,h)anthracene	0.200 U	0.800 U	0.200 U	0.200 U	0.200 U
Fluoranthene	0.100 U	0.400 U	0.100 U	2.00 U	2.00 U
Fluorene	**1.43**	**0.665**	**2.03**	**4.59**	**5.15**
Indeno(1,2,3-cd)pyrene	0.100 U	0.400 U	0.100 U	0.100 U	0.100 U
Naphthalene	1.10 U	4.00 U	**64.4**	4.00 U	2.00 U
Phenanthrene	**1.50**	0.400 U	**1.07**	**2.21**	**2.38**
Pyrene	0.100 U	0.400 U	0.100 U	**0.417**	**0.301**
VOLATILES (µg/L)					
EPA 8260B					
Acetone	25.0 U	25.0 U	500 U	500 U	125 U
Benzene	1.00 U	1.00 U	**419**	**2780**	**706**
Bromobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Bromochloromethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Bromodichloromethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Bromoform	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Bromomethane	5.00 U	5.00 U	100 U	100 U	25.0 U
2-Butanone	10.0 U	10.0 U	200 U	200 U	50.0 U
n-Butylbenzene	5.00 U	5.00 U	100 U	100 U	25.0 U
sec-Butylbenzene	**1.72**	**17.7**	20.0 U	20.0 U	**5.75**
tert-Butylbenzene	1.00 U	**2.12**	20.0 U	20.0 U	5.00 U
Carbon disulfide	10.0 U	10.0 U	200 U	200 U	50.0 U
Carbon tetrachloride	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Chlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Chloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Chloroform	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Chloromethane	5.00 U	5.00 U	100 U	100 U	25.0 U
2-Chlorotoluene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
4-Chlorotoluene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	100 U	100 U	25.0 U
Dibromochloromethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2-Dibromoethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Dibromomethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	100 U	100 U	25.0 U
1,1-Dichloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2-Dichloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1-Dichloroethene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2-Dichloropropane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U

BZTO104(e)027458

TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW043S P5H0734-02 8/17/2005	LW044S P5H0734-03 8/17/2005	N P5H0852-01 8/19/2005	P P5H1000-15 8/24/2005	Q P5H1000-16 8/24/2005
1,3-Dichloropropane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
2,2-Dichloropropane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1-Dichloropropene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Ethylbenzene	1.00 U	1.00 U	**898**	20.0 U	**7.10**
Hexachlorobutadiene	4.00 U	4.00 U	80.0 U	80.0 U	20.0 U
2-Hexanone	10.0 U	10.0 U	200 U	200 U	50.0 U
Isopropylbenzene	**4.87**	**106**	**57.4**	40.0 U	**47.8**
4-Isopropyltoluene	2.00 U	2.00 U	40.0 U	40.0 U	10.0 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	100 U	100 U	25.0 U
Methyl tert-butyl ether	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Methylene chloride	5.00 U	5.00 U	100 U	100 U	25.0 U
Naphthalene	2.00 U	2.00 U	**91.2**	40.0 U	10.0 U
n-Propylbenzene	**12.6**	**78.7**	**85.6**	**20.8**	**93.2**
Styrene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Tetrachloroethene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Toluene	1.00 U	1.00 U	**107**	20.0 U	**13.9**
1,2,3-Trichlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Trichloroethene	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
Trichlorofluoromethane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	**514**	**42.6**	5.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	**120**	**60.6**	5.00 U
Vinyl chloride	1.00 U	1.00 U	20.0 U	20.0 U	5.00 U
o-Xylene	1.00 U	1.00 U	**518**	**32.2**	5.00 U
m,p-Xylene	2.00 U	2.00 U	**1960**	**47.0**	**14.2**
Xylene (total)					
NWTPH-G (µg/L)					
Gasoline Range Hydrocarbons	**248**	**933 J**	**996**	**6100**	**3460**
NWTPH-Dx (µg/L)					
Diesel Range Hydrocarbons	**595**	**1400**	**1320**	**789 J**	**1260**
Heavy Oil Range Hydrocarbons	500 U	500 U	500 U	500 UJ	500 U
TOTAL METALS (µg/L)					
EPA 6020					
Arsenic	**13.2**	**28.9**	**40.2**	**30.6**	**33.8**
Chromium	1 U	1 U	1 U	1 U	1 U

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TABLE A-4
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW043S P5H0734-02 8/17/2005	LW044S P5H0734-03 8/17/2005	N P5H0852-01 8/19/2005	P P5H1000-15 8/24/2005	Q P5H1000-16 8/24/2005
Copper	1 U	**1.87**	1 U	**2.13**	1 U
Lead	1 U	1 U	**6.56**	**24.5**	**8.14**
Nickel	1 U	**1.69**	**2.45**	**4.49**	**2.12**
Zinc	10 U	10 U	10 U	10 U	10 U
CONVENTIONALS (µg/L)					
Chloride (300.0)	**1650**	**2940**	**2340**	**2370**	**2410**
N-Nitrate (300.0)			100 U	100 U	100 U
Sulfate (300.0)			1000 U	1000 U	1000 U
Sulfide (376.2)			1000 U	1000 U	2000 U
Total Dissolved Solids (160.1)	**234000**	**285000**	**342000**	**392000**	**418000**
Total Organic Carbon (415.1/5310C)			**14700**	**26500**	**19500**
FIELD PARAMETERS					
pH	**6.49**	**6.50**	**6.18**	**6.90**	**6.96**
Temperature (deg C)	**14.7**	**16.0**	**15.7**	**14.4**	**14.2**
Conductivity (uS/cm)	**307**	**352**	**519**	**441**	**413**
Turbidity (NTU)	**0**	**0**		**0**	**0**

Bold indicates detected constituent.

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B2 P5H1000-14 8/24/2005	G1A P5H0853-05 8/19/2005	J2 P5H1000-17 8/24/2005	LW001D P5H0814-02 8/18/2005	LW003D P5H1000-18 8/24/2005	LW004DR P5H0814-06 8/18/2005	LW006D P5H1000-13 8/23/2005	LW009D P5H1000-12 8/23/2005	LW010D P5H0814-04 8/18/2005	LW011D P5H0853-08 8/19/2005	LW014D P5H0853-02 8/19/2005	LW017D P5H0853-06 8/19/2005
PENTACHLOROPHENOL (µg/L)												
EPA 8270SIM												
Pentachlorophenol	0.495 U	0.500 U	0.490 U		0.485 U		0.490 U	0.490 U	0.500 U	0.500 U	0.500 U	0.500 U
SEMIVOLATILES (µg/L)												
EPA 8270C												
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U		
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U		
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B2 P5H1000-14 8/24/2005	G1A P5H0853-05 8/19/2005	J2 P5H1000-17 8/24/2005	LW001D P5H0814-02 8/18/2005	LW003D P5H1000-18 8/24/2005	LW004DR P5H0814-06 8/18/2005	LW006D P5H1000-13 8/23/2005	LW009D P5H1000-12 8/23/2005	LW010D P5H0814-04 8/18/2005	LW011D P5H0853-08 8/19/2005	LW014D P5H0853-02 8/19/2005	LW017D P5H0853-06 8/19/2005
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Methylnaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Naphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Pentachlorophenol	5 UJ	10.0 U	10.0 U	5 UJ	10.0 U	**13.1**	5 UJ	5 UJ	10.0 U	10.0 U		
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Phenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene	0.100 U			0.100 U			**0.259**	0.100 U				**0.428**
Acenaphthylene	0.100 U			0.100 U			0.150 U	0.100 U				0.150 U
Anthracene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Benzo(a)anthracene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Benzo(a)pyrene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Benzo(b)fluoranthene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Benzo(g,h,i)perylene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Benzo(k)fluoranthene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Chrysene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B2 P5H1000-14 8/24/2005	G1A P5H0853-05 8/19/2005	J2 P5H1000-17 8/24/2005	LW001D P5H0814-02 8/18/2005	LW003D P5H1000-18 8/24/2005	LW004DR P5H0814-06 8/18/2005	LW006D P5H1000-13 8/23/2005	LW009D P5H1000-12 8/23/2005	LW010D P5H0814-04 8/18/2005	LW011D P5H0853-08 8/19/2005	LW014D P5H0853-02 8/19/2005	LW017D P5H0853-06 8/19/2005
Dibenzo(a,h)anthracene	0.200 U			0.200 U			0.200 U	0.200 U				0.200 U
Fluoranthene	0.100 U			0.100 U			0.100 U	0.100 U				**0.123**
Fluorene	0.100 U			0.100 U			**0.147**	0.100 U				**0.555**
Indeno(1,2,3-cd)pyrene	0.100 U			0.100 U			0.100 U	0.100 U				0.100 U
Naphthalene	**0.102**			0.100 U			1.00 U	0.100 U				1.50 U
Phenanthrene	0.100 U			0.100 U			0.100 U	0.100 U				**0.359**
Pyrene	0.100 U			0.100 U			0.100 U	0.100 U				**0.141**
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U		
Benzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
n-Butylbenzene	5.00 U	**6.48**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
sec-Butylbenzene	1.00 U	**11.5**	1.00 U	1.00 U	1.00 U	1.00 U	**1.18**	1.00 U	1.00 U	1.00 U		
tert-Butylbenzene	1.00 U	**3.71**	1.00 U	1.00 U	1.00 U	1.00 U	**3.19**	1.00 U	1.00 U	1.00 U		
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B2 P5H1000-14 8/24/2005	G1A P5H0853-05 8/19/2005	J2 P5H1000-17 8/24/2005	LW001D P5H0814-02 8/18/2005	LW003D P5H1000-18 8/24/2005	LW004DR P5H0814-06 8/18/2005	LW006D P5H1000-13 8/23/2005	LW009D P5H1000-12 8/23/2005	LW010D P5H0814-04 8/18/2005	LW011D P5H0853-08 8/19/2005	LW014D P5H0853-02 8/19/2005	LW017D P5H0853-06 8/19/2005
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U		
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U		
Isopropylbenzene	2.00 U	**104**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
n-Propylbenzene	1.00 U	**80.1**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**2.79**	1.00 U	1.00 U	1.00 U	1.00 U		
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U		
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	80.0 U	**439 J**		80.0 U		80.0 U	**918**	**127**	80.0 UJ	80.0 U		**656 J**
NWTPH-Dx (µg/L)												
Diesel Range Hydrocarbons	250 U	**496**		250 U		250 U	**383**	250 U	250 U	250 U		**669**
Heavy Oil Range Hydrocarbons	500 U	500 U		500 U		500 U	500 U	500 U	500 U	500 U		500 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	B2 P5H1000-14 8/24/2005	G1A P5H0853-05 8/19/2005	J2 P5H1000-17 8/24/2005	LW001D P5H0814-02 8/18/2005	LW003D P5H1000-18 8/24/2005	LW004DR P5H0814-06 8/18/2005	LW006D P5H1000-13 8/23/2005	LW009D P5H1000-12 8/23/2005	LW010D P5H0814-04 8/18/2005	LW011D P5H0853-08 8/19/2005	LW014D P5H0853-02 8/19/2005	LW017D P5H0853-06 8/19/2005
TOTAL METALS (µg/L)												
EPA 6020												
Arsenic	**52.2**	**31.0**	**19.3**	**6.64**	**11.5**	**19.3**	**14.3**	**32.1**	**20.0**	**6.49**		**32.2**
Chromium	**1.50**	**2.12**	**19.0**	**2.08**	1 U	**13.6**	**2.06**	1 U	**5.45**	**27.8**		1 U
Copper	**1.69**	**6.14**	**31.4**	**3.70**	1 U	**20.0**	**2.98**	1 U	**8.78**	**31.9**		**2.07**
Lead	1 U	**1.79**	**13.1**	**1.86**	1 U	**5.06**	**1.20**	1 U	**2.39**	**13.2**		**2.43**
Nickel	**3.69**	**94.1**	**21.5**	**2.80**	**1.90**	**15.1**	**7.55**	**1.09**	**5.76**	**59.6**		**10.2**
Selenium												
Zinc	10 U	10 U	**67.9**	**13.8**	10 U	**37.3**	10 U	10 U	**20.2**	**97.2**		**13.2**
CONVENTIONALS (µg/L)												
Chloride (300.0)	**2950**	**4950**	**4700**	**2470**	**3550**	**4360**		**1480**	**1410**	**5910**		
N-Nitrate (300.0)												
Sulfate (300.0)												
Sulfide (376.2)												
Total Dissolved Solids (160.1)	**313000**	**353000**	**358000**	**324000**	**361000**	**353000**	**294000**	**236000**	**161000**	**449000**		
Total Organic Carbon (415.1/5310C)												
FIELD PARAMETERS												
pH	**6.77**	**6.61**	**6.38**	**6.96**	**6.29**	**6.93**	**6.57**	**6.37**	**6.95**	**6.37**	**6.06**	**6.54**
Temperature (deg C)	**16.2**	**15.4**	**18.7**	**16.4**	**16.6**	**17.1**	**14.6**	**14.9**	**15.8**	**17.3**	**15.0**	**15.7**
Conductivity (uS/cm)	**370**	**438**	**354**	**373**	**354**	**437**	**333**	**301**	**161**	**519**	**458**	**356**
Turbidity (NTU)		**201**		**33**		**130**	**6**		**2**			**58**
Ferrous Iron (mg/L)												

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW018D P5H0853-01 8/19/2005	OX008D P5H1000-06 8/23/2005	RW2 P5H0853-03 8/19/2005
PENTACHLOROPHENOL (µg/L)			
EPA 8270SIM			
Pentachlorophenol	0.500 U		0.500 U
SEMIVOLATILES (µg/L)			
EPA 8270C			
Tetrachlorophenols (2)		25.0 U	25.0 U
Acenaphthene		5.00 U	5.00 U
Acenaphthylene		5.00 U	5.00 U
Anthracene		5.00 U	5.00 U
Benzo(a)anthracene		5.00 U	5.00 U
Benzo(a)pyrene		5.00 U	5.00 U
Benzo(b)fluoranthene		5.00 U	5.00 U
Benzo(g,h,i)perylene		5.00 U	5.00 U
Benzo(k)fluoranthene		5.00 U	5.00 U
Benzoic Acid		50.0 U	50.0 U
Benzyl alcohol		10.0 U	10.0 U
4-Bromophenyl-phenylether		5.00 U	5.00 U
Butyl benzyl phthalate		5.00 U	5.00 U
4-Chloro-3-methylphenol		5.00 U	5.00 U
4-Chloroaniline		20.0 U	20.0 U
Bis(2-chloroethoxy)methane		10.0 U	10.0 U
Bis(2-chloroethyl)ether		5.00 U	5.00 U
Bis(2-chloroisopropyl)ether		10.0 U	10.0 U
2-Chloronaphthalene		5.00 U	5.00 U
2-Chlorophenol		5.00 U	5.00 U
4-Chlorophenylphenyl ether		5.00 U	5.00 U
Chrysene		5.00 U	5.00 U
Di-n-butyl phthalate		5.00 U	5.00 U
Di-n-octyl phthalate		5.00 U	5.00 U
Dibenzo(a,h)anthracene		5.00 U	5.00 U
Dibenzofuran		5.00 U	5.00 U
1,2-Dichlorobenzene		5.00 U	5.00 U
1,3-Dichlorobenzene		5.00 U	5.00 U
1,4-Dichlorobenzene		5.00 U	5.00 U
3,3-Dichlorobenzidine		5.00 U	5.00 U
2,4-Dichlorophenol		5.00 U	5.00 U
Diethyl phthalate		5.00 U	5.00 U
2,4-Dimethylphenol		10.0 U	10.0 U
Dimethyl phthalate		5.00 U	5.00 U
4,6-Dinitro-2-methylphenol		10.0 U	10.0 U
2,4-Dinitrophenol		25.0 U	25.0 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW018D P5H0853-01 8/19/2005	OX008D P5H1000-06 8/23/2005	RW2 P5H0853-03 8/19/2005
2,4-Dinitrotoluene		5.00 U	5.00 U
2,6-Dinitrotoluene		5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate		10.0 U	10.0 U
Fluoranthene		5.00 U	5.00 U
Fluorene		5.00 U	5.00 U
Hexachlorobenzene		5.00 U	5.00 U
Hexachlorobutadiene		10.0 U	10.0 U
Hexachlorocyclopentadiene		10.0 U	10.0 U
Hexachloroethane		10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene		5.00 U	5.00 U
Isophorone		5.00 U	5.00 U
2-Methylnaphthalene		5.00 U	5.00 U
2-Methylphenol		10.0 U	10.0 U
3- & 4-Methylphenol		5.00 U	5.00 U
Naphthalene		5.00 U	5.00 U
2-Nitroaniline		5.00 U	5.00 U
3-Nitroaniline		10.0 U	10.0 U
4-Nitroaniline		10.0 U	10.0 U
Nitrobenzene		5.00 U	5.00 U
2-Nitrophenol		5.00 U	5.00 U
4-Nitrophenol		25.0 U	25.0 U
N-Nitroso-Di-N-Propylamine		10.0 U	10.0 U
N-Nitrosodiphenylamine		5.00 U	5.00 U
Pentachlorophenol		10.0 U	10.0 U
Phenanthrene		5.00 U	5.00 U
Phenol		5.00 U	5.00 U
Pyrene		5.00 U	5.00 U
1,2,4-Trichlorobenzene		5.00 U	5.00 U
2,4,5-Trichlorophenol		5.00 U	5.00 U
2,4,6-Trichlorophenol		5.00 U	5.00 U
PAHs (µg/L)			
EPA 8270SIM			
Acenaphthene			
Acenaphthylene			
Anthracene			
Benzo(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Benzo(g,h,i)perylene			
Benzo(k)fluoranthene			
Chrysene			

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW018D P5H0853-01 8/19/2005	OX008D P5H1000-06 8/23/2005	RW2 P5H0853-03 8/19/2005
Dibenzo(a,h)anthracene			
Fluoranthene			
Fluorene			
Indeno(1,2,3-cd)pyrene			
Naphthalene			
Phenanthrene			
Pyrene			
VOLATILES (µg/L)			
EPA 8260B			
Acetone		25.0 U	25.0 U
Benzene		1.00 U	1.00 U
Bromobenzene		1.00 U	1.00 U
Bromochloromethane		1.00 U	1.00 U
Bromodichloromethane		1.00 U	1.00 U
Bromoform		1.00 U	1.00 U
Bromomethane		5.00 U	5.00 U
2-Butanone		10.0 U	10.0 U
n-Butylbenzene		5.00 U	5.00 U
sec-Butylbenzene		1.00 U	**6.24**
tert-Butylbenzene		1.00 U	**1.77**
Carbon disulfide		10.0 U	10.0 U
Carbon tetrachloride		1.00 U	1.00 U
Chlorobenzene		1.00 U	1.00 U
Chloroethane		1.00 U	1.00 U
Chloroform		1.00 U	1.00 U
Chloromethane		5.00 U	5.00 U
2-Chlorotoluene		1.00 U	1.00 U
4-Chlorotoluene		1.00 U	1.00 U
1,2-Dibromo-3-chloropropane		5.00 U	5.00 U
Dibromochloromethane		1.00 U	1.00 U
1,2-Dibromoethane		1.00 U	1.00 U
Dibromomethane		1.00 U	1.00 U
1,2-Dichlorobenzene		1.00 U	1.00 U
1,3-Dichlorobenzene		1.00 U	1.00 U
1,4-Dichlorobenzene		1.00 U	1.00 U
Dichlorodifluoromethane		5.00 U	5.00 U
1,1-Dichloroethane		1.00 U	1.00 U
1,2-Dichloroethane		1.00 U	1.00 U
1,1-Dichloroethene		1.00 U	1.00 U
cis-1,2-Dichloroethene		1.00 U	1.00 U
trans-1,2-Dichloroethene		1.00 U	1.00 U
1,2-Dichloropropane		1.00 U	1.00 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW018D P5H0853-01 8/19/2005	OX008D P5H1000-06 8/23/2005	RW2 P5H0853-03 8/19/2005
1,3-Dichloropropane		1.00 U	1.00 U
2,2-Dichloropropane		1.00 U	1.00 U
1,1-Dichloropropene		1.00 U	1.00 U
cis-1,3-Dichloropropene		1.00 U	1.00 U
trans-1,3-Dichloropropene		1.00 U	1.00 U
Ethylbenzene		1.00 U	**1.77**
Hexachlorobutadiene		4.00 U	4.00 U
2-Hexanone		10.0 U	10.0 U
Isopropylbenzene		2.00 U	**31.4**
4-Isopropyltoluene		2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)		5.00 U	5.00 U
Methyl tert-butyl ether		1.00 U	1.00 U
Methylene chloride		5.00 U	5.00 U
Naphthalene		2.00 U	**2.46**
n-Propylbenzene		1.00 U	**38.8**
Styrene		1.00 U	1.00 U
1,1,1,2-Tetrachloroethane		1.00 U	1.00 U
1,1,2,2-Tetrachloroethane		1.00 U	1.00 U
Tetrachloroethene		1.00 U	1.00 U
Toluene		1.00 U	1.00 U
1,2,3-Trichlorobenzene		1.00 U	1.00 U
1,2,4-Trichlorobenzene		1.00 U	1.00 U
1,1,1-Trichloroethane		1.00 U	1.00 U
1,1,2-Trichloroethane		1.00 U	1.00 U
Trichloroethene		1.00 U	1.00 U
Trichlorofluoromethane		1.00 U	1.00 U
1,2,3-Trichloropropane		1.00 U	1.00 U
1,2,4-Trimethylbenzene		1.00 U	**2.89**
1,3,5-Trimethylbenzene		1.00 U	1.00 U
Vinyl chloride		1.00 U	1.00 U
o-Xylene		1.00 U	1.00 U
m,p-Xylene		2.00 U	2.00 U
NWTPH-G (µg/L)			
Gasoline Range Hydrocarbons	**667 J**		**377 J**
NWTPH-Dx (µg/L)			
Diesel Range Hydrocarbons	**380**		**300**
Heavy Oil Range Hydrocarbons	500 U		500 U

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TABLE A-5
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW018D P5H0853-01 8/19/2005	OX008D P5H1000-06 8/23/2005	RW2 P5H0853-03 8/19/2005
TOTAL METALS (µg/L)			
EPA 6020			
Arsenic	**20.1**	**22.1**	**21.1**
Chromium	**8.86**	**36.0**	1 U
Copper	**15.6**	**41.4**	**3.28**
Lead	**3.78**	**12.5**	1 U
Nickel	**50.4**	**26.0**	**25.5**
Selenium		1 U	
Zinc	**110**	**69.7**	**16.4**
CONVENTIONALS (µg/L)			
Chloride (300.0)			**3370**
N-Nitrate (300.0)			
Sulfate (300.0)			
Sulfide (376.2)			
Total Dissolved Solids (160.1)			**264000**
Total Organic Carbon (415.1/5310C)			
FIELD PARAMETERS			
pH	**6.47**	**6.56**	**6.68**
Temperature (deg C)	**15.8**	**16.5**	**14.9**
Conductivity (uS/cm)	**421**	**363**	**360**
Turbidity (NTU)	**313**		**0**
Ferrous Iron (mg/L)		**3.5**	

Bold indicates detected constituent.

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW020D P5H0813-02 8/18/2005	LW022D P5H0625-06 8/15/2005	LW023D P5H0625-05 8/15/2005	Dup of LW023D X P5H0625-04 8/15/2005	LW024D P5H0813-04 8/18/2005	LW025D P5H0813-03 8/18/2005	LW026D P5H0852-02 8/19/2005	LW027D P5H0852-03 8/19/2005	LW029D P5H0625-10 8/15/2005	LW030D P5H0625-09 8/15/2005	LW032D P5H0701-04 8/16/2005	LW035D P5H0813-05 8/18/2005
SEMIVOLATILES (µg/L)												
EPA 8270C												
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	27.8 U	25.0 U
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	55.6 U	50.0 U
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	22.2 U	20.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	27.8 U	25.0 U
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	**5.01**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW020D P5H0813-02 8/18/2005	LW022D P5H0625-06 8/15/2005	LW023D P5H0625-05 8/15/2005	Dup of LW023D X P5H0625-04 8/15/2005	LW024D P5H0813-04 8/18/2005	LW025D P5H0813-03 8/18/2005	LW026D P5H0852-02 8/19/2005	LW027D P5H0852-03 8/19/2005	LW029D P5H0625-10 8/15/2005	LW030D P5H0625-09 8/15/2005	LW032D P5H0701-04 8/16/2005	LW035D P5H0813-05 8/18/2005
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2-Methylnaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Naphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	27.8 U	25.0 U
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11.1 U	10.0 U
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Pentachlorophenol	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	6 UJ	5 UJ
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Phenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.56 U	5.00 U
PAHs (µg/L)												
EPA 8270SIM												
Acenaphthene	**0.110**	0.100 U	**0.611**	**0.615**	**2.25**	**1.72**	0.100 U	**0.117**	0.100 U	0.100 U	0.100 U	0.100 U
Acenaphthylene	0.100 U	0.100 U	0.150 U	0.150 U	1.00 U	0.800 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.150 U
Anthracene	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	**0.625**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.202**
Benzo(a)anthracene	0.100 U	**0.119**	0.100 U	0.100 U	**0.203**	**0.902**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.542**
Benzo(a)pyrene	0.100 U	**0.129**	0.100 U	0.100 U	**0.137**	**0.846**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.419**
Benzo(b)fluoranthene	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.432**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.230**
Benzo(g,h,i)perylene	0.100 U	0.100 U	0.100 U	0.100 U	**0.102**	**0.482**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.266**
Benzo(k)fluoranthene	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.582**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.304**
Chrysene	0.100 U	**0.114**	0.100 U	0.100 U	**0.187**	**0.941**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.541**
Dibenzo(a,h)anthracene	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Fluoranthene	0.100 U	**0.139**	**0.143**	**0.123**	1.00 U	**1.41**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.698**
Fluorene	0.100 U	0.100 U	**0.300**	**0.286**	**5.24**	**2.12**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Indeno(1,2,3-cd)pyrene	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.450**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.229**
Naphthalene	0.300 U	0.100 U	0.550 U	0.600 U	2.50 U	1.80 U	**0.559**	0.250 U	0.100 U	0.100 U	0.100 U	0.150 U
Phenanthrene	0.100 U	0.100 U	0.150 U	0.150 U	**3.11**	**2.29**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.352**
Pyrene	0.100 U	**0.199**	**0.169**	**0.167**	**0.516**	**2.27**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.882**

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW020D P5H0813-02 8/18/2005	LW022D P5H0625-06 8/15/2005	LW023D P5H0625-05 8/15/2005	Dup of LW023D X P5H0625-04 8/15/2005	LW024D P5H0813-04 8/18/2005	LW025D P5H0813-03 8/18/2005	LW026D P5H0852-02 8/19/2005	LW027D P5H0852-03 8/19/2005	LW029D P5H0625-10 8/15/2005	LW030D P5H0625-09 8/15/2005	LW032D P5H0701-04 8/16/2005	LW035D P5H0813-05 8/18/2005
VOLATILES (µg/L)												
EPA 8260B												
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	1.00 U	**120**	**120**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	1.00 U	**1.55**	**1.54**	**5.17**	**2.36**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW020D P5H0813-02 8/18/2005	LW022D P5H0625-06 8/15/2005	LW023D P5H0625-05 8/15/2005	Dup of LW023D X P5H0625-04 8/15/2005	LW024D P5H0813-04 8/18/2005	LW025D P5H0813-03 8/18/2005	LW026D P5H0852-02 8/19/2005	LW027D P5H0852-03 8/19/2005	LW029D P5H0625-10 8/15/2005	LW030D P5H0625-09 8/15/2005	LW032D P5H0701-04 8/16/2005	LW035D P5H0813-05 8/18/2005
Isopropylbenzene	2.00 U	2.00 U	**7.09**	**7.02**	**10.8**	**5.99**	**2.19**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	**3.58**	**3.57**	1.00 U	1.00 U	**3.96**	**12.9**	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene	1.00 U	1.00 U	**3.14**	**3.36**	**12.3**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)												
Gasoline Range Hydrocarbons	**140**	80.0 U	**512**	**524**	**442**	**333**	**120**	80.0 U	80.0 U	80.0 U	80.0 UJ	80.0 U
NWTPH-Dx (µg/L)												
Diesel Range Hydrocarbons	250 U	250 U	250 U	**254**	**510**	**336**	250 U	250 U	250 U	250 U	250 U	250 U
Heavy Oil Range Hydrocarbons	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
TOTAL METALS (µg/L)												
EPA 6020												
Arsenic	**30.2**	**70.2**	**42.3**	**40.2**	**57.4**	**112**	**11.3**	**5.93**	**7.19**	**14.8**	**11.1**	**33.1**
Chromium	**2.99**	**23.5**	**24.0**	**23.1**	**60.1**	**101**	**26.8**	**6.68**	**3.71**	**24.5**	**30.0**	**131**
Copper	**4.05**	**35**	**38.7**	**36.8**	**72.0**	**116**	**35.5**	**9.23**	**4.58**	**34.7**	**34.9**	**165**
Lead	**1.21**	**12.2**	**14.3**	**13.5**	**32.1**	**65.2**	**10.5**	**2.22**	**1.13**	**7.85**	**8.21**	**57.8**
Nickel	**4.29**	**28.9**	**21.8**	**20.6**	**57.0**	**96.2**	**19.8**	**6.70**	**5.33**	**19.7**	**23.6**	**183**
Zinc	**14.4**	**94.0**	**64.3**	**56.9**	**165**	**292**	**64.8**	**20.8**	**14.1**	**56.7**	**69.2**	**590**

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW020D P5H0813-02 8/18/2005	LW022D P5H0625-06 8/15/2005	LW023D P5H0625-05 8/15/2005	Dup of LW023D X P5H0625-04 8/15/2005	LW024D P5H0813-04 8/18/2005	LW025D P5H0813-03 8/18/2005	LW026D P5H0852-02 8/19/2005	LW027D P5H0852-03 8/19/2005	LW029D P5H0625-10 8/15/2005	LW030D P5H0625-09 8/15/2005	LW032D P5H0701-04 8/16/2005	LW035D P5H0813-05 8/18/2005
DISSOLVED METALS (µg/L)												
EPA 6020												
Arsenic (Dissolved)												
Chromium (Dissolved)												
Copper (Dissolved)												
Lead (Dissolved)												
Nickel (Dissolved)												
Zinc (Dissolved)												
CONVENTIONALS (µg/L)												
Chloride (300.0)	**2470**	**1670**	**2640**	**2570**	**3330**	**1850**	**2710**	**2980**	**3520**	**6240**	**4410**	**1710**
N-Nitrate (300.0)		100 U										
Sulfate (300.0)		**7060**										
Sulfide (376.2)		400 U										
Total Dissolved Solids (160.1)	**249000**	**252000**	**436000**	**457000**	**334000**	**257000**	**348000**	**312000**	**434000**	**341000**	**366000**	**443000**
Total Organic Carbon (415.1/5310C)		**4540**										
METHANE (µg/L)												
GC/FID												
Methane												
FIELD PARAMETERS												
pH	**6.65**	**6.20**	**6.36**	**6.35**	**6.06**	**6.75**	**6.38**	**6.82**	**7.04**	**6.59**	**6.93**	**6.63**
Temperature (deg C)	**14.9**	**15.5**	**15.7**	**15.8**	**16.1**	**17.0**	**16.1**	**16.4**	**15.0**	**16.3**	**14.4**	**15.0**
Conductivity (uS/cm)	**341**	**300**	**326**	**317**	**595**	**405**	**452**	**359**	**495**	**448**	**474**	**479**
Turbidity (NTU)	**0**	**926**	**539**	**554**		**999**		**133**	**0**	**151**	**768**	**872**

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW036D P5H0734-08 8/17/2005	LW037D P5H0734-09 8/17/2005	LW038D P5H0734-10 8/17/2005	Dup of LW038D Y P5H0734-12 8/17/2005	LW039D P5H0734-11 8/17/2005	LW040D P5H0734-07 8/17/2005	LW045D P5H0625-07 8/15/2005
SEMIVOLATILES (µg/L)							
EPA 8270C							
Tetrachlorophenols (2)	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Acenaphthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Acenaphthylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**10.2**
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Benzyl alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Butyl benzyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloro-3-methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chloroaniline	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl)ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-chloroisopropyl)ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorophenylphenyl ether	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-butyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzo(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3,3-Dichlorobenzidine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Diethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dimethyl phthalate	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
2,4-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,6-Dinitrotoluene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bis(2-ethylhexyl)phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	**27.5**
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Fluorene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW036D P5H0734-08 8/17/2005	LW037D P5H0734-09 8/17/2005	LW038D P5H0734-10 8/17/2005	Dup of LW038D Y P5H0734-12 8/17/2005	LW039D P5H0734-11 8/17/2005	LW040D P5H0734-07 8/17/2005	LW045D P5H0625-07 8/15/2005
Hexachlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isophorone	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylnaphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3- & 4-Methylphenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitroaniline	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Nitrophenol	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
N-Nitroso-Di-N-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pentachlorophenol	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Phenanthrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Phenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4,6-Trichlorophenol	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
PAHs (µg/L)							
EPA 8270SIM							
Acenaphthene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.263**
Acenaphthylene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	0.100 U
Anthracene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**4.61**
Benzo(a)anthracene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.281**
Benzo(a)pyrene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.256**
Benzo(b)fluoranthene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.154**
Benzo(g,h,i)perylene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	0.100 U
Benzo(k)fluoranthene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.191**
Chrysene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.332**
Dibenzo(a,h)anthracene	0.200 U	0.200 U	0.200 U	0.222 U	0.200 U	0.200 U	0.200 U
Fluoranthene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.310**
Fluorene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.547**
Indeno(1,2,3-cd)pyrene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	0.100 U
Naphthalene	0.300 U	0.100 U	0.200 U	0.222 U	0.100 U	0.100 U	0.300 U
Phenanthrene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.483**
Pyrene	0.100 U	0.100 U	0.100 U	0.111 U	0.100 U	0.100 U	**0.427**

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW036D P5H0734-08 8/17/2005	LW037D P5H0734-09 8/17/2005	LW038D P5H0734-10 8/17/2005	Dup of LW038D Y P5H0734-12 8/17/2005	LW039D P5H0734-11 8/17/2005	LW040D P5H0734-07 8/17/2005	LW045D P5H0625-07 8/15/2005
VOLATILES (µg/L)							
EPA 8260B							
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
sec-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.25**
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

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TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW036D P5H0734-08 8/17/2005	LW037D P5H0734-09 8/17/2005	LW038D P5H0734-10 8/17/2005	Dup of LW038D Y P5H0734-12 8/17/2005	LW039D P5H0734-11 8/17/2005	LW040D P5H0734-07 8/17/2005	LW045D P5H0625-07 8/15/2005
Isopropylbenzene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**6.22**
4-Isopropyltoluene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
4-Methyl-2-Pentanone (MIBK)	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Propylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Styrene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
NWTPH-G (µg/L)							
Gasoline Range Hydrocarbons	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	**98.4**
NWTPH-Dx (µg/L)							
Diesel Range Hydrocarbons	250 U	250 U	250 UJ	250 U	250 U	278 U	250 U
Heavy Oil Range Hydrocarbons	500 U	500 U	500 UJ	500 U	500 U	556 U	500 U
TOTAL METALS (µg/L)							
EPA 6020							
Arsenic	1 U	1 U	**5.07**	**4.93**	**4.06**	**1.74**	**51.4**
Chromium	1 U	**1.58**	1 U	1 U	1 U	**9.05**	**73.1**
Copper	**1.11**	**1.96**	1 U	1 U	**1.47**	**9.09**	**91.1**
Lead	1 U	1 U	1 U	1 U	1 U	**2.67**	**36**
Nickel	**5.61**	**2.49**	**3.34**	**3.24**	**24.3**	**13.8**	**98.8**
Zinc	10 U	10 U	10 U	10 U	10 U	**25.7**	**342**

TABLE A-6
PHASE III REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
THIRD QUARTER SAMPLING EVENT, AUGUST 2005
TIME OIL NORTHWEST TERMINAL

Parameter	LW036D P5H0734-08 8/17/2005	LW037D P5H0734-09 8/17/2005	LW038D P5H0734-10 8/17/2005	Dup of LW038D Y P5H0734-12 8/17/2005	LW039D P5H0734-11 8/17/2005	LW040D P5H0734-07 8/17/2005	LW045D P5H0625-07 8/15/2005
DISSOLVED METALS (µg/L)							
EPA 6020							
Arsenic (Dissolved)	1 U	1 U	**5.86**	**5.17**	**4.59**		
Chromium (Dissolved)	1 U	1 U	1 U	1 U	1 U		
Copper (Dissolved)	1 U	1 U	1 U	1 U	1 U		
Lead (Dissolved)	1 U	1 U	1 U	1 U	1 U		
Nickel (Dissolved)	**4.73**	**1.16**	**2.96**	**3.07**	**28.3**		
Zinc (Dissolved)	10 U	10 U	10 U	10 U	10 U		
CONVENTIONALS (µg/L)							
Chloride (300.0)	**1680**	**1960**	**3160**	**3010**	**3380**	**2170**	**1900**
N-Nitrate (300.0)	100 U						
Sulfate (300.0)	**1880**						
Sulfide (376.2)	200 U						
Total Dissolved Solids (160.1)	**308000**	**145000**	**173000**	**186000**	**162000**	**165000**	**361000**
Total Organic Carbon (415.1/5310C)	**5200**						
METHANE (µg/L)							
GC/FID							
Methane							
FIELD PARAMETERS							
pH	**6.38**	**6.34**	**6.30**	**6.27**	**6.00**	**5.92**	**6.42**
Temperature (deg C)	**16.8**	**16.0**	**16.9**	**16.9**	**16.3**	**14.8**	**16.1**
Conductivity (uS/cm)	**352**	**139**	**169**	**169**	**165**	**151**	**494**
Turbidity (NTU)	**0**	**0**	**0**	**0**	**0**	**357**	**999**

Bold indicates detected constituent.

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.
J = indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Third Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report Time Oil Northwest Terminal Portland, Oregon

January 26, 2006

Prepared for

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1.0 INTRODUCTION

This report provides the results of the third quarter 2005 groundwater monitoring event conducted as part of the ongoing Phase II and III remedial investigation (RI) activities at the Time Oil Northwest Terminal (terminal) in Portland, Oregon. This report also provides performance and status information for the Phase II groundwater interim action currently ongoing at the terminal.

The terminal is a former bulk petroleum storage and transfer facility owned by Time Oil Co. (Time Oil) that is located in the industrialized Rivergate area of north Portland, Oregon (Figure 1). Time Oil ceased operations at the terminal on October 31, 2001. Groundwater monitoring is conducted in accordance with the *Phase I/II Remedial Investigation/Feasibility Study (RI/FS)* work plan (Landau Associates 1996), and the Phase III RI work plan (Landau Associates 2001). The groundwater monitoring locations at the terminal are shown on Figure 2. Prior to the fourth quarter 2003 event, groundwater monitoring was focused on wells drilled for the Phase II RI at locations within and downgradient of the former pentachlorophenol (PCP) mixing area. Quarterly groundwater monitoring of the Phase II wells has been ongoing at the terminal since April 1997. Starting with the fourth quarter 2003 event, groundwater monitoring data were also collected from wells installed as part of the Phase III RI within the Main Terminal tank farm and Bell Terminal tank farm areas, and other areas of the terminal not covered under previous investigations. Also, quarterly groundwater monitoring for 12 additional monitoring wells, installed in October-November 2004 began during the fourth quarter 2004 event. Specifically, the data presented in this report include the results for the following:

- Phase II wells used for monitoring of the groundwater interim action
- Phase II wells used for monitoring groundwater concentrations in the upper zone PCP plume area where the *in situ* chemical oxidation (ISCO) technique was applied in February and June 2005
- Phase III wells used for monitoring groundwater concentrations in the areas where petroleum-related operations formerly occurred.

This was the fourth sampling event for the wells installed in fall 2004.

Sampling of two wells located on the Port of Portland property to the north of the terminal was again attempted this quarter to assist in defining the locality of facility boundary to the north. (The first attempt was conducted during the second quarter 2005 event). The wells were dry. A third attempt to sample these wells will be conducted during the first quarter 2006 event. If the wells are still dry, Time Oil will provide a recommendation to DEQ on a methodology to define the locality of facility in this area.

Data from the quarterly monitoring events are used to assess contaminant distribution and groundwater level trends across the terminal. Additional discussion of the Phase III RI activities through

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the fourth quarter 2004 sampling event is included in the final Phase III RI report (Landau Associates 2005a).

The third quarter 2005 groundwater monitoring event was conducted from August 15 through August 30, 2005. This report summarizes groundwater elevation and groundwater quality data for the third quarter 2005, transmits analytical laboratory data packages and the associated data validation report, and presents an evaluation of data collected during the third quarter 2005 (July 1 through September 30, 2005) for the groundwater interim action in the upper and lower water-bearing zones relative to compliance with defined performance criteria.

The chemical analyses conducted during this monitoring event for each groundwater sampling location are summarized in Appendix A, Table A-1. Groundwater level measurements collected at the terminal for the third quarter 2005 event and for the previous RI quarterly events since March 1997 are provided in Appendix A, Table A-2. Groundwater quality data for the third quarter 2005 event are provided in Tables A-3 and A-4 for the upper zone wells and Tables A-5 and A-6 for the lower zone wells. Table A-7 is a summary of detected analytes in the nearshore wells, and Table A-8 is a summary of total and dissolved metals in the shoreline wells. A summary of the third quarter 2005 groundwater interim action recovery data is provided in Appendix B. Procedures for collection of water level measurements and groundwater samples and methods for evaluation are provided in Appendix C. A summary of all modifications to the Phase II groundwater quality sampling and analysis requirements, as approved by the Oregon Department of Environmental Quality (DEQ), is included in Appendix D. The data validation report for the third quarter 2005 data is provided in Appendix E. Laboratory data packages for these data are provided in Appendix F.

As requested by DEQ, a summary of the quarterly water quality data (detected constituents) since March 1997 for the upper and lower zone wells is being provided electronically to DEQ on CD. These tables will continue to be updated following each quarterly event.

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2.0 THIRD QUARTER 2005 GROUNDWATER MONITORING EVENT

The third quarter 2005 groundwater monitoring event was conducted from August 15 through August 30, 2005. The quarterly event included measurement of water levels at groundwater monitoring wells, well points, and recovery wells, and at a river gauge established on the south side of the dock extending into the Willamette River (Figure 2); measurement of product thickness in all terminal wells, if observed; and collection of groundwater quality samples. The third quarter 2005 event included sampling of the routine Phase II monitoring locations for performance of the groundwater interim action (G1A, J1, LW-4S, LW-4DR, LW-6D, LW-8S, LW-9D, LW-10D, LW-11D, RW-2 and SDM-1); selected monitoring wells associated with the Phase II ISCO activities (OX-1S, OX-3S through OX-9S, OX-8D, LW-11S, LW-13S, LW-17D, and LW-18D, and RW-1), selected Phase II monitoring wells sampled only during semiannual and annual monitoring events; and Phase III monitoring wells.

In October and November 2004, 11 additional wells were installed to address data gaps within the Main Terminal and Bell Terminal tank farm areas, including four upper zone wells within the Bell Terminal tank farm area (LW-41S, LW-42S, LW-43S, and LW-44S); five wells located beyond the extent of the confining unit, either on the Willamette River shoreline (LW-36D through LW-39D) or on the north side of the Main Terminal tank farm area (LW-45D); and one upper/lower zone well pair (two wells) located on the north side of the Main Terminal tank farm area (LW-40S/D). A twelfth well was installed (LW-4DR) to replace well LW-4D that was damaged during performance of the first ISCO injection event. Details on the installation and construction of the 12 new wells are provided in the final Phase III RI report (Landau Associates 2005a).

Because the Phase II and Phase III wells were installed to monitor groundwater quality in different areas of the terminal with different historical uses, the Phase II and Phase III groundwater quality data are discussed in separate sections (Sections 2.2 and 2.3, respectively). For discussion purposes, Phase II refers to monitoring locations within and downgradient of the former PCP mixing area and warehouse, and Phase III refers to monitoring locations within and downgradient of the Main Terminal and Bell Terminal tank farm areas and associated petroleum storage operation areas.

For reference, the monitoring wells, well points, recovery wells, and monitoring points are grouped as follows:

- Phase II: B1, B2, D, G1A, H, HRW-1, J1, J2, J3, L, LW-1S/1D, LW-3D, LW-4S/4DR, LW-5S, LW-6D, LW-8S, LW-9S/9D, LW-10S/10D, LW-11S/11D, LW-13S, LW-14D, LW-15D, LW-16D, LW-17D, LW-18D, OX-1S through OX-7S, OX-8S/8D, OX-9S, PZ-1 through PZ-4, RW-1, RW-2, SDM-1, and river outfall.

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- Phase III: K, N, P, Q, O, R, LW-7S, LW-19S, LW-20S/20D, LW-21S, LW-22D, LW-23D, LW-24D, LW-25D, LW-26D, LW-27S/27D, LW-28S, LW-29S/29D, LW-30S/30D, LW-31S, LW-32S/32D, LW-33S, LW-34S, LW-35D, LW-36D, LW-37D, LW-38D, LW-39D, LW-40S/40D, LW-41S, LW-42S, LW-43S, LW-44S, and LW-45D.

A summary of the analyses conducted at each sample location included in the third quarter 2005 event is provided in Table A-1. Section 2.1 presents a summary of the results for the groundwater level measurements for the monitoring locations at the terminal. The groundwater quality data and evaluations of groundwater flow and contaminant occurrence and trends for the Phase II wells and the Phase III wells are presented in Sections 2.2 and 2.3, respectively. The performance and status of the groundwater recovery interim action are discussed in Section 3.0.

2.1 GROUNDWATER LEVEL AND PRODUCT MEASUREMENTS

Groundwater levels were measured at each well for the third quarter 2005 event on August 16, 2005. Each well was also checked for the presence of product. The measurement and evaluation results are presented in the following sections. The measurement and evaluation procedures are provided in Appendix C. The groundwater measurement locations are shown on Figure 2. Groundwater level measurements conducted for the quarterly groundwater sampling events since March 1997 are provided in Table A-2. Historical (pre-Phase II RI) groundwater level measurements conducted from 1993 through 1996 were provided in the Phase II RI report (Landau Associates 2000a).

2.1.1 PRODUCT MEASUREMENTS AND PRODUCT RECOVERY

During the third quarter 2005 event, measurable product was observed in Phase II well OX-2S (0.23 ft), which is located downgradient of the former PCP mixing area. Product was last observed in well OX-2S during the first quarter 2005 sampling event at a thickness of 0.03 ft.

During the second quarter 2005 event, measurable product was observed at Phase III wells LW-21S (0.16 ft) and LW-27S (0.03 ft), located within the Main Terminal tank farm area. Wells LW-21S and LW-27S were installed in September 2003; measurable product was first observed in these wells in the first quarter of 2004. Keck passive product recovery bailers were installed at LW-21S and LW-27S in March 2004. The product recovery bailer at LW-27S was removed during the second quarter 2004 sampling event because no measurable product was noted at the time the water level was measured and to allow the collection of a groundwater quality sample. The product bailer was reinstalled at LW-27S during the third quarter 2004 sampling event to continue the product recovery efforts. There was not enough product accumulated in these wells to conduct any product recovery during the third

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quarter 2005 event. The recovered product is temporarily contained in a 55-gal drum onsite pending appropriate offsite disposal. Monitoring wells at the terminal will continue to be monitored for the presence of product during future quarterly monitoring events. A record of product observations and thicknesses is provided in Table A-2.

2.1.2 UPPER WATER-BEARING ZONE

Groundwater elevations measured in the upper water-bearing zone (upper zone) wells were used to estimate groundwater flow. Groundwater elevation contours for the upper zone are presented on Figure 3. Groundwater elevations measured during the third quarter 2005 indicate that groundwater flow in the upper zone is generally to the west-southwest toward the Willamette River across the Main Terminal and Bell Terminal tank farm areas. The localized southward shift in groundwater flow, which has historically been apparent within and downgradient of the former PCP mixing area, appears to be due to the influence of the east-west trending storm drain located about 170 ft north of the southern property boundary (Figure 2). Groundwater elevations measured at Phase III wells located along the confining unit boundary in the western portion of the terminal reflect the change from two water-bearing zones (upper and lower) to a single unconfined water-bearing zone. For example, wells LW-9S and LW-10S and piezometers PZ-3 and PZ-4, located near or beyond the extent of the confining unit, are typically dry during summer and fall months. During the wetter winter and spring months, groundwater is typically observed within the upper zone along this boundary. At well LW-27S where the confining unit is observed but is thin, the water level appears to represent an intermediate groundwater elevation between the upper zone and lower zone, thereby indicating the edge of the confining unit and the transition from two groundwater zones to one in this area. The groundwater flow patterns in this area mirror the western extent of the confining unit boundary and groundwater gradients increase sharply where the upper and lower zones converge. In the Bell Terminal tank farm area, well LW-41S, which is located where the confining unit is thin and likely discontinuous, was dry during the fourth quarter 2004 and first quarter 2005 quarterly sampling events, was not dry during the second quarter 2005 event, and was dry again during the third quarter 2005 event.

Overall, the data collected to date show that the upper zone groundwater levels are influenced by seasonal variations in precipitation, but the groundwater flow patterns do not appear to vary significantly with the seasons.

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2.1.3 LOWER WATER-BEARING ZONE

Groundwater elevations measured in the lower water-bearing zone (lower zone) wells were used to estimate groundwater flow in the lower zone and in the area where the confining zone is absent. Groundwater elevation contours for the lower zone are presented on Figure 4. The groundwater flow pattern in the lower zone likely represents the combined influence of two factors: 1) upper zone groundwater flow over the confining unit boundary, and 2) the resulting hydrostatic pressure change when transitioning between confined-semiconfined conditions to unconfined conditions west of the confining unit boundary.

Groundwater recovery well RW-2 pumped continuously during the third quarter 2005 for the groundwater interim action, except for periodic shutdowns for system maintenance. The contours indicate that pumping of recovery well RW-2 has modified groundwater flow in the lower zone in proximity to the pumping well. Groundwater flow outside the well RW-2 capture zone is generally west/southwest toward the Willamette River.

2.2 PHASE II GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase II wells are used to evaluate groundwater quality within and downgradient of the former PCP mixing area and warehouse. The contaminants associated with historical operations in these areas include predominantly PCP and associated carrier compounds. The Phase II wells are currently being sampled on a semiannual basis, as described earlier, except those wells used to monitor the ISCO injection events and groundwater interim action. For this monitoring event, the analytical results for groundwater samples collected from selected Phase II wells were used to evaluate the performance of the groundwater interim action and to assess long-term contaminant concentrations and trends in the Phase II wells in conjunction with sampling conducted within the Phase III areas of the terminal. For the third quarter 2005 event, groundwater from 16 upper zone Phase II wells and 15 lower zone Phase II wells was sampled and analyzed. Monitoring wells LW-9S and LW-10S were dry and, therefore, not sampled as part of this event. Discussion of the groundwater interim action is provided in Sections 3.0.

Phase II groundwater samples were analyzed for some or all of the following constituents, as shown in Table A-1:

- Semivolatile organic compounds [SVOCs; U.S. Environmental Protection Agency (EPA) Method 8270]
- Volatile organic compounds (VOCs; EPA Method 8260) including methyl tert-butyl ether (MTBE) at select wells
- PAHs (EPA Method 8270 SIM) at select wells

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- Diesel-range and motor oil-range TPH (NWTPH-Dx) and gasoline-range TPH (NWTPH-Gx)
- Six priority pollutant metals (arsenic, chromium, copper, lead, nickel, and zinc; EPA Methods 6010/7000 series)
- Selenium (EPA Method 6010)
- Total dissolved solids (TDS; EPA Method 160.1)
- Major Ions include chloride (EPA Method 325.2), nitrate (EPA Method 300), sulfate (EPA Method 300), sulfide (EPA Method 376.2), and total organic carbon (TOC; EPA Method 415.1/5301C)
- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature)
- Ferrous iron (using a Hatch field kit).
- PCP (EPA Method 8270 SIM) on samples where PCP was not detected above the reporting limit using EPA Method 8270 and for monitoring of the ISCO wells
- Dioxins and furans (EPA Method SW8290) for groundwater samples from wells OX-1S, OX-6S, and RW-1
- Methane (method GC/FID).

The laboratory analyses were conducted by North Creek Analytical, in Beaverton, Oregon, except for dioxin/furan analyses, which was performed by Pace Analytical Services, Inc., in Minneapolis, Minnesota.

Analytical results for the Phase II monitoring wells for the third quarter 2005 event are provided in Table A-3 for the upper zone wells and in Table A-5 for the lower zone wells. A summary of the Phase II results is provided in the following sections. Results collected for a monitored natural attenuation (MNA) evaluation, including methane and other major ions will be discussed in an upcoming Source Control Evaluation Report.

2.2.1 Upper Water-Bearing Zone

The third quarter 2005 analytical results for the Phase II upper zone wells indicate the following:

- Samples from seven wells contained concentrations of PCP greater than the laboratory reporting limits (Figure 5). The highest concentrations were detected in the samples from wells OX-6S and LW-4S [2,030 and 1,960 micrograms per liter (µg/L), respectively], located within and downgradient of the former PCP mixing area. During the previous quarterly event, PCP concentrations were highest in samples from wells OX-2S (1,540 µg/L) and OX-6S (600 µg/L), indicating that PCP concentrations have increased since the second quarter 2005 event. OX-2S was not sampled during third quarter 2005 due to the presence of free product. In addition to PCP, 2,3,4,6-tetrachlorophenol and 2,3,5,6-tetrachlorophenol (breakdown by-products of PCP) were detected at concentrations ranging from 84.4 µg/L (OX-3S) to 1,550 µg/L (LW-4S).

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- Other SVOCs were detected at low concentrations; however, none were greater than 21.8 µg/L (naphthalene at OX-8S).
- VOCs, including benzene, n-butylbenzene, chloroethane, ethylbenzene, isopropylbenzene, 4-isopropyltoluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, sec-butlybenzene, tert-butlybenzene, toluene, n-propylbenzene, naphthalene, and xylenes, were detected in some combination in samples collected from all Phase II wells (with exception of LW-1S, OX-5S, and OX-9S), at concentrations ranging from 1.0 µg/L to 231 µg/L.
- The highest concentrations of diesel-range TPH and gasoline-range TPH were observed at well LW-4S (1,520 µg/L) and LW-8S (an estimated 1,880 µg/L), respectively.
- Arsenic concentrations detected in samples from the upper zone Phase II wells ranged from less than the laboratory reporting limit (i.e., nondetect) to 25.4 µg/L (LW-8S). Chromium concentrations were nondetect in all samples except RW-1 (3.72 µg/L); copper concentrations ranged from nondetect to 57 µg/L (LW-4S); lead concentrations were nondetect in all samples except RW-1 (1.96 µg/L); nickel concentrations ranged from 1.52 µg/L (D) to 208 µg/L (OX-8S); and zinc concentrations ranged from nondetect in most wells to 26.6 µg/L (OX-7S). Selenium was not detected in any of the samples analyzed. Chromium and copper concentrations are presented on Figure 6.
- Dioxin and furan analyses were performed on samples from wells OX-1S, OX-6S, and RW-1, which are located within and downgradient of the former PCP mixing area. Results from these analyses indicated concentrations, as total equivalency quotient (TEQ), ranging from 0.0018 nanograms per liter (ng/L) (RW-1) to 0.00497 ng/L (OX-6S).

2.2.2 LOWER WATER-BEARING ZONE

During third quarter 2005, PCP was not detected above the laboratory reporting limit in groundwater from any of the lower zone wells, except for well LW-4DR at a concentration of 13.1 µg/L, as shown on Figure 7. PCP was not detected in well LW-4DR during second quarter 2005. No other SVOCs were detected above laboratory reporting limits in groundwater from the lower zone wells. The highest concentrations of VOCs were detected in the sample collected from well G1A; however, none of the detected concentrations were greater than 104 µg/L (isopropylbenzene). The highest detected concentrations of diesel-range (669 µg/L) and gasoline-range TPH (918 µg/L) were observed at wells LW-17D and LW-6D, respectively. Arsenic concentrations in the samples from the lower zone Phase II wells ranged from 6.49 µg/L (LW-11D) to 52.2 µg/L (B2); chromium concentrations ranged from nondetect to 36.0 µg/L (OX-8D); copper concentrations ranged from nondetect to 41.4 µg/L (OX-8D); lead concentrations ranged from nondetect to 13.2 µg/L (LW-11D); nickel concentrations ranged from 1.09 µg/L (LW-9D) to 94.1 µg/L (GIA); and zinc concentrations ranged from nondetect to 110 µg/L (LW-18D). Selenium was not detected in the one sample analyzed.

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2.2.3 WATER LEVEL AND CONTAMINANT TRENDS

The third quarter 2005 data from the Phase II wells were used to evaluate long-term groundwater level and contaminant trends for groundwater impacted by former PCP-related operations at the terminal. PCP concentrations were evaluated by generating time versus groundwater elevation and time versus concentration plots for the period covered by the Phase II RI quarterly sampling events (April 1997, or first available, through the current quarterly event). Plots of PCP concentrations (maximum concentrations of EPA Methods 8270 and 8040 for events prior to the second quarter 2001 event) versus time for selected upper zone wells (LW-4S, LW-11S, LW-13S, and RW-1) and selected lower zone wells (LW-4D, LW-11D, GIA, and RW-2) are provided on Figures 8 and 9. Plots of groundwater elevations and PCP concentrations for upper zone wells LW-4S and LW-11S are shown on Figures 10 and 11. Figure 12 shows groundwater elevations and PCP concentrations at lower zone well LW-11D plotted with the Willamette River stage through the previous quarterly event as mentioned earlier. In addition, PCP concentrations from the third quarter 2005 event for the upper and lower water-bearing zones are shown on Figures 5 and 7 and discussed above.

As shown on Figure 8, the PCP concentrations at the selected upper zone wells show variable concentration trends over time. PCP concentrations at RW-1 decreased throughout 2004, increased slightly during the first and second quarters of 2005, and decreased during third quarter 2005 to a concentration of 108 µg/L (from 271 µg/L in second quarter 2005). The concentration of PCP at RW-1 is above the historic low observed during November 2001 (17 µg/L), but well below the historic high (11,000 µg/L) observed in April 2001. PCP concentrations at well LW-11S decreased from February 2004 through first quarter 2005 (from 2,130 to 178 µg/L), but increased in the second and third quarters of 2005 to concentrations of 545 µg/L and 687 µg/L, respectively. Historically, PCP concentrations detected at well LW-11S appear to reflect a response to seasonal groundwater fluctuations, as shown on Figure 11. PCP concentrations at LW-13S have typically been reported at less than about 1 µg/L since the fourth quarter 2001 event, except during the fourth quarter of 2004. PCP was not detected at LW-13S during the third quarter 2005, and the laboratory reporting limit decreased slightly to 0.500 µg/L from 0.526 µg/L. PCP concentrations at well LW-4S appear to reflect seasonal changes in groundwater elevation and resulting changes in PCP concentrations at upgradient locations (Figure 10).

PCP was not detected in Phase II lower zone wells during the third quarter 2005 event, with exception of LW-4DR (13.1 µg/L). PCP was last detected in well LW-4DR at a concentration of 1.08 µg/L during fourth quarter 2004. As shown on Figure 9, the PCP concentration in the lower zone at RW-2 has continued to decrease since the May 2004 event (from a concentration of 46.7 µg/L) and PCP was not detected at RW-2 during third quarter 2005. Historically, sporadic detections of PCP have been

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observed in both LW-11D and G1A; however, during this quarterly event, PCP was not detected in either well. PCP has been detected in LW-6D five times historically, at concentrations ranging from 0.42 µg/L to 1.1 µg/L, but was not detected in third quarter 2005.

Fluctuations in groundwater elevations in the upper zone reflect typical seasonal variability with seasonal lows during the fall months (October-November) and seasonal highs during the winter and early spring months (January-March) since monitoring began in March 1997. The groundwater levels during the past year are similar to those observed during previous years. Trends in PCP concentrations correlate with groundwater elevations at some locations. Figure 10 shows that there appears to be a historical correlation between the water level and PCP concentration in the upper zone at well LW-4S since the first quarter of 2002. Figure 11 shows that the PCP concentration in the upper zone at well LW-11S typically follows the water level trends in that zone over time. In the lower zone, groundwater levels show trends similar to the seasonal fluctuations in the Willamette River, as shown by the plot of groundwater elevations at LW-11D with river stage on Figure 12. However, there appears to be no correlation between PCP concentrations and groundwater/river stage elevations at LW-11D.

Concentration contours for the upper and lower water-bearing zones (Figure 5 and 7, respectively) indicate that the overall areal extent of the PCP plume has remained approximately the same since second quarter 2005 in the upper water-bearing zone, but has increased in the vicinity of LW-4DR (which was below detection levels in second quarter 2005) in the lower water-bearing zone. PCP concentrations are slightly lower in most upper water-bearing zone wells than in the previous quarter, with exception of wells LW-4S, LW-11S, OX-6S, and OX-7S. At well OX-2S, product was not observed in second quarter 2005; however, product was observed during the third quarter 2005 event and the well was not sampled. The fluctuations in PCP concentrations at most wells appear to be due to seasonal changes in groundwater elevations. Increases in PCP concentrations could also possibly be a result of rebound since the February 2005 injection event.

Contaminant and groundwater level trends will continue to be evaluated and discussed as part of future quarterly events.

2.3 PHASE III GROUNDWATER QUALITY

Analytical results for groundwater collected from the Phase III wells are used to evaluate groundwater quality in the former petroleum operations areas of the terminal, mainly focusing on the Main Terminal tank farm and Bell Terminal tank farm areas. The contaminants associated with historical operations in these areas predominantly include petroleum hydrocarbons (gasoline and diesel range); volatile compounds [e.g., benzene, toluene, ethylbenzene, and xylenes (BTEX)]; polycyclic aromatic

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hydrocarbons (PAHs); and other associated petroleum-related compounds. For the third quarter 2005 event, groundwater from 16 upper zone Phase III wells and 17 lower zone Phase III wells was sampled and analyzed. These wells are identified in Table A-1. Monitoring wells LW-21S and LW-27S were not sampled due to the presence of product at these well locations. The third quarter 2005 sampling event is the eighth consecutive quarterly monitoring event for the Phase III wells that were installed in September 2003 and the fourth sampling event for the 12 monitoring wells installed in October 2004, as discussed previously.

Except as shown in Table A-1, all groundwater samples were analyzed for the following constituents:

- SVOCs (EPA Method 8270)
- VOCs (EPA Method 8260) including MTBE
- PAHs (EPA Method 8270 SIM)
- Diesel-range, motor oil-range, and gasoline-range TPH (NWTPH-Dx and NWTPH-Gx)
- Six priority pollutant metals (arsenic, chromium, copper, lead, nickel, and zinc; EPA Methods 6010/7000 series)
- TDS (EPA Method 160.1)
- Chloride (EPA Method 325.2), nitrate (EPA Method 300), sulfate (EPA Method 300), sulfide (EPA Method 376.2), and total organic carbon (TOC; EPA Method 415.1/5301C)
- Field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature).

The Phase III laboratory analyses were conducted by North Creek Analytical in Beaverton, Oregon.

The groundwater analytical results were contoured using preliminary screening levels. Since the primary groundwater transport pathway of concern at the terminal is from groundwater to surface water, the preliminary screening levels were based on the most conservative published value from the EPA National Recommended Water Quality Criteria (organism only; EPA 2002); DEQ ecological risk screening level values (SLVs; DEQ 2001); Oregon Ambient Water Quality Criteria for Freshwater (fish consumption only; DEQ 2004); and DEQ generic risk-based concentrations for petroleum constituents and total petroleum hydrocarbons (DEQ 2003).

Analytical results for the third quarter 2005 event are provided in Table A-4 for the upper zone wells and Table A-6 for the lower zone wells. A summary of the Phase III results is provided in the following sections.

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2.3.1 UPPER WATER-BEARING ZONE

The third quarter 2005 results for the Phase III monitoring wells installed in the upper zone indicate the following:

- SVOCs (acenapththene, dibenzofuran, 2,4-dimethylphenol, fluorene, 2-methylnapthalene, 3-4-methylphenol, naphthalene, and/or phenol) were detected at Phase III monitoring wells N, P, and Q. SVOCs ranged from nondetect to 87.6 µg/L [3- & 4-methylphenol at well P].
- VOCs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, chloroethane, ethylbenzene, isopropylbenzene, m,p-xylene, naphthalene, n-butylbenzene, n-propylbenzene, o-xylene, sec-butylbenzene, tert-butylbenzene, and/or toluene) were detected at 12 of the 16 wells sampled for these constituents. The detected VOC concentrations ranged from 1.04 µg/L (chloroethane) at well LW-7S to 2,780 µg/L (benzene) at well P. The highest ethylbenzene concentration (898 µg/L), toluene concentration (107 µg/L), and total xylenes concentration (2,478 µg/L) were detected at well N. MTBE was not detected above the laboratory reporting limit in any of the upper zone well samples analyzed. Benzene and ethylbenzene concentrations at the upper zone monitoring locations are shown on Figures 13 and 14.
- Diesel-range TPH was detected at five of the seven upper zone Phase III well locations (LW-19S, LW-20S, N, P, and Q) within the Main Terminal tank farm area. Gasoline-range TPH was detected at all of the seven upper zone wells (LW-7S, LW-19S, LW-20S, K, N, P, and Q). Within the Bell Terminal tank farm area, groundwater from five wells (LW-30S, LW-32S, LW-42S, LW-43S, and LW-44S) contained concentrations of diesel-range and gasoline-range TPH above the laboratory reporting limits. The highest diesel-range TPH concentration was detected at well LW-44S (1,400 µg/L) and the highest gasoline-range TPH concentration was detected at well P (6,100 µg/L). Diesel-range TPH and gasoline-range TPH concentrations at the upper zone monitoring locations are shown on Figures 15 and 16, respectively.
- In the Phase III upper zone well locations, arsenic concentrations ranged from nondetect to 40.2 µg/L (N) and lead concentrations ranged from nondetect to 24.5 µg/L (P). Chromium and copper were not detected above laboratory reporting limits in the Phase III upper zone wells, with the exception of copper in monitoring wells LW-32S (1.17 µg/L), LW-42S (1.87 µg/L), and P (2.13 µg/L). Chromium and copper concentrations at the upper zone monitoring locations are shown on Figure 6.

2.3.2 LOWER WATER-BEARING ZONE

The third quarter 2005 results for the Phase III monitoring wells installed in the lower zone indicate the following:

- PAHs [acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)-phthalate, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and/or pyrene] were detected in nine Phase III lower zone wells, with individual concentrations ranging from 0.102 µg/L [benzo(g,h,i)perylene at well LW-24D] to 5.24 µg/L (fluorene at well LW-24D). No other SVOCs were detected.
- Concentrations of VOCs (benzene, isopropylbenzene, n-propylbenzene, and/or sec-butylbenzene) were detected in 6 of the 17 wells sampled, at concentrations ranging from

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1.25 µg/L (sec-butylbenzene; LW-45D) to 120 µg/L (benzene; LW-23D). MTBE was detected in three Phase III lower zone wells (LW-23D, LW-26D, and LW-27D) located within the Main Terminal tank farm area at concentrations of 3.58 µg/L (LW-23D), 3.58 µg/L (LW-23D), and 12.9 µg/L (LW-27D). Benzene and ethylbenzene concentrations at the lower zone monitoring locations are shown on Figures 17 and 18, respectively.

- Diesel-range TPH was detected in two of the lower zone Phase III wells that were sampled. Gasoline-range TPH was detected in six of the lower zone Phase III wells that were sampled. The sample from monitoring wells LW-23D and LW-24D contained the highest concentrations of gasoline-range TPH (512 µg/L) and diesel-range TPH (510 µg/L), respectively. Diesel-range TPH and gasoline-range TPH concentrations at the lower zone monitoring locations are shown on Figures 19 and 20, respectively.
- Total arsenic was detected in 15 of the 17 Phase III lower zone wells at concentrations ranging from 1.74 µg/L at well LW-40D to 112 µg/L at well LW-25D. Five or more priority pollutant metals (arsenic, chromium, copper, lead, nickel, and/or zinc) were detected at 13 of the 17 lower zone wells. Chromium and copper concentrations at the lower zone monitoring locations are shown on Figure 21.

2.3.3 WATER LEVEL AND CONTAMINANT TRENDS

The eight quarters of data collected from the Phase III wells between November 2003 and August 2005 were used to evaluate contaminant trends within areas of the terminal historically used for petroleum operations. The analytes detected in the Phase III wells during the third quarter 2005 and previous quarters are predominantly constituents commonly associated with petroleum products. This contaminant trend discussion focuses on total petroleum hydrocarbons (gasoline- and diesel-range) and VOCs (benzene and ethylbenzene) because these constituents are related to former petroleum operations at the terminal and are indicative of the nature and extent of contamination for petroleum-related compounds; however, other constituents were detected, as described in the previous sections. The diesel-range and gasoline-range TPH, benzene, and ethylbenzene concentrations for the upper and lower water-bearing zones for the third quarter 2005 are shown on Figures 13 through 20.

As shown in Table A-7 and on Figure 22, the analytical results indicate that concentrations for most of the constituents analyzed for the shoreline wells were nondetect and none of the concentrations were greater than the preliminary screening levels. This information confirms the previous quarterly results that there is not currently a complete exposure pathway to receptors in the river via groundwater.

Trends of TPH and associated petroleum-related VOC concentrations were also evaluated using time versus groundwater elevation and time versus concentration plots for the period covered by the Phase III RI quarterly sampling events (October 2003 through the latest quarterly event) and quarterly events since February 1999 for well LW-8S. Plots of diesel-range and gasoline-range TPH concentrations for selected upper zone and lower zone wells in the Main Terminal tank farm area are shown on Figures 23 through 26. These same constituents for upper zone wells in the Bell Terminal tank

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farm area are shown on Figures 27 and 28. Plots of TPH (diesel- and gasoline-range), benzene, and ethylbenzene including groundwater elevation and Willamette River stage (lower zone wells only) for one upper zone well (LW-8S) and selected lower zone wells (LW-23D and LW-25D) in the Main Terminal tank farm area and upper zone well (LW-32S) in the Bell Terminal tank farm area are provided on Figures 29 through 32 (note the logarithmic scale on these figures). Plots of diesel-range TPH concentrations versus groundwater elevation for paired wells in the Main Terminal tank farm area (LW-20S/D) and in the Bell Terminal tank farm area (LW-30S/D) are shown on Figures 33 and 34.

Concentrations of diesel- and gasoline-range TPH in the samples from the upper and lower zone Phase III wells generally decreased or were similar to those detected during the previous quarter. Upper zone well LW-27S located within the Main Terminal tank farm area has contained product during six of the last seven quarters ranging in thickness from 0.69 ft in February 2004 to 0.02 ft in November 2004 and February 2005. A thickness of 0.03 ft was observed in well LW-27S in August 2005. Also, during the last seven quarters, measurable product was observed at LW-21S at thicknesses ranging from 1.03 ft in February 2004 to 0.02 ft in February 2005. A thickness of 0.16 ft was observed in well LW-21S in August 2005. Based on information collected for the Phase III RI, the potential sources of product within the Main Terminal tank farm area include a diesel spill resulting from the rupture of Tank 29508 in 1975; an unleaded gasoline spill in the vicinity of wells N, P, and Q in 1994; and, to a lesser extent, incidental leakage along conveyance pipelines. Based on the available information, the diesel-range concentrations in the upper and lower zones (Figures 15 and 19) and the ethylbenzene concentrations in the upper zone (Figure 14) within and near the southeast corner of the Main Terminal tank farm area represent groundwater concentrations associated with separate historic activities conducted at the terminal. The plumes to the west, including upper zone monitoring location LW-8S and the other Main Terminal tank farm area wells, are likely associated with spills related to former petroleum operations within the Main Terminal tank farm area. The plumes to the east, including monitoring locations RW-1 and LW-11S in the upper zone, and B2 and RW-2 in the lower zone, are likely associated with carrier fluids used with PCP during wood treatment formulation activities within the former PCP mixing area. This interpretation is supported by the results for the product sample collected from well LW-11S in November 2000, which contained 3.2 percent PCP in addition to other petroleum constituents, versus the results for the product samples collected from wells LW-21S and LW-27S in April 2004, which contained only petroleum constituents (e.g., gasoline-, diesel-, and motor oil-range TPH). The plumes in the area around well LW-8S are considered to be associated with the former petroleum operations in the Main Terminal tank farm area because upper zone groundwater flow in this area appears to be to the south-southwest (Figure 3) and constituents originating in the former PCP mixing area (e.g., PCP) have not been observed at well LW-8S.

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Benzene and ethylbenzene concentrations for the upper zone are presented on Figures 13 and 14, and those for the lower zone are presented on Figures 17 and 18. In general, the overall distribution of these compounds has remained unchanged over the previous six quarters based on the available data. Benzene concentrations at lower zone monitoring location LW-23D located on the riverbank to the west of the Main Terminal tank farm area increased from 64.6 µg/L second quarter 2005 from to 120 µg/L this quarter, which is below the high detected during the second quarter 2004 sampling event (132 µg/L). Benzene was not detected in any other lower zone wells during third quarter 2005. Ethylbenzene was not detected in any lower zone wells during third quarter 2005.

Overall, the diesel-range concentrations at the lower zone wells in the Main Terminal tank farm area were at historical low concentrations and were similar to second quarter 2005 concentrations (Figure 25). The gasoline-range concentrations for the lower zone wells in the Main Terminal tank farm area showed similar overall trends to the diesel-range concentrations, with slight increases in concentrations since second quarter 2005 (Figure 26). The diesel-range TPH concentrations in the upper zone within the Main Terminal tank farm area have historically ranged between about 3,000 to 12,000 µg/L (Figure 23); however, the maximum concentration observed during the third quarter 2005 was 1,320 µg/L (well N; Figure 15). Gasoline-range TPH concentrations in the upper zone within the Main Terminal tank farm area are consistently greatest at well LW-8S with concentrations over time ranging from greater than 2,000 to 15,000 µg/L since this well was first sampled in May 1999 (Figures 24 and 29); the lowest concentration at this well was recorded during this quarter (1,180 µg/L).

Diesel-range TPH concentrations in the lower zone within the Main Terminal tank farm area tend to be significantly greater than gasoline-range TPH concentrations at the same locations over time (Figures 25 and 26), but less overall than the upper zone concentrations for these constituents (Figures 23 and 24). Also, TPH concentrations in groundwater from lower zone wells located beyond the extent of the confining unit in the Main Terminal tank farm area tend to be greater than from wells farther to the east where the confining unit is present. This is likely the result of upper zone groundwater with higher TPH concentrations mixing with lower zone groundwater downgradient of the confining unit boundary. The highest concentration of diesel-range TPH detected since quarterly monitoring began was at well LW-25D in February 2004 (6,700 µg/L). The concentration detected at LW-25D this quarter was 336 µg/L (Figure 31).

Similar to the Main Terminal, diesel- and gasoline-range TPH concentrations in the Bell Terminal tank farm area are at historic low concentrations with slight increases at some of the wells since the second quarter 2005 (Figures 27 and 28). In the Bell Terminal tank farm area, diesel-range TPH concentrations in the upper zone are slightly greater than the gasoline-range concentrations, with the

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maximum concentrations this quarter occurring at LW-44S (1,400 µg/L for diesel-range TPH and 933 µg/L for gasoline-range TPH) (Figures 15, 16, 27 and 28). Lower zone groundwater concentrations in the Bell Terminal tank farm area for these constituents (Figures 19 and 20) are much less than the upper zone concentrations (Figures 15 and 16). Also, diesel- and gasoline-range TPH concentrations are much less in upper zone groundwater in the Bell Terminal tank farm area than in the Main Terminal tank farm area.

Comparison of the diesel- and gasoline-range TPH, benzene, and ethylbenzene concentrations with groundwater elevations at selected well locations in the Main Terminal tank farm area indicates that groundwater concentrations in upper zone wells are likely influenced by seasonal fluctuations in groundwater levels, as demonstrated by the long-term monitoring data from well LW-8S (Figure 29). At well LW-8S, the overall benzene and ethylbenzene concentrations are decreasing, and gasoline-range and diesel-range TPH concentrations have been relatively consistent since about February 2002. At lower zone wells LW-23D and LW-25D (Figures 30 and 31), groundwater elevations correlate with river stage fluctuations, as expected; however, any trend in groundwater concentrations in response to fluctuations in groundwater level or river stage is not apparent from the available data. Diesel-range TPH concentrations at well pair LW-20S/-20D in the Main Terminal tank farm area indicate that the concentrations in the upper and lower zones for this constituent are relatively similar at this location during the last two quarters, and are both less than 1.0 mg/L (Figure 32).

In the Bell Terminal tank farm area, concentrations of benzene and ethylbenzene in upper zone well LW-32S have remained relatively consistent over time and no correlation between groundwater concentrations and groundwater levels is apparent from the available data (Figure 33). This quarter, the diesel-range TPH concentration increased from 562 to 987 µg/L, and the gasoline-range TPH concentration decreased from 971 to 807 mg/L at well LW-32S. At well pair LW-30S/LW-30D, trends in diesel-range TPH concentrations and groundwater levels do not correlate (Figure 34). Diesel-range TPH concentrations have been slightly greater in the upper zone than the lower zone at this well pair, except during the November 2004 event and the past two events when the lower zone concentrations were greater.

Concentrations of total chromium and copper in Phase III wells exceeded the preliminary screening level in multiple lower zone wells and wells located beyond the confining unit boundary in the Main Terminal tank farm area. However, none of the total metals concentrations in the shoreline wells, located along the river (LW-36D through LW-39D) or in the upper zone Phase III wells, exceeded the preliminary screening levels. In addition, none of the total metals concentrations in the wells in the Bell Terminal tank farm area exceeded the preliminary screening levels, with the exception of LW-30D and LW-32D.

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Samples collected from the shoreline wells were analyzed for both total and dissolved metals during the third quarter 2005. The dissolved metals results were used to continue to assess whether the presence of total chromium and copper observed in groundwater at concentrations exceeding preliminary screening levels during the fourth quarter 2004 event was the result of suspended material present in the samples from the shoreline wells. The third quarter 2005 data indicate that dissolved arsenic was detected in two shoreline wells (LW-38D and LW-39D) and dissolved nickel was detected in all four shoreline wells. None of the total or dissolved metals concentrations in the shoreline wells for the third quarter 2005 event exceeded the preliminary screening levels, as shown in Table A-8. Comparison of the dissolved and total metals concentrations indicate that dissolved concentrations of nickel in LW-36D, LW-37D, and LW-38D were slightly less than the total metals concentrations. Dissolved arsenic in wells LW-38D and LW-39D and dissolved nickel in well LW-39D were slightly more than the total metals concentration. However, the concentrations do not vary by more than 4.0 μg/L at any one location.

Long-term trends in the upper and lower zones will continue to be evaluated as part of the quarterly monitoring events.

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3.0 GROUNDWATER RECOVERY INTERIM ACTION

This section presents a summary of the performance and status of the groundwater interim action system at the terminal for the third quarter of 2005 (July 1 through September 30, 2005). System operation data for the groundwater interim action were evaluated in accordance with the startup monitoring plan (Landau Associates 2000b) to determine compliance with performance criteria for the upper zone and the lower zone at the terminal. Specific performance criteria include: 1) groundwater recovery from an upper zone recovery well (HRW-1) when the pump is operating or when sufficient groundwater is present in the upper zone; 2) continuous pumping from a lower zone recovery well (RW-2), except for brief periods of system maintenance; 3) groundwater flow toward HRW-1 and RW-2 from the downgradient and upgradient directions; 4) reversal of the lower zone groundwater flow direction at the leading edge of the PCP plume; 5) chemical confirmation that continued migration of PCP in groundwater downgradient of RW-2 and HRW-1 is not occurring; and 6) compliance with the requirements of the existing discharge permit. In addition to the six criteria listed above, information is also presented in this section regarding the operation of an upper zone groundwater intercept system located in a storm drain (SDM-1) at the site.

Specific operational information for the third quarter 2005, as it relates to the criteria identified above, is as follows:

- As discussed in Section 2.1, groundwater elevation data were collected from the upper zone monitoring wells on August 16, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 3.
- During the third quarter 2005, groundwater was extracted from the upper zone recovery well (HRW-1) when sufficient water was present in the extraction well. A total of approximately 300 gallons of groundwater was recorded as being recovered from HRW-1 during the third quarter of 2005 at an estimated rate of 0.002 gallon per minute (gpm). Extracted water is discharged into Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal, and is subsequently discharged to the sanitary sewer under a permit with the City of Portland. No sample of the discharge water was collected during third quarter 2005 because the well was dry at the time of sampling. A summary of groundwater recovery data for HRW-1 is included in Appendix B, Table B-1.
- With the exception of periodic shutdowns for system maintenance, groundwater was extracted continuously from the lower zone during the period from July 1 through September 30, 2005 by operating the groundwater recovery pump in RW-2. A total of approximately 696,300 gallons of groundwater was recorded as being recovered from RW-2 during the third quarter of 2005 at an estimated average rate of 5.31 gpm. The recovery pump in RW-2 discharged water to Tank 16804 for temporary storage until treated by the wastewater treatment system located at the terminal and subsequent discharge to the sanitary sewer under a permit with the City of Portland. A sample of the discharge water was collected on August 19, 2005 and analyzed for PCP. PCP was not detected above the laboratory reporting limit in the discharge sample from RW-2. A summary of the groundwater recovery data for RW-2 is included in Appendix B, Table B-1.

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- As discussed in Section 2.1, groundwater elevation data were collected from the lower zone wells on August 16, 2005. The groundwater elevation data are summarized in Table A-2 and presented on Figure 4. Based on the groundwater elevation data collected, the groundwater flow direction was reversed locally downgradient of the leading edge of the PCP plume in the lower zone when RW-2 was in operation during this quarter.
- As previously discussed in Section 2.2, groundwater samples were collected at the terminal on August 15 through August 30, 2005. Historically, the extent of groundwater impact has been estimated based on the extent of dissolved-phase PCP. The extent of PCP in the upper and lower zones is depicted on Figures 5 and 7, based on data collected during the August 2005 groundwater sampling event. The lateral extent of PCP from north to south in the upper zone is consistent with previous quarterly events. The lateral extent of PCP from east to west in the upper zone appears to be similar in comparison to the second quarter 2005 event. The third quarter lower zone analytical data indicate that monitoring wells LW-10D, LW-14D, LW-16D, and LW-18D, located south and west of RW-2, did not contain concentrations of PCP greater than the laboratory reporting limit for this sampling event. In addition, RW-2 did not contain concentrations of PCP greater than the laboratory reporting limit.
- Between July 1 and September 30, 2005, 114,700 gallons of groundwater were recorded as being pumped by the groundwater intercept system at storm drain manhole SDM-1 and transferred to Tank 16804 for temporary storage and subsequent treatment by the onsite wastewater treatment system. During operation, the pump extracted water from SDM-1 at a rate of approximately 0.88 gpm. During the third quarter 2005 sampling event, the Willamette River level was above the elevation of the outfall of the storm drain line; therefore, no water quality sample was collected for PCP analysis during this sampling event.

The industrial wastewater discharge permit (City of Portland Permit No. 400.121) for discharge of the extracted groundwater following treatment at the terminal's wastewater treatment plant includes the following discharge limitations:

Parameter	Permitted Limit
PCP	40 µg/L
Benzene	50 µg/L
BTEX (1)	750 µg/L
pH	5 to 11.5

(1) Sum of detected concentrations of Benzene, Toluene, Ethylbenzene, Xylenes (BTEX).

A sample of the treated groundwater discharge was collected on August 15, 2005 for analysis of PCP. In addition, the pH of the discharge was monitored throughout the quarter. Sampling results indicate that the PCP concentration was nondetect and pH ranged from 8.3 to 8.7 during third quarter 2005. Currently, Landau Associates and Time Oil Co. are monitoring the discharge concentration of PCP on a monthly basis and pH readings are collected at least twice a month. Samples collected on July 7, 2005 and August 14, 2005 indicate that no BTEX constituents were detected. The PCP analytical results for the treatment system discharge are provided in Appendix B, Table B-1.

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4.0 FUTURE GROUNDWATER TASKS

4.1 GROUNDWATER MONITORING

The fourth quarter 2005 groundwater sampling event was conducted during the week of November 14, 2005. The groundwater monitoring and analytical program for the fourth quarter 2005 event includes the following: 1) monitoring at Phase II quarterly well locations per the approved modifications outlined in Appendix D; 2) monitoring of ISCO injection monitoring wells as per the ISCO work plan (Landau Associates 2004b); and 3) monitoring of Phase III RI monitoring wells per the approved modifications outlined in Appendix D. In October 2005, Landau Associates requested a reduction in sampling frequency at a select number of Phase II and Phase III wells (Landau Associates 2005b). DEQ approved the request, with the incorporation of additional wells adjacent to the PCP plume area and in the Bell Terminal for a single sampling event associated with groundwater sampling on the adjacent Schnitzer property. Both letters are included in Appendix D. The results for the Phase II and Phase III fourth quarter 2005 groundwater monitoring event and the fourth quarter groundwater interim action status will be provided in the *Fourth Quarter 2005 Groundwater Monitoring and Groundwater Interim Action Status Report.*

4.2 GROUNDWATER RECOVERY INTERIM ACTION

The groundwater recovery interim action system appears to exhibit continued effectiveness at limiting further migration of impacted groundwater in the upper and lower zones. The groundwater recovery system will continue to be operated in the fourth quarter of 2005. The effectiveness of the current onsite treatment system methodology will be evaluated relative to the potential effectiveness of a granular activated carbon (GAC) treatment system. A cost-benefit analysis will be conducted to assess the potential replacement of the current treatment system with a GAC system.

4.3 ISCO GROUNDWATER INTERIM ACTION

The ISCO interim action appears to be beneficial in the reduction of PCP concentrations in the upper zone groundwater; therefore, an additional ISCO injection event is planned in the first quarter 2006 when water elevations rise. The higher elevation of the groundwater table should allow for better distribution of ISCO reagents into the upper zone groundwater. The number and proposed locations for the injection points will be identified following a review of the fourth quarter 2005 groundwater analytical data.

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5.0 USE OF THIS REPORT

This quarterly groundwater report has been prepared by Landau Associates for the exclusive use of Time Oil Co. for specific application to the Northwest Terminal. Services for this project were conducted in accordance with the Environmental Services Contract between Time Oil Co. and Landau Associates, Inc. Landau Associates has performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by Time Oil Co. or others in connection with any site other than the Northwest Terminal without Landau Associates' written permission shall be at the sole risk of Time Oil Co. and without liability to Landau Associates.

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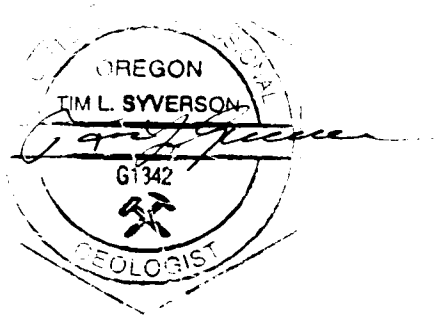

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2
4			S177C		T176O		U235I		V224S		W371J		Y336B		Z225N		Z960F		AH49A		AU36B		BC27M		BH96P		BR55J		CB68B
5			4/1/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		2/16/00		5/23/00		8/29/00
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	0.25	U	**0.17**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	**0.6**	J1	1.0	U	1.0	U	1.0
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**5.6**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.48**		0.25	U	0.25	U	**0.36**		**0.28**		0.25
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2	
4			CL03J		CT67G		DE68K		DM30N		DW37C		ED23B		EM75K		ES04H		EY88D		FF88P		FL41G		FU50D		FY64E		0402099-02	
5			11/10/00		2/15/01		6/5/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		11/11/02		2/13/03		5/7/03		8/29/03		10/20/03		2/19/04	
7	**CHLORINATED PHENOLS (µg/L)**																													
8	**EPA Method SW8040**																													
9	Pentachlorophenol	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.27	U	0.25	U	0.26	U	0.25	U	0.5	U	0.5	U	0.475	U
10	2,4,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																														
17	**SEMIVOLATILES (µg/L)**																													
18	**EPA Method SW8270**																													
19	Phenol	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.1	U	2.2	U	2	U	2	U	2	U	2	U	1.95	U
20	4-Methylphenol	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	9.73	U
21	Isophorone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.2	U	3.3	U	3.1	U	3	U	3	U	3	U	2.92	U
23	Benzoic Acid	U	10	U	10	U	10	U	10	U	50	U	50	U	50	U	53	U	56	U	51	U	50	U	50	U	10	U	19.5	U
24	Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
25	2-Methylnaphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.6	U	5.1	U	5	U	5	U	5	U	4.86	U
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.6	U	5.1	U	5	U	5	U	5	U	4.86	U
28	Acenaphthene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
30	Fluorene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.973	U
31	Pentachlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.6	U	5.1	U	5	U	5	U	5	U	4.86	U
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.0	U	4.3	U	4.4	U	1	U	1	U	**6.1**		1	U	0.973	U
33																														
34	**VOLATILES (µg/L)**																													
35	**EPA Method SW8260**																													
36	Acetone	U	5.0	U	5.0	U	5.0	U	5.0	U	**7.2**		5.0	U	5.0	U	5	U	5	U	5	U	**12**		5	U	5	U	50	U
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
38	2-Butanone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	10	U
39	Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4	U
40	Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
45	o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
49	n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
50	tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
54	Naphthalene	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	1	U
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U
56																														
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																													
58	**Method OR-DEQ**																													
59	**TPH-Diesel**	U	0.25	U	0.25	U	NA		NA		NA		0.25	U	NA		NA		NA		0.25	U	NA		NA		NA		NA	
60	**TPH-D Motor Oil**		0.50	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		B2		B2		B2
4		0408019-03		0502102-03		P5H1000-14
5		8/03/04		2/23/05		08/24/05
6						
7	**CHLORINATED PHENOLS (µg/L)**					
8	**EPA Method SW8040**					
9	Pentachlorophenol	0.5	U	0.506	U	0.495 U
10	2,4,6-Trichlorophenol	NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA
16						
17	**SEMIVOLATILES (µg/L)**					
18	**EPA Method SW8270**					
19	Phenol	2.01	U	2.06	U	5.00 U
20	4-Methylphenol	10	U	10.3	U	5.00 U
21	Isophorone	1	U	1.03	U	5.00 U
22	2,4-Dimethylphenol	3.01	U	3.1	U	10.0 U
23	Benzoic Acid	20.1	U	20.6	U	50.0 U
24	Naphthalene	1	U	1.03	U	5.00 U
25	2-Methylnaphthalene	1	U	1.03	U	5.00 U
26	2,4,6-Trichlorophenol	5.02	U	5.16	U	5.00 U
27	2,4,5-Trichlorophenol	5.02	U	5.16	U	5.00 U
28	Acenaphthene	1	U	1.03	U	5.00 U
29	Dibenzofuran	1	U	1.03	U	5.00 U
30	Fluorene	1	U	1.03	U	5.00 U
31	Pentachlorophenol	5.02	U	5.16	U	5 UJ
32	bis(2-Ethylhexyl)phthalate	1	U	1.03	U	10.0 U
33						
34	**VOLATILES (µg/L)**					
35	**EPA Method SW8260**					
36	Acetone	50	U	50	U	25.0 U
37	Carbon Disulfide	2	U	2	U	10.0 U
38	2-Butanone	10	U	10	U	10.0 U
39	Benzene	0.3	U	0.3	U	1.00 U
40	Bromoform	1	U	1	U	1.00 U
41	Toluene	1	U	1	U	1.00 U
42	Ethylbenzene	1	U	1	U	1.00 U
43	Styrene	1	U	1	U	1.00 U
44	m,p-Xylene	2	U	2	U	2.00 U
45	o-Xylene	1	U	1	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1.00 U
48	Isopropylbenzene	1	U	1	U	2.00 U
49	n-Propylbenzene	1	U	1	U	1.00 U
50	tert-Butylbenzene	1	U	1	U	1.00 U
51	sec-Butylbenzene	1	U	1	U	1.00 U
52	4-Isopropyltoluene	1	U	1	U	2.00 U
53	n-Butylbenzene	1	U	1	U	5.00 U
54	Naphthalene	1	U	1	U	2.00 U
55	Methyl tert-butyl ether	1	U	1	U	1.00 U
56						
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**					
58	**Method OR-DEQ**					
59	**TPH-Diesel**	NA		NA		0.250 U
60	**TPH-D Motor Oil**	NA		NA		0.500 U
61	**TPH-Gasoline**	NA		NA		0.08 U
62						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2
4			S177C		T176O		U235I		V224S		W371J		Y336B		Z225N		Z960F		AH49A		AU36B		BC27M		BH96P		BR55J		CB68B
5			4/1/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		2/16/00		5/23/00		8/29/00
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.008**		**0.008**		0.05	U	0.05	U	**0.014**		**0.022**		**0.010**		**0.026**		**0.010**		**0.012**		**0.012**		**0.017**		**0.012**		**0.015**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	0.004	U	**0.013**		0.004	U	0.004	U	**0.005**		0.004	U	**0.007**	J	**0.006**		**0.005**		0.006	U	**0.007**		**0.011**		**0.011**
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	**66.1**		**65.6**		**40.1**		**41.8**		NA		NA		NA		**38.8**		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**45.2**		**47**		**14.4**		**13.5**		NA		NA		NA		**11.9**		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**2.0**		**1.9**		**4.7**		**4.5**		NA		NA		NA		**4.5**		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**18.8**		**19.6**		**11.5**		**9.59**		NA		NA		NA		**9.03**		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**370**		**380**	J2	**38**		**190**		NA		NA		NA		**170**		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**370**		**380**	J2	**38**		**190**		NA		NA		NA		**170**		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**420**	J2	**210**		**190**		**180**		**200**		**230**		**180**		**170**		**210**		**160**		**180**		**190**		**220**
81	74	Chloride (mg/L) (EPA 325.2)	**7.6**		**9.1**		**2.6**		**1.9**		**3.4**		**1.6**		**2.7**		**1.0**		**3.9**		**2.7**		**3.9**		**3.6**		**2.8**		**2.5**
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	**0.027**		**0.018**	J2	NA		NA		NA		**0.012**		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.02	J	**0.028**	J2	**0.32**		0.010	UJ	NA		NA		NA		**0.019**		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.019**		0.010	U	**0.35**		**0.018**	J2	NA		NA		NA		**0.031**		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	2.5	U	2.5	U	2.5	U	2.5	U	NA		NA		NA		**3.8**		NA		NA		NA		NA		NA		NA
86	79																												

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2	
4			CL03J		CT67G		DE68K		DM30N		DW37C		ED23B		EM75K		ES04H		EY88D		FF88P		FL41G		FU50D		FY64E		0402099-02	
5			11/10/00		2/15/01		6/5/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		11/11/02		2/13/03		5/7/03		8/29/03		10/20/03		2/19/04	
63	**PRIORITY POLLUTANT**																													
64	**METALS (mg/L)**																													
65	Arsenic (7060)		**0.006**		**0.006**		**0.005**		**0.010**		**0.009**		**0.011**		**0.010**		**0.013**		0.05	U	**0.027**		**0.048**		**0.01**		**0.002**		**0.005**	
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0087**	
67	Copper (6010)	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.01	U
68	Lead (7421)	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.0001	U
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U
70	Zinc (6010)		0.006	U	0.006	U	**0.009**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.01**		**0.016**	J	0.006	U	0.006	U	0.01	U
71																														
72	**MAJOR IONS AND CONVENTIONALS**																													
73	Calcium (mg/L) (6010)		NA		**43.6**		**48.0**		**42.0**		**56.4**	J	**43.3**		NA		NA		NA		**46.7**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)		NA		**19.4**		**23.8**		**18.3**		**32.6**	J	**14.5**		NA		NA		NA		**20.5**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)		NA		**3.4**		**3.4**		**3.9**		**2.4**		**5.2**		NA		NA		NA		**3.9**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)		NA		**11.0**		**12.1**		**11.4**		**15.0**		**9.84**		NA		NA		NA		**11.3**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		**200**		NA		NA		NA		**240**		NA		NA		NA		**270**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		1.0	U	NA		NA		NA		**1.0**	U	NA		NA		NA		1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		**200**		NA		NA		NA		**240**		NA		NA		NA		**270**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**240**		**260**		**260**		**270**		**280**		**240**		**190**		**210**		**360**		**250**		**220**		**240**		**250**		**218**	
81	Chloride (mg/L) (EPA 325.2)		**3.2**		**3.9**	J	**3.2**		**6.1**		**3.9**		**3.3**		**5.1**		**5.2**		**4.3**		**5.9**		**3.5**		**2.9**		**3.1**		**2.64**	
82	N-Nitrate (mg-N/L) (Calculated)		NA		**0.81**		NA		NA		NA		**0.73**		NA		NA		NA		**0.2**		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		0.010	J	NA		NA		NA		**0.021**		NA		NA		NA		**0.023**		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		**0.81**		NA		NA		NA		**0.75**	J	NA		NA		NA		**0.22**		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		**4.1**		NA		NA		NA		**2.6**		NA		NA		NA		**3**		NA		NA		NA		NA	
86																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		B2		B2		B2
4		0408019-03		0502102-03		P5H1000-14
5		8/03/04		2/23/05		08/24/05
63	**PRIORITY POLLUTANT**					
64	**METALS (mg/L)**					
65	Arsenic (7060)	**0.00363**		0.001	U	**0.0522**
66	Chromium (6010)	**0.0161**		**0.0076**		**0.0015**
67	Copper (6010)	0.01	U	0.01	U	**0.00169**
68	Lead (7421)	0.0001	U	0.0001	U	0.001 U
69	Nickel (6010)	0.005	U	**0.0172**		**0.00369**
70	Zinc (6010)	0.01	U	0.01	U	0.01 U
71						
72	**MAJOR IONS AND CONVENTIONALS**					
73	Calcium (mg/L) (6010)	NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**286**		**262**		**313**
81	Chloride (mg/L) (EPA 325.2)	**3.51**		**3.85**		**2.95**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA
86						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2
4			S177C		T176O		U235I		V224S		W371J		Y336B		Z225N		Z960F		AH49A		AU36B		BC27M		BH96P		BR55J		CB68B
5			4/1/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		2/16/00		5/23/00		8/29/00
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.75		6.73		7.28		6.96		6.61		6.43		6.48		7.16		6.27		6.61		6.88		6.70		6.51		7.00
89	82	Temperature (° C) (avg)	13.4		16.3		13.9		14.4		13.0		15.5		12.9		13.3		14.1		15.0		12.6		13.4		16.1		15.6
90	83	Conductivity (um/hos)	769		675		297		385		494		643		234		357		253		285		305		653		665		346
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		1.44		1.50		3.24		3.13		1.53		2.93		1.98		1.09		0.67		1.16
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120	113																												
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2	
4			CL03J		CT67G		DE68K		DM30N		DW37C		ED23B		EM75K		ES04H		EY88D		FF88P		FL41G		FU50D		FY64E		0402099-02	
5			11/10/00		2/15/01		6/5/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		11/11/02		2/13/03		5/7/03		8/29/03		10/20/03		2/19/04	
87	**FIELD PARAMETERS**																													
88	pH (avg)		5.53		6.97		6.80		6.96		6.71		6.90		7.01		7.21		6.8		7.06		7.25		6.96		6.71		6.52	
89	Temperature (° C) (avg)		13.3		13.5		14.0		16.3		12.8		13.1		15.3		15.9		14.1		14.4		15.2		14.9		14.9		14.8	
90	Conductivity (um/hos)		319		315		611		608		384		362		272		272		595		598		319		340		560		301	
91	Dissolved oxygen (mg/L) (avg)		2.17		1.81		1.59		1.98		4.27		7.72		4.80		1.09		2.52		0		4.22		1.75		0.56		3.24	
92																														
93	**DIOXINS AND FURANS (ng/L)**																													
94	**Method 8290**																													
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		B2		B2		B2
4		0408019-03		0502102-03		P5H1000-14
5		8/03/04		2/23/05		08/24/05
87	**FIELD PARAMETERS**					
88	pH (avg)	7.76		7.06		6.77
89	Temperature (° C) (avg)	15.3		14.4		16.2
90	Conductivity (um/hos)	414		190		370
91	Dissolved oxygen (mg/L) (avg)	NM		2.31		NM
92						
93	**DIOXINS AND FURANS (ng/L)**					
94	**Method 8290**					
95	2,3,7,8-TCDF	NA		NA		NA
96	Total TCDF	NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA
98	Total TCDD	NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA
101	Total PeCDF	NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA
103	Total PeCDD	NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA
108	Total HxCDF	NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA
112	Total HxCDD	NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA
115	Total HpCDF	NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA
117	Total HpCDD	NA		NA		NA
118	OCDF	NA		NA		NA
119	OCDD	NA		NA		NA
120						
121						
122						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2
4			S177C		T176O		U235I		V224S		W371J		Y336B		Z225N		Z960F		AH49A		AU36B		BC27M		BH96P		BR55J		CB68B
5			4/1/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/21/99		12/8/99		2/16/00		5/23/00		8/29/00
6																													
123	114	**PAHs (µg/L)**																											
124	115	**EPA Method SW8270 SIM**																											
125	116	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	117	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	118	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128	119	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	120	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	121	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131	122	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2		B2	
4			CL03J		CT67G		DE68K		DM30N		DW37C		ED23B		EM75K		ES04H		EY88D		FF88P		FL41G		FU50D		FY64E		0402099-02	
5			11/10/00		2/15/01		6/5/01		8/14/01		11/28/01		2/26/02		6/25/02		08/28/02		11/11/02		2/13/03		5/7/03		8/29/03		10/20/03		2/19/04	
6																														
123	**PAHs (µg/L)**																													
124	**EPA Method SW8270 SIM**																													
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		B2		B2		B2
4		0408019-03		0502102-03		P5H1000-14
5		8/03/04		2/23/05		08/24/05
123	**PAHs (µg/L)**					
124	**EPA Method SW8270 SIM**					
125	Naphthalene	NA		NA		**0.102**
126	2-Methylnaphthalene	NA		NA		NA
127	Acenaphthylene	1	U	NA		0.100 U
128	Acenaphthene	NA		NA		0.100 U
129	Fluorene	NA		NA		0.100 U
130	Anthracene	1	U	NA		0.100 U
131	Dibenzofuran	NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
								Dup of G1A				Dup of G1A															
		G1A		G1A		G1A		G1B		G1A		S		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
		S177E		T176H		U258C		U258A		V224T		V224L		W391G		Y313D		Z225C		Z960O		AH27J		AU45F		BC27E	
		4/2/97		7/15/97		10/23/97		10/23/97		1/29/98		1/29/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99	
1	**CHLORINATED PHENOLS (µg/L)**																										
2	**EPA Method SW8040**																										
3	Pentachlorophenol	**66**		**170**		**25**		**21**		**99**		**96**		**0.16**	J1	**0.37**		0.25	U	**0.28**		0.25	U	0.25	U	0.25	U
4	2,4,6-Trichlorophenol	**0.25**		**5.1**		**0.58**		**0.59**		**1.8**	J2	**1.3**	J2	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
5	2,3,6-Trichlorophenol	**0.40**		0.91	U	0.25	U	0.25	U	**0.26**		**0.20**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
6	2,4,5-Trichlorophenol	0.49	U	1.7	U	0.35	U	1.0	U	**1.1**		**0.86**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**3.4**		**21**		**2.5**		**2.3**		**5.4**		**5.1**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
9	2,3,4,5-Tetrachlorophenol	**0.49**		**3.6**		**0.50**		**0.49**		**0.50**		**0.41**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
10																											
11	**SEMIVOLATILES (µg/L)**																										
12	**EPA Method SW8270**																										
13	Phenol	2.0	U	**7.5**		3.4	U	2.5	U	2.0	U	2.0	U	**2.3**		**6.0**		2.0	U	2.0	U	**3.2**		**10**		2.0	U
14	4-Methylphenol	1.0	U	**2.2**		1.7	U	1.2	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**15**		1.0	U	1.0	U
15	Isophorone	1.0	U	1.0	U	1.7	U	1.2	U	**1.2**		**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
16	2,4-Dimethylphenol	3.0	U	3.0	U	5.2	U	3.8	U	3.0	U	**3.3**		**11**	J2	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
17	Benzoic Acid	10	U	10	U	17	U	12	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	**16**		10	U
18	Naphthalene	**9.7**		**14**		**11**		**11**		30	J2	**23**	J2	**8.4**	J2	**9.0**		**1.6**		**2.4**		**15**		**6.4**		**3.0**	
19	2-Methylnaphthalene	**29**		**37**		**33**		**35**		**44**	J2	**30**	J2	**19**	J2	**25**		**7.2**		**14**		**23**		**16**		**12**	
20	2,4,6-Trichlorophenol	5.0	U	**9.6**		8.6	U	6.2	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
21	2,4,5-Trichlorophenol	5.0	U	**5.6**		8.6	U	6.2	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
22	Acenaphthene	1.0	U	1.0	U	1.7	U	1.2	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
23	Dibenzofuran	1.0	U	1.0	U	1.7	U	1.2	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
24	Fluorene	1.0	U	1.0	U	1.7	U	1.2	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	Pentachlorophenol	**65**		**180**		**34**		**37**		**4.3**	J1	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.7	U	**2.1**		1.0	U	**1.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
27																											
28	**VOLATILES (µg/L)**																										
29	**EPA Method SW8260**																										
30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**6.8**		5.0	U	5.0	U	5.0	U	**14**		**16**	M	5.0	U
31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	150	J	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**36**		**22**		5.0	U
33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.7**		1.0	U
34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
35	Toluene	1.0	U	**1.2**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.3**		1.0	U	1.0	U
36	Ethylbenzene	31		**49**		**74**	J2	**59**	J2	**28**		**32**		**34**		**42**		**3.1**		1.0	U	**81**		**7.4**		**2.3**	
37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	m,p-Xylene	**51**		**74**		**160**	J2	**120**	J2	**74**		**89**		**74**		**93**		**5.7**		**2.0**		**120**		**24**		**1.5**	
39	o-Xylene	**3.4**		**5.2**		**10**		**8.3**		**4.1**		**4.1**		1.0	U	**2.5**		1.0	U	1.0	U	**5.6**		1.0	U	1.0	U
40	1,3,5-Trimethylbenzene	**36**		**58**		**120**	J2	**85**	J2	**59**		**60**		**38**		**52**		**3.2**		**4.2**		**35**		**20**		**11**	
41	1,2,4-Trimethylbenzene	**130**		**150**		**350**	J2	**250**	J2	140		**160**		**120**		**99**		**8.8**		**9.9**		**110**		**57**		**14**	
42	Isopropylbenzene	**180**		**200**		**310**	J2	**240**	J2	**130**		**140**		**200**	E	**180**		**170**		**170**		**190**		**96**		**66**	
43	n-Propylbenzene	**200**		**220**		**340**	J2	**270**	J2	**140**		**160**		**210**	E	**180**		**170**		**160**		**220**		**93**		**64**	
44	tert-Butylbenzene	**3.6**		**5.1**	J2	**6.9**		**5.7**		**3.6**		**4.0**		**5.3**	M	**6.9**		**4.6**		**4.1**		**3.9**		**3.7**		**1.7**	
45	sec-Butylbenzene	**18**		**25**		**33**		**27**		**14**		**17**		**24**		**30**	J2	**23**		**18**		**20**		**19**		**6.9**	
46	4-Isopropyltoluene	**2.8**		**3.6**		**9.2**	J2	**6.2**	J2	**4.8**		**5.6**		**4.0**		**6.5**		1.0	U	1.0	U	**2.9**		**1.3**		1.0	U
47	n-Butylbenzene	**14**	M	**19**		**26**		**22**		**12**		**14**		**19**		**23**		**15**		**11**		**15**		14	U	1.0	U
48	Naphthalene	**20**		**32**		**73**	J2	**50**	J2	**22**		**78**		**36**		**41**		**5.2**		**5.3**		**28**		**18**		5.0	U
	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49																											
50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
51	**Method OR-DEQ**																										
52	**TPH-Diesel**	**4.0**		**3.9**		**3.5**		**3.6**		**3.3**		**3.5**		**3.0**		**2.6**		**2.7**		**2.5**		**2.6**		**2.6**		**2.3**	
53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4		BH96J		BR64I		CB85G		CL03E		CT55A		DE87L		DM30A		DW37F		ED23I		EM85J		ER93D		EZ03D		FF76E		FL66D	
5		2/17/00		5/24/00		8/30/00		11/8/00		2/13/01		6/6/01		8/13/01		11/28/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03	
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.26	U	0.25	U	**0.39**		0.25	U
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.1	U	2.2	U	2.1	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.1	U	3.3	U	3.1	U	3	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	50	U	50	U	50	U	52	U	54	U	52	U	50	U
24	Naphthalene	**6.7**		**3.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
25	2-Methylnaphthalene	**24**		**14**		**7.7**		**4.1**		**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.2	U	5.4	U	5.2	U	5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.2	U	5.4	U	5.2	U	5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1.1	U	1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.2	U	5.4	U	5.2	U	5	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	**1.7**		1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.0	U	4.2	U	4.3	U	1	U	1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	5.0	U	5.0	U	5.0	U		R	5.0	U	**5.6**		5.0	U	5.0	U	**7.8**		5	U	5	U	5	U	**5.6**	M
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	**9.0**		21	U	**21**		5.0	U	**6.2**		**13**		**6.4**		**7.5**		5.0	U	**11**	M	5	U	5	U	5	U
39	Benzene	**4.4**		**1.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	1.0	U	**1.9**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.3**		1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	**1.6**		**7.9**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	**17**		**11**		**3.8**		2.4	M	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	**140**		**95**		**100**		**140**		**120**		**150**		**130**		**200**		**140**		**170**		**140**		**150**		**180**		**65**	
49	n-Propylbenzene	**130**		**90**		**92**		**130**		**110**		**140**		**120**		**190**		**120**		**150**		**110**		**130**		**150**		**49**	
50	tert-Butylbenzene	**4.8**		**2.6**		**4.0**		**3.7**		**3.2**		**4.5**		**3.2**		**4.9**		**3.6**		**4.7**		**3.8**		**3.7**		**4.7**		**2.6**	
51	sec-Butylbenzene	**24**		**9.6**		**20**		**19**		**16**		**20**		**17**		**23**		**16**		**23**		**18**		**18**		**22**		**7.2**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**7.9**		1.0	U	1.0	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	**17**		**6.2**	M	**14**	M	**12**		**10**		14	U	**11**		**14**	M	**12**		**13**	M	**11**	M	**11**	M	**14**	M	**4.3**	M
54	Naphthalene	**13**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	**2.3**		**3.2**		**2.1**		**2.2**		**3.4**		**2.3**		**3.3**		**4.5**		**4.3**		**5.0**		**4.8**		**4.4**		**4.4**		**3.3**	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
1																		
2																		
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A
4		FU50F		FY82N		0402105-04		0406039-03		0408044-06		0411051-06		0502087-13		P5F0553-05		P5H0853-05
5		8/29/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/19/05
6																		
7	**CHLORINATED PHENOLS (µg/L)**																	
8	**EPA Method SW8040**																	
9	Pentachlorophenol	0.51	U	0.5	U	0.478	U	0.507	U	NA		0.478	U	0.509	U	0.500	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
16																		
17	**SEMIVOLATILES (µg/L)**																	
18	**EPA Method SW8270**																	
19	Phenol	2	U	2	U	2.06	U	2.13	U	2	U	2.01	U	2.09	U	5.00	U	5.00 U
20	4-Methylphenol	1	U	1	U	10.3	U	10.6	U	10	U	10.1	U	10.4	U	5.00	U	5.00 U
21	Isophorone	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	3	U	3	U	3.08	U	3.19	U	3	U	3.02	U	3.13	U	10.00	U	10.0 U
23	Benzoic Acid	51	U	10	U	20.6	U	21.3	U	20	U	20.1	U	20.9	U	50.0	U	50.0 U
24	Naphthalene	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
25	2-Methylnaphthalene	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
26	2,4,6-Trichlorophenol	5.1	U	5	U	5.14	U	5.32	U	5	U	5.04	U	5.21	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	5.1	U	5	U	5.14	U	5.32	U	5	U	5.04	U	5.21	U	5.00	U	5.00 U
28	Acenaphthene	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
29	Dibenzofuran	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
30	Fluorene	1	U	1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	5.00	U	5.00 U
31	Pentachlorophenol	5.1	U	5	U	5.14	U	5.32	U	**5.22**		5.04	U	5.21	U	10	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	**2.8**		1	U	1.03	U	1.06	U	1	U	1.01	U	1.04	U	10.00	U	10.0 U
33																		
34	**VOLATILES (µg/L)**																	
35	**EPA Method SW8260**																	
36	Acetone	**9.3**	M	**7.3**	M	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	1	U	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	**10**	M	**6.7**	M	10	U	10	U	10	U	**12**		10	U	10.00	U	10.0 U
39	Benzene	1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	**1.06**		1.00	U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	1	U	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	1	U	1	U	**1.4**		**1.09**		1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	Isopropylbenzene	**180**		**150**		**67.2**		**105**		**118**		**86.6**		**218**		**146**		**104**
49	n-Propylbenzene	**160**		**130**		**57.1**		**112**		**99.6**		**114**		**247**		**115**		**80.1**
50	tert-Butylbenzene	**5.1**		**3.5**		1	U	**5.1**		**2.94**		**3.89**		**7.49**		**3.84**		**3.71**
51	sec-Butylbenzene	**23**		**17**		**7.93**		**27.5**		**16.8**		**24.5**		**34.4**		**15.4**		**11.5**
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	**14**		**10**		**4.23**		**15**		**8.97**		**14**		**18.8**		**9.15**		**6.48**
54	Naphthalene	5	U	5	U	1	U	1	U	**2.49**		1	U	**5.45**		2.00	U	2.00 U
55	Methyl tert-butyl ether	NA		NA		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56																		
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																	
58	**Method OR-DEQ**																	
59	**TPH-Diesel**	**3.7**		**2.2**		**2.39**	J	**3.98**		**3.25**		**3.13**		**3.6**		**0.388**		**0.496**
60	**TPH-D Motor Oil**	NA		0.5	U	0.491	UJ	0.536	U	0.507	U	0.502	U	0.501	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		**0.439 J**
62																		

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2									Dup of G1A				Dup of G1A															
3			G1A		G1A		G1A		G1B		G1A		S		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4			S177E		T176H		U258C		U258A		V224T		V224L		W391G		Y313D		Z225C		Z960O		AH27J		AU45F		BC27E	
5			4/2/97		7/15/97		10/23/97		10/23/97		1/29/98		1/29/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.031**		**0.034**		0.05	U	0.05	U	0.05	U	0.05	U	**0.039**		**0.039**		**0.10**		**0.041**		**0.032**		**0.040**		**0.039**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.008**		0.005	U
67	60	Copper (6010)	0.002	U	0.002	U	**0.002**		**0.003**		**0.004**		**0.004**		0.002	U	**0.004**		**0.004**		0.002	U	0.002	U	**0.009**		**0.003**	
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.02	U	0.02	U	**0.001**		**0.005**		**0.002**		0.001	U	**0.003**		**0.007**		**0.001**	
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.02	U	0.01	U
70	63	Zinc (6010)	0.004	U	0.004	U	**0.024**		**0.024**		**0.008**		**0.010**		**0.005**	J2	**0.013**		**0.012**		**0.011**	J	0.009	U	**0.020**		0.008	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**59.1**		**51**		**53.5**		**53.0**		**46.7**		**46.4**		NA		NA		NA		**55.5**		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**21.6**		**19.1**		**17.9**		**17.6**		**15.8**		**15.7**		NA		NA		NA		**19.5**		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**0.8**		**0.7**		**6.8**		**7.6**		**1.5**		**1.5**		NA		NA		NA		**1.0**		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**11.5**		**10.5**		**15.2**		**15.4**		**10.4**		**10.2**		NA		NA		NA		**11.0**		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**260**		**230**		**210**		**210**		**250**		**210**		NA		NA		NA		**240**		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**260**		**230**		**210**		**210**		**250**		**210**		NA		NA		NA		**240**		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**300**	J2	**270**		**260**		**230**		**270**		**300**		**290**		**260**		**340**		**670**		**580**		**420**	
81	74	Chloride (mg/L) (EPA 325.2)	**13**		**14**		**14**		**13**		**13**		**12**		**12**		**11**		**12**		**12**		**9.1**		**11**		**9.3**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	0.010	U	0.010	U	**0.022**	J2	**0.024**	J2	NA		NA		NA		**0.010**		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.036**	J	**0.042**	J2	**0.013**		**0.019**		**0.011**	J2	0.010	UJ	NA		NA		NA		**0.015**		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.024**		0.010	U	**0.020**		**0.020**		**0.033**	J2	**0.024**	J2	NA		NA		NA		**0.025**		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	3.7		NA		NA		NA		**4.7**		NA		NA		NA	
86	79																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4		BH96J		BR64I		CB85G		CL03E		CT55A		DE87L		DM30A		DW37F		ED23I		EM85J		ER93D		EZ03D		FF76E		FL66D	
5		2/17/00		5/24/00		8/30/00		11/8/00		2/13/01		6/6/01		8/13/01		11/28/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.036**		**0.036**		**0.036**		**0.033**		**0.035**		**0.036**		**0.040**		**0.034**		**0.035**		**0.037**		**0.039**		0.05	U	**0.024**		**0.028**	
66	Chromium (6010)	0.005	U	0.005	U	**0.005**		0.005	U	0.005	U	0.005	U	**0.013**		**0.005**		**0.005**		0.005	U	0.005	U	**0.008**		0.005	U	0.005	U
67	Copper (6010)	0.002	U	0.002	U	**0.015**		**0.004**		0.002	U	**0.003**		**0.017**		**0.005**	J	**0.005**		**0.002**		**0.004**		**0.01**		**0.01**		0.002	U
68	Lead (7421)	0.001	U	**0.001**		**0.004**		**0.003**		**0.002**		**0.001**		**0.008**		**0.004**		**0.002**		0.001	U	**0.003**		0.02	U	0.001	U	0.001	U
69	Nickel (6010)	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U
70	Zinc (6010)	0.006	U	0.006	U	**0.014**		**0.009**		**0.008**		**0.009**		**0.033**		**0.015**	J	**0.008**		**0.008**		**0.034**		**0.02**		**0.013**		**0.011**	
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		**65.6**		**60.3**		**67.9**		**56.9**	J	**62.8**		NA		NA		NA		**61.7**		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		**21.6**		**20.2**		**24.9**		**18.7**	J	**21.1**		NA		NA		NA		**22**		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		**1.8**		**3.4**		**2.4**		**3.6**		**3.2**		NA		NA		NA		**7**		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		**11.2**		**12.1**		**13.5**		**13.4**		**13.0**		NA		NA		NA		**17**		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		**310**		NA		NA		NA		**290**		NA		NA		NA		**300**		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		**310**		NA		NA		NA		**290**		NA		NA		NA		**300**		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**450**		**390**		**460**		**380**		**350**	J	**340**	J	**330**	J	**330**		**380**		**320**		**330**		**430**		**350**		**350**	
81	Chloride (mg/L) (EPA 325.2)	**18**		**8.4**		**6.7**		**8.2**		**8.8**		**8.2**		**10**		**3.3**		**26**		**5.1**		**5**		**4.8**		**3.6**		**6**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		**0.010**		NA		NA		NA		0.010	U	NA		NA		NA		**0.045**		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.074**		NA		NA		NA		**0.023**		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		**0.010**		NA		NA		NA		**0.057**	J	NA		NA		NA		**0.068**		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		**4.7**		NA		NA		NA		**2.5**		NA		NA		NA		2.5	U	NA	
86																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
1																		
2																		
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A
4		FU50F		FY82N		0402105-04		0406039-03		0408044-06		0411051-06		0502087-13		P5F0553-05		P5H0853-05
5		8/29/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/19/05
63	**PRIORITY POLLUTANT**																	
64	**METALS (mg/L)**																	
65	Arsenic (7060)	**0.036**		**0.035**		**0.032**		**0.033**		**0.0293**		**0.0295**		**0.0303**		**0.0424**		**0.031**
66	Chromium (6010)	**0.006**		**0.01**		**0.0077**		**0.0155**		**0.0156**		**0.0203**		**0.0053**		**0.00212**		**0.00212**
67	Copper (6010)	**0.004**		**0.007**		**0.0346**		0.01	U	0.01	U	0.01	U	0.01	U	**0.00334**		**0.00614**
68	Lead (7421)	0.001	U	**0.003**		**0.0004**		**0.0004**		**0.000658**		**0.00395**		**0.000572**		**0.00139**		**0.00179**
69	Nickel (6010)	**0.05**		**0.08**		**0.0997**		**0.0955**		**0.13**		**0.13**		**0.101**		**0.109**		**0.0941**
70	Zinc (6010)	**0.009**		**0.021**		0.01	U	**0.0102**		0.01	U	**0.0243**		0.01	U	**0.0101**		0.01 U
71																		
72	**MAJOR IONS AND CONVENTIONALS**																	
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**400**		**310**		**280**		**364**		**302**		**339**		**328**		**350**		**353**
81	Chloride (mg/L) (EPA 325.2)	**7.3**		**8.4**		**7.79**		**6.83**		**6.46**		**6.51**		**4.79**		**5.37**		**4.95**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
86																		

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2									Dup of G1A				Dup of G1A															
3			G1A		G1A		G1A		G1B		G1A		S		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4			S177E		T176H		U258C		U258A		V224T		V224L		W391G		Y313D		Z225C		Z960O		AH27J		AU45F		BC27E	
5			4/2/97		7/15/97		10/23/97		10/23/97		1/29/98		1/29/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.77		6.67		6.82		6.82		6.73		6.70		6.43		6.50		6.30		6.87		5.75		6.67		6.45	
89	82	Temperature (° C) (avg)	14.1		16.0		14.5		14.5		14.2		14.0		13.8		15.2		12.6		13.0		15.5		17.9		13.0	
90	83	Conductivity (um/hos)	625		585		496		496		473		480		444		680		127		559		825		850		742	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		NA		2.18		0.93		1.58		1.54		1.83		0.68		2.00	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121																												
122																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4		BH96J		BR64I		CB85G		CL03E		CT55A		DE87L		DM30A		DW37F		ED23I		EM85J		ER93D		EZ03D		FF76E		FL66D	
5		2/17/00		5/24/00		8/30/00		11/8/00		2/13/01		6/6/01		8/13/01		11/28/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	6.68		6.47		5.92		5.84		6.42		6.83		6.79		6.58		6.64		6.48		6.69		6.76		7.18		6.92	
89	Temperature (° C) (avg)	13.9		17.2		15.0		13.7		15.2		14.4		15.5		13.4		14.3		17.5		17.7		13.7		14.4		14.9	
90	Conductivity (um/hos)	828		796		799		679		645		651		614		586		578		592		513		665		682		566	
91	Dissolved oxygen (mg/L) (avg)	0.86		0.31		0.67		0.64		1.76		1.84		1.41		4.16		7.50		2.72		0.69		1.06		1.68		2.83	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
1																		
2																		
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A
4		FU50F		FY82N		0402105-04		0406039-03		0408044-06		0411051-06		0502087-13		P5F0553-05		P5H0853-05
5		8/29/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/19/05
87	**FIELD PARAMETERS**																	
88	pH (avg)	6.69		6.64		6.7		5.4		6.22		6.74		6.67		6.59		6.61
89	Temperature (° C) (avg)	15		14.7		15.4		14.9		14.4		14.1		13.5		17.7		15.4
90	Conductivity (um/hos)	588		603		560		473		811		545		188		308		438
91	Dissolved oxygen (mg/L) (avg)	1.35		2.92		0.96		1.54		3.36		1.2		0		0.78		NM
92																		
93	**DIOXINS AND FURANS (ng/L)**																	
94	**Method 8290**																	
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
120																		
121																		
122																		

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2									Dup of G1A				Dup of G1A															
3			G1A		G1A		G1A		G1B		G1A		S		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4			S177E		T176H		U258C		U258A		V224T		V224L		W391G		Y313D		Z225C		Z960O		AH27J		AU45F		BC27E	
5			4/2/97		7/15/97		10/23/97		10/23/97		1/29/98		1/29/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99	
6																												
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		**2.5**		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		**16**		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.23**	M	NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.16**	M	NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A	
4		BH96J		BR64I		CB85G		CL03E		CT55A		DE87L		DM30A		DW37F		ED23I		EM85J		ER93D		EZ03D		FF76E		FL66D	
5		2/17/00		5/24/00		8/30/00		11/8/00		2/13/01		6/6/01		8/13/01		11/28/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03	
6																													
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU
1																		
2																		
3		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A		G1A
4		FU50F		FY82N		0402105-04		0406039-03		0408044-06		0411051-06		0502087-13		P5F0553-05		P5H0853-05
5		8/29/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/19/05
123	**PAHs (µg/L)**																	
124	**EPA Method SW8270 SIM**																	
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		1	U	NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene	NA		NA		NA		NA		1	U	NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

		C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2
		S177J		T176Q		U235K		V224P		W371L		Y314J		Z225P		Z960D		AH49D		AU22I		BC27L		BH96S		BR64E		CB49H
		4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99		12/8/99		2/16/00		5/24/00		8/29/00
1	**CHLORINATED PHENOLS (µg/L)**																											
2	**EPA Method SW8040**																											
3	Pentachlorophenol	**0.15**	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.36**		0.25	U	0.25	U	0.25
4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
10																												
11	**SEMIVOLATILES (µg/L)**																											
12	**EPA Method SW8270**																											
13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	**2.8**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
26	bis(2-Ethylhexyl)phthalate	1.1	U	**1.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
27																												
28	**VOLATILES (µg/L)**																											
29	**EPA Method SW8260**																											
30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
31	Carbon Disulfide	1.0	U	1.0	U	**44**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
49																												
50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
51	**Method OR-DEQ**																											
52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.36**		0.25	U	0.25	U	**0.28**		**0.31**		**0.28**		**0.30**		**0.38**		**0.26**
53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
55																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2	
4			CL03I		CT55E		DE68J		DM52A		DW48D		ED23D		EM85E		ES04E		EZ03L		FF76I		FL58J		FU31B		FY64I		0402105-02	
5			11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02		2/12/03		5/8/03		8/27/03		10/21/03		2/20/04	
7	**CHLORINATED PHENOLS (µg/L)**																													
8	**EPA Method SW8040**																													
9	Pentachlorophenol	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.33**		0.25	U	0.25	U	0.28	U	0.25	U	0.26	U	0.25	U	0.5	U	0.5	U	0.483	U
10	2,4,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																														
17	**SEMIVOLATILES (µg/L)**																													
18	**EPA Method SW8270**																													
19	Phenol	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U	2.2	U	2	U	2	U	2	U	2	U	1.99	U
20	4-Methylphenol	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	9.93	U
21	Isophorone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U	3.3	U	3.1	U	3	U	3	U	3	U	2.98	U
23	Benzoic Acid	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	56	U	56	U	51	U	50	U	50	U	10	U	19.9	U
24	Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
25	2-Methylnaphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.6	U	5.1	U	5	U	5	U	5	U	4.97	U
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.6	U	5.1	U	5	U	5	U	5	U	4.97	U
28	Acenaphthene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
30	Fluorene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U	0.993	U
31	Pentachlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.6	U	5.1	U	5	U	5	U	5	U	4.97	U
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.4	U	4.4	U	1	U	1	U	1	U	1	U	0.993	U
33																														
34	**VOLATILES (µg/L)**																													
35	**EPA Method SW8260**																													
36	Acetone	U	5.0	U		R	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	50	U
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
38	2-Butanone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	10	U
39	Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4	U
40	Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
45	o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
49	n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
50	tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
54	Naphthalene	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	1	U
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U
56																														
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																													
58	**Method OR-DEQ**																													
59	**TPH-Diesel**		**0.40**		**0.35**		NA		NA		NA		**0.41**		NA		NA		NA		**0.39**		NA		NA		NA		NA	
60	**TPH-D Motor Oil**		0.50	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		J2		J2		J2
4		0408019-05		0502102-01		P5H1000-17
5		8/03/04		2/23/05		08/24/05
6						
7	**CHLORINATED PHENOLS (µg/L)**					
8	**EPA Method SW8040**					
9	Pentachlorophenol	0.5	U	0.503	U	0.490 U
10	2,4,6-Trichlorophenol	NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA
16						
17	**SEMIVOLATILES (µg/L)**					
18	**EPA Method SW8270**					
19	Phenol	2.01	U	2.07	U	5.00 U
20	4-Methylphenol	10.1	U	10.4	U	5.00 U
21	Isophorone	1.01	U	1.04	U	5.00 U
22	2,4-Dimethylphenol	3.02	U	3.11	U	10.0 U
23	Benzoic Acid	20.1	U	20.7	U	50.0 U
24	Naphthalene	1.01	U	1.04	U	5.00 U
25	2-Methylnaphthalene	1.01	U	1.04	U	5.00 U
26	2,4,6-Trichlorophenol	5.04	U	5.19	U	5.00 U
27	2,4,5-Trichlorophenol	5.04	U	5.19	U	5.00 U
28	Acenaphthene	1.01	U	1.04	U	5.00 U
29	Dibenzofuran	1.01	U	1.04	U	5.00 U
30	Fluorene	1.01	U	1.04	U	5.00 U
31	Pentachlorophenol	5.04	U	5.19	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	1.01	U	1.04	U	10.0 U
33						
34	**VOLATILES (µg/L)**					
35	**EPA Method SW8260**					
36	Acetone	50	U	50	U	25.0 U
37	Carbon Disulfide	2	U	2	U	10.0 U
38	2-Butanone	10	U	10	U	10.0 U
39	Benzene	0.3	U	0.3	U	1.00 U
40	Bromoform	1	U	1	U	1.00 U
41	Toluene	1	U	1	U	1.00 U
42	Ethylbenzene	1	U	1	U	1.00 U
43	Styrene	1	U	1	U	1.00 U
44	m,p-Xylene	2	U	2	U	2.00 U
45	o-Xylene	1	U	1	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1.00 U
48	Isopropylbenzene	1	U	1	U	2.00 U
49	n-Propylbenzene	1	U	1	U	1.00 U
50	tert-Butylbenzene	1	U	1	U	1.00 U
51	sec-Butylbenzene	1	U	1	U	1.00 U
52	4-Isopropyltoluene	1	U	1	U	2.00 U
53	n-Butylbenzene	1	U	1	U	5.00 U
54	Naphthalene	1	U	1	U	2.00 U
55	Methyl tert-butyl ether	1	U	1	U	1.00 U
56						
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**					
58	**Method OR-DEQ**					
59	**TPH-Diesel**	NA		NA		NA
60	**TPH-D Motor Oil**	NA		NA		NA
61	**TPH-Gasoline**	NA		NA		NA
62						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2
4			S177J		T176Q		U235K		V224P		W371L		Y314J		Z225P		Z960D		AH49D		AU22I		BC27L		BH96S		BR64E		CB49H
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99		12/8/99		2/16/00		5/24/00		8/29/00
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.011**		**0.012**		0.05	U	0.05	U	**0.010**		**0.008**		**0.008**		**0.009**		**0.006**		**0.010**		**0.010**		**0.012**		**0.006**		**0.004**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	0.001	U	0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	0.004	U	**0.012**		0.004	U	**0.005**	J2	**0.008**		0.004	U	**0.017**	J	**0.004**		**0.005**		0.006	U	0.006	U	**0.008**		0.006
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	**63.6**		**63**		**61.6**		**57.8**		NA		NA		NA		**59.4**		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**43.1**		**43.9**		**39.7**		**37.1**		NA		NA		NA		**38.5**		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**2.4**		**2.1**		**2.5**		**2.2**		NA		NA		NA		**4.0**		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**17.7**		**17.7**		**18.1**		**17.1**		NA		NA		NA		**18.3**		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**350**		**360**	J2	**170**		**380**		NA		NA		NA		**350**		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**350**		**360**	J2	**170**		**380**		NA		NA		NA		**350**		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**410**	J2	**360**		**410**		**360**		**390**		**360**		**380**		**350**		**380**		**360**		**330**		**320**		**380**
81	74	Chloride (mg/L) (EPA 325.2)	**7.3**		**7.0**		**9.0**		**8.0**		**8.2**		**7.7**		**8.1**		**8.0**		**6.9**		**6.3**		**7.2**		**7.7**		**5.6**		**4.4**
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	**0.028**		**0.027**	J2	NA		NA		NA		0.010	U	NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.022**	J	**0.019**	J2	**0.015**		**0.013**	J2	NA		NA		NA		**0.022**		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.015**		0.010	U	**0.043**		**0.040**	J2	NA		NA		NA		**0.016**		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	2.5	U	2.5	U	2.5	U	2.5	U	NA		NA		NA		**5.7**		NA		NA		NA		NA		NA		NA
86	79																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2	
4			CL03I		CT55E		DE68J		DM52A		DW48D		ED23D		EM85E		ES04E		EZ03L		FF76I		FL58J		FU31B		FY64I		0402105-02	
5			11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02		2/12/03		5/8/03		8/27/03		10/21/03		2/20/04	
63	**PRIORITY POLLUTANT**																													
64	**METALS (mg/L)**																													
65	Arsenic (7060)		**0.008**		**0.008**		**0.010**		**0.010**		**0.008**		**0.012**		**0.005**		**0.008**		0.05	U	**0.008**		**0.005**		**0.005**		**0.004**		**0.008**	
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	**0.003**		0.002	U	0.002	U	0.002	U	0.002	U	**0.004**		0.01	U
68	Lead (7421)	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.02	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.0002**	
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U
70	Zinc (6010)	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	**0.011**		**0.009**		**0.007**		**0.008**		**0.006**		**0.006**		0.01	U
71																														
72	**MAJOR IONS AND CONVENTIONALS**																													
73	Calcium (mg/L) (6010)		NA		**53.0**		**57.1**		**49.5**		**53.9**		**55.8**		NA		NA		NA		**54.1**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)		NA		**31.3**		**33.2**		**30.0**		**28.8**		**31.7**		NA		NA		NA		**29.2**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)		NA		**1.8**		**2.1**		**2.1**		**2.6**		**2.8**		NA		NA		NA		**2.8**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)		NA		**14.5**		**15.2**		**14.8**		**14.9**		**15.9**		NA		NA		NA		**15**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		**330**		NA		NA		NA		**370**		NA		NA		NA		**310**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		**330**		NA		NA		NA		**370**		NA		NA		NA		**310**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**340**		**370**		**370**		**350**		**350**		**340**		**290**		**330**		**360**		**330**		**320**		**360**		**340**		**329**	
81	Chloride (mg/L) (EPA 325.2)		**5.1**		**5.0**		**4.2**		**5.9**		**4.3**		**5.3**		**4.8**		**4.1**		**4.6**		**4.5**		**4.6**		**3.9**		**4.1**		**4.42**	
82	N-Nitrate (mg-N/L) (Calculated)		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		**0.046**		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		0.010	U	NA		NA		NA		**0.013**		NA		NA		NA		**0.012**		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		0.010	U	NA		NA		NA		**0.019**	J	NA		NA		NA		**0.058**		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		**5.6**		NA		NA		NA		**3.5**		NA		NA		NA		**5.9**		NA		NA		NA		NA	
86																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		J2		J2		J2
4		0408019-05		0502102-01		P5H1000-17
5		8/03/04		2/23/05		08/24/05
63	**PRIORITY POLLUTANT**					
64	**METALS (mg/L)**					
65	Arsenic (7060)	**0.0108**		**0.0126**		**0.0193**
66	Chromium (6010)	0.005	U	**0.0069**		**0.019**
67	Copper (6010)	0.01	U	0.01	U	**0.0314**
68	Lead (7421)	**0.000186**		0.000136	U	**0.0131**
69	Nickel (6010)	0.005	U	0.005	U	**0.0215**
70	Zinc (6010)	**0.021**		0.01	U	**0.0679**
71						
72	**MAJOR IONS AND CONVENTIONALS**					
73	Calcium (mg/L) (6010)	NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**382**		**308**		**358**
81	Chloride (mg/L) (EPA 325.2)	**4.62**		**4.51**		**4.70**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA
86						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2
4			S177J		T176Q		U235K		V224P		W371L		Y314J		Z225P		Z960D		AH49D		AU22I		BC27L		BH96S		BR64E		CB49H
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99		12/8/99		2/16/00		5/24/00		8/29/00
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.76		6.74		6.91		6.76		6.49		6.37		6.35		6.89		5.95		6.30		6.56		6.69		6.49		6.71
89	82	Temperature (° C) (avg)	13.9		16.8		13.8		14.3		13.0		16.5		12.7		14.1		14.7		14.9		12.1		13.6		16.1		14.7
90	83	Conductivity (um/hos)	721		650		551		646		663		756		399		683		565		587		631		657		637		584
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		0.73		0.77		2.50		2.54		1.96		2.18		2.42		1.12		0.90		1.10
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121																													
122																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2	
4			CL03I		CT55E		DE68J		DM52A		DW48D		ED23D		EM85E		ES04E		EZ03L		FF76I		FL58J		FU31B		FY64I		0402105-02	
5			11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02		2/12/03		5/8/03		8/27/03		10/21/03		2/20/04	
87	**FIELD PARAMETERS**																													
88	pH (avg)		5.46		6.27		6.72		6.91		6.61		6.62		6.58		6.93		6.61		7.06		6.87		6.73		6.93		6.67	
89	Temperature (° C) (avg)		12.8		13.9		13.7		15.7		13.4		13.8		15.3		15.5		14.1		14		14.5		15.1		16.1		13.9	
90	Conductivity (um/hos)		578		574		619		594		584		592		467		416		456		654		464		523		457		490	
91	Dissolved oxygen (mg/L) (avg)		1.02		0.62		1.12		1.30		3.69		6.76		3.17		1.32		1.19		0		2.73		1.76		3.09		1.64	
92																														
93	**DIOXINS AND FURANS (ng/L)**																													
94	**Method 8290**																													
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		J2		J2		J2
4		0408019-05		0502102-01		P5H1000-17
5		8/03/04		2/23/05		08/24/05
87	**FIELD PARAMETERS**					
88	pH (avg)	6.16		NM		6.38
89	Temperature (° C) (avg)	15.8		6.71		18.7
90	Conductivity (um/hos)	692		14.2		354
91	Dissolved oxygen (mg/L) (avg)	3.72		204		NM
92						
93	**DIOXINS AND FURANS (ng/L)**					
94	**Method 8290**					
95	2,3,7,8-TCDF	NA		NA		NA
96	Total TCDF	NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA
98	Total TCDD	NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA
101	Total PeCDF	NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA
103	Total PeCDD	NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA
108	Total HxCDF	NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA
112	Total HxCDD	NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA
115	Total HpCDF	NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA
117	Total HpCDD	NA		NA		NA
118	OCDF	NA		NA		NA
119	OCDD	NA		NA		NA
120						
121						
122						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2
4			S177J		T176Q		U235K		V224P		W371L		Y314J		Z225P		Z960D		AH49D		AU22I		BC27L		BH96S		BR64E		CB49H
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98		2/17/99		5/18/99		9/20/99		12/8/99		2/16/00		5/24/00		8/29/00
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1																														
2																														
3			J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2		J2	
4			CL03I		CT55E		DE68J		DM52A		DW48D		ED23D		EM85E		ES04E		EZ03L		FF76I		FL58J		FU31B		FY64I		0402105-02	
5			11/10/00		2/14/01		6/5/01		8/14/01		11/29/01		2/26/02		6/26/02		08/28/02		11/12/02		2/12/03		5/8/03		8/27/03		10/21/03		2/20/04	
6																														
123	**PAHs (µg/L)**																													
124	**EPA Method SW8270 SIM**																													
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BG	BH	BI	BJ	BK
1						
2						
3		J2		J2		J2
4		0408019-05		0502102-01		P5H1000-17
5		8/03/04		2/23/05		08/24/05
123	**PAHs (µg/L)**					
124	**EPA Method SW8270 SIM**					
125	Naphthalene	NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA
127	Acenaphthylene	1.01	U	NA		NA
128	Acenaphthene	NA		NA		NA
129	Fluorene	NA		NA		NA
130	Anthracene	1.01	U	NA		NA
131	Dibenzofuran	NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
3			LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4			S167L		T176F		U235U		V208G		W371H		Y336H		Z225D		Z960H		AH27H		AU45K		BC21AC		BH75H		BR55F	
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00	
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	**0.60**		0.25	U	0.25	U	0.25	U	0.25	U	**0.16**	J1	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	UJ
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	1.0	UJ	3.5	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		**6.5**		1.0	U	1.0	U	1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.36**		0.25	U	0.25	U	0.25	U	**0.67**		0.25	U	0.25	U	0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
3		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4		CB49B		CK77E		CT37C		DE68E		DM52D		DW48L		ED16I		EM75H		ER92D		EY88F		FF88L		FL41E		FU31D		FY64K	
5		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03	
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.26**		**0.26**		0.25	U	0.27	U	0.25	U	0.25	U	0.25	U	0.6	U	0.5	U
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.1	U	2	U	2	U	2	U	2.4	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.2	U	3	U	3	U	3	U	3.6	U	3	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	53	U	50	U	50	U	50	U	60	U	10	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5	U	5	U	5	U	6	U	5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5	U	5	U	5	U	6	U	5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1	U	1	U	1	U	1.2	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5	U	5	U	5	U	6	U	5	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.3	U	4	U	1	U	1	U	1.2	U	1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	5.0	U	7.6	U	5.0	U	5.0	U	**20**		**6.9**		**6.4**		**16**		5	U	5	U	**6.3**		5	U	**5.1**	
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
39	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
49	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	0.25	U	0.25	U	**0.27**		NA		NA		NA		0.25	U	NA		NA		NA		0.25	U	NA		NA		NA	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG
1				
2				
3		LW1D		LW1D
4		0502099-02		P5H0814-02
5		2/22/05		08/18/05
6				
7	**CHLORINATED PHENOLS (µg/L)**			
8	**EPA Method SW8040**			
9	Pentachlorophenol	NA		NA
10	2,4,6-Trichlorophenol	NA		NA
11	2,3,6-Trichlorophenol	NA		NA
12	2,4,5-Trichlorophenol	NA		NA
13	2,3,4-Trichlorophenol	NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA
16				
17	**SEMIVOLATILES (µg/L)**			
18	**EPA Method SW8270**			
19	Phenol	2.04	U	5.00 U
20	4-Methylphenol	10.2	U	5.00 U
21	Isophorone	1.02	U	5.00 U
22	2,4-Dimethylphenol	3.05	U	10.0 U
23	Benzoic Acid	20.4	U	50.0 U
24	Naphthalene	1.02	U	5.00 U
25	2-Methylnaphthalene	1.02	U	5.00 U
26	2,4,6-Trichlorophenol	5.09	U	5.00 U
27	2,4,5-Trichlorophenol	5.09	U	5.00 U
28	Acenaphthene	1.02	U	5.00 U
29	Dibenzofuran	1.02	U	5.00 U
30	Fluorene	1.02	U	5.00 U
31	Pentachlorophenol	5.09	U	5 UJ
32	bis(2-Ethylhexyl)phthalate	1.02	U	10.0 U
33				
34	**VOLATILES (µg/L)**			
35	**EPA Method SW8260**			
36	Acetone	50	U	25.0 U
37	Carbon Disulfide	2	U	10.0 U
38	2-Butanone	10	U	10.0 U
39	Benzene	0.3	U	1.00 U
40	Bromoform	1	U	1.00 U
41	Toluene	1	U	1.00 U
42	Ethylbenzene	1	U	1.00 U
43	Styrene	1	U	1.00 U
44	m,p-Xylene	2	U	2.00 U
45	o-Xylene	1	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1.00 U
48	Isopropylbenzene	1	U	2.00 U
49	n-Propylbenzene	1	U	1.00 U
50	tert-Butylbenzene	1	U	1.00 U
51	sec-Butylbenzene	1	U	1.00 U
52	4-Isopropyltoluene	1	U	2.00 U
53	n-Butylbenzene	1	U	5.00 U
54	Naphthalene	1	U	2.00 U
55	Methyl tert-butyl ether	1	U	1.00 U
56				
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**			
58	**Method OR-DEQ**			
59	**TPH-Diesel**	0.259	U	0.250 U
60	**TPH-D Motor Oil**	0.583	U	0.500 U
61	**TPH-Gasoline**	0.1	U	0.08 U
62				

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4			S167L		T176F		U235U		V208G		W371H		Y336H		Z225D		Z960H		AH27H		AU45K		BC21AC		BH75H		BR55F	
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.004**		**0.006**		0.05	U	0.05	U	**0.006**		**0.006**		**0.007**		**0.007**		**0.005**		**0.006**		**0.006**		**0.008**		**0.006**	
66	59	Chromium (6010)	0.005	U	**0.007**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.007**		**0.006**		0.005	U	0.005	U
67	60	Copper (6010)	0.002	U	**0.009**		**0.004**		**0.003**		0.002	U	0.004		0.002	U	0.002	U	0.002	U	**0.007**		**0.003**		**0.003**		0.002	U
68	61	Lead (7421)	0.001	U	**0.002**		0.02	U	0.02	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.003**		**0.001**		**0.002**		**0.001**	
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	0.004	U	**0.019**	J2	**0.021**		**0.010**		**0.008**	J2	**0.014**		**0.006**		**0.009**	J	0.007	U	**0.021**		**0.012**		**0.017**		**0.007**	
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**69.1**		**71.1**		**72.9**		**65.8**		NA		NA		NA		**63.4**		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**40.5**		**42.6**		**43.1**		**37.0**		NA		NA		NA		**38.6**		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**1.9**		**2.0**		**2.0**		**1.1**		NA		NA		NA		**1.5**		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**15.3**		**16.4**		**16.3**		**15.9**		NA		NA		NA		**15.1**		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**360**		**350**		**360**		**370**		NA		NA		NA		**360**		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**360**		**350**		**360**		**370**		NA		NA		NA		**360**		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**400**	J2	**400**		**370**	J2	**310**		**350**		**310**		**340**		**340**		**360**		**360**		**360**		**350**	
81	74	Chloride (mg/L) (EPA 325.2)	**3.2**	J	**3.0**		**3.5**		**3.3**		**3.9**		**2.0**		**2.8**		**3.6**		**1.6**		**3.2**		**3.7**		**3.5**		**10**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.012**	J	0.010	U	**0.017**		**0.021**		NA		NA		NA		0.010	U	NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	0.010	U	0.010	U	0.010	U	NA		NA		NA		**0.020**		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.012**	J	0.010	U	**0.017**		**0.021**		NA		NA		NA		**0.020**		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**3.4**	J	2.5	U	2.5	U	2.5	U	NA		NA		NA		**7.2**		NA		NA		NA		NA		NA	
86	79																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4		CB49B		CK77E		CT37C		DE68E		DM52D		DW48L		ED16I		EM75H		ER92D		EY88F		FF88L		FL41E		FU31D		FY64K	
5		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.006**		**0.005**		**0.006**		**0.005**		**0.006**		**0.006**		**0.006**		**0.005**		**0.006**		0.05	U	**0.006**		**0.006**		**0.006**		**0.006**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.005**	
67	Copper (6010)	0.002	U	**0.002**	J2	0.002	U	0.002	U	0.002	U	0.003	U	**0.005**		0.002	U	**0.005**		**0.003**		**0.004**		0.002	U	**0.002**		**0.005**	
68	Lead (7421)	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	**0.005**		**0.002**		0.02	U	0.001	U	0.001	U	0.001	U	**0.036**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	**0.011**		**0.007**		**0.007**		0.006	U	0.006	U	**0.01**		**0.011**		**0.006**		**0.011**		**0.009**		**0.014**		**0.01**	J	**0.012**		**0.019**	
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		**51.5**		**53.8**		**50.2**		**45.3**		**51.6**		NA		NA		NA		**48.2**		NA		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		**32.5**		**33.0**		**32.0**		**29.2**		**34.0**		NA		NA		NA		**30.9**		NA		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		**1.1**		**1.3**		**1.4**		**1.3**		**1.8**		NA		NA		NA		**1.4**		NA		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		**13.0**		**12.9**		**13.3**		**12.4**		**14.4**		NA		NA		NA		**13.6**		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		**300**		NA		NA		NA		**280**		NA		NA		NA		**270**		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		**300**		NA		NA		NA		**280**		NA		NA		NA		**270**		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**380**		**360**		**380**		**360**		**360**		**320**		**320**		**300**		**340**		**320**		**280**		**300**		**320**		**330**	
81	Chloride (mg/L) (EPA 325.2)	**3.2**		**3.2**		**3.0**		**3.2**		**3.1**		**2.6**		**3.0**		**1.6**		**2.6**		**2.7**		**4.9**		**3.1**		**2.2**		**2.9**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		**0.031**		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		0.010	U	NA		NA		NA		**0.010**		NA		NA		NA		0.01	U	NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		0.010	UJ	NA		NA		NA		**0.017**		NA		NA		NA		**0.031**		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		**11**		NA		NA		NA		**6.1**		NA		NA		NA		**4.6**		NA		NA		NA	
86																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG
1				
2				
3		LW1D		LW1D
4		0502099-02		P5H0814-02
5		2/22/05		08/18/05
63	**PRIORITY POLLUTANT**			
64	**METALS (mg/L)**			
65	Arsenic (7060)	**0.00637**		**0.00664**
66	Chromium (6010)	**0.0096**		**0.00208**
67	Copper (6010)	0.01	U	**0.0037**
68	Lead (7421)	**0.00363**		**0.00186**
69	Nickel (6010)	0.005	U	**0.0028**
70	Zinc (6010)	**0.0195**		**0.0138**
71				
72	**MAJOR IONS AND CONVENTIONALS**			
73	Calcium (mg/L) (6010)	NA		NA
74	Magnesium (mg/L) (6010)	NA		NA
75	Potassium (mg/L) (6010)	NA		NA
76	Sodium (mg/L) (6010)	NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**328**		**324**
81	Chloride (mg/L) (EPA 325.2)	**2.44**		**2.47**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA
86				

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4			S167L		T176F		U235U		V208G		W371H		Y336H		Z225D		Z960H		AH27H		AU45K		BC21AC		BH75H		BR55F	
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.91		6.99		7.14		6.94		6.64		6.61		6.45		6.97		6.05		6.90		6.36		6.88		6.65	
89	82	Temperature (° C) (avg)	14.1		16.5		14.4		14.1		12.7		16.0		13.8		14.6		16.4		15.9		14.1		14.7		14.7	
90	83	Conductivity (um/hos)	678		654		576		594		522		633		137		586		459		488		536		521		482	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		0.95		2.22		2.43		2.41		0.76		3.26		1.89		0.97	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121																												
122																												

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4		CB49B		CK77E		CT37C		DE68E		DM52D		DW48L		ED16I		EM75H		ER92D		EY88F		FF88L		FL41E		FU31D		FY64K	
5		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	6.55		5.47		6.64		6.96		7.11		6.86		6.36		6.86		6.96		7.03		7.12		7.31		7.05		7.07	
89	Temperature (° C) (avg)	15.2		14.0		15.0		15.6		16.3		14.3		14.1		16.0		16.0		14.9		15.5		14.6		16.7		17.1	
90	Conductivity (um/hos)	553		481		476		484		503		467		445		451		389		495		508		411		388		381	
91	Dissolved oxygen (mg/L) (avg)	1.78		2.23		1.51		1.99		1.34		4.23		4.78		5.36		1.91		2.59		0		4.2		1.54		2.51	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG
1				
2				
3		LW1D		LW1D
4		0502099-02		P5H0814-02
5		2/22/05		08/18/05
87	**FIELD PARAMETERS**			
88	pH (avg)	6.92		6.96
89	Temperature (° C) (avg)	14.4		16.4
90	Conductivity (um/hos)	223		373
91	Dissolved oxygen (mg/L) (avg)	1.99		NM
92				
93	**DIOXINS AND FURANS (ng/L)**			
94	**Method 8290**			
95	2,3,7,8-TCDF	NA		NA
96	Total TCDF	NA		NA
97	2,3,7,8-TCDD	NA		NA
98	Total TCDD	NA		NA
99	1,2,3,7,8-PeCDF	NA		NA
100	2,3,4,7,8-PeCDF	NA		NA
101	Total PeCDF	NA		NA
102	1,2,3,7,8-PeCDD	NA		NA
103	Total PeCDD	NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA
108	Total HxCDF	NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA
112	Total HxCDD	NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA
115	Total HpCDF	NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA
117	Total HpCDD	NA		NA
118	OCDF	NA		NA
119	OCDD	NA		NA
120				
121				
122				

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4			S167L		T176F		U235U		V208G		W371H		Y336H		Z225D		Z960H		AH27H		AU45K		BC21AC		BH75H		BR55F	
5			4/1/97		7/15/97		10/23/97		1/28/98		5/18/98		8/19/98		11/13/98		2/17/99		5/17/99		9/23/99		12/6/99		2/15/00		5/23/00	
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D		LW1D	
4		CB49B		CK77E		CT37C		DE68E		DM52D		DW48L		ED16I		EM75H		ER92D		EY88F		FF88L		FL41E		FU31D		FY64K	
5		8/28/00		11/7/00		2/12/01		6/4/01		8/15/01		11/29/01		2/25/02		6/25/02		08/26/02		11/11/02		2/13/03		5/7/03		8/27/03		10/21/03	
6																													
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG
1				
2				
3		LW1D		LW1D
4		0502099-02		P5H0814-02
5		2/22/05		08/18/05
6				
123	**PAHs (µg/L)**			
124	**EPA Method SW8270 SIM**			
125	Naphthalene	0.0514	U	0.100 U
126	2-Methylnaphthalene	NA		NA
127	Acenaphthylene	0.0514	U	0.100 U
128	Acenaphthene	0.0514	U	0.100 U
129	Fluorene	0.0514	U	0.100 U
130	Anthracene	0.0514	U	0.100 U
131	Dibenzofuran	NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			S177F		T176V		U235S		V224M		W391H		Y336C		Z225H		Z960M		AH76I		AU36C		BC27B		BH96K		BR55I		CB49E
5			4/2/97		7/16/97		10/23/97		1/29/98		5/20/98		8/18/98		11/13/98		2/18/99		5/19/99		9/21/99		12/7/99		2/18/00		5/23/00		8/29/00
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	**0.23**	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	1.0	U	1.0
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	**5.3**	J2	5.4	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
37	31	Carbon Disulfide	1.0	U	1.0	U	**4.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.38**		**0.32**		0.25
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			CK77G		CT55C		DE68H		DM52C		DW48A		ED34F		EM85A		ES04B		EZ03A		FF88B		FL66J		FU50A		FY82I		0402113-10
5			11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02		11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	U	0.25	U	0.25	U	0.25	U	0.25	U	**3.0**		**0.76**		0.25	U	0.29	U	0.25	U	**0.28**		0.25	U	0.55	U	**0.62**		0.489
10	2,4,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.3	U	2.2	U	2	U	2	U	2.2	U	2.2	U	1.97
20	4-Methylphenol	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	9.85
21	Isophorone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.5	U	3.3	U	3	U	3	U	3.3	U	3.3	U	2.96
23	Benzoic Acid	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	58	U	54	U	50	U	50	U	55	U	11	U	19.7
24	Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
25	2-Methylnaphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5.4	U	5	U	5	U	5.5	U	5.5	U	4.93
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.8	U	5.4	U	5	U	5	U	5.5	U	5.5	U	4.93
28	Acenaphthene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
30	Fluorene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1.1	U	1.1	U	0.985
31	Pentachlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**26**		5.0	U	5.8	U	5.4	U	5	U	5	U	5.5	U	5.5	U	4.93
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		4.0	U	4.0	U	4.7	U	4.3	U	1	U	1	U	1.1	U	1.1	U	0.985
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	U	**15**			R	**23**		**38**		**80**		**10**		**50**		**13**		5	U	**12**		**24**		**17**		**64**		50
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2
38	2-Butanone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	10
39	Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4
40	Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
41	Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
42	Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
43	Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
44	m,p-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2
45	o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
46	1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
47	1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
48	Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
49	n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
50	tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
51	sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
53	n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1
54	Naphthalene	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	1
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	U	0.25	U	**0.28**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BF	BG	BH	BI	BJ	BK
1							
2							
3			LW3D		LW3D		LW3D
4			0408044-01		0502102-06		P5H1000-18
5			8/06/04		2/23/05		08/24/05
6							
7	**CHLORINATED PHENOLS (µg/L)**						
8	**EPA Method SW8040**						
9	Pentachlorophenol	U	0.5	U	0.484	U	0.485 U
10	2,4,6-Trichlorophenol		NA		NA		NA
11	2,3,6-Trichlorophenol		NA		NA		NA
12	2,4,5-Trichlorophenol		NA		NA		NA
13	2,3,4-Trichlorophenol		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA
16							
17	**SEMIVOLATILES (µg/L)**						
18	**EPA Method SW8270**						
19	Phenol	U	2	U	1.92	U	5.00 U
20	4-Methylphenol	U	10	U	9.62	U	5.00 U
21	Isophorone	U	1	U	0.962	U	5.00 U
22	2,4-Dimethylphenol	U	3	U	2.88	U	10.0 U
23	Benzoic Acid	U	20	U	19.2	U	50.0 U
24	Naphthalene	U	1	U	0.962	U	5.00 U
25	2-Methylnaphthalene	U	1	U	0.962	U	5.00 U
26	2,4,6-Trichlorophenol	U	5	U	4.81	U	5.00 U
27	2,4,5-Trichlorophenol	U	5	U	4.81	U	5.00 U
28	Acenaphthene	U	1	U	0.962	U	5.00 U
29	Dibenzofuran	U	1	U	0.962	U	5.00 U
30	Fluorene	U	1	U	0.962	U	5.00 U
31	Pentachlorophenol	U	5	U	4.81	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	U	1	U	0.962	U	10.0 U
33							
34	**VOLATILES (µg/L)**						
35	**EPA Method SW8260**						
36	Acetone	U	50	U	50	U	25.0 U
37	Carbon Disulfide	U	2	U	2	U	10.0 U
38	2-Butanone	U	10	U	10	U	10.0 U
39	Benzene	U	0.3	U	0.3	U	1.00 U
40	Bromoform	U	1	U	1	U	1.00 U
41	Toluene	U	1	U	1	U	1.00 U
42	Ethylbenzene	U	1	U	1	U	1.00 U
43	Styrene	U	1	U	1	U	1.00 U
44	m,p-Xylene	U	2	U	2	U	2.00 U
45	o-Xylene	U	1	U	1	U	1.00 U
46	1,3,5-Trimethylbenzene	U	1	U	1	U	1.00 U
47	1,2,4-Trimethylbenzene	U	1	U	1	U	1.00 U
48	Isopropylbenzene	U	1	U	1	U	2.00 U
49	n-Propylbenzene	U	1	U	1	U	1.00 U
50	tert-Butylbenzene	U	1	U	1	U	1.00 U
51	sec-Butylbenzene	U	1	U	1	U	1.00 U
52	4-Isopropyltoluene	U	1	U	1	U	2.00 U
53	n-Butylbenzene	U	1	U	1	U	5.00 U
54	Naphthalene	U	1	U	**3.5**		2.00 U
55	Methyl tert-butyl ether	U	1	U	1	U	1.00 U
56							
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**						
58	**Method OR-DEQ**						
59	**TPH-Diesel**		NA		0.247	U	NA
60	**TPH-D Motor Oil**		NA		0.494	U	NA
61	**TPH-Gasoline**		NA		NA		NA
62							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			S177F		T176V		U235S		V224M		W391H		Y336C		Z225H		Z960M		AH76I		AU36C		BC27B		BH96K		BR55I		CB49E
5			4/2/97		7/16/97		10/23/97		1/29/98		5/20/98		8/18/98		11/13/98		2/18/99		5/19/99		9/21/99		12/7/99		2/18/00		5/23/00		8/29/00
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.010**		**0.009**		0.05	U	0.05	U	**0.018**		**0.014**		**0.015**		**0.017**		**0.017**		**0.017**		**0.017**		**0.021**		**0.019**		**0.017**
66	59	Chromium (6010)	0.005	U	**0.164**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	**0.003**		**0.164**		0.002	U	**0.004**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002
68	61	Lead (7421)	0.001	U	**0.062**		0.02	U	0.02	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	**0.12**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	**0.021**		**0.464**		**0.016**		**0.015**		**0.009**	J2	**0.011**		**0.007**		**0.012**	J	**0.009**		**0.012**		0.010	U	**0.011**		0.006	U	**0.015**
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	**54.4**		**82.6**		**58.7**		**61.3**		NA		NA		NA		**62.7**		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**26.1**		**55.4**		**27.7**		**28.4**		NA		NA		NA		**29.0**		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**3.4**		**11.5**		**3.9**		**3.7**		NA		NA		NA		**3.5**		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**51.0**		**92.1**		**35.7**		**27.8**		NA		NA		NA		**17.8**		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**370**		**340**	J2	**340**		**360**		NA		NA		NA		**350**		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**370**		**340**	J2	**340**		**360**		NA		NA		NA		**350**		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**360**	J2	**350**		**360**		**380**		**340**		**330**		**380**		**340**		**340**		**360**		**360**		**360**		**410**
81	74	Chloride (mg/L) (EPA 325.2)	**4.8**		**4.3**		**4.9**		**3.9**		**4.7**		**3.1**		**3.5**		**5.3**		**3.5**		**3.4**		**4.5**		**4.3**		**4.4**		**3.5**
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.012**		0.010	U	**0.026**		**0.023**	J2	NA		NA		NA		0.010	U	NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.012**	J	**0.012**	J2	**0.014**		0.010	UJ	NA		NA		NA		**0.021**		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.024**		0.010	U	**0.040**		**0.023**	J2	NA		NA		NA		**0.020**		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**12**	J	**4.3**		2.5	U	**2.6**		NA		NA		NA		**5.4**		NA		NA		NA		NA		NA		NA
86	79																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			CK77G		CT55C		DE68H		DM52C		DW48A		ED34F		EM85A		ES04B		EZ03A		FF88B		FL66J		FU50A		FY82I		0402113-10
5			11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02		11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)		**0.016**		**0.015**		**0.016**		**0.018**		**0.020**		**0.016**		**0.019**		**0.016**		0.05	U	**0.014**		**0.016**		**0.018**		**0.018**		**0.014**
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.010**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.006**		**0.006**
67	Copper (6010)	U	**0.004**	J2	0.002	U	0.002	U	0.002	U	0.002	U	**0.004**		**0.002**		**0.003**		**0.002**		0.002	U	**0.003**		**0.003**		**0.004**		0.01
68	Lead (7421)	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U	0.001	U	0.02	U	**0.002**		**0.001**		0.001	U	**0.001**		**0.0006**
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005
70	Zinc (6010)		**0.017**		**0.007**		0.006	U	**0.012**		**0.013**		**0.008**		**0.008**		**0.014**		0.006	U	0.006	U	**1.1**		**0.008**		**0.013**		0.01
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)		NA		**61.4**		**62.1**		**55.1**		**57.3**		**60.9**		NA		NA		NA		**57.8**		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)		NA		**27.5**		**28.4**		**25.4**		**26.3**		**27.6**		NA		NA		NA		**27.7**		NA		NA		NA		NA
75	Potassium (mg/L) (6010)		NA		**3.2**		**3.5**		**3.4**		**3.2**		**3.9**		NA		NA		NA		**3.6**		NA		NA		NA		NA
76	Sodium (mg/L) (6010)		NA		**13.4**		**13.4**		**12.6**		**13.2**		**14.5**		NA		NA		NA		**13.7**		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		**330**		NA		NA		NA		**350**		NA		NA		NA		**310**		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		**330**		NA		NA		NA		**350**		NA		NA		NA		**310**		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**350**		**360**		**370**		**310**		**330**		**390**		**310**		**380**		**380**		**350**		**330**		**330**		**290**		**350**
81	Chloride (mg/L) (EPA 325.2)		**6.9**		**3.3**		**6.2**		**4.5**		**3.4**		**3.7**		**3.4**		**3.4**		**3.5**		**4.7**		**3.3**		**2.6**		**3.6**		**3.97**
82	N-Nitrate (mg-N/L) (Calculated)		NA		**0.012**		NA		NA		NA		NA		NA		NA		NA		**0.031**		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		0.010	U	NA		NA		NA		NA		NA		NA		NA		**0.032**		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		**0.012**		NA		NA		NA		NA		NA		NA		NA		**0.063**		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)		NA		**6.5**		NA		NA		NA		**5.5**		NA		NA		NA		**4.1**		NA		NA		NA		NA
86																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BF	BG	BH	BI	BJ	BK
1							
2							
3			LW3D		LW3D		LW3D
4			0408044-01		0502102-06		P5H1000-18
5			8/06/04		2/23/05		08/24/05
63	**PRIORITY POLLUTANT**						
64	**METALS (mg/L)**						
65	Arsenic (7060)		**0.014**		**0.0157**		**0.0115**
66	Chromium (6010)		0.005	U	**0.0137**		0.001 U
67	Copper (6010)	U	0.01	U	0.01	U	0.001 U
68	Lead (7421)		**0.000392**		**0.00467**		0.001 U
69	Nickel (6010)	U	0.005	U	0.005	U	**0.0019**
70	Zinc (6010)	U	0.01	U	**0.0262**		0.01 U
71							
72	**MAJOR IONS AND CONVENTIONALS**						
73	Calcium (mg/L) (6010)		NA		NA		NA
74	Magnesium (mg/L) (6010)		NA		NA		NA
75	Potassium (mg/L) (6010)		NA		NA		NA
76	Sodium (mg/L) (6010)		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**359**		**287**		**361**
81	Chloride (mg/L) (EPA 325.2)		0.5	U	**3.39**		**3.55**
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA
86							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			S177F		T176V		U235S		V224M		W391H		Y336C		Z225H		Z960M		AH76I		AU36C		BC27B		BH96K		BR55I		CB49E
5			4/2/97		7/16/97		10/23/97		1/29/98		5/20/98		8/18/98		11/13/98		2/18/99		5/19/99		9/21/99		12/7/99		2/18/00		5/23/00		8/29/00
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.76		6.74		6.59		6.87		6.48		6.40		6.21		6.58		6.08		6.44		6.31		6.30		6.55		5.92
89	82	Temperature (° C) (avg)	12.7		16.2		13.4		16.5		13.3		14.2		13.3		12.4		13.9		15.5		12.2		12.3		16.0		14.0
90	83	Conductivity (um/hos)	706		646		627		668		504		673		159		695		635		588		657		667		627		629
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		2.21		1.60		2.22		2.47		1.99		2.10		2.44		2.05		1.49		1.04
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121																													
122																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			CK77G		CT55C		DE68H		DM52C		DW48A		ED34F		EM85A		ES04B		EZ03A		FF88B		FL66J		FU50A		FY82I		0402113-10
5			11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02		11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04
87	**FIELD PARAMETERS**																												
88	pH (avg)		5.58		6.29		6.56		6.54		6.47		6.50		6.30		6.45		6.39		6.8		6.87		6.52		6.33		6.45
89	Temperature (° C) (avg)		12.7		12.4		13.6		14.4		12.7		12.5		14.4		15.2		13.3		13.1		14.5		15.1		13.0		14.2
90	Conductivity (um/hos)		624		638		655		628		628		617		629		595		664		826		534		525		543		541
91	Dissolved oxygen (mg/L) (avg)		1.28		0.60		0.92		11.14		3.61		7.98		4.43		1.20		1.94		0		4.28		1.13		2.00		0.04
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BF	BG	BH	BI	BJ	BK
1							
2							
3			LW3D		LW3D		LW3D
4			0408044-01		0502102-06		P5H1000-18
5			8/06/04		2/23/05		08/24/05
87	**FIELD PARAMETERS**						
88	pH (avg)		5.93		6.79		6.29
89	Temperature (° C) (avg)		14.7		14		16.6
90	Conductivity (um/hos)		836		214		354
91	Dissolved oxygen (mg/L) (avg)		3.8		3.38		NM
92							
93	**DIOXINS AND FURANS (ng/L)**						
94	**Method 8290**						
95	2,3,7,8-TCDF		NA		NA		NA
96	Total TCDF		NA		NA		NA
97	2,3,7,8-TCDD		NA		NA		NA
98	Total TCDD		NA		NA		NA
99	1,2,3,7,8-PeCDF		NA		NA		NA
100	2,3,4,7,8-PeCDF		NA		NA		NA
101	Total PeCDF		NA		NA		NA
102	1,2,3,7,8-PeCDD		NA		NA		NA
103	Total PeCDD		NA		NA		NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA
108	Total HxCDF		NA		NA		NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA
112	Total HxCDD		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA
115	Total HpCDF		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA
117	Total HpCDD		NA		NA		NA
118	OCDF		NA		NA		NA
119	OCDD		NA		NA		NA
120							
121							NA
122							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			S177F		T176V		U235S		V224M		W391H		Y336C		Z225H		Z960M		AH76I		AU36C		BC27B		BH96K		BR55I		CB49E
5			4/2/97		7/16/97		10/23/97		1/29/98		5/20/98		8/18/98		11/13/98		2/18/99		5/19/99		9/21/99		12/7/99		2/18/00		5/23/00		8/29/00
6																													
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
1																													
2																													
3			LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D		LW3D
4			CK77G		CT55C		DE68H		DM52C		DW48A		ED34F		EM85A		ES04B		EZ03A		FF88B		FL66J		FU50A		FY82I		0402113-10
5			11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02		11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04
6																													
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BF	BG	BH	BI	BJ	BK
1							
2							
3			LW3D		LW3D		LW3D
4			0408044-01		0502102-06		P5H1000-18
5			8/06/04		2/23/05		08/24/05
123	**PAHs (µg/L)**						
124	**EPA Method SW8270 SIM**						
125	Naphthalene		NA		NA		NA
126	2-Methylnaphthalene		NA		NA		NA
127	Acenaphthylene		1	U	NA		NA
128	Acenaphthene		NA		NA		NA
129	Fluorene		NA		NA		NA
130	Anthracene		1	U	NA		NA
131	Dibenzofuran		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2							Dup of LW4D										Dup of LW4D				Dup of LW4D				Dup of LW4D
3			LW4D		LW4D		LW40D		LW4D		LW4D		LW4D (a)		LW4D		LW40D		LW4D		LW40D		LW4D		LW40D
4			S167I		T176M		T176L		U235N		V232F		B802035-02		W391E		W391I		Y314E		Y314B		Z225J		Z225L
5			4/1/97		7/16/97		7/16/97		10/22/97		1/30/98		1/30/98		5/20/98		5/20/98		8/17/98		8/17/98		11/14/98		11/14/98
6																									
7	1	**CHLORINATED PHENOLS (µg/L)**																							
8	2	**EPA Method SW8040**																							
9	3	Pentachlorophenol	**450**		**8200**		**7200**		**8700**		**14000**		**16500**		**4300**		**4400**		**3300**		**3300**		**2400**		**2300**
10	4	2,4,6-Trichlorophenol	**0.44**		**4.0**		**3.7**		**4.8**		**8.8**		NA		**5.3**		**5.4**		**6.3**		**6.5**		**20**	J2	**16**
11	5	2,3,6-Trichlorophenol	0.29	U	1.8	U	1.8	U	0.73	U	0.25	U	NA		0.25	U	0.25	U	0.82	U	0.90	U	0.46	U	0.47
12	6	2,4,5-Trichlorophenol	11	U	39	U	30	U	76	U	**39**		NA		**90**		**90**		51	U	51	U	60	U	26
13	7	2,3,4-Trichlorophenol	0.28	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**20**		**880**		**770**		**600**		**940**		**746**		**240**		**250**		**270**		**280**		**210**	J2	**160**
15	9	2,3,4,5-Tetrachlorophenol	**6.1**		**29**		**26**		**19**		**20**		NA		50	U	50	U	**16**		**14**		**8.4**		**8.4**
16	10																								
17	11	**SEMIVOLATILES (µg/L)**																							
18	12	**EPA Method SW8270**																							
19	13	Phenol	**150**		**180**		**200**		**58**		**30**		100	U	**16**		**17**		**10**		**8.1**		**7.7**		**7.6**
20	14	4-Methylphenol	**11**		**33**		**32**		1.0	U	**8.7**		100	U	**16**		**15**		1.0	U	1.0	U	**10**		**9.4**
21	15	Isophorone	1.0	U	1.0	U	1.0	U	**1.8**		**2.3**		NA		1.0	U	1.0	U	**1.1**		1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	200	U	**17**	J2	**18**	J2	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	**22**		**28**	J2	**47**	J2	10	U	10	U	NA		10	U	10	U	10	U	10	U	10	U	10
24	18	Naphthalene	**35**		**44**		**46**		**36**		**30**		NA		**16**	J2	**21**	J2	**18**	J2	**23**	J2	**28**		**28**
25	19	2-Methylnaphthalene	**52**		**67**		**74**		**45**		**44**		NA		**24**	J2	**32**	J2	**42**		**49**		**57**		**58**
26	20	2,4,6-Trichlorophenol	5.0	U	**8.0**		**9.4**		**7.5**		**9.3**		100	U	**7.3**	J2	**9.4**	J2	5.0	U	5.0	U	**18**	J2	**20**
27	21	2,4,5-Trichlorophenol	**14**		**43**		**49**		**69**		**78**		100	U	**57**		**60**		**7.4**		**6.7**		**69**		**66**
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	**390**		**10000**		**12000**		**18000**		**16000**		**13500**		**5300**		**5200**		**3100**		**2900**		**4600**		**3800**
32	26	bis(2-Ethylhexyl)phthalate	10	UJ	1.0	U	1.0	U	**2.0**		1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
33	27																								
34	28	**VOLATILES (µg/L)**																							
35	29	**EPA Method SW8260**																							
36	30	Acetone	**16**		**42**		**43**		**25**		**29**		NA		**17**		**17**		**11**		**9.2**		**12**		**13**
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	5.0	U	**12**		**12**		5.0	U	5.0	U	NA		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	**10**		**6.4**		**6.3**		**17**		**11**		NA		**5.4**		**5.4**		**10**		**9.6**		**5.7**		**5.0**
42	36	Ethylbenzene	**140**		**190**		**190**		**180**		**130**		NA		**12**		**13**		**100**		**95**		**93**		**80**
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	**390**		**580**		**600**		**730**		**500**		NA		**450**		**450**		**320**		**320**		**340**		**300**
45	39	o-Xylene	**77**		**140**		**140**		**150**		**100**		NA		**110**		**110**		**120**		**95**		**94**		**78**
46	40	1,3,5-Trimethylbenzene	**170**		**190**		**180**		**330**		**140**		NA		**160**		**150**		**180**		**170**		**120**		**99**
47	41	1,2,4-Trimethylbenzene	**580**		**630**		720		**1100**	J2	**560**		NA		**480**		**550**		**590**		**570**		**460**	J2	**590**
48	42	Isopropylbenzene	**110**		**120**		**120**		**140**	J2	**81**		NA		**7.5**		**7.4**		**100**		**85**		**54**		**46**
49	43	n-Propylbenzene	**140**		**160**		**150**		**190**		**110**		NA		**7.6**		**7.3**		**120**		**110**		**78**		**65**
50	44	tert-Butylbenzene	1.0	U	1.0	U	**4.1**	J2	**3.8**		**2.6**		NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	**15**		**20**		**18**		**18**	J2	**12**		NA		1.0	U	1.0	U	**22**	J2	1.0	UJ	1.0	U	1.0
52	46	4-Isopropyltoluene	**10**		**15**		**14**		**14**	J2	**10**		NA		**5.4**		**5.4**		**15**		**12**		**8.5**		**6.8**
53	47	n-Butylbenzene	**14**		**20**		**18**		**17**	J2	**13**		NA		4.4	U	4.2	U	**21**	J2	**16**	J2	**12**	J2	**8.9**
54	48	Naphthalene	**54**		**87**		**84**		**92**	J2	**78**		NA		**41**		**41**		**50**		**48**		**28**		**28**
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	51	**Method OR-DEQ**																							
59	52	**TPH-Diesel**	**7.2**		**12**		**12**		**15**		**11**		NA		**7.2**		**6.8**		**6.5**	J2	**8.2**	J2	**4.6**		**4.6**
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																								

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
2					Dup of LW4D						Dup of LW4D				Dup of LW4D											
3			LW4D		LW40D		LW4D		LW4D		LW40D		LW4D		LW40D		LW4D		LW4D		LW4D		LW4D		LW4D	
4			Z960P		Z960K		AH49H		AU45G		AU45I		BC21J		BC27P		BH96E		BR55D		CB68D		CL03G		CT67D	
5			2/17/99		2/17/99		5/18/99		9/22/99		9/22/99		12/9/99		12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01	
7	**CHLORINATED PHENOLS (µg/L)**																									
8	**EPA Method SW8040**																									
9	Pentachlorophenol		**2300**		**2400**		**2.5**		**0.85**	J2	**0.58**	J2	**1.5**	J2	**3.4**	J2	**0.60**		**0.41**	J2	**0.30**		0.25	U	0.25	U
10	2,4,6-Trichlorophenol	J2	**9.6**	J	**13**	J	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA	
11	2,3,6-Trichlorophenol	U	1.2	U	1.1	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA	
12	2,4,5-Trichlorophenol	U	80	U	48	U	0.39	U	0.25	U	0.25	U	0.34	U	0.69	U	0.25	U	0.25	U	0.41	U	0.25	U	NA	
13	2,3,4-Trichlorophenol	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	J2	**130**		**140**		**0.26**		0.25	U	0.25	U	**1.4**	J2	**3.0**	J2	0.25	U	0.25	U	0.25	U	0.25	U	NA	
15	2,3,4,5-Tetrachlorophenol		**67**	J	**42**	J	**0.49**		0.25	U	0.25	U	0.25	U	**0.19**	J1	0.25	U	0.25	U	0.25	U	0.25	U	NA	
16																										
17	**SEMIVOLATILES (µg/L)**																									
18	**EPA Method SW8270**																									
19	Phenol		**23**		**25**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	**110**		2.0	U	2.0	U
20	4-Methylphenol		**7.5**		**7.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	Isophorone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	Benzoic Acid	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	**11**		10	U	10	U
24	Naphthalene		**23**		**25**		1.0	U	**27**	J2	**14**	J2	**19**		**19**		**24**		**10**		**11**		**5.4**		**2.1**	
25	2-Methylnaphthalene		**64**		**65**		1.0	U	**41**	J2	**22**	J2	**30**		**30**		**30**		**18**		**18**		**11**		**11**	
26	2,4,6-Trichlorophenol	J2	**12**		**11**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	2,4,5-Trichlorophenol		**59**		**55**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	Acenaphthene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	Fluorene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	Pentachlorophenol		**4000**		**3700**		**6.5**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**8.9**		5.0	U	5.0	U
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**0.7**	J1	**0.7**	J1	1.0	U	1.0	U	1.0	U	2.8	U	1.0	U
33																										
34	**VOLATILES (µg/L)**																									
35	**EPA Method SW8260**																									
36	Acetone		**16**		**15**		**16**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	25	U	17	U	5.0	U
37	Carbon Disulfide	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U
38	2-Butanone	U	15	U	**7.4**		**8.2**		**28**		**32**		5.0	U	5.0	U	5.0	U	5.0	U	25	U	**14**		**26**	
39	Benzene	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		5.0	U	1.0	U	1.0	U
40	Bromoform	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U
41	Toluene		**6.0**		**6.5**		**11**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.4**		5.0	U	1.0	U	1.0	U
42	Ethylbenzene		**52**		**62**		**220**		**39**		**38**		**21**		**21**		**18**		**22**		**39**		**1.3**		**1.3**	
43	Styrene	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U
44	m,p-Xylene		**320**		**320**		**720**		**110**		**110**		**88**		**90**		**76**		**100**		**120**		**3.6**		**3.0**	
45	o-Xylene		**84**		**95**		**130**		**5.4**		**4.5**		**20**		**20**		**8.1**		**11**		**13**		1.0	U	1.0	U
46	1,3,5-Trimethylbenzene		**170**		**140**		**160**		**70**		**70**		**94**		**96**		**90**		**70**		**50**		**12**		**14**	
47	1,2,4-Trimethylbenzene	J2	**550**		**520**		**700**		**320**		**310**		**260**		**280**		**290**		**300**		**270**		**240**		**120**	
48	Isopropylbenzene		**42**		**43**		**92**		**65**		**68**		**40**		**39**		**79**		**54**		**62**		**56**		**58**	
49	n-Propylbenzene		**51**		**54**		**130**		**69**		**71**		**45**		**45**		**87**		**61**		**76**		**60**		**60**	
50	tert-Butylbenzene	U	**3.0**		**2.9**		**4.3**		1.0	U	1.0	U	**2.0**		**2.0**		**4.2**		**2.6**		5.0	U	**2.9**		**2.8**	
51	sec-Butylbenzene	U	**8.3**		**9.2**		**16**		**14**		**14**		**7.3**		**7.3**		**15**		**9.8**		**11**		**9.1**		**9.8**	
52	4-Isopropyltoluene		**8.3**		**8.1**		**11**		**7.6**		**6.9**		**7.3**		**7.5**		**6.6**		**4.3**		**7.6**		1.0	U	1.0	U
53	n-Butylbenzene	J2	**9.7**		**10**		**16**		12	U	12	U	8.0	U	8.3	U	**14**		9.2	U	9.7	U	**7.0**		**7.8**	
54	Naphthalene		**41**		**44**		**57**		**34**		**33**		**28**		**30**		**50**		**34**		**26**		**12**		**8.9**	
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	**Method OR-DEQ**																									
59	**TPH-Diesel**		**6.9**		**7.3**		**5.0**		**4.2**	J2	**3.2**	J2	**3.1**		**2.9**		**3.8**		**2.8**		**3.3**		**5.4**		**4.4**	
60	**TPH-D Motor Oil**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.50	U	NA	
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																										

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV
3		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D	
4		DE87K		DM30D		DW29G		ED30H		EN00H		ER93L		EZ17F		FF65G		FL58E		FU45N		FY82L		0402113-08	
5		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04	
7	**CHLORINATED PHENOLS (µg/L)**																								
8	**EPA Method SW8040**																								
9	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.3	U	0.25	U	0.26	U	0.26	U	**1**	J	0.5	U	NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																									
17	**SEMIVOLATILES (µg/L)**																								
18	**EPA Method SW8270**																								
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.4	U	2.3	U	2.1	U	2	U	2	U	2	U	1.93	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	9.64	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	0.964	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.6	U	3.4	U	3.1	U	3.1	U	3.1	U	3	U	2.89	U
23	Benzoic Acid	10	U	10	U	30	U	50	U	50	U	60	U	57	U	52	U	51	U	51	U	10	U	19.3	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	**4.12**	
25	2-Methylnaphthalene	**3.6**		**3.3**		**1.4**		**1.8**		**1.6**		1.2	U	1.1	U	1	U	1	U	1	U	1	U	**11.7**	
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.7	U	5.2	U	5.1	U	5.1	U	5	U	4.82	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.7	U	5.2	U	5.1	U	5.1	U	5	U	4.82	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	0.964	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	0.964	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U	0.964	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.7	U	5.2	U	5.1	U	5.1	U	5	U	**8.95**	
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.8	U	4.5	U	1	U	1	U	1	U	1	U	0.964	U
33																									
34	**VOLATILES (µg/L)**																								
35	**EPA Method SW8260**																								
36	Acetone	**22**		**42**		**77**		**14**		20	U	**8.2**		9	U	**96**		**11**	M	**12**	J	**6.6**	M	50	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
38	2-Butanone	**14**		5.0	U	5.0	U	**14**		5.0	U	**13**	M	5	U	5	U	5	U	**13**	M	**9.1**	M	10	U
39	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	**13**		**3.4**		**1.4**		**2.4**		**1.1**		1	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	**84**		**49**		**7.2**		**48**		**9.5**		**15**		1	U	**3**		**5.5**		1	U	**1.4**		1	U
48	Isopropylbenzene	**31**		**14**		**3.9**		**14**		**5.0**		**5.7**		**4.2**		**3.7**		**7**		**2.6**		**1.9**		**2.46**	
49	n-Propylbenzene	**39**		**16**		**5.2**		**14**		**5.1**		**4.9**		**4.2**		**2.9**		**5.3**		**1.6**		**1.6**		**1**	
50	tert-Butylbenzene	**1.7**		**1.3**	M	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	**7.4**		**4.1**		**1.6**		**2.8**		**1.7**		**1.8**		**1.3**		1	U	**1.6**		1	U	1	U	1	U
52	4-Isopropyltoluene	**2.3**		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	**6.2**		**3.4**	M	1.7	U	**2.3**		1.6	U	**1.6**		**1.1**	M	1	U	**1.2**		1	U	1	U	1	U
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U	1	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U
56																									
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	**Method OR-DEQ**																								
59	**TPH-Diesel**	**3.5**		**3.4**		**1.8**		**4.0**		**2.8**		**3.2**		**2.4**		**3**		**2.6**		**1.8**		**1.6**		**1**	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.5	U	0.504	U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2							Dup of LW4D										Dup of LW4D				Dup of LW4D				Dup of LW4D
3			LW4D		LW4D		LW40D		LW4D		LW4D		LW4D (a)		LW4D		LW40D		LW4D		LW40D		LW4D		LW40D
4			S167I		T176M		T176L		U235N		V232F		B802035-02		W391E		W391I		Y314E		Y314B		Z225J		Z225L
5			4/1/97		7/16/97		7/16/97		10/22/97		1/30/98		1/30/98		5/20/98		5/20/98		8/17/98		8/17/98		11/14/98		11/14/98
63	56	**PRIORITY POLLUTANT**																							
64	57	**METALS (mg/L)**																							
65	58	Arsenic (7060)	**0.024**		**0.025**		**0.025**		0.05	U	0.05	U	NA		**0.028**		**0.028**		**0.028**		**0.029**		**0.028**		**0.030**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NA		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	**0.003**		**0.004**		**0.003**		**0.002**		**0.005**		NA		**0.002**		**0.002**		**0.003**		**0.003**		0.002	U	0.002
68	61	Lead (7421)	0.001	U	0.001	U	0.001	U	0.02	U	0.02	U	NA		0.001	U	0.001	U	**0.001**		**0.001**		0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NA		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	0.004	U	**0.008**	J2	**0.005**	J2	**0.023**		**0.014**		NA		0.004	U	**0.010**	J2	**0.006**		**0.010**		**0.007**		**0.006**
71	64																								
72	65	**MAJOR IONS AND CONVENTIONALS**																							
73	66	Calcium (mg/L) (6010)	**49.9**		**49.7**		**51**		**45.6**		**42.2**		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	**21.9**		**21.7**		**22.3**		**19.4**		**17.7**		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	**1.2**		**1.0**		**1.0**		**1.2**		**1.0**		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	**10.9**		**10.4**		**10.6**		**10.1**		**9.60**		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**240**		**200**		**200**		**200**		**140**		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**240**		**200**		**200**		**200**		**140**		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**240**	J2	**340**	J2	**260**		**250**	J2	NA		**240**		**230**		**240**		**270**		**270**		**280**
81	74	Chloride (mg/L) (EPA 325.2)	**19**	J	**15**		**15**		**16**		**15**		NA		**13**		**12**		**13**		**12**		**11**		**13**
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	0.010	U	**0.025**		0.010	UJ	NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.026**	J	**0.032**	J2	**0.025**	J2	**0.010**		**0.019**	J2	NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.019**	J	**0.01**		**0.01**		**0.035**		**0.010**	J2	NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**3.2**	J	2.5	U	**2.5**	U	2.5	U	2.5	U	NA		NA		NA		NA		NA		NA		NA
86	79																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																										
2					Dup of LW4D						Dup of LW4D				Dup of LW4D											
3			LW4D		LW40D		LW4D		LW4D		LW40D		LW4D		LW40D		LW4D		LW4D		LW4D		LW4D		LW4D	
4			Z960P		Z960K		AH49H		AU45G		AU45I		BC21J		BC27P		BH96E		BR55D		CB68D		CL03G		CT67D	
5			2/17/99		2/17/99		5/18/99		9/22/99		9/22/99		12/9/99		12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01	
63	**PRIORITY POLLUTANT**																									
64	**METALS (mg/L)**																									
65	Arsenic (7060)		**0.030**		**0.029**		**0.029**		**0.030**		**0.033**		**0.024**		**0.025**		**0.030**		**0.025**		**0.029**		**0.028**		**0.03**	
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.007**		**0.008**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	U	**0.005**		**0.005**		0.002	U	**0.004**		**0.003**		**0.011**		**0.012**		**0.007**		0.002	U	**0.002**		**0.004**		**0.005**	
68	Lead (7421)	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.002**		**0.002**		**0.001**		0.001	U	0.001	U	0.001	U
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)		**0.009**	J	**0.008**	J	**0.005**		**0.007**	J2	**0.016**	J2	0.020	U	0.021	U	**0.019**		**0.008**		**0.020**		**0.013**		**0.016**	
71																										
72	**MAJOR IONS AND CONVENTIONALS**																									
73	Calcium (mg/L) (6010)		**50.4**		**51.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		**71.3**	
74	Magnesium (mg/L) (6010)		**21.6**		**22.0**		NA		NA		NA		NA		NA		NA		NA		NA		NA		**30.1**	
75	Potassium (mg/L) (6010)		**0.7**	J	**0.9**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		**1.6**	
76	Sodium (mg/L) (6010)		**10.6**		**10.9**		NA		NA		NA		NA		NA		NA		NA		NA		NA		**14.5**	
77	Alkalinity (mg/L CaCO3) (SM 2320)		**210**		**210**		NA		NA		NA		NA		NA		NA		NA		NA		NA		**360**	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		1.0	U	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		1.0	U
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		**210**		**210**		NA		NA		NA		NA		NA		NA		NA		NA		NA		**360**	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**360**		**320**		**310**		**300**		**270**		**260**		**290**		**270**		**270**		**360**		**370**		**430**	
81	Chloride (mg/L) (EPA 325.2)		**17**		**18**		**12**		**12**		**12**		**13**		**14**		**12**		**12**		**9.8**		**16**		**24**	J
82	N-Nitrate (mg-N/L) (Calculated)		**0.010**		0.010	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U
83	N-Nitrite (mg-N/L) (EPA 354.1)		**0.015**	J	**0.023**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.037**	J
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		**0.025**	J	**0.018**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.045**	
85	Sulfate (mg/L) (EPA 375.2)		**6.1**	J	**8.8**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		**8.6**	
86																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV
1																									
2																									
3		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D	
4		DE87K		DM30D		DW29G		ED30H		EN00H		ER93L		EZ17F		FF65G		FL58E		FU45N		FY82L		0402113-08	
5		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04	
63	**PRIORITY POLLUTANT**																								
64	**METALS (mg/L)**																								
65	Arsenic (7060)	**0.028**		**0.032**		**0.022**		**0.040**		**0.027**		**0.028**		0.05	U	**0.03**		**0.04**		**0.04**		**0.028**		**0.031**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.009**		**0.01**	
67	Copper (6010)	**0.003**		**0.004**		**0.003**		**0.004**		**0.003**		**0.004**		**0.004**		**0.002**		**0.002**		**0.005**		**0.006**		0.01	U
68	Lead (7421)	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.002**		0.02	U	0.001	U	**0.002**		0.001	U	0.001	U	**0.0010**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.02**		0.01	U	0.005	U
70	Zinc (6010)	**0.011**		0.012		**0.011**		**0.010**	J	**0.009**		**0.009**		**0.011**		**0.021**		**0.009**		**0.006**		**0.017**		0.01	U
71																									
72	**MAJOR IONS AND CONVENTIONALS**																								
73	Calcium (mg/L) (6010)	**74.5**		**81.3**		**57.1**		**67.1**		**65.9**		NA		NA		**56.5**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	**31.0**		**35.2**		**25.2**		**31.9**		**29.4**		NA		NA		**25.9**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	**1.4**		**1.5**		**1.8**		**1.0**		**1.3**		NA		NA		**1.4**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	**14.5**		**16.5**		**16.4**		**15.9**		**18.2**		NA		NA		**16.1**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		**430**		NA		NA		NA		**330**		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		**430**		NA		NA		NA		**330**		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**460**	J	**430**	J	**350**		**400**		**360**		**430**		**390**		**360**		**400**		**390**		**340**		**417**	
81	Chloride (mg/L) (EPA 325.2)	**18**		**18**		**12**		**14**	J	**15**		**13**		**15**		**15**		**11**		**7.8**		**11**		**9.75**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		**0.012**		NA		NA		NA		0.01	U	NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		**0.012**		NA		NA		NA		**0.052**		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		**0.024**		NA		NA		NA		**0.045**		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		**9.5**		NA		NA		NA		**8.5**		NA		NA		NA		NA	
86																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2							Dup of LW4D										Dup of LW4D				Dup of LW4D				Dup of LW4D
3			LW4D		LW4D		LW40D		LW4D		LW4D		LW4D (a)		LW4D		LW40D		LW4D		LW40D		LW4D		LW40D
4			S167I		T176M		T176L		U235N		V232F		B802035-02		W391E		W391I		Y314E		Y314B		Z225J		Z225L
5			4/1/97		7/16/97		7/16/97		10/22/97		1/30/98		1/30/98		5/20/98		5/20/98		8/17/98		8/17/98		11/14/98		11/14/98
6																									
87	80	**FIELD PARAMETERS**																							
88	81	pH (avg)	6.65		6.67		6.67		6.94		6.84		6.84		6.51		6.51		6.49		6.48		6.39		6.37
89	82	Temperature (° C) (avg)	12.9		15.1		14.9		13.6		13.5		13.5		13.3		13.3		18.1		18.3		13.5		13.3
90	83	Conductivity (um/hos)	559		491		490		375		381		381		368		367		557		560		120		120
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		NA		NA		1.74		1.74		1.00		1.00		1.44		1.80
92	85																								
93	86	**DIOXINS AND FURANS (ng/L)**																							
94	87	**Method 8290**																							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		0.0027	U	NA		NA		NA		0.0049	U	NA		0.0023	U	NA
96	89	Total TCDF	NA		NA		NA		NA		0.0027	U	NA		NA		NA		0.0049	U	NA		0.0023	U	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		0.0029	U	NA		NA		NA		0.0063	U	NA		0.0045	U	NA
98	91	Total TCDD	NA		NA		NA		NA		0.0029	U	NA		NA		NA		0.0063	U	NA		0.0045	U	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		0.0018	U	NA		NA		NA		0.0035	U	NA		**0.0012**		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		0.0019	U	NA		NA		NA		0.0050	U	NA		0.0034	U	NA
101	94	Total PeCDF	NA		NA		NA		NA		0.0019	U	NA		NA		NA		0.0043	U	NA		**0.0012**		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		0.0052	U	NA		NA		NA		0.0071	U	NA		0.0072	U	NA
103	96	Total PeCDD	NA		NA		NA		NA		0.0052	U	NA		NA		NA		**0.019**		NA		0.0072	U	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		0.0024	U	NA		NA		NA		0.0880	U	NA		0.0059	U	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		0.0026	U	NA		NA		NA		0.0390	U	NA		0.0020	U	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		0.0049	U	NA		NA		NA		0.0088	U	NA		0.0049	U	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		0.0052	U	NA		NA		NA		**0.066**		NA		0.0036	U	NA
108	101	Total HxCDF	NA		NA		NA		NA		0.0110	U	NA		NA		NA		**0.210**		NA		0.0041	U	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		0.0032	U	NA		NA		NA		0.0140	U	NA		0.0056	U	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		0.0044	U	NA		NA		NA		0.0097	U	NA		0.0043	U	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		0.0031	U	NA		NA		NA		0.0048	U	NA		0.0040	U	NA
112	105	Total HxCDD	NA		NA		NA		NA		0.0036	U	NA		NA		NA		**0.043**		NA		0.0046	U	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		0.0140	U	NA		NA		NA		0.0140	U	NA		0.0038	U	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		0.0030	U	NA		NA		NA		0.0062	U	NA		0.0022	U	NA
115	108	Total HpCDF	NA		NA		NA		NA		0.0220	U	NA		NA		NA		**0.022**		NA		0.0030	U	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		**0.0240**		NA		NA		NA		**0.031**		NA		**0.0095**		NA
117	110	Total HpCDD	NA		NA		NA		NA		**0.0400**		NA		NA		NA		**0.045**		NA		**0.0160**		NA
118	111	OCDF	NA		NA		NA		NA		**0.0140**		NA		NA		NA		**0.032**		NA		**0.0088**		NA
119	112	OCDD	NA		NA		NA		NA		**0.1500**		NA		NA		NA		**0.300**		NA		**0.0720**		NA
120																									
121																									
122																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																										
2					Dup of LW4D						Dup of LW4D				Dup of LW4D											
3			LW4D		LW40D		LW4D		LW4D		LW40D		LW4D		LW40D		LW4D		LW4D		LW4D		LW4D		LW4D	
4			Z960P		Z960K		AH49H		AU45G		AU45I		BC21J		BC27P		BH96E		BR55D		CB68D		CL03G		CT67D	
5			2/17/99		2/17/99		5/18/99		9/22/99		9/22/99		12/9/99		12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01	
87	**FIELD PARAMETERS**																									
88	pH (avg)		6.86		6.85		5.88		5.99		6.60		6.68		6.65		6.72		6.66		6.02		5.96		6.49	
89	Temperature (° C) (avg)		13.3		13.2		14.7		18.8		16.3		12.8		12.9		16.4		16.5		14.4		13.3		13.8	
90	Conductivity (um/hos)		500		500		462		491		359		436		424		548		437		526		656		673	
91	Dissolved oxygen (mg/L) (avg)		2.39		2.57		2.40		1.35		1.42		1.76		1.86		0.12		1.00		1.39		0.31		0.19	
92																										
93	**DIOXINS AND FURANS (ng/L)**																									
94	**Method 8290**																									
95	2,3,7,8-TCDF		0.0017	U	NA		0.0011	U	0.0018	U	NA		0.00068	U	NA		0.0034	U	NA		NA		NA		NA	
96	Total TCDF		0.0017	U	NA		0.0011	U	0.0018	U	NA		0.00068	U	NA		0.0034	U	NA		NA		NA		NA	
97	2,3,7,8-TCDD		0.0043	U	NA		0.0016	U	0.0031	U	NA		0.00130	U	NA		0.0058	U	NA		NA		NA		NA	
98	Total TCDD		0.0043	U	NA		0.0016	U	0.0031	U	NA		0.00130	U	NA		0.0058	U	NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		0.0028	U	NA		0.0021	U	0.0031	U	NA		0.00120	U	NA		0.0025	U	NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		0.0036	U	NA		0.0027	U	0.0032	U	NA		0.00088	U	NA		0.0033	U	NA		NA		NA		NA	
101	Total PeCDF		0.0032	U	NA		0.0024	U	0.0032	U	NA		0.00110	U	NA		0.0029	U	NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		0.0046	U	NA		0.0023	U	0.0048	U	NA		0.00094	U	NA		0.0051	U	NA		NA		NA		NA	
103	Total PeCDD		0.0046	U	NA		0.0023	U	0.0048	U	NA		0.00094	U	NA		0.0051	U	NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		**0.0013**		NA		0.0035	U	0.0024	U	NA		0.00150	U	NA		0.0031	U	NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		0.0024	U	NA		**0.0014**		0.0019	U	NA		0.00150	U	NA		0.0029	U	NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		0.0036	U	NA		**0.0032**		**0.0024**		NA		0.0025	U	NA		0.0034	U	NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		0.0044	U	NA		0.0039	U	0.0021	U	NA		0.00170	U	NA		0.0036	U	NA		NA		NA		NA	
108	Total HxCDF		**0.0013**		NA		**0.0046**		**0.0024**		NA		0.0025	U	NA		0.0033	U	NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		0.0054	U	NA		0.0051	U	0.0039	U	NA		0.00150	U	NA		0.0050	U	NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		0.0037	U	NA		0.0052	U	0.0035	U	NA		0.00170	U	NA		0.0037	U	NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		0.0036	U	NA		0.0039	U	0.0025	U	NA		0.00150	U	NA		0.0034	U	NA		NA		NA		NA	
112	Total HxCDD		0.0042	U	NA		0.0047	U	0.0033	U	NA		0.00160	U	NA		0.0040	U	NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		0.0026	U	NA		0.0039	U	0.0022	U	NA		0.0015	U	NA		0.0024	U	NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		0.0045	U	NA		**0.0036**	U	0.0060	U	NA		0.00200	U	NA		0.0065	U	NA		NA		NA		NA	
115	Total HpCDF		0.0036	U	NA		**0.0051**		0.0041	U	NA		**0.0036**	J1	NA		0.0044	U	NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		**0.0055**		NA		**0.0110**		**0.0044**		NA		**0.0090**	J1	NA		0.0059	U	NA		NA		NA		NA	
117	Total HpCDD		**0.0055**		NA		**0.0160**		**0.0044**		NA		**0.0160**	J1	NA		0.0040	U	NA		NA		NA		NA	
118	OCDF		**0.0100**		NA		**0.0100**		0.0042	U	NA		**0.0058**	J1	NA		0.0048	U	NA		NA		NA		NA	
119	OCDD		0.0420	U	NA		**0.0770**		**0.0440**		NA		0.0660	U	NA		**0.044**	J1	NA		NA		NA		NA	
120																										
121																										
122																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV
1																									
2																									
3		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D	
4		DE87K		DM30D		DW29G		ED30H		EN00H		ER93L		EZ17F		FF65G		FL58E		FU45N		FY82L		0402113-08	
5		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04	
87	**FIELD PARAMETERS**																								
88	pH (avg)	6.91		6.94		6.61		6.48		6.65		7.04		6.31		7		6.97		7		6.79		6.49	
89	Temperature (° C) (avg)	14.7		15.4		13.3		14.2		14.4		15.8		14		14.1		14.1		17.3		14.6		14.4	
90	Conductivity (um/hos)	778		757		592		705		624		613		564		704		599		526		523		482	
91	Dissolved oxygen (mg/L) (avg)	0.48		0.98		4.41		7.10		4.00		1.24		0.37		0.76		1.68		1.66		2.57		1.36	
92																									
93	**DIOXINS AND FURANS (ng/L)**																								
94	**Method 8290**																								
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																									
121																									
122																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																									
2							Dup of LW4D										Dup of LW4D				Dup of LW4D				Dup of LW4D
3			LW4D		LW4D		LW40D		LW4D		LW4D		LW4D (a)		LW4D		LW40D		LW4D		LW40D		LW4D		LW40D
4			S167I		T176M		T176L		U235N		V232F		B802035-02		W391E		W391I		Y314E		Y314B		Z225J		Z225L
5			4/1/97		7/16/97		7/16/97		10/22/97		1/30/98		1/30/98		5/20/98		5/20/98		8/17/98		8/17/98		11/14/98		11/14/98
6																									
123		**PAHs (µg/L)**																							
124		**EPA Method SW8270 SIM**																							
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1																										
2					Dup of LW4D						Dup of LW4D				Dup of LW4D											
3			LW4D		LW40D		LW4D		LW4D		LW40D		LW4D		LW40D		LW4D		LW4D		LW4D		LW4D		LW4D	
4			Z960P		Z960K		AH49H		AU45G		AU45I		BC21J		BC27P		BH96E		BR55D		CB68D		CL03G		CT67D	
5			2/17/99		2/17/99		5/18/99		9/22/99		9/22/99		12/9/99		12/9/99		2/17/00		5/22/00		8/30/00		11/9/00		2/15/01	
123	**PAHs (µg/L)**																									
124	**EPA Method SW8270 SIM**																									
125	Naphthalene		**22**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		**60**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		0.10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		**0.44**	M	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		0.10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		0.10	U	NA		NA		NA		NA				NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		**0.34**	M	NA		NA		NA		NA				NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV
1																									
2																									
3		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D		LW4D	
4		DE87K		DM30D		DW29G		ED30H		EN00H		ER93L		EZ17F		FF65G		FL58E		FU45N		FY82L		0402113-08	
5		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/24/03		2/23/04	
123	**PAHs (µg/L)**																								
124	**EPA Method SW8270 SIM**																								
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW4DR		LW4DR		LW4DR		LW4DR
4			0411151-01		0502102-11		P5F0223-08		P5H0814-06
5			11/29/04		2/23/05		6/6/05		08/18/05
6									
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	**1.08**		0.503	U	0.556	U	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	1.99	U	2.05	U	5.00	U	5.00 U
20	14	4-Methylphenol	9.94	U	10.3	U	5.00	U	5.00 U
21	15	Isophorone	0.994	U	1.03	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	2.98	U	3.08	U	10.00	U	10.0 U
23	17	Benzoic Acid	19.9	U	20.5	U	50.0	U	50.0 U
24	18	Naphthalene	0.994	U	1.03	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	0.994	U	1.03	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	4.97	U	5.13	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	4.97	U	5.13	U	5.00	U	5.00 U
28	22	Acenaphthene	0.994	U	1.03	U	5.00	U	5.00 U
29	23	Dibenzofuran	0.994	U	1.03	U	5.00	U	5.00 U
30	24	Fluorene	0.994	U	1.03	U	5.00	U	5.00 U
31	25	Pentachlorophenol	4.97	U	5.13	U	10	U	**13.1**
32	26	bis(2-Ethylhexyl)phthalate	**2.83**		1.03	U	10.00	U	10.0 U
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	**0.32**		0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	**1.9**		1	U	1.00	U	**2.79**
48	42	Isopropylbenzene	**1.51**		1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	**4.29**		1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	**0.353**		0.252	U	0.278	U	0.250 U
60	53	**TPH-D Motor Oil**	**0.529**		0.504	U	0.556	U	0.500 U
61	54	**TPH-Gasoline**	NA		NA		0.08	U	0.08 U
62	55								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW4DR		LW4DR		LW4DR		LW4DR
4			0411151-01		0502102-11		P5F0223-08		P5H0814-06
5			11/29/04		2/23/05		6/6/05		08/18/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	**0.0101**		**0.00581**		**0.0113**		**0.0193**
66	59	Chromium (6010)	**0.0076**		**0.0101**		**0.00129**		**0.0136**
67	60	Copper (6010)	0.01	U	0.01	U	**0.00274**		**0.020**
68	61	Lead (7421)	**0.00202**		**0.000876**		0.001	U	**0.00506**
69	62	Nickel (6010)	**0.008**		0.005	U	**0.0162**		**0.0151**
70	63	Zinc (6010)	**0.19**		**0.0353**		**0.0137**		**0.0373**
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**262**		**379**		**385**		**353**
81	74	Chloride (mg/L) (EPA 325.2)	**4.93**		**4.1**		**5.32**		**4.36**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA
86	79								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW4DR		LW4DR		LW4DR		LW4DR
4			0411151-01		0502102-11		P5F0223-08		P5H0814-06
5			11/29/04		2/23/05		6/6/05		08/18/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	5.95		6.73		7.34		6.93
89	82	Temperature (° C) (avg)	12.3		14.8		19.0		17.1
90	83	Conductivity (um/hos)	436		197		469		437
91	84	Dissolved oxygen (mg/L) (avg)	999		1.38		4.28		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121									
122									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW4DR		LW4DR		LW4DR		LW4DR
4			0411151-01		0502102-11		P5F0223-08		P5H0814-06
5			11/29/04		2/23/05		6/6/05		08/18/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
3			LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4			S167G		T176I		U235R		V208I		W391D		Y314C		Z225B		Z960G		AH27I		AU45D		BC27F		BH96I		BR64J	
5			3/31/97		7/15/97		10/22/97		1/28/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/17/00		5/24/00	
7	1	**CHLORINATED PHENOLS (µg/L)**																										
8	2	**EPA Method SW8040**																										
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.42**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
16	10																											
17	11	**SEMIVOLATILES (µg/L)**																										
18	12	**EPA Method SW8270**																										
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**	
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	UJ	**1.1**	J2	**1.3**		**1.2**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.6**		1.0	U
33	27																											
34	28	**VOLATILES (µg/L)**																										
35	29	**EPA Method SW8260**																										
36	30	Acetone	5.0	U	5.0	U	**5.1**		5.0	U	**7.1**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	**2.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	**41**		**61**		**78**	J2	**76**		**56**		**96**		**93**		**32**		**31**		**52**		**43**		**68**		**24**	
49	43	n-Propylbenzene	**14**		**28**		**40**		**36**		**20**		**44**		**32**		**8.9**		**9.3**		**14**		**7.7**		**10**		**4.4**	
50	44	tert-Butylbenzene	**2.4**		**2.7**	J2	**2.8**		**2.3**		**2.8**		**3.8**		**3.2**		**2.0**		**2.4**		**3.5**		**3.0**		**4.1**		**2.3**	
51	45	sec-Butylbenzene	**5.7**		**8.3**		**8.5**	J2	**7.1**		**7.8**		**14**	J2	**9.7**		**3.6**		**5.4**		**10**		**8.2**		**12**		**4.4**	
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	**1.6**		**2.8**		**2.8**	J2	**2.9**		2.7	U	**5.0**		**3.2**		**1.2**		**2.1**		3.0	U	2.3	U	**3.6**		**1.7**	M
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																											
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	51	**Method OR-DEQ**																										
59	52	**TPH-Diesel**	**1.0**		**1.0**		**1.2**		**0.80**		**0.86**		**1.3**		**1.0**		**0.62**		**0.92**		**1.4**		**1.0**		**1.0**		**1.1**	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4		CB85E		CL03C		CT55B		DE87G		DM30B		DW29H		ED23H		EM85I		ER93C		EZ03E		FF76F		FL66E		FU45R		FY82O	
5		8/30/00		11/8/00		2/13/01		6/5/01		8/13/01		11/27/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03	
7	**CHLORINATED PHENOLS (µg/L)**																												
8	**EPA Method SW8040**																												
9	Pentachlorophenol	0.25	U	0.25	U	**0.46**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.3	U	0.25	U	0.25	U	**0.47**		**0.6**	J	**1.1**	
10	2,4,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																													
17	**SEMIVOLATILES (µg/L)**																												
18	**EPA Method SW8270**																												
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.4	U	2.2	U	2	U	2	U	2.1	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.6	U	3.3	U	3	U	3	U	3.1	U	3.1	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	60	U	54	U	50	U	50	U	52	U	10	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.4	U	5	U	5	U	5.2	U	5.1	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.4	U	5	U	5	U	5.2	U	5.1	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1	U	1	U	1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6	U	5.4	U	5	U	5	U	5.2	U	5.1	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	4.0	U	4.8	U	4.3	U	**13**		1	U	1	U	1	U
33																													
34	**VOLATILES (µg/L)**																												
35	**EPA Method SW8260**																												
36	Acetone	5.0	U	5.0	U		R	5.0	U	5.0	U	5.0	U	5.0	U	**6.8**		5	U	**16**		5	U	**9.6**		**6.2**	J	5	U
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
39	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	**16**		**24**		**14**		**10**		**8.8**		**2.6**		**7.0**		**2.6**		**7.5**		**3.4**		**4**		**2.7**		**3.5**		**4.2**	
49	n-Propylbenzene	1.0	U	**2.8**		**1.4**		**1.1**		**1.4**		1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
50	tert-Butylbenzene	**3.5**		**2.8**		**2.8**		**3.4**		**2.8**		**3.1**		**3.1**		**1.8**		**3.4**		**3.2**		**3.1**		**2**		**2.3**		**2.9**	
51	sec-Butylbenzene	**6.0**		**6.4**		**5.3**		**4.7**		**4.3**		**2.4**		**3.4**		**1.7**		**3.3**		**2.2**		**2.5**		**1.8**		**2.1**		**2.1**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	1.2	U	1.0	U	**1.3**	M	1.3	U	1.4	U	1.0	U	**1.2**	M	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																													
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	**Method OR-DEQ**																												
59	**TPH-Diesel**	**1.2**		**1.2**		**1.8**		**1.4**		**1.7**		**1.8**		**1.9**		**1.6**		**2.6**		**2.2**		**2.3**		**2.2**		**1.9**		**1.1**	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.5	U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D
4		0402105-05		0406039-01		0408044-07		0411051-07		0502087-06		P5F0553-03		P5H1000-13
5		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
7	**CHLORINATED PHENOLS (µg/L)**													
8	**EPA Method SW8040**													
9	Pentachlorophenol	0.483	U	0.498	U	0.5	U	0.495	U	**0.607**		0.500	U	0.490 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA
16														
17	**SEMIVOLATILES (µg/L)**													
18	**EPA Method SW8270**													
19	Phenol	1.92	U	2	U	2	U	2.08	U	2.05	U	5.00	U	5.00 U
20	4-Methylphenol	9.61	U	9.98	U	10	U	10.4	U	10.2	U	5.00	U	5.00 U
21	Isophorone	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	2.88	U	2.99	U	3	U	3.12	U	3.07	U	10.00	U	10.0 U
23	Benzoic Acid	19.2	U	20	U	20	U	20.8	U	20.5	U	50.0	U	50.0 U
24	Naphthalene	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
25	2-Methylnaphthalene	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
26	2,4,6-Trichlorophenol	4.8	U	4.99	U	5	U	5.21	U	5.12	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	4.8	U	4.99	U	5	U	5.21	U	5.12	U	5.00	U	5.00 U
28	Acenaphthene	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
29	Dibenzofuran	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
30	Fluorene	0.961	U	0.998	U	1	U	1.04	U	1.02	U	5.00	U	5.00 U
31	Pentachlorophenol	4.8	U	4.99	U	5	U	5.21	U	5.12	U	10	U	5 UJ
32	bis(2-Ethylhexyl)phthalate	0.961	U	0.998	U	1	U	1.04	U	1.02	U	10.00	U	10.0 U
33														
34	**VOLATILES (µg/L)**													
35	**EPA Method SW8260**													
36	Acetone	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	**1.38**		**1.6**		1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	**1.53**		1.00	U	1.00 U
48	Isopropylbenzene	**3.43**		**2.05**		**2.11**		**2.39**		**2.06**		2.00	U	2.00 U
49	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	tert-Butylbenzene	1	U	**1.76**		**2.09**		**3.23**		**6.03**		**2.00**		**3.19**
51	sec-Butylbenzene	**1.27**		1	U	**1.29**		**1.09**		**4.04**		**1.16**		**1.18**
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	Naphthalene	1	U	1	U	1	U	1	U	**3.91**		2.00	U	2.00 U
55	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56														
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**													
58	**Method OR-DEQ**													
59	**TPH-Diesel**	**1.36**	J	**1.9**		**2.05**		**1.9**		**1.57**		**0.326**		**0.383**
60	**TPH-D Motor Oil**	0.491	UJ	0.51	U	0.474	U	0.509	U	0.517	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		**0.918**
62														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4			S167G		T176I		U235R		V208I		W391D		Y314C		Z225B		Z960G		AH27I		AU45D		BC27F		BH96I		BR64J	
5			3/31/97		7/15/97		10/22/97		1/28/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/17/00		5/24/00	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.013**		**0.015**		0.05	U	0.05	U	**0.017**		**0.011**		**0.016**		**0.014**		**0.018**		**0.016**		**0.016**		**0.016**		**0.012**	
66	59	Chromium (6010)	0.005	U	0.005	U	**0.011**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	**0.004**		**0.003**		**0.014**		**0.002**		**0.003**		0.002	U	0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	0.002	U	0.002	U
68	61	Lead (7421)	**0.001**		**0.002**		0.02	U	0.02	U	**0.001**		0.001	U	**0.002**		0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	**0.001**	
69	62	Nickel (6010)	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.006**		**0.009**	J2	**0.045**		**0.011**		**0.017**	J2	**0.006**		**0.009**		**0.008**	J	0.007	U	**0.009**		**0.011**	U	**0.010**		0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	**47.2**		**44.2**		**49.1**		**41.8**		NA		NA		NA		**42.9**		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**19.9**		**19**		**20.3**		**16.3**		NA		NA		NA		**17.6**		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**3.0**		**2.7**		**3.5**		**2.4**		NA		NA		NA		**2.3**		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**15.6**		**13.9**		**14.1**		**12.1**		NA		NA		NA		**11.6**		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**250**		**190**		**210**		**200**		NA		NA		NA		**210**		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**250**		**190**		**210**		**200**		NA		NA		NA		**210**		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**260**	J2	**260**		**230**		**220**		**240**		**240**		**260**		**240**		**240**		**250**		**240**		**230**	
81	74	Chloride (mg/L) (EPA 325.2)	**8.4**	J	**4.1**		**3.9**		**2.7**		**3.3**		**2.0**		**2.6**		**4.2**		1.0	U	**3.1**		**4.3**		**2.8**		**2.1**	
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.016**	J	0.010	U	**0.013**		0.010	U	NA		NA		NA		0.010	U	NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.025**	J	**0.014**		**0.010**		**0.014**		NA		NA		NA		**0.018**		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.041**	J	0.010	U	**0.023**		**0.016**		NA		NA		NA		**0.017**		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**4.7**	J	2.5	U	2.5	U	2.5	U	NA		NA		NA		**5.5**		NA		NA		NA		NA		NA	
86	79																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4		CB85E		CL03C		CT55B		DE87G		DM30B		DW29H		ED23H		EM85I		ER93C		EZ03E		FF76F		FL66E		FU45R		FY82O	
5		8/30/00		11/8/00		2/13/01		6/5/01		8/13/01		11/27/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03	
63	**PRIORITY POLLUTANT**																												
64	**METALS (mg/L)**																												
65	Arsenic (7060)	**0.018**		**0.015**		**0.015**		**0.017**		**0.020**		**0.021**		**0.016**		**0.016**		**0.02**		0.05	U	**0.011**		**0.017**		**0.014**		**0.016**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.008**	
67	Copper (6010)	**0.002**		**0.006**		0.002	U	**0.003**		**0.003**		0.002	U	0.002	U	0.002	U	**0.002**		0.002	U	**0.005**		0.002	U	**0.004**		**0.005**	
68	Lead (7421)	**0.002**		**0.002**		**0.001**		**0.002**		**0.002**		0.001	U	0.001	U	0.001	U	0.001	U	0.02	U	0.001	U	**0.001**		0.001	U	**0.003**	
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	**0.007**		**0.008**		**0.007**		**0.008**		**0.009**		0.006	U	**0.008**		0.006	U	**0.007**		0.006	U	**0.01**		**0.007**		**0.007**		**0.013**	
71																													
72	**MAJOR IONS AND CONVENTIONALS**																												
73	Calcium (mg/L) (6010)	NA		NA		**40.8**		**44.2**		**40.8**		**40.9**		**42.5**		NA		NA		NA		**39.5**		NA		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		**16.1**		**18.4**		**16.8**		**16.5**		**17.6**		NA		NA		NA		**16.7**		NA		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		**2.1**		**3.2**		**2.6**		**2.0**		**2.7**		NA		NA		NA		**1.9**		NA		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		**10.3**		**11.5**		**10.4**		**10.3**		**11.1**		NA		NA		NA		**9.6**		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		**200**		NA		NA		NA		**220**		NA		NA		NA		**300**		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA		NA		1	U	NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		**200**		NA		NA		NA		**220**		NA		NA		NA		**300**		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**240**		**220**		**290**	J	**240**	J	**220**	J	**250**		**260**		**240**		**270**		**310**		**280**		**260**		**290**		**250**	
81	Chloride (mg/L) (EPA 325.2)	**1.4**		**2.2**		**1.8**		**2.2**		**3.8**		**2.1**		**2.8**		**2.5**		**2.2**		**2.8**		**4.2**		**1.8**		**1.6**		**2.9**	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		0.010	U	NA		NA		NA		**0.010**		NA		NA		NA		**0.048**		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		0.010	U	NA		NA		NA		**0.023**		NA		NA		NA		**0.015**		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		0.010	U	NA		NA		NA		**0.033**	J	NA		NA		NA		**0.063**		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		**3.3**		NA		NA		NA		2.5	U	NA		NA		NA		2.5	U	NA		NA		NA	
86																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ
1														
2														
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D
4		0402105-05		0406039-01		0408044-07		0411051-07		0502087-06		P5F0553-03		P5H1000-13
5		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
63	**PRIORITY POLLUTANT**													
64	**METALS (mg/L)**													
65	Arsenic (7060)	**0.015**		**0.013**		**0.0153**		**0.014**		**0.0113**		**0.0109**		**0.0143**
66	Chromium (6010)	**0.0101**		**0.0208**		**0.0187**		**0.0182**		**0.0077**		0.001	U	**0.00206**
67	Copper (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	**0.00298**
68	Lead (7421)	**0.0009**		**0.0002**		**0.000252**		**0.00042**		0.000168	U	0.001	U	**0.0012**
69	Nickel (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00418**		**0.00755**
70	Zinc (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.00523**		0.01 U
71														
72	**MAJOR IONS AND CONVENTIONALS**													
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**269**		**325**		**259**		**283**		**249**		**268**		**294**
81	Chloride (mg/L) (EPA 325.2)	**3.04**		**2.91**		**2.57**		**2.86**		**2.53**		**2.41**		NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA
86														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4			S167G		T176I		U235R		V208I		W391D		Y314C		Z225B		Z960G		AH27I		AU45D		BC27F		BH96I		BR64J	
5			3/31/97		7/15/97		10/22/97		1/28/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/17/00		5/24/00	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.53		6.63		6.84		6.65		6.35		6.34		6.17		6.78		5.66		6.64		6.38		6.57		6.42	
89	82	Temperature (° C) (avg)	12.2		15.7		13.2		13.5		13.0		17.9		13.1		13.7		14.6		15.5		12.8		13.5		17.1	
90	83	Conductivity (um/hos)	504		501		377		431		369		559		134		448		360		398		409		420		421	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		1.85		NA		1.58		2.77		1.60		1.96		1.86		0.82		0.48	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		0.0027	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		0.0011-0.0028	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		0.0013	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		0.0011-0.0029	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		0.0035	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		0.0029	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		0.0013-0.0045	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		0.0052	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		0.0019-0.0061	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		0.0030	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		0.0032	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		0.0047	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		0.0051	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		0.0076	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		0.0041	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		0.0024-0.0089	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		0.0047	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		0.0054	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		0.0017-0.0069	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		**0.0250**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		**0.0360**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		**0.0350**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		**0.2400**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121																												
122																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4		CB85E		CL03C		CT55B		DE87G		DM30B		DW29H		ED23H		EM85I		ER93C		EZ03E		FF76F		FL66E		FU45R		FY82O	
5		8/30/00		11/8/00		2/13/01		6/5/01		8/13/01		11/27/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03	
87	**FIELD PARAMETERS**																												
88	pH (avg)	5.85		5.73		6.32		6.58		6.72		6.58		6.54		6.41		6.58		6.73		6.96		6.81		6.87		6.57	
89	Temperature (° C) (avg)	15.1		13.8		16.6		14.1		15.7		13.4		15.7		16.6		17.3		13.7		14.5		14.5		16.3		14.7	
90	Conductivity (um/hos)	398		360		408		428		413		410		381		331		373		499		494		354		364		375	
91	Dissolved oxygen (mg/L) (avg)	1.36		1.20		2.16		2.06		1.50		3.91		7.27		3.07		1.39		1.14		1.68		2.47		2.1		2.86	
92																													
93	**DIOXINS AND FURANS (ng/L)**																												
94	**Method 8290**																												
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ
1														
2														
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D
4		0402105-05		0406039-01		0408044-07		0411051-07		0502087-06		P5F0553-03		P5H1000-13
5		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
87	**FIELD PARAMETERS**													
88	pH (avg)	6.55		5.37		6.26		6.57		6.66		6.54		6.57
89	Temperature (° C) (avg)	15.5		15.3		15.2		14.2		14.5		20.1		14.6
90	Conductivity (um/hos)	378		311		597		403		219		279		333
91	Dissolved oxygen (mg/L) (avg)	2.34		1.62		4.43		1.92		0.52		4.69		NM
92														
93	**DIOXINS AND FURANS (ng/L)**													
94	**Method 8290**													
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA
120														
121														
122														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4			S167G		T176I		U235R		V208I		W391D		Y314C		Z225B		Z960G		AH27I		AU45D		BC27F		BH96I		BR64J	
5			3/31/97		7/15/97		10/22/97		1/28/98		5/20/98		8/17/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/17/00		5/24/00	
6																												
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																													
2																													
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D	
4		CB85E		CL03C		CT55B		DE87G		DM30B		DW29H		ED23H		EM85I		ER93C		EZ03E		FF76F		FL66E		FU45R		FY82O	
5		8/30/00		11/8/00		2/13/01		6/5/01		8/13/01		11/27/01		2/26/02		6/26/02		08/26/02		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03	
123	**PAHs (µg/L)**																												
124	**EPA Method SW8270 SIM**																												
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ
1														
2														
3		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D		LW6D
4		0402105-05		0406039-01		0408044-07		0411051-07		0502087-06		P5F0553-03		P5H1000-13
5		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
123	**PAHs (µg/L)**													
124	**EPA Method SW8270 SIM**													
125	Naphthalene	NA		NA		NA		NA		NA		NA		1.00 U
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		1	U	NA		NA		NA		0.150 U
128	Acenaphthene	NA		NA		NA		NA		NA		NA		**0.259**
129	Fluorene	NA		NA		NA		NA		NA		NA		**0.147**
130	Anthracene	NA		NA		1	U	NA		NA		NA		0.100 U
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

A	B	C/D	E/F	G/H	I/J	K/L	M/N	O/P	Q/R	S/T	U/V	W/X	Y/Z	AA/AB	AC/AD
		LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D	LW9D
		AH76Q	AU45E	BC27G	BH96Q	BR64M	CB85F	CL03D	CT67B	DE87H	DM30F	DW29B	ED34J	EM85H	ER93M
		5/19/99	9/22/99	12/7/99	2/16/00	5/25/00	8/30/00	11/8/00	2/14/01	6/5/01	8/14/01	11/27/01	2/28/02	6/26/02	08/27/02
1	**CHLORINATED PHENOLS (µg/L)**														
2	**EPA Method SW8040**														
3	Pentachlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.28 U
4	2,4,6-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
5	2,3,6-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
6	2,4,5-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
7	2,3,4-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
9	2,3,4,5-Tetrachlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	NA	NA	NA	NA
10															
11	**SEMIVOLATILES (µg/L)**														
12	**EPA Method SW8270**														
13	Phenol	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.2 U
14	4-Methylphenol	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
15	Isophorone	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
16	2,4-Dimethylphenol	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.3 U
17	Benzoic Acid	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	30 U	50 U	50 U	56 U
18	Naphthalene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
19	2-Methylnaphthalene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
20	2,4,6-Trichlorophenol	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.6 U
21	2,4,5-Trichlorophenol	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.6 U
22	Acenaphthene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
23	Dibenzofuran	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
24	Fluorene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U
25	Pentachlorophenol	5.0 U	5.0 U	5.0 U	**17**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.6 U
26	bis(2-Ethylhexyl)phthalate	1.2 U	**2.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	1.0 U	1.0 U	**3.1**	4.0 U	4.0 U	4.4 U
27															
28	**VOLATILES (µg/L)**														
29	**EPA Method SW8260**														
30	Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**6.1**	5.0 U	**6.7**	**37**	**14**	5 U
31	Carbon Disulfide	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
32	2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U
33	Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
34	Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
35	Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
36	Ethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
37	Styrene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
38	m,p-Xylene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
39	o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
40	1,3,5-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
41	1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
42	Isopropylbenzene	**10**	**5.5**	**8.5**	**1.1**	**3.0**	**3.0**	1.0 U	**2.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
43	n-Propylbenzene	**8.4**	**8.7**	**3.8**	1.0 U	**1.2**	**2.7**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
44	tert-Butylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
45	sec-Butylbenzene	1.0 U	**2.3**	**1.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
46	4-Isopropyltoluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
47	n-Butylbenzene	1.0 U	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
48	Naphthalene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U
	Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
49															
50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**														
51	**Method OR-DEQ**														
52	**TPH-Diesel**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**0.25**	0.25 U	**0.35**	0.25 U	**0.26**	0.25 U
53	**TPH-D Motor Oil**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	NA	NA	NA
54	**TPH-Gasoline**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25 U	NA	NA	NA
55															

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
3		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D
4		EZ03F		FF76K		FL66H		FU45P		FY82M		0402105-08		0406039-02		0408044-05		0411051-02		0502087-07		P5F0553-04		P5H1000-12
5		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
7	**CHLORINATED PHENOLS (µg/L)**																							
8	**EPA Method SW8040**																							
9	Pentachlorophenol	0.25	U	0.26	U	0.25	U	**0.55**	J	0.51	U	0.495	U	0.494	U	0.5	U	0.504	U	0.507	U	0.500	U	0.490 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16																								
17	**SEMIVOLATILES (µg/L)**																							
18	**EPA Method SW8270**																							
19	Phenol	2.3	U	2.1	U	2	U	2.1	U	2	U	1.92	U	2.27	U	2	U	2	U	2.02	U	5.00	U	5.00 U
20	4-Methylphenol	1.1	U	1	U	1	U	1	U	1	U	9.58	U	11.4	U	10	U	10	U	10.1	U	5.00	U	5.00 U
21	Isophorone	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	3.4	U	3.1	U	3	U	3.1	U	3.1	U	2.87	U	3.41	U	3	U	3.01	U	3.03	U	10.00	U	10.0 U
23	Benzoic Acid	57	U	52	U	50	U	52	U	10	U	19.2	U	22.7	U	20	U	20	U	20.2	U	50.0	U	50.0 U
24	Naphthalene	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
25	2-Methylnaphthalene	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
26	2,4,6-Trichlorophenol	5.7	U	5.2	U	5	U	5.2	U	5.1	U	4.79	U	5.68	U	5	U	5.01	U	5.06	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	5.7	U	5.2	U	5	U	5.2	U	5.1	U	4.79	U	5.68	U	5	U	5.01	U	5.06	U	5.00	U	5.00 U
28	Acenaphthene	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
29	Dibenzofuran	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
30	Fluorene	1.1	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	5.00	U	5.00 U
31	Pentachlorophenol	5.7	U	5.2	U	5	U	5.2	U	5.1	U	4.79	U	5.68	U	5	U	5.01	U	5.06	U	10	U	5 UJ
32	bis(2-Ethylhexyl)phthalate	4.6	U	1	U	1	U	1	U	1	U	0.958	U	1.14	U	1	U	1	U	1.01	U	10.00	U	10.0 U
33																								
34	**VOLATILES (µg/L)**																							
35	**EPA Method SW8260**																							
36	Acetone	5	U	5	U	5	U	5	U	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	5	U	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	1	U	1	U	1	U	1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	Isopropylbenzene	1	U	**3.3**		1	U	**14**		**12**		**4.36**		1	U	**17.6**		**1.74**		**1.64**		2.00	U	2.00 U
49	n-Propylbenzene	1	U	1		1	U	**7.8**		**5.4**		**1.16**		1	U	**8.72**		1	U	1	U	1.00	U	1.00 U
50	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**1.03**		**2.71**		1.00	U	1.00 U
51	sec-Butylbenzene	1	U	1	U	1	U	**1.6**		**1.3**		1	U	1	U	**1.03**		1	U	1	U	1.00	U	1.00 U
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	Naphthalene	5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56																								
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	**Method OR-DEQ**																							
59	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	**0.34**		0.25	U	0.246	UJ	0.246	U	0.254	U	**0.289**		0.255	U	0.25	U	0.250 U
60	**TPH-D Motor Oil**	NA		NA		NA		NA		0.5	U	0.492	UJ	0.492	U	0.508	U	0.514	U	0.511	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.436**		**0.109**		**0.127**
62																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D	
4			AH76Q		AU45E		BC27G		BH96Q		BR64M		CB85F		CL03D		CT67B		DE87H		DM30F		DW29B		ED34J		EM85H		ER93M	
5			5/19/99		9/22/99		12/7/99		2/16/00		5/25/00		8/30/00		11/8/00		2/14/01		6/5/01		8/14/01		11/27/01		2/28/02		6/26/02		08/27/02	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	**0.025**		**0.030**		**0.022**		**0.028**		**0.028**		**0.032**		**0.030**		**0.037**		**0.033**		**0.044**		**0.042**		**0.030**		**0.033**		**0.033**	
66	59	Chromium (6010)	**0.025**		**0.020**		**0.009**		**0.014**		0.005	U	**0.013**		**0.010**		**0.012**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	**0.027**		**0.019**		**0.011**		**0.016**		**0.004**		**0.013**		**0.015**		**0.014**		**0.009**		**0.002**		**0.005**		**0.004**		**0.002**		0.002	U
68	61	Lead (7421)	**0.006**		**0.006**		**0.004**		**0.003**		**0.002**		**0.005**		**0.003**		**0.006**		0.001	U	0.001	U	**0.003**		0.001	U	0.001	U	**0.002**	
69	62	Nickel (6010)	**0.02**		0.02	U	0.01	U	**0.02**		0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.070**		**0.052**		**0.032**	U	**0.042**		**0.013**		**0.033**		**0.028**		**0.039**		**0.012**		0.006	U	**0.019**		**0.009**		**0.011**		**0.012**	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**28.8**		**37.0**		**39.8**		**39.3**		**40.0**		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**11.0**	J	**13.2**		**13.8**		**13.7**		**13.8**		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**2.0**		**1.9**		**1.8**		**1.6**		**2.0**		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**5.18**		**5.47**		**5.76**		**6.14**		**7.23**		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**150**		NA		NA		NA		**180**		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**150**		NA		NA		NA		**180**		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**130**		**120**		**130**		**110**		**140**		**150**		**170**		**190**		**210**	J	**200**		**220**		**260**		**220**		**190**	
81	74	Chloride (mg/L) (EPA 325.2)	**1.4**		**2.6**		**2.7**		**3.1**		**2.6**		**2.4**		**2.1**		**2.9**	J	**2.1**		**3.3**		**1.8**		**2.4**		**3.0**		**2.5**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		0.010	U	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		**0.011**	J	NA		NA		NA		**0.018**		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		**0.018**		NA		NA		NA		**0.025**		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		**4.6**		NA		NA		NA		**5.3**		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D
4		EZ03F		FF76K		FL66H		FU45P		FY82M		0402105-08		0406039-02		0408044-05		0411051-02		0502087-07		P5F0553-04		P5H1000-12
5		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
63	**PRIORITY POLLUTANT**																							
64	**METALS (mg/L)**																							
65	Arsenic (7060)	0.05	U	**0.021**		**0.03**		**0.03**		**0.038**		**0.030**		**0.027**		**0.0307**		**0.0458**		**0.0321**		**0.0366**		**0.0321**
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	**0.012**		**0.0101**		**0.0173**		**0.0175**		**0.0182**		**0.0086**		0.001	U	0.001 U
67	Copper (6010)	0.002	U	**0.002**		0.002	U	**0.004**		**0.011**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	0.001 U
68	Lead (7421)	0.02	U	0.001	U	0.001	U	0.001	U	**0.002**		**0.0007**		**0.0006**		**0.000788**		**0.00068**		**0.00144**		0.001	U	0.001 U
69	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00233**		**0.00109**
70	Zinc (6010)	**0.008**		**0.008**		0.006	U	**0.008**		**0.027**		0.01	U	0.01	U	0.01	U	0.0124	U	**0.0146**		**0.00808**		0.01 U
71																								
72	**MAJOR IONS AND CONVENTIONALS**																							
73	Calcium (mg/L) (6010)	NA		**34.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		**11.8**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		**1.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		**5.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		**130**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		**130**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**210**		**250**		**180**		**180**		**160**		**181**		**237**		**163**		**229**		**207**		**220**		**236**
81	Chloride (mg/L) (EPA 325.2)	**2.2**		**1.9**		**2**		1	U	**1.2**		**1.47**		**1.39**		**1.33**		**1.27**		**1.58**		**1.20**		**1.48**
82	N-Nitrate (mg-N/L) (Calculated)	NA		**0.11**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		**0.019**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		**0.13**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		**16**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D	
4			AH76Q		AU45E		BC27G		BH96Q		BR64M		CB85F		CL03D		CT67B		DE87H		DM30F		DW29B		ED34J		EM85H		ER93M	
5			5/19/99		9/22/99		12/7/99		2/16/00		5/25/00		8/30/00		11/8/00		2/14/01		6/5/01		8/14/01		11/27/01		2/28/02		6/26/02		08/27/02	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.35		6.71		6.62		6.90		6.69		6.05		5.91		6.35		6.81		6.97		6.72		6.52		6.41		6.89	
89	82	Temperature (° C) (avg)	14.5		14.9		13.1		13.7		14.8		14.7		13.4		14.3		14.3		14.6		13.0		14.1		16.9		15.6	
90	83	Conductivity (um/hos)	171		160		166		198		198		227		242		259		330		324		345		361		310		249	
91	84	Dissolved oxygen (mg/L) (avg)	3.18		1.73		1.57		1.39		0.48		1.67		1.06		0.75		1.67		1.80		1.32		7.46		3.30		0.99	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D
4		EZ03F		FF76K		FL66H		FU45P		FY82M		0402105-08		0406039-02		0408044-05		0411051-02		0502087-07		P5F0553-04		P5H1000-12
5		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
87	**FIELD PARAMETERS**																							
88	pH (avg)	6.91		7.02		6.83		6.95		6.69		6.64		5.41		6.22		6.76		7.68		6.72		6.37
89	Temperature (° C) (avg)	14.3		14.7		15		16.4		14.9		16.3		15.6		15		14.6		15		15.8		14.9
90	Conductivity (um/hos)	314		281		171		205		255		274		125		362		303		195		186		301
91	Dissolved oxygen (mg/L) (avg)	1		2.04		4.56		1.03		2.91		1.42		5.05		3.75		1.9		1.82		1.95		NM
92																								
93	**DIOXINS AND FURANS (ng/L)**																							
94	**Method 8290**																							
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																								
121																								
122																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D	
4			AH76Q		AU45E		BC27G		BH96Q		BR64M		CB85F		CL03D		CT67B		DE87H		DM30F		DW29B		ED34J		EM85H		ER93M	
5			5/19/99		9/22/99		12/7/99		2/16/00		5/25/00		8/30/00		11/8/00		2/14/01		6/5/01		8/14/01		11/27/01		2/28/02		6/26/02		08/27/02	
6																														
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D		LW9D
4		EZ03F		FF76K		FL66H		FU45P		FY82M		0402105-08		0406039-02		0408044-05		0411051-02		0502087-07		P5F0553-04		P5H1000-12
5		11/12/02		2/12/03		5/9/03		8/28/03		10/24/03		2/20/04		6/7/04		8/06/04		11/9/04		2/18/05		6/14/05		08/23/05
123	**PAHs (µg/L)**																							
124	**EPA Method SW8270 SIM**																							
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.100 U
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		0.100 U
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.100 U
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		0.100 U
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		0.100 U
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D	
		AH76P		AU45H		BC27D		BH96H		BR64L		CB85H		CL03O		CT67A		DE87I		DM30E		DW29D		ED30C		EN00C		ER93E	
		5/19/99		9/22/99		12/7/99		2/17/00		5/25/00		8/31/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02	
1	**CHLORINATED PHENOLS (µg/L)**																												
2	**EPA Method SW8040**																												
3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.27	U
4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA	
10																													
11	**SEMIVOLATILES (µg/L)**																												
12	**EPA Method SW8270**																												
13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U
14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U
17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	54	U
18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U
21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U
22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U
25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.4	U
26	bis(2-Ethylhexyl)phthalate	3.2	U	**1.3**		1.0	U	**1.1**		**1.7**		1.0	U	**2.7**		**1.2**		1.0	U	**2.0**		1.0	U	4.0	U	4.0	U	4.3	U
27																													
28	**VOLATILES (µg/L)**																												
29	**EPA Method SW8260**																												
30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**11**		5.0	U	5.0	U	5	U
31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U
33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U
48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U
	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49																													
50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
51	**Method OR-DEQ**																												
52	**TPH-Diesel**	0.25	U	**0.32**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		0.50	U	NA		NA		NA		NA		NA		NA		NA	
54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
3		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D
4		EZ17I		FF76C		FL41N		FU45K		FY82B		0402113-02		0406073-02		0408044-03		0411051-03		0502102-10		P5F0223-05		P5H0814-04
5		11/13/02		2/12/03		5/7/03		8/28/03		10/23/03		2/23/04		6/10/04		8/06/04		11/9/04		2/23/05		6/6/05		08/18/05
7	**CHLORINATED PHENOLS (µg/L)**																							
8	**EPA Method SW8040**																							
9	Pentachlorophenol	**0.47**		0.25	U	**0.36**		**4**	J	**0.94**		0.491	U	0.509	U	0.5	U	0.489	U	0.504	U	0.485	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
17	**SEMIVOLATILES (µg/L)**																							
18	**EPA Method SW8270**																							
19	Phenol	2.1	U	2	U	2	U	2	U	2	U	2	U	2.14	U	2	U	1.97	U	2	U	5.56	U	5.00 U
20	4-Methylphenol	1.1	U	1	U	1	U	1	U	1	U	9.99	U	10.7	U	10	U	9.85	U	9.99	U	5.56	U	5.00 U
21	Isophorone	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
22	2,4-Dimethylphenol	3.2	U	3	U	3	U	3.1	U	3	U	3	U	3.21	U	3	U	2.96	U	3	U	11.1	U	10.0 U
23	Benzoic Acid	53	U	50	U	50	U	51	U	10	U	20	U	21.4	U	20	U	19.7	U	20	U	55.6	U	50.0 U
24	Naphthalene	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
25	2-Methylnaphthalene	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
26	2,4,6-Trichlorophenol	5.3	U	5	U	5	U	5.1	U	5	U	5	U	5.35	U	5	U	4.93	U	5	U	5.56	U	5.00 U
27	2,4,5-Trichlorophenol	5.3	U	5	U	5	U	5.1	U	5	U	5	U	5.35	U	5	U	4.93	U	5	U	5.56	U	5.00 U
28	Acenaphthene	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
29	Dibenzofuran	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
30	Fluorene	1.1	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	5.56	U	5.00 U
31	Pentachlorophenol	5.3	U	5	U	5	U	5.1	U	5	U	5	U	5.35	U	5	U	4.93	U	5	U	11.1	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	4.3	U	1	U	1	U	1	U	1	U	0.999	U	1.07	U	1	U	0.985	U	0.999	U	11.1	U	10.0 U
34	**VOLATILES (µg/L)**																							
35	**EPA Method SW8260**																							
36	Acetone	5	U	5	U	5	U	5	U	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	5	U	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	1	U	1	U	1	U	1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	Naphthalene	5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																							
58	**Method OR-DEQ**																							
59	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.247	U	0.238	U	0.245	U	0.24	U	0.246	U	0.25	U	0.250 U
60	**TPH-D Motor Oil**	0.5	U	NA		NA		NA		0.5	U	0.494	U	0.476	U	0.49	U	0.481	U	0.492	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.1	U	0.08	U	0.08 UJ

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D	
4			AH76P		AU45H		BC27D		BH96H		BR64L		CB85H		CL03O		CT67A		DE87I		DM30E		DW29D		ED30C		EN00C		ER93E	
5			5/19/99		9/22/99		12/7/99		2/17/00		5/25/00		8/31/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	**0.038**		**0.038**		**0.022**		**0.032**		**0.025**		**0.037**		**0.022**		**0.025**		**0.023**		**0.027**		**0.017**		**0.019**		**0.031**		**0.026**	
66	59	Chromium (6010)	0.005	U	**0.021**		**0.006**		0.005	U	0.005	U	**0.034**		**0.013**		**0.011**		**0.008**		**0.019**		**0.010**		0.005	U	0.005	U	**0.007**	
67	60	Copper (6010)	**0.003**		**0.028**		**0.011**		0.002	U	**0.005**		**0.045**		**0.021**		**0.015**		**0.009**		**0.024**		**0.012**		**0.009**		**0.004**		**0.009**	
68	61	Lead (7421)	**0.001**		**0.008**		**0.003**		0.001	U	**0.002**		**0.012**		**0.006**		**0.006**		**0.003**		**0.008**		**0.004**		**0.002**		0.001	U	**0.004**	
69	62	Nickel (6010)	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	**0.03**		0.01	U	0.01	U	0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.018**		**0.046**		0.022	U	**0.010**		**0.010**		**0.076**		**0.030**		**0.031**		**0.018**		**0.039**		**0.022**		**0.015**	J	**0.010**		**0.018**	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**19.2**		**20.4**		**22.5**		**21.0**		**19.0**		**19.1**		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**9.95**		**10.3**		**12.1**		**10.3**		**9.55**		**9.37**		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**1.1**		**1.2**		**1.5**		**0.9**		**1.0**		**0.7**		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**8.31**		**9.80**		**9.09**		**9.65**		**9.06**		**8.77**		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**110**		NA		NA		NA		**100**		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**110**		NA		NA		NA		**100**		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**180**		**180**		**170**		**150**		**150**		**170**		**160**		**150**		**150**	J	**160**	J	**150**		**100**		**140**		**150**	
81	74	Chloride (mg/L) (EPA 325.2)	**1.7**		**1.9**		**2.1**		**3.5**		**2.3**		**14**		**2.0**		**2.6**	J	**1.9**		**4.1**		**1.7**		**1.3**	J	**2.1**		**2.2**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.012**		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.013**		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.025**		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		**6.2**		NA		NA		NA		**7.5**		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D
4		EZ17I		FF76C		FL41N		FU45K		FY82B		0402113-02		0406073-02		0408044-03		0411051-03		0502102-10		P5F0223-05		P5H0814-04
5		11/13/02		2/12/03		5/7/03		8/28/03		10/23/03		2/23/04		6/10/04		8/06/04		11/9/04		2/23/05		6/6/05		08/18/05
63	**PRIORITY POLLUTANT**																							
64	**METALS (mg/L)**																							
65	Arsenic (7060)	0.05	U	**0.011**		**0.008**		**0.026**		**0.024**		**0.023**		**0.019**		**0.0198**		**0.0168**		**0.0175**		**0.0226**		**0.02**
66	Chromium (6010)	**0.009**		0.005	U	0.005	U	0.005	U	**0.012**		**0.0114**		**0.0156**		**0.0185**		**0.0233**		**0.0156**		**0.00497**		**0.00545**
67	Copper (6010)	**0.012**		**0.004**	J	**0.003**		**0.004**		**0.011**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.00874**		**0.00878**
68	Lead (7421)	0.02	U	0.001	U	**0.001**		0.001	U	**0.003**		**0.0010**		0.0001	U	**0.00123**		**0.0021**		**0.00234**		**0.00207**		**0.00239**
69	Nickel (6010)	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00499**		**0.00576**
70	Zinc (6010)	**0.026**		**0.01**		**0.019**		0.006	U	**0.024**		0.01	U	0.01	U	0.01	U	**0.0159**		**0.0246**		**0.0136**		**0.0202**
71																								
72	**MAJOR IONS AND CONVENTIONALS**																							
73	Calcium (mg/L) (6010)	NA		**14.1**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		**5.88**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		**1.2**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		**8.5**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		**96**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		**96**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**170**		**130**		**88**		**120**	J	**120**		**162**		**161**		**113**		**156**		**96**		**151**		**161**
81	Chloride (mg/L) (EPA 325.2)	**2.5**		**1.9**		**1.6**		**1.4**		**1.5**		**1.56**		**1.53**		**1.42**		**1.34**		**1.59**		**1.62**		**1.41**
82	N-Nitrate (mg-N/L) (Calculated)	NA		**0.025**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		0.01	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		**0.025**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		**7.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D	
4			AH76P		AU45H		BC27D		BH96H		BR64L		CB85H		CL03O		CT67A		DE87I		DM30E		DW29D		ED30C		EN00C		ER93E	
5			5/19/99		9/22/99		12/7/99		2/17/00		5/25/00		8/31/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.44		6.49		6.79		6.86		6.90		6.71		6.10		6.72		6.88		7.03		6.80		6.50		6.56		6.67	
89	82	Temperature (° C) (avg)	14.7		17.1		12.6		15.8		13.9		13.8		13.0		13.7		13.7		16.2		14.1		13.5		14.1		14.3	
90	83	Conductivity (um/hos)	195		233		220		246		255		208		203		204		228		216		216		164		189		180	
91	84	Dissolved oxygen (mg/L) (avg)	2.03		1.29		2.53		0.52		0.72		1.47		1.09		0.52		2.70		0.63		3.97		7.74		5.59		0.95	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D
4		EZ17I		FF76C		FL41N		FU45K		FY82B		0402113-02		0406073-02		0408044-03		0411051-03		0502102-10		P5F0223-05		P5H0814-04
5		11/13/02		2/12/03		5/7/03		8/28/03		10/23/03		2/23/04		6/10/04		8/06/04		11/9/04		2/23/05		6/6/05		08/18/05
87	**FIELD PARAMETERS**																							
88	pH (avg)	6.35		7.14		7.18		7.07		6.48		6.47		6.71		6.2		6.8		7.02		7.41		6.95
89	Temperature (° C) (avg)	13.7		13.6		13.4		15.8		17.9		15.7		14.5		14		13.8		15.5		14.4		15.8
90	Conductivity (um/hos)	188		178		93		122		164		151		140		236		157		103		124		161
91	Dissolved oxygen (mg/L) (avg)	1.22		1.47		5.73		2.33		5.66		4.49		1.71		4.91		1.66		2.2		4.79		NM
92																								
93	**DIOXINS AND FURANS (ng/L)**																							
94	**Method 8290**																							
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																								
121																								
122																								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D	
4			AH76P		AU45H		BC27D		BH96H		BR64L		CB85H		CL03O		CT67A		DE87I		DM30E		DW29D		ED30C		EN00C		ER93E	
5			5/19/99		9/22/99		12/7/99		2/17/00		5/25/00		8/31/00		11/9/00		2/15/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02	
6																														
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																								
2																								
3		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D		LW10D
4		EZ17I		FF76C		FL41N		FU45K		FY82B		0402113-02		0406073-02		0408044-03		0411051-03		0502102-10		P5F0223-05		P5H0814-04
5		11/13/02		2/12/03		5/7/03		8/28/03		10/23/03		2/23/04		6/10/04		8/06/04		11/9/04		2/23/05		6/6/05		08/18/05
123	**PAHs (µg/L)**																							
124	**EPA Method SW8270 SIM**																							
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			AH76H		AU45C		BC27I		BH96L		BR64G		CB49F		CK77H		CT55D		DE68B		DM52G		DW48B		ED34E		EM85C		ES04C
5			5/20/99		9/22/99		12/8/99		2/18/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	**46**		**8.1**		**1.1**		**0.36**		0.25	U	0.25	U	0.25	U	**1.6**		0.25	U	0.25	U	**0.62**		**0.76**		0.25	U	0.26
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	0.57	U	1.3	U	0.39	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**2.2**		**1.5**		**0.36**		**0.12**	J1	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	**2.2**		**1.1**		**0.27**		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.1
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U	51
24	18	Naphthalene	**1.3**		1.0	U	**0.9**	J1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
25	19	2-Methylnaphthalene	1.0	U	1.0	U	**0.6**	J1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.1
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.1
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
31	25	Pentachlorophenol	**55**		**5.0**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.1
32	26	bis(2-Ethylhexyl)phthalate	3.5	U	1.0	U	**2.6**		**2.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.9**		4.0	U	4.0	U	4.1
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	**8.9**		**16**		5.0	U	5.0	U	5.0	U	**8.4**		**12**			R	**35**		**10**		**130**		5.0	U	**54**		**27**
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
38	32	2-Butanone	5.0	U	22	U	5.9	U	5.0	U	**5.4**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
42	36	Ethylbenzene	**16**		**7.2**		**3.2**		**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
44	38	m,p-Xylene	**22**		**7.4**		**2.1**		**1.3**		**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
45	39	o-Xylene	**21**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
46	40	1,3,5-Trimethylbenzene	**34**		**26**		**10**		**7.5**		**8.0**		**4.4**		**3.1**		**4.2**		**3.4**		**2.2**		**1.1**		1.0	U	1.0	U	1
47	41	1,2,4-Trimethylbenzene	**97**		**40**		**12**		**9.0**		**12**		**6.7**		**5.6**		**7.0**		**5.7**		**3.6**		**1.7**		1.0	U	**1.4**		1
48	42	Isopropylbenzene	**12**		**11**		**6.9**		**4.0**		**2.4**		**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
49	43	n-Propylbenzene	**18**		**20**		**13**		**7.5**		**4.8**		**2.8**		**1.6**		**1.3**		**1.2**		**1.2**		1.0	U	1.0	U	1.0	U	1
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
51	45	sec-Butylbenzene	**4.6**		**5.3**		**4.8**		**3.7**		**2.7**		**2.2**		**1.7**		**1.2**		**1.2**		**1.4**		**1.2**		1.0	U	1.0	U	1
52	46	4-Isopropyltoluene	**6.7**		**5.0**		**2.0**		**1.6**		**1.9**		**1.7**		1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1
53	47	n-Butylbenzene	**5.8**		4.1	U	2.3	U	**2.3**		**2.2**	M	**2.4**	M	**1.5**		**1.4**	M	**1.5**		**1.5**		1.0	U	1.0	U	1.0	U	1
54	48	Naphthalene	**5.3**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	**0.68**		**1.4**		**0.76**		**0.60**		**0.74**		**0.88**		**0.70**		**1.1**		**1.0**		**0.88**		**0.98**		**0.87**		**1.1**		**0.97**
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			EZ03B		FF88D		FL66I		FU50B		FY82J		0402113-11		0408044-02		0411066-08		0502087-03		P5F0223-03		P5H0853-08
5			11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04		8/06/04		11/11/04		2/17/05		6/6/05		08/19/05
7	**CHLORINATED PHENOLS (µg/L)**																						
8	**EPA Method SW8040**																						
9	Pentachlorophenol	U	0.25	U	0.26	U	0.26	U	**5.6**		0.55	U	**1.5**		0.5	U	NA		0.49	U	0.485	U	0.500 U
10	2,4,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16																							
17	**SEMIVOLATILES (µg/L)**																						
18	**EPA Method SW8270**																						
19	Phenol	U	2.2	U	2	U	2	U	2.1	U	2.2	U	1.95	U	2	U	1.98	U	1.98	U	5.00	U	5.00 U
20	4-Methylphenol	U	1.1	U	1	U	1	U	1	U	1.1	U	9.76	U	10	U	9.89	U	9.89	U	5.00	U	5.00 U
21	Isophorone	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	U	3.3	U	3.1	U	3.1	U	3.1	U	3.3	U	2.93	U	3	U	2.97	U	2.97	U	10.00	U	10.0 U
23	Benzoic Acid	U	54	U	51	U	51	U	52	U	11	U	19.5	U	20	U	19.8	U	19.8	U	50.0	U	50.0 U
24	Naphthalene	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
25	2-Methylnaphthalene	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
26	2,4,6-Trichlorophenol	U	5.4	U	5.1	U	5.1	U	5.2	U	5.5	U	4.88	U	5	U	4.95	U	4.95	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	U	5.4	U	5.1	U	5.1	U	5.2	U	5.5	U	4.88	U	5	U	4.95	U	4.95	U	5.00	U	5.00 U
28	Acenaphthene	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
29	Dibenzofuran	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
30	Fluorene	U	1.1	U	1	U	1	UJ	1	U	1.1	U	0.976	U	1	U	0.989	U	0.989	U	5.00	U	5.00 U
31	Pentachlorophenol	U	5.4	U	5.1	U	5.1	U	5.2	U	5.5	U	4.88	U	5	U	4.95	U	4.95	U	10	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	U	4.3	U	**1.9**		1	UJ	**1.9**		**1.5**		**1.86**		**1.71**		**1.17**		0.989	U	10.00	U	10.0 U
33																							
34	**VOLATILES (µg/L)**																						
35	**EPA Method SW8260**																						
36	Acetone		**31**		**26**		**140**		**11**		**71**		50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	U	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	U	5	U	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	U	1	U	1	U	1	U	1	U	1	U	0.4	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	Bromoform	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	Styrene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	U	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	o-Xylene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**1.26**		1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	1,2,4-Trimethylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**1**		1.00	U	1.00 U
48	Isopropylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	n-Propylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	tert-Butylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	sec-Butylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	4-Isopropyltoluene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	Naphthalene	U	5	U	5	U	5	U	5	U	5	U	1	U	1	U	1	U	**3.1**		2.00	U	2.00 U
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		1	U	1	U	1	U	1	U	1.00	U	1.00 U
56																							
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																						
58	**Method OR-DEQ**																						
59	**TPH-Diesel**		**0.8**		**0.74**		**0.91**		**1.1**		**0.66**		**0.562**		**0.79**		NA		**0.482**		0.25	U	0.250 U
60	**TPH-D Motor Oil**		NA		NA		NA		NA		0.5	U	0.504	U	0.51	U	NA		0.484	U	0.5	U	0.500 U
61	**TPH-Gasoline**		NA		NA		NA		NA		NA		NA		NA		NA		**0.328**		0.08	U	0.08 U
62																							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			AH76H		AU45C		BC27I		BH96L		BR64G		CB49F		CK77H		CT55D		DE68B		DM52G		DW48B		ED34E		EM85C		ES04C
5			5/20/99		9/22/99		12/8/99		2/18/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	**0.006**		**0.008**		**0.006**		**0.007**		**0.007**		**0.007**		**0.007**		**0.006**		**0.007**		**0.009**		**0.009**		**0.007**		**0.007**		**0.005**
66	59	Chromium (6010)	**0.008**		**0.053**		**0.015**		**0.011**		**0.013**		**0.018**		**0.016**		0.005	U	0.005	U	**0.024**		0.005	U	0.005	U	0.005	U	**0.02**
67	60	Copper (6010)	**0.005**		**0.051**		**0.016**		**0.013**		**0.014**		**0.017**		**0.018**	J2	**0.005**		**0.002**		**0.024**		0.004	U	**0.007**		**0.003**		**0.02**
68	61	Lead (7421)	**0.002**		**0.018**		**0.007**		**0.004**		**0.008**		**0.006**		**0.008**		**0.002**		**0.002**		**0.008**		**0.004**		**0.002**		0.001	U	**0.007**
69	62	Nickel (6010)	0.01	U	0.04	U	0.01	U	**0.01**		0.01	U	**0.02**		**0.01**		0.01	U	0.01	U	**0.02**		0.01	U	0.01	U	0.01	U	**0.01**
70	63	Zinc (6010)	**0.030**		**0.142**		**0.047**		**0.042**		**0.040**		**0.052**		**0.058**		**0.023**		**0.018**		**0.064**		**0.022**		**0.022**		**0.013**		**0.053**
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**54.9**		**61.5**		**55.9**		**58.6**		**60.0**		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**26.4**		**31.0**		**27.6**		**28.6**		**31.3**		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**1.7**		**1.9**		**2.9**		**2.1**		**2.2**		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**15.6**		**16.6**		**17.5**		**16.2**		**17.6**		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**350**		NA		NA		NA		**370**		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**350**		NA		NA		NA		**370**		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**420**		**310**		**310**		**290**		**350**		**380**		**380**		**360**		**370**		**300**		**340**		**340**		**410**		**390**
81	74	Chloride (mg/L) (EPA 325.2)	**9.2**		**10**		**11**		**11**		**10**		**10**		**14**		**7.7**		**8.8**		**8.3**		**7.5**		**9.8**		**12**		**9.8**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.024**		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.025**		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		**0.049**		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		**6.3**		NA		NA		NA		**7.6**		NA		NA
86	79																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1																							
2																							
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			EZ03B		FF88D		FL66I		FU50B		FY82J		0402113-11		0408044-02		0411066-08		0502087-03		P5F0223-03		P5H0853-08
5			11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04		8/06/04		11/11/04		2/17/05		6/6/05		08/19/05
63	**PRIORITY POLLUTANT**																						
64	**METALS (mg/L)**																						
65	Arsenic (7060)		0.05	U	**0.008**		**0.007**		**0.005**		**0.005**		**0.007**		**0.00558**		**0.00441**		**0.005**		**0.0104**		**0.00649**
66	Chromium (6010)		**0.032**		0.005	U	0.005	U	**0.007**		**0.016**		**0.0104**		**0.0176**		**0.0216**		**0.0084**		**0.065**		**0.0278**
67	Copper (6010)		**0.034**		**0.007**		**0.004**		**0.008**		**0.015**		0.01	U	0.01	U	0.01	U	0.01	U	**0.0999**		**0.0319**
68	Lead (7421)		0.02	U	**0.002**		**0.002**		**0.002**		**0.004**		**0.0019**		**0.00274**		**0.00301**		**0.00129**		**0.0369**		**0.0132**
69	Nickel (6010)		**0.05**		**0.05**		**0.01**		**0.01**		**0.02**		0.005	U	0.005	U	0.005	U	0.005	U	**0.0839**		**0.0596**
70	Zinc (6010)		**0.096**		**0.024**		**0.019**		**0.025**		**0.041**		0.01	U	**0.0216**		**0.0246**		0.01	U	**0.254**		**0.0972**
71																							
72	**MAJOR IONS AND CONVENTIONALS**																						
73	Calcium (mg/L) (6010)		NA		**70.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)		NA		**31.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)		NA		**2.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)		NA		**17.5**		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		**310**		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		**310**		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**470**		**380**		**320**		**260**		**290**		**361**		**303**		**333**		**382**		**447**		**449**
81	Chloride (mg/L) (EPA 325.2)		**7.4**		**7.8**		**6.7**		**4.6**		**5.8**		**6.68**		**4.59**		**4.54**		**5.65**		**5.57**		**5.91**
82	N-Nitrate (mg-N/L) (Calculated)		NA		**0.02**		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		0.01	U	NA		NA		NA		NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		**0.02**		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)		NA		**96**		NA		NA		NA		NA		NA		NA		NA		NA		NA
86																							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			AH76H		AU45C		BC27I		BH96L		BR64G		CB49F		CK77H		CT55D		DE68B		DM52G		DW48B		ED34E		EM85C		ES04C
5			5/20/99		9/22/99		12/8/99		2/18/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.51		6.75		6.54		6.44		6.63		6.35		5.75		6.38		6.75		7.80		6.68		6.52		6.56		6.44
89	82	Temperature (° C) (avg)	15.5		15.3		12.1		12.0		17.0		15.0		12.8		12.3		13.3		14.7		12.6		12.8		14.9		15.7
90	83	Conductivity (um/hos)	630		487		617		551		643		523		544		454		493		488		473		576		694		466
91	84	Dissolved oxygen (mg/L) (avg)	1.96		1.53		1.33		1.86		1.53		1.49		1.23		1.14		1.45		1.43		3.48		8.44		3.33		1.30
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1																							
2																							
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			EZ03B		FF88D		FL66I		FU50B		FY82J		0402113-11		0408044-02		0411066-08		0502087-03		P5F0223-03		P5H0853-08
5			11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04		8/06/04		11/11/04		2/17/05		6/6/05		08/19/05
87	**FIELD PARAMETERS**																						
88	pH (avg)		6.2		6.96		6.81		6.7		6.48		6.53		6.3		6.69		6.84		7.34		6.37
89	Temperature (° C) (avg)		14		13.6		14.3		14.4		13.3		14.1		14.3		13.6		13.1		17.1		17.3
90	Conductivity (um/hos)		642		704		419		334		376		485		678		463		214		462		519
91	Dissolved oxygen (mg/L) (avg)		0.48		0		2.57		2.31		2.80		1.13		3.15		1.34		0.88		2.79		NM
92																							
93	**DIOXINS AND FURANS (ng/L)**																						
94	**Method 8290**																						
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																							
121																							
122																							

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2																													
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			AH76H		AU45C		BC27I		BH96L		BR64G		CB49F		CK77H		CT55D		DE68B		DM52G		DW48B		ED34E		EM85C		ES04C
5			5/20/99		9/22/99		12/8/99		2/18/00		5/24/00		8/29/00		11/8/00		2/14/01		6/5/01		8/15/01		11/29/01		2/28/02		6/26/02		08/28/02
6																													
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1																							
2																							
3			LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D		LW11D
4			EZ03B		FF88D		FL66I		FU50B		FY82J		0402113-11		0408044-02		0411066-08		0502087-03		P5F0223-03		P5H0853-08
5			11/12/02		2/13/03		5/9/03		8/29/03		10/24/03		2/23/04		8/06/04		11/11/04		2/17/05		6/6/05		08/19/05
123	**PAHs (µg/L)**																						
124	**EPA Method SW8270 SIM**																						
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130	Anthracene		NA		NA		NA		NA		NA		NA		1	U	NA		NA		NA		NA
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2					Dup of LW14D																								
3			LW14D		W		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D
4			BR64R		BR64Q		CT67N		DE87E		DM30Q		DW29J		ED30E		EN00E		ER93F		EZ17C		FF65E		FL58D		FU45L		FY82C
5			5/25/00		5/25/00		2/14/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/23/03
6																													
7	1	**CHLORINATED PHENOLS (µg/L)**																											
8	2	**EPA Method SW8040**																											
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.27	U	0.25	U	0.25	U	0.25	U	**2.3**	J	0.5
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																												
17	11	**SEMIVOLATILES (µg/L)**																											
18	12	**EPA Method SW8270**																											
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
33	27																												
34	28	**VOLATILES (µg/L)**																											
35	29	**EPA Method SW8260**																											
36	30	Acetone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
37	31	Carbon Disulfide	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
38	32	2-Butanone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
39	33	Benzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
40	34	Bromoform	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
41	35	Toluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
42	36	Ethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
43	37	Styrene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
44	38	m,p-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
45	39	o-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
46	40	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
47	41	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
48	42	Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
49	43	n-Propylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
50	44	tert-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
51	45	sec-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
52	46	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
53	47	n-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
54	48	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																												
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																											
58	51	**Method OR-DEQ**																											
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK
1									
2									
3			LW14D		LW14D		LW14D		LW14D
4			0402113-03		0408036-05		0502102-09		P5H0853-02
5			2/23/04		8/05/04		2/23/05		08/19/05
6									
7	**CHLORINATED PHENOLS (µg/L)**								
8	**EPA Method SW8040**								
9	Pentachlorophenol	U	0.557	U	0.5	U	0.513	U	0.500 U
10	2,4,6-Trichlorophenol		NA		NA		NA		NA
11	2,3,6-Trichlorophenol		NA		NA		NA		NA
12	2,4,5-Trichlorophenol		NA		NA		NA		NA
13	2,3,4-Trichlorophenol		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA		NA
16									
17	**SEMIVOLATILES (µg/L)**								
18	**EPA Method SW8270**								
19	Phenol		NA		NA		NA		NA
20	4-Methylphenol		NA		NA		NA		NA
21	Isophorone		NA		NA		NA		NA
22	2,4-Dimethylphenol		NA		NA		NA		NA
23	Benzoic Acid		NA		NA		NA		NA
24	Naphthalene		NA		NA		NA		NA
25	2-Methylnaphthalene		NA		NA		NA		NA
26	2,4,6-Trichlorophenol		NA		NA		NA		NA
27	2,4,5-Trichlorophenol		NA		NA		NA		NA
28	Acenaphthene		NA		NA		NA		NA
29	Dibenzofuran		NA		NA		NA		NA
30	Fluorene		NA		NA		NA		NA
31	Pentachlorophenol		NA		NA		NA		NA
32	bis(2-Ethylhexyl)phthalate		NA		NA		NA		NA
33									
34	**VOLATILES (µg/L)**								
35	**EPA Method SW8260**								
36	Acetone		NA		NA		NA		NA
37	Carbon Disulfide		NA		NA		NA		NA
38	2-Butanone		NA		NA		NA		NA
39	Benzene		NA		NA		NA		NA
40	Bromoform		NA		NA		NA		NA
41	Toluene		NA		NA		NA		NA
42	Ethylbenzene		NA		NA		NA		NA
43	Styrene		NA		NA		NA		NA
44	m,p-Xylene		NA		NA		NA		NA
45	o-Xylene		NA		NA		NA		NA
46	1,3,5-Trimethylbenzene		NA		NA		NA		NA
47	1,2,4-Trimethylbenzene		NA		NA		NA		NA
48	Isopropylbenzene		NA		NA		NA		NA
49	n-Propylbenzene		NA		NA		NA		NA
50	tert-Butylbenzene		NA		NA		NA		NA
51	sec-Butylbenzene		NA		NA		NA		NA
52	4-Isopropyltoluene		NA		NA		NA		NA
53	n-Butylbenzene		NA		NA		NA		NA
54	Naphthalene		NA		NA		NA		NA
55	Methyl tert-butyl ether		NA		NA		NA		NA
56									
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	**Method OR-DEQ**								
59	**TPH-Diesel**		NA		NA		NA		NA
60	**TPH-D Motor Oil**		NA		NA		NA		NA
61	**TPH-Gasoline**		NA		NA		NA		NA
62									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2					Dup of LW14D																								
3			LW14D		W		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D
4			BR64R		BR64Q		CT67N		DE87E		DM30Q		DW29J		ED30E		EN00E		ER93F		EZ17C		FF65E		FL58D		FU45L		FY82C
5			5/25/00		5/25/00		2/14/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/23/03
63	56	**PRIORITY POLLUTANT**																											
64	57	**METALS (mg/L)**																											
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
71	64																												
72	65	**MAJOR IONS AND CONVENTIONALS**																											
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK
1									
2									
3			LW14D		LW14D		LW14D		LW14D
4			0402113-03		0408036-05		0502102-09		P5H0853-02
5			2/23/04		8/05/04		2/23/05		08/19/05
63	**PRIORITY POLLUTANT**								
64	**METALS (mg/L)**								
65	Arsenic (7060)		NA		NA		NA		NA
66	Chromium (6010)		NA		NA		NA		NA
67	Copper (6010)		NA		NA		NA		NA
68	Lead (7421)		NA		NA		NA		NA
69	Nickel (6010)		NA		NA		NA		NA
70	Zinc (6010)		NA		NA		NA		NA
71									
72	**MAJOR IONS AND CONVENTIONALS**								
73	Calcium (mg/L) (6010)		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)		NA		NA		NA		NA
75	Potassium (mg/L) (6010)		NA		NA		NA		NA
76	Sodium (mg/L) (6010)		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)		NA		NA		NA		NA
81	Chloride (mg/L) (EPA 325.2)		NA		NA		NA		NA
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA
86									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2					Dup of LW14D																								
3			LW14D		W		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D
4			BR64R		BR64Q		CT67N		DE87E		DM30Q		DW29J		ED30E		EN00E		ER93F		EZ17C		FF65E		FL58D		FU45L		FY82C
5			5/25/00		5/25/00		2/14/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/23/03
87	80	**FIELD PARAMETERS**																											
88	81	pH (avg)	6.64		6.64		6.15		6.65		6.81		6.61		6.35		6.64		6.73		6.22		7.05		6.69		6.98		6.56
89	82	Temperature (° C) (avg)	14.1		14.2		12.9		13.5		14.1		12.4		13.6		13.9		14.8		13.4		14.3		13.3		16.1		14.2
90	83	Conductivity (um/hos)	312		312		345		371		296		362		356		487		434		477		426		258		224		238
91	84	Dissolved oxygen (mg/L) (avg)	4.54		4.52		0.12		1.17		0.83		4.12		7.36		5.08		2.09		0.77		2.48		3.06		1.54		2.29
92	85																												
93	86	**DIOXINS AND FURANS (ng/L)**																											
94	87	**Method 8290**																											
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																													
121																													
122																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK
1									
2									
3			LW14D		LW14D		LW14D		LW14D
4			0402113-03		0408036-05		0502102-09		P5H0853-02
5			2/23/04		8/05/04		2/23/05		08/19/05
87	**FIELD PARAMETERS**								
88	pH (avg)		6.38		6.1		6.65		6.06
89	Temperature (° C) (avg)		13.7		16		13.9		15.0
90	Conductivity (um/hos)		239		356		177		458
91	Dissolved oxygen (mg/L) (avg)		1.11		3.07		0		NM
92									
93	**DIOXINS AND FURANS (ng/L)**								
94	**Method 8290**								
95	2,3,7,8-TCDF		NA		NA		NA		NA
96	Total TCDF		NA		NA		NA		NA
97	2,3,7,8-TCDD		NA		NA		NA		NA
98	Total TCDD		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA
101	Total PeCDF		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA
103	Total PeCDD		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA
108	Total HxCDF		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA
112	Total HxCDD		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA
115	Total HpCDF		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA
117	Total HpCDD		NA		NA		NA		NA
118	OCDF		NA		NA		NA		NA
119	OCDD		NA		NA		NA		NA
120									
121									
122									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2					Dup of LW14D																								
3			LW14D		W		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D		LW14D
4			BR64R		BR64Q		CT67N		DE87E		DM30Q		DW29J		ED30E		EN00E		ER93F		EZ17C		FF65E		FL58D		FU45L		FY82C
5			5/25/00		5/25/00		2/14/01		6/6/01		8/13/01		11/27/01		2/27/02		6/27/02		08/27/02		11/13/02		2/11/03		5/8/03		8/28/03		10/23/03
6																													
123		**PAHs (µg/L)**																											
124		**EPA Method SW8270 SIM**																											
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AD	AE	AF	AG	AH	AI	AJ	AK
1									
2									
3			LW14D		LW14D		LW14D		LW14D
4			0402113-03		0408036-05		0502102-09		P5H0853-02
5			2/23/04		8/05/04		2/23/05		08/19/05
6									
123	**PAHs (µg/L)**								
124	**EPA Method SW8270 SIM**								
125	Naphthalene		NA		NA		NA		NA
126	2-Methylnaphthalene		NA		NA		NA		NA
127	Acenaphthylene		NA		NA		NA		NA
128	Acenaphthene		NA		NA		NA		NA
129	Fluorene		NA		NA		NA		NA
130	Anthracene		NA		NA		NA		NA
131	Dibenzofuran		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW16D		LW16D	
4			BR64U		0408036-04	
5			5/25/00		8/05/04	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	0.25	U	0.5	U
10	4	2,4,6-Trichlorophenol	0.25	U	NA	
11	5	2,3,6-Trichlorophenol	0.25	U	NA	
12	6	2,4,5-Trichlorophenol	0.25	U	NA	
13	7	2,3,4-Trichlorophenol	0.25	U	NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	NA	
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	NA		NA	
20	14	4-Methylphenol	NA		NA	
21	15	Isophorone	NA		NA	
22	16	2,4-Dimethylphenol	NA		NA	
23	17	Benzoic Acid	NA		NA	
24	18	Naphthalene	NA		NA	
25	19	2-Methylnaphthalene	NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA	
28	22	Acenaphthene	NA		NA	
29	23	Dibenzofuran	NA		NA	
30	24	Fluorene	NA		NA	
31	25	Pentachlorophenol	NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA	
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	NA		NA	
37	31	Carbon Disulfide	NA		NA	
38	32	2-Butanone	NA		NA	
39	33	Benzene	NA		NA	
40	34	Bromoform	NA		NA	
41	35	Toluene	NA		NA	
42	36	Ethylbenzene	NA		NA	
43	37	Styrene	NA		NA	
44	38	m,p-Xylene	NA		NA	
45	39	o-Xylene	NA		NA	
46	40	1,3,5-Trimethylbenzene	NA		NA	
47	41	1,2,4-Trimethylbenzene	NA		NA	
48	42	Isopropylbenzene	NA		NA	
49	43	n-Propylbenzene	NA		NA	
50	44	tert-Butylbenzene	NA		NA	
51	45	sec-Butylbenzene	NA		NA	
52	46	4-Isopropyltoluene	NA		NA	
53	47	n-Butylbenzene	NA		NA	
54	48	Naphthalene	NA		NA	
55		Methyl tert-butyl ether	NA	NA	NA	
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA	
61	54	**TPH-Gasoline**	NA		NA	
62	55					

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW16D		LW16D	
4			BR64U		0408036-04	
5			5/25/00		8/05/04	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	NA		NA	
66	59	Chromium (6010)	NA		NA	
67	60	Copper (6010)	NA		NA	
68	61	Lead (7421)	NA		NA	
69	62	Nickel (6010)	NA		NA	
70	63	Zinc (6010)	NA		NA	
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW16D		LW16D	
4			BR64U		0408036-04	
5			5/25/00		8/05/04	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.74		6.29	
89	82	Temperature (° C) (avg)	14.3		15	
90	83	Conductivity (um/hos)	314		200	
91	84	Dissolved oxygen (mg/L) (avg)	0.71		5.43	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121						
122						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW16D		LW16D	
4			BR64U		0408036-04	
5			5/25/00		8/05/04	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	NA		NA	
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	NA		NA	
128		Acenaphthene	NA		NA	
129		Fluorene	NA		NA	
130		Anthracene	NA		NA	
131		Dibenzofuran	NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D	
4			CB85A		CL03R		CT67L		DE87C		DM30P		DW48H		ED34B		EN00J		ER93N		EZ03H		FF88H		FL66F		FU45S		FY82G	
5			8/31/00		11/8/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/13/03		5/9/03		8/28/03		10/23/03	
6																														
7	1	**CHLORINATED PHENOLS (µg/L)**																												
8	2	**EPA Method SW8040**																												
9	3	Pentachlorophenol	0.25	U	0.25	U	**0.56**		0.25	U	0.25	U	0.25	U	**6.8**		0.25	U	0.28	U	0.25	U	**0.33**		0.25	U	0.5	U	0.51	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																													
17	11	**SEMIVOLATILES (µg/L)**																												
18	12	**EPA Method SW8270**																												
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
33	27																													
34	28	**VOLATILES (µg/L)**																												
35	29	**EPA Method SW8260**																												
36	30	Acetone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
37	31	Carbon Disulfide	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
38	32	2-Butanone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
39	33	Benzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
40	34	Bromoform	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
41	35	Toluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
42	36	Ethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
43	37	Styrene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
44	38	m,p-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
45	39	o-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
46	40	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
47	41	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
48	42	Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49	43	n-Propylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
50	44	tert-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
51	45	sec-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
52	46	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
53	47	n-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	48	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	51	**Method OR-DEQ**																												
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D
4		0402105-06		0408044-08		0411051-08		0502087-11		P5F0444-02		P5H0853-06
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
6												
7	**CHLORINATED PHENOLS (µg/L)**											
8	**EPA Method SW8040**											
9	Pentachlorophenol	0.497	U	0.5	U	0.495	U	0.499	U	0.500	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
16												
17	**SEMIVOLATILES (µg/L)**											
18	**EPA Method SW8270**											
19	Phenol	NA		NA		NA		NA		5.00	U	NA
20	4-Methylphenol	NA		NA		NA		NA		5.00	U	NA
21	Isophorone	NA		NA		NA		NA		5.00	U	NA
22	2,4-Dimethylphenol	NA		NA		NA		NA		10.00	U	NA
23	Benzoic Acid	NA		NA		NA		NA		50.0	U	NA
24	Naphthalene	NA		NA		NA		NA		5.00	U	NA
25	2-Methylnaphthalene	NA		NA		NA		NA		5.00	U	NA
26	2,4,6-Trichlorophenol	NA		NA		NA		NA		5.00	U	NA
27	2,4,5-Trichlorophenol	NA		NA		NA		NA		5.00	U	NA
28	Acenaphthene	NA		NA		NA		NA		5.00	U	NA
29	Dibenzofuran	NA		NA		NA		NA		5.00	U	NA
30	Fluorene	NA		NA		NA		NA		5.00	U	NA
31	Pentachlorophenol	NA		NA		NA		NA		10	U	NA
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		10.00	U	NA
33												
34	**VOLATILES (µg/L)**											
35	**EPA Method SW8260**											
36	Acetone	NA		NA		NA		NA		25.0	U	NA
37	Carbon Disulfide	NA		NA		NA		NA		10.00	U	NA
38	2-Butanone	NA		NA		NA		NA		10.00	U	NA
39	Benzene	NA		NA		NA		NA		1.00	U	NA
40	Bromoform	NA		NA		NA		NA		1.00	U	NA
41	Toluene	NA		NA		NA		NA		1.00	U	NA
42	Ethylbenzene	NA		NA		NA		NA		**8.10**		NA
43	Styrene	NA		NA		NA		NA		1.00	U	NA
44	m,p-Xylene	NA		NA		NA		NA		2.00	U	NA
45	o-Xylene	NA		NA		NA		NA		1.00	U	NA
46	1,3,5-Trimethylbenzene	NA		NA		NA		NA		1.00	U	NA
47	1,2,4-Trimethylbenzene	NA		NA		NA		NA		1.00	U	NA
48	Isopropylbenzene	NA		NA		NA		NA		**145**		NA
49	n-Propylbenzene	NA		NA		NA		NA		**121**		NA
50	tert-Butylbenzene	NA		NA		NA		NA		**4.81**		NA
51	sec-Butylbenzene	NA		NA		NA		NA		**18.8**		NA
52	4-Isopropyltoluene	NA		NA		NA		NA		2.00	U	NA
53	n-Butylbenzene	NA		NA		NA		NA		**6.31**		NA
54	Naphthalene	NA		NA		NA		NA		2.00	U	NA
55	Methyl tert-butyl ether	NA		NA		NA		NA		1.00	U	NA
56												
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**											
58	**Method OR-DEQ**											
59	**TPH-Diesel**	NA		NA		**2.74**		**2.08**		**0.759**		**0.669**
60	**TPH-D Motor Oil**	NA		NA		0.489	U	0.499	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		**3.83**		**3.37**		**1.83**	J	**0.656 J**
62												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D	
4			CB85A		CL03R		CT67L		DE87C		DM30P		DW48H		ED34B		EN00J		ER93N		EZ03H		FF88H		FL66F		FU45S		FY82G	
5			8/31/00		11/8/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/13/03		5/9/03		8/28/03		10/23/03	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D
4		0402105-06		0408044-08		0411051-08		0502087-11		P5F0444-02		P5H0853-06
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
63	**PRIORITY POLLUTANT**											
64	**METALS (mg/L)**											
65	Arsenic (7060)	NA		NA		NA		NA		**0.034**		**0.0322**
66	Chromium (6010)	NA		NA		NA		NA		0.001	U	0.001 U
67	Copper (6010)	NA		NA		NA		NA		**0.00317**		**0.00207**
68	Lead (7421)	NA		NA		NA		NA		**0.00132**		**0.00243**
69	Nickel (6010)	NA		NA		NA		NA		**0.0342**		**0.0102**
70	Zinc (6010)	NA		NA		NA		NA		**0.0218**		**0.0132**
71												
72	**MAJOR IONS AND CONVENTIONALS**											
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA
86												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D	
4			CB85A		CL03R		CT67L		DE87C		DM30P		DW48H		ED34B		EN00J		ER93N		EZ03H		FF88H		FL66F		FU45S		FY82G	
5			8/31/00		11/8/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/13/03		5/9/03		8/28/03		10/23/03	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.14		5.95		6.15		6.53		6.67		6.44		6.49		6.68		6.41		6.64		6.9		6.75		6.74		6.47	
89	82	Temperature (° C) (avg)	13.8		13.5		14.4		14.0		15.3		14		13.7		14.2		16.1		13.7		15.2		13.8		17.4		15.8	
90	83	Conductivity (um/hos)	305		79		440		488		544		529		62		196		399		457		401		349		431		434	
91	84	Dissolved oxygen (mg/L) (avg)	2.10		1.21		0.47		2.27		1.69		3.81		7.82		4.92		1.31		0.94		0		2.33		1.01		3.72	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D
4		0402105-06		0408044-08		0411051-08		0502087-11		P5F0444-02		P5H0853-06
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
87	**FIELD PARAMETERS**											
88	pH (avg)	6.44		6.17		6.59		6.61		6.81		6.54
89	Temperature (° C) (avg)	15.7		14.6		14.4		15.1		15.7		15.7
90	Conductivity (um/hos)	367		607		399		205		315		356
91	Dissolved oxygen (mg/L) (avg)	23.19		3.04		1.72		0.96		2.76		NM
92												
93	**DIOXINS AND FURANS (ng/L)**											
94	**Method 8290**											
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA
120												
121												
122												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D	
4			CB85A		CL03R		CT67L		DE87C		DM30P		DW48H		ED34B		EN00J		ER93N		EZ03H		FF88H		FL66F		FU45S		FY82G	
5			8/31/00		11/8/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/13/03		5/9/03		8/28/03		10/23/03	
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW17D		LW17D		LW17D		LW17D		LW17D		LW17D
4		0402105-06		0408044-08		0411051-08		0502087-11		P5F0444-02		P5H0853-06
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
123	**PAHs (µg/L)**											
124	**EPA Method SW8270 SIM**											
125	Naphthalene	NA		NA		NA		NA		NA		1.50 U
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		0.150 U
128	Acenaphthene	NA		NA		NA		NA		NA		**0.428**
129	Fluorene	NA		NA		NA		NA		NA		**0.555**
130	Anthracene	NA		NA		NA		NA		NA		0.100 U
131	Dibenzofuran	NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D	
4			CB85B		CL03S		CT67M		DE87D		DM30O		DW48G		ED34C		EN00I		ER93O		EZ03G		FF76D		FL66G		FU45Q		FY82F	
5			8/31/00		11/9/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/12/03		5/9/03		8/28/03		10/23/03	
6																														
7	1	**CHLORINATED PHENOLS (µg/L)**																												
8	2	**EPA Method SW8040**																												
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	**0.26**		**0.44**		0.25	U	0.3	U	0.25	U	0.25	U	0.25	U	**0.58**	J	**0.58**	
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																													
17	11	**SEMIVOLATILES (µg/L)**																												
18	12	**EPA Method SW8270**																												
19	13	Phenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
20	14	4-Methylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
21	15	Isophorone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
22	16	2,4-Dimethylphenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
23	17	Benzoic Acid	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
24	18	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
25	19	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
28	22	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
29	23	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
30	24	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
31	25	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
33	27																													
34	28	**VOLATILES (µg/L)**																												
35	29	**EPA Method SW8260**																												
36	30	Acetone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
37	31	Carbon Disulfide	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
38	32	2-Butanone	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
39	33	Benzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
40	34	Bromoform	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
41	35	Toluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
42	36	Ethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
43	37	Styrene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
44	38	m,p-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
45	39	o-Xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
46	40	1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
47	41	1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
48	42	Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
49	43	n-Propylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
50	44	tert-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
51	45	sec-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
52	46	4-Isopropyltoluene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
53	47	n-Butylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
54	48	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	51	**Method OR-DEQ**																												
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D
4		0402105-07		0408044-04		0411051-05		0502087-08		P5F0444-01		P5H0853-01
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
6												
7	**CHLORINATED PHENOLS (µg/L)**											
8	**EPA Method SW8040**											
9	Pentachlorophenol	0.488	U	0.5	U	0.5	U	0.507	U	0.495	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
16												
17	**SEMIVOLATILES (µg/L)**											
18	**EPA Method SW8270**											
19	Phenol	NA		NA		NA		NA		5.00	U	NA
20	4-Methylphenol	NA		NA		NA		NA		5.00	U	NA
21	Isophorone	NA		NA		NA		NA		5.00	U	NA
22	2,4-Dimethylphenol	NA		NA		NA		NA		10.00	U	NA
23	Benzoic Acid	NA		NA		NA		NA		50.0	U	NA
24	Naphthalene	NA		NA		NA		NA		5.00	U	NA
25	2-Methylnaphthalene	NA		NA		NA		NA		5.00	U	NA
26	2,4,6-Trichlorophenol	NA		NA		NA		NA		5.00	U	NA
27	2,4,5-Trichlorophenol	NA		NA		NA		NA		5.00	U	NA
28	Acenaphthene	NA		NA		NA		NA		5.00	U	NA
29	Dibenzofuran	NA		NA		NA		NA		5.00	U	NA
30	Fluorene	NA		NA		NA		NA		5.00	U	NA
31	Pentachlorophenol	NA		NA		NA		NA		10	U	NA
32	bis(2-Ethylhexyl)phthalate	NA		NA		NA		NA		10.00	U	NA
33												
34	**VOLATILES (µg/L)**											
35	**EPA Method SW8260**											
36	Acetone	NA		NA		NA		NA		25.0	U	NA
37	Carbon Disulfide	NA		NA		NA		NA		10.00	U	NA
38	2-Butanone	NA		NA		NA		NA		10.00	U	NA
39	Benzene	NA		NA		NA		NA		1.00	U	NA
40	Bromoform	NA		NA		NA		NA		1.00	U	NA
41	Toluene	NA		NA		NA		NA		1.00	U	NA
42	Ethylbenzene	NA		NA		NA		NA		1.00	U	NA
43	Styrene	NA		NA		NA		NA		1.00	U	NA
44	m,p-Xylene	NA		NA		NA		NA		2.00	U	NA
45	o-Xylene	NA		NA		NA		NA		1.00	U	NA
46	1,3,5-Trimethylbenzene	NA		NA		NA		NA		1.00	U	NA
47	1,2,4-Trimethylbenzene	NA		NA		NA		NA		1.00	U	NA
48	Isopropylbenzene	NA		NA		NA		NA		**76.3**		NA
49	n-Propylbenzene	NA		NA		NA		NA		**60.7**		NA
50	tert-Butylbenzene	NA		NA		NA		NA		**3.67**		NA
51	sec-Butylbenzene	NA		NA		NA		NA		**11.0**		NA
52	4-Isopropyltoluene	NA		NA		NA		NA		2.00	U	NA
53	n-Butylbenzene	NA		NA		NA		NA		**6.23**		NA
54	Naphthalene	NA		NA		NA		NA		2.00	U	NA
55	Methyl tert-butyl ether	NA		NA		NA		NA		1.00	U	NA
56												
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**											
58	**Method OR-DEQ**											
59	**TPH-Diesel**	NA		NA		**2.32**		**2.8**		**0.498**		**0.380**
60	**TPH-D Motor Oil**	NA		NA		0.491	U	0.503	U	0.5	U	0.500 U
61	**TPH-Gasoline**	NA		NA		**1.79**		**2.9**		**0.985**	J	**0.667 J**
62												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D	
4			CB85B		CL03S		CT67M		DE87D		DM30O		DW48G		ED34C		EN00I		ER93O		EZ03G		FF76D		FL66G		FU45Q		FY82F	
5			8/31/00		11/9/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/12/03		5/9/03		8/28/03		10/23/03	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D
4		0402105-07		0408044-04		0411051-05		0502087-08		P5F0444-01		P5H0853-01
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
63	**PRIORITY POLLUTANT**											
64	**METALS (mg/L)**											
65	Arsenic (7060)	NA		NA		NA		NA		**0.00345**		**0.0201**
66	Chromium (6010)	NA		NA		NA		NA		0.001	U	**0.00886**
67	Copper (6010)	NA		NA		NA		NA		**0.00728**		**0.0156**
68	Lead (7421)	NA		NA		NA		NA		**0.00124**		**0.00378**
69	Nickel (6010)	NA		NA		NA		NA		**0.0031**		**0.0504**
70	Zinc (6010)	NA		NA		NA		NA		**0.322**		**0.110**
71												
72	**MAJOR IONS AND CONVENTIONALS**											
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA
86												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D	
4			CB85B		CL03S		CT67M		DE87D		DM30O		DW48G		ED34C		EN00I		ER93O		EZ03G		FF76D		FL66G		FU45Q		FY82F	
5			8/31/00		11/9/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/12/03		5/9/03		8/28/03		10/23/03	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.48		6.12		6.08		6.38		6.60		6.44		6.26		6.45		6.64		6.57		6.83		6.62		6.79		6.53	
89	82	Temperature (° C) (avg)	14.1		12.8		13.9		14.7		15.2		13.8		14.5		15.5		16.0		14.6		14.4		15.1		18.8		17.9	
90	83	Conductivity (um/hos)	338		265		523		486		623		435		422		393		455		511		544		315		379		425	
91	84	Dissolved oxygen (mg/L) (avg)	2.14		1.25		0.37		0.69		1.82		3.27		7.60		4.42		0.82		0.69		0.88		1.78		0.98		4.38	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D
4		0402105-07		0408044-04		0411051-05		0502087-08		P5F0444-01		P5H0853-01
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
87	**FIELD PARAMETERS**											
88	pH (avg)	6.42		6.05		6.56		6.61		7.13		6.47
89	Temperature (° C) (avg)	15.7		15.2		15		13.9		12.6		15.8
90	Conductivity (um/hos)	206		487		369		211		145		421
91	Dissolved oxygen (mg/L) (avg)	2.29		4.09		1.6		1.05		3.23		NM
92												
93	**DIOXINS AND FURANS (ng/L)**											
94	**Method 8290**											
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA
120												
121												
122												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D	
4			CB85B		CL03S		CT67M		DE87D		DM30O		DW48G		ED34C		EN00I		ER93O		EZ03G		FF76D		FL66G		FU45Q		FY82F	
5			8/31/00		11/9/00		2/14/01		6/5/01		8/13/01		11/29/01		2/28/02		6/27/02		08/27/02		11/12/02		2/12/03		5/9/03		8/28/03		10/23/03	
6																														
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1												
2												
3		LW18D		LW18D		LW18D		LW18D		LW18D		LW18D
4		0402105-07		0408044-04		0411051-05		0502087-08		P5F0444-01		P5H0853-01
5		2/20/04		8/06/04		11/9/04		2/18/05		6/10/05		08/19/05
123	**PAHs (µg/L)**											
124	**EPA Method SW8270 SIM**											
125	Naphthalene	NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA
127	Acenaphthylene	NA		NA		NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA
130	Anthracene	NA		NA		NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D
4			FZ04N		0402115-03		0406050-10		0408056-10		0411059-03		0502110-07		P5F0666-04		P5H0813-02
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2	U	2.05	U	2.08	U	2.13	U	1.9	U	2.02	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	10.2	U	10.4	U	10.6	U	9.5	U	10.1	U	5.00	U	5.00 U
21	15	Isophorone	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3	U	3.07	U	3.12	U	3.19	U	2.85	U	3.03	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	20.5	U	20.8	U	21.3	U	19	U	20.2	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5	U	5.12	U	5.19	U	5.31	U	4.75	U	5.05	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5	U	5.12	U	5.19	U	5.31	U	4.75	U	5.05	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
30	24	Fluorene	1	U	1.02	U	1.04	U	1.06	U	0.95	U	1.01	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5	U	5.12	U	5.19	U	5.31	U	4.75	U	5.05	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**3.9**		1.02	U	1.04	U	**1.86**		0.95	U	**21.7**		10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**6**	M	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	**2.4**		2.00	U	2.00 U
55		Methyl tert-butyl ether	**1.5**		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**0.4**		**0.369**		**0.573**		**0.737**		**0.552**		**0.459**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.492	U	0.504	U	0.506	U	**0.665**		0.768	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	**0.229**		0.1	U	0.162	U	0.08	U	**0.140**
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D
4			FZ04N		0402115-03		0406050-10		0408056-10		0411059-03		0502110-07		P5F0666-04		P5H0813-02
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.021**		**0.029**		**0.027**		**0.0286**		**0.0297**		**0.033**		**0.0326**		**0.0302**
66	59	Chromium (6010)	0.005	U	**0.0206**		**0.0199**		**0.0271**		**0.022**		**0.0094**		**0.00392**		**0.00299**
67	60	Copper (6010)	**0.004**		0.01	U	0.01	U	**0.0957**		**0.0113**		0.01	U	**0.00589**		**0.00405**
68	61	Lead (7421)	0.001	U	**0.0020**		**0.0014**		**0.00305**		**0.00188**		**0.000426**		**0.00125**		**0.00121**
69	62	Nickel (6010)	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00501**		**0.00429**
70	63	Zinc (6010)	**0.015**		**0.0113**		**0.0167**		**0.0674**		**0.0238**		0.01	U	**0.0108**		**0.0144**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**220**		**244**		**222**		**260**		**248**	J	**360**		**269**		**249**
81	74	Chloride (mg/L) (EPA 325.2)	**5.6**		**2.77**		**2.8**		**3.34**		**3.68**		**3.12**		**2.73**		**2.47**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D
4			FZ04N		0402115-03		0406050-10		0408056-10		0411059-03		0502110-07		P5F0666-04		P5H0813-02
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.62		6.74		6.82		6.23		7.02		7.01		6.77		6.65
89	82	Temperature (° C) (avg)	15.8		14.1		14.8		15.7		14.2		15		15.8		14.9
90	83	Conductivity (um/hos)	347		283		264		590		325		196		256		341
91	84	Dissolved oxygen (mg/L) (avg)	2.04		2.67		1.19		2.23		1.81		0		0.09		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D		LW20D
4			FZ04N		0402115-03		0406050-10		0408056-10		0411059-03		0502110-07		P5F0666-04		P5H0813-02
5			10/28/03		2/24/04		6/8/04		8/09/04		11/10/04		2/24/05		6/15/05		08/18/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	0.0557	U	**0.06**		**0.1**		0.0476	U	**0.00509**		0.495	U	0.300 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	0.0557	U	0.05	U	0.0502	U	0.0476	U	0.00509	U	0.495	U	0.100 U
128		Acenaphthene	0.1	U	0.0557	U	0.05	U	**0.11**		0.0476	U	**0.00509**		0.495	U	**0.110**
129		Fluorene	0.1	U	**0.078**		**0.17**		**0.0602**		0.0476	U	0.00509	U	0.495	U	0.100 U
130		Anthracene	0.1	U	0.0557	U	0.05	U	0.0502	U	0.0476	U	0.00509	U	0.495	U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D
4			FZ04A		0402115-10		0406040-03		0408056-03		0411059-04		0502099-04		P5F0554-02		P5H0625-06
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/15/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	**4.1**		2.05	U	1.9	U	2.02	U	1.96	U	2.07	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.4	U	10.3	U	9.51	U	10.1	U	9.79	U	10.4	U	5.00	U	5.00 U
21	15	Isophorone	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	4.2	U	3.08	U	2.85	U	3.03	U	2.94	U	3.11	U	10.00	U	10.0 U
23	17	Benzoic Acid	14	U	20.5	U	19	U	20.2	U	19.6	U	20.7	U	50.0	U	50.0 U
24	18	Naphthalene	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	7	U	5.13	U	4.76	U	5.05	U	4.9	U	5.18	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	7	U	5.13	U	4.76	U	5.05	U	4.9	U	5.18	U	5.00	U	5.00 U
28	22	Acenaphthene	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
30	24	Fluorene	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	5.00	U	5.00 U
31	25	Pentachlorophenol	7	U	5.13	U	4.76	U	5.05	U	4.9	U	5.18	U	10.00	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.4	U	1.03	U	0.951	U	1.01	U	0.979	U	1.04	U	10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**5.2**	M	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	**2.9**		0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	**1.6**		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	**1.6**		2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**14**		1	U	**13.8**		1	U	**1.38**		1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	**12**		1	U	**5.59**		1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	**1.5**		1	U	**1.26**		1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	**1.9**	M	1	U	1	U	1	U	**2.26**		1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**2**		**0.429**		**3.43**		**1.75**		**1.61**		**1.23**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.497	U	0.499	U	0.498	U	**1.29**		1.26	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.54**		0.1	U	**0.239**		0.1	U	0.1	U	0.1	U	0.08	U	0.08 U
62	55																

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GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D
4			FZ04A		0402115-10		0406040-03		0408056-03		0411059-04		0502099-04		P5F0554-02		P5H0625-06
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/15/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.023**		**0.039**		**0.026**		**0.00774**		**0.0417**		**0.0234**		**0.0757**		**0.0702**
66	59	Chromium (6010)	**0.15**		**0.0195**		**0.0235**		**0.0194**		0.005	U	**0.0084**		**0.0339**		**0.0235**
67	60	Copper (6010)	**0.199**		**0.0114**		0.01	U	0.01	U	0.01	U	0.01	U	**0.0491**		**0.0350**
68	61	Lead (7421)	**0.056**		**0.0097**		**0.0037**		**0.00121**		**0.0028**		**0.00085**		**0.0213**		**0.0122**
69	62	Nickel (6010)	**0.14**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0497**		**0.0289**
70	63	Zinc (6010)	**0.4**		**0.0361**		**0.0175**		**0.0123**		**0.0176**		0.01	U	**0.116**		**0.094**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**280**		**263**		**308**		**243**		**247**	J	**295**		**289**		**252**
81	74	Chloride (mg/L) (EPA 325.2)	**1.7**		**1.94**		**1.55**		**1.79**		**1.72**		**1.24**		**1.51**		**1.67**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		0.100 U
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		**7.06**
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D
4			FZ04A		0402115-10		0406040-03		0408056-03		0411059-04		0502099-04		P5F0554-02		P5H0625-06
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/15/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.65		6.53		5.19		5.61		6.56		6.43		5.89		6.20
89	82	Temperature (° C) (avg)	17.2		14.5		14.6		15.4		14.5		15.4		14.6		15.5
90	83	Conductivity (um/hos)	498		295		377		639		341		235		285		300
91	84	Dissolved oxygen (mg/L) (avg)	4.51		2.82		3.19		2.34		2.57		1.79		5.90		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D		LW22D
4			FZ04A		0402115-10		0406040-03		0408056-03		0411059-04		0502099-04		P5F0554-02		P5H0625-06
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/15/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.14	U	0.0523	U	**0.106**		0.052	U	0.052	U	0.0501	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.14	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.14	U	0.0523	U	0.0482	U	0.052	U	0.052	U	0.0501	U	0.100	U	0.100 U
128		Acenaphthene	1		0.0523	U	0.0482	U	0.052	U	0.052	U	0.0501	U	0.100	U	0.100 U
129		Fluorene	0.35		0.0523	U	0.0482	U	**0.166**		0.052	U	0.0501	U	0.100	U	0.100 U
130		Anthracene	0.14	U	0.0523	U	0.0482	U	0.052	U	0.052	U	0.0501	U	0.100	U	0.100 U
131		Dibenzofuran	0.14	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		Dup of LW23D
3			LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D	X
4			FZ04B		0402115-11		0406040-04		0408056-04		0411065-01		0502099-05		P5F0441-13		P5H0625-05	P5H0625-04
5			10/27/03		2/24/04		6/7/04		8/09/04		11/11/04		2/22/05		6/10/05		08/15/05	08/15/05
6																		
7	1	**CHLORINATED PHENOLS (µg/L)**																
8	2	**EPA Method SW8040**																
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA	NA
16	10																	
17	11	**SEMIVOLATILES (µg/L)**																
18	12	**EPA Method SW8270**																
19	13	Phenol	2	U	2.26	U	1.94	U	2.09	U	2.05	U	1.98	U	5.00	U	5.00 U	5.00 U
20	14	4-Methylphenol	1	U	11.3	U	9.68	U	10.5	U	10.2	U	9.89	U	5.00	U	5.00 U	5.00 U
21	15	Isophorone	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
22	16	2,4-Dimethylphenol	3	U	3.39	U	2.9	U	3.14	U	3.07	U	2.97	U	10.00	U	10.0 U	10.0 U
23	17	Benzoic Acid	10	U	22.6	U	19.4	U	20.9	U	20.5	U	19.8	U	50.0	U	50.0 U	50.0 U
24	18	Naphthalene	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
25	19	2-Methylnaphthalene	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
26	20	2,4,6-Trichlorophenol	5	U	5.66	U	4.84	U	5.24	U	5.12	U	4.95	U	5.00	U	5.00 U	5.00 U
27	21	2,4,5-Trichlorophenol	5	U	5.66	U	4.84	U	5.24	U	5.12	U	4.95	U	5.00	U	5.00 U	5.00 U
28	22	Acenaphthene	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
29	23	Dibenzofuran	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
30	24	Fluorene	1	U	1.13	U	0.968	U	1.05	U	1.02	U	0.989	U	5.00	U	5.00 U	5.00 U
31	25	Pentachlorophenol	5	U	5.66	U	4.84	U	5.24	U	5.12	U	4.95	U	10	U	5 UJ	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**6.8**		1.13	U	0.968	U	1.05	U	**3.52**		**1.26**		10.00	U	10.0 U	10.0 U
33	27																	
34	28	**VOLATILES (µg/L)**																
35	29	**EPA Method SW8260**																
36	30	Acetone	**19**		50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U	10.0 U
39	33	Benzene	**40**		**22.9**		**132**		**26.1**		**12.1**		**8.76**		**64.6**		**120**	**120**
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
41	35	Toluene	**1.2**		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
44	38	m,p-Xylene	**1.2**		2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	**1.22**		1	U	1.00	U	1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
48	42	Isopropylbenzene	**16**		**8.51**		**13.7**		**11.5**		**14.5**		**8.96**		**4.15**		**7.09**	**7.02**
49	43	n-Propylbenzene	**8.6**		**6.71**		**6.9**		**5.51**		**4.79**		**5.75**		**1.53**		**3.14**	**3.36**
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U	1.00 U
51	45	sec-Butylbenzene	**3.3**		**1.12**		**2.86**		**1.6**		**2.08**		**1.57**		1.00	U	**1.55**	**1.54**
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U	2.00 U
53	47	n-Butylbenzene	**1.6**		1	U	**1.4**		1	U	**1.45**		**4.49**		5.00	U	5.00 U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1.64	U	2.00	U	2.00 U	2.00 U
55		Methyl tert-butyl ether	**33**		**17.4**		**51.2**		**3.17**		**7.93**		1	U	**10.9**		**3.58**	**3.57**
56	49																	
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																
58	51	**Method OR-DEQ**																
59	52	**TPH-Diesel**	**2.9**		**1.53**		**4.44**		**3.21**		**2.94**		**2.75**		0.25	U	0.250 U	**0.254**
60	53	**TPH-D Motor Oil**	0.5	U	**0.648**		0.527	U	0.5	U	**1.2**		0.492	U	0.5	U	0.500 U	0.500 U
61	54	**TPH-Gasoline**	**0.88**		**0.67**		**0.732**		**0.562**		**1.23**		**0.598**		**0.241**		**0.512**	**0.524**
62	55																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		Dup of LW23D
3			LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D	X
4			FZ04B		0402115-11		0406040-04		0408056-04		0411065-01		0502099-05		P5F0441-13		P5H0625-05	P5H0625-04
5			10/27/03		2/24/04		6/7/04		8/09/04		11/11/04		2/22/05		6/10/05		08/15/05	08/15/05
63	56	**PRIORITY POLLUTANT**																
64	57	**METALS (mg/L)**																
65	58	Arsenic (7060)	**0.021**		**0.042**		**0.044**		**0.0435**		**0.0574**		**0.0638**		**0.0472**		**0.0423**	**0.0402**
66	59	Chromium (6010)	**0.135**		**0.0226**		**0.0248**		**0.0224**		**0.037**		**0.0122**		**0.0114**		**0.024**	**0.0231**
67	60	Copper (6010)	**0.201**		**0.0197**		0.01	U	**0.0372**		**0.0387**		0.01	U	**0.0182**		**0.0387**	**0.0368**
68	61	Lead (7421)	**0.068**		**0.0085**		**0.0047**		**0.00792**		**0.0169**		**0.00494**		**0.00629**		**0.0143**	**0.0135**
69	62	Nickel (6010)	**0.11**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0122**		**0.0218**	**0.0206**
70	63	Zinc (6010)	**0.348**		**0.0333**		**0.024**		**0.0431**		**0.0754**		**0.0213**		**0.0315**		**0.0643**	**0.0569**
71	64																	
72	65	**MAJOR IONS AND CONVENTIONALS**																
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**330**		**349**		**456**		**466**		**371**		**421**		**459**		**436**	**457**
81	74	Chloride (mg/L) (EPA 325.2)	**2.4**		**2.54**		**2.54**		**2.8**		**2.59**		**2.14**		**2.43**		**2.64**	**2.57**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA	NA
86	79																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2																		Dup of LW23D
3			LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D	X
4			FZ04B		0402115-11		0406040-04		0408056-04		0411065-01		0502099-05		P5F0441-13		P5H0625-05	P5H0625-04
5			10/27/03		2/24/04		6/7/04		8/09/04		11/11/04		2/22/05		6/10/05		08/15/05	08/15/05
87	80	**FIELD PARAMETERS**																
88	81	pH (avg)	6.78		6.85		5.51		6.13		6.86		6.61		7.01		6.36	6.35
89	82	Temperature (° C) (avg)	15.8		13.9		14.5		13.8		14.5		14.6		13.9		15.7	15.8
90	83	Conductivity (um/hos)	547		474		547		998		579		267		507		326	317
91	84	Dissolved oxygen (mg/L) (avg)	0.35		1.11		3.01		2.46		0.68		1.63		4.64		NM	NM
92	85																	
93	86	**DIOXINS AND FURANS (ng/L)**																
94	87	**Method 8290**																
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA	NA
120																		
121																		
122																		

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		Dup of LW23D
3			LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D		LW23D	X
4			FZ04B		0402115-11		0406040-04		0408056-04		0411065-01		0502099-05		P5F0441-13		P5H0625-05	P5H0625-04
5			10/27/03		2/24/04		6/7/04		8/09/04		11/11/04		2/22/05		6/10/05		08/15/05	08/15/05
123		**PAHs (µg/L)**																
124		**EPA Method SW8270 SIM**																
125		Naphthalene	0.1	U	**0.09**		**0.517**		**0.409**		**0.526**		0.339	U	0.400	U	0.550 U	0.600 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA	NA
127		Acenaphthylene	0.1	U	0.05	U	**0.0683**		**0.123**		**0.115**		**0.0896**		0.100	U	0.150 U	0.150 U
128		Acenaphthene	0.61		**0.16**		**0.429**		**0.86**		**0.698**		**0.508**		**0.356**		**0.611**	**0.615**
129		Fluorene	0.31		**0.06**		**0.0585**		**0.246**		**0.277**		**0.239**		**0.160**		**0.300**	**0.286**
130		Anthracene	0.11		0.05	U	0.0488	U	0.0512	U	0.0478	U	**0.0498**		0.100	U	0.100 U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA	NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																	Dup of LW24D		
3			LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		X		LW24D
4			FZ04U		0402115-07		0406040-07		0408056-06		0411065-02		0502088-06		P5F0554-07		P5F0554-06		P5H0813-04
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/14/05		6/14/05		08/18/05
6																			
7	1	**CHLORINATED PHENOLS (µg/L)**																	
8	2	**EPA Method SW8040**																	
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA
16	10																		
17	11	**SEMIVOLATILES (µg/L)**																	
18	12	**EPA Method SW8270**																	
19	13	Phenol	2	U	2.14	U	1.9	U	2.08	U	1.91	U	2.02	U	5.00	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	10.7	U	9.51	U	10.4	U	9.55	U	10.1	U	5.00	U	5.00	U	5.00 U
21	15	Isophorone	1	U	1.07	U	0.951	U	1.04	U	0.955	U	1.01	U	5.00	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3	U	3.22	U	2.85	U	3.12	U	2.87	U	3.02	U	10.00	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	21.4	U	19	U	20.8	U	19.1	U	20.2	U	50.0	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	1.07	U	0.951	U	1.04	U	0.955	U	1.01	U	5.00	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	1.07	U	0.951	U	1.04	U	0.955	U	1.01	U	5.00	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5	U	5.36	U	4.75	U	5.21	U	4.78	U	5.04	U	5.00	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5	U	5.36	U	4.75	U	5.21	U	4.78	U	5.04	U	5.00	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	**1.37**		**1.27**		**1.65**		**1.43**		**1.21**		5.00	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	1.07	U	0.951	U	1.04	U	0.955	U	1.01	U	5.00	U	5.00	U	5.00 U
30	24	Fluorene	1	U	**3.55**		**3.06**		**4.04**		**3.47**		**2.79**		5.00	U	5.00	U	**5.01**
31	25	Pentachlorophenol	5	U	5.36	U	4.75	U	5.21	U	4.78	U	5.04	U	10	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**5.6**		1.07	U	**1.07**		**1.91**		**2.93**		1.01	U	10.00	U	10.00	U	10.0 U
33	27																		
34	28	**VOLATILES (µg/L)**																	
35	29	**EPA Method SW8260**																	
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	**1.31**		1	U	1.00	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**2.2**		**7.97**		**8.96**		**10.4**		**10.6**		**6.19**		**3.62**		**3.62**		**10.8**
49	43	n-Propylbenzene	1	U	**12.8**		**11.5**		**13**		**10.3**		**8.13**		**3.65**		**3.60**		**12.3**
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	**1.3**		**4.81**		**4.84**		**4.22**		**4.08**		**3.33**		**2.19**		**2.09**		**5.17**
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	**2.85**		**3.51**		**2.63**		**3.3**		**5.94**		5.00	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00	U	1.00 U
56	49																		
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																	
58	51	**Method OR-DEQ**																	
59	52	**TPH-Diesel**	**2.5**		**5.43**		**6.84**		**6.57**		**3.87**		**4.92**		NA		**0.655**		**0.510**
60	53	**TPH-D Motor Oil**	0.5	U	**1.15**		0.541	U	0.575	U	**1.24**		0.498	U	NA		0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.92**		**1.5**		**1.23**		**0.948**		**1.64**		**0.958**		NA		**0.189**		**0.442**
62	55																		

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																	Dup of LW24D		
3			LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		X		LW24D
4			FZ04U		0402115-07		0406040-07		0408056-06		0411065-02		0502088-06		P5F0554-07		P5F0554-06		P5H0813-04
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/14/05		6/14/05		08/18/05
63	56	**PRIORITY POLLUTANT**																	
64	57	**METALS (mg/L)**																	
65	58	Arsenic (7060)	**0.009**		**0.066**		**0.058**		**0.043**		**0.0525**		**0.0841**		NA		**0.0465**		**0.0574**
66	59	Chromium (6010)	**0.125**		**0.0423**		**0.0421**		**0.0279**		**0.0422**		**0.0152**		NA		**0.0105**		**0.0601**
67	60	Copper (6010)	**0.163**		**0.0474**		**0.0256**		**0.0125**		**0.0424**		**0.0162**		NA		**0.0149**		**0.072**
68	61	Lead (7421)	**0.058**		**0.0182**		**0.0126**		**0.00423**		**0.0256**		**0.0209**		NA		**0.00578**		**0.0321**
69	62	Nickel (6010)	**0.11**		**0.0096**		**0.0069**		**0.0088**		**0.0237**		0.005	U	NA		**0.013**		**0.057**
70	63	Zinc (6010)	**0.327**		**0.102**		**0.0779**		**0.0905**		**0.124**		**0.0502**		NA		**0.0328**		**0.165**
71	64																		
72	65	**MAJOR IONS AND CONVENTIONALS**																	
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**340**		**277**		**350**		**268**		**347**		**289**		NA		**352**		**334**
81	74	Chloride (mg/L) (EPA 325.2)	**2.2**		**2.3**		**1.89**		**3.24**		**2.8**		**3.22**		NA		**3.06**		**3.33**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA
86	79																		

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																	Dup of LW24D		
3			LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		X		LW24D
4			FZ04U		0402115-07		0406040-07		0408056-06		0411065-02		0502088-06		P5F0554-07		P5F0554-06		P5H0813-04
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/14/05		6/14/05		08/18/05
87	80	**FIELD PARAMETERS**																	
88	81	pH (avg)	6.87		6.69		5.43		6.02		6.86		6.79		6.71		6.72		6.06
89	82	Temperature (° C) (avg)	16.9		14.8		15.5		15.9		15		13.9		15.5		15.5		16.1
90	83	Conductivity (um/hos)	494		440		426		793		457		201		397		397		595
91	84	Dissolved oxygen (mg/L) (avg)	0.57		1.08		1.6		2.57		0.86		2.24		2.24		2.24		NM
92	85																		
93	86	**DIOXINS AND FURANS (ng/L)**																	
94	87	**Method 8290**																	
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA
120																			
121																			
122																			

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																	Dup of LW24D		
3			LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		LW24D		X		LW24D
4			FZ04U		0402115-07		0406040-07		0408056-06		0411065-02		0502088-06		P5F0554-07		P5F0554-06		P5H0813-04
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/14/05		6/14/05		08/18/05
123		**PAHs (µg/L)**																	
124		**EPA Method SW8270 SIM**																	
125		Naphthalene	0.1	U	**0.749**		**0.87**		**0.409**		**0.829**		**0.587**		NA		2.00	U	2.50 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	**0.375**		**0.303**		**0.517**		**0.357**		**0.324**		NA		1.00	U	1.00 U
128		Acenaphthene	0.91		**1.56**		**1.21**		**1.39**		**1.45**		**1.3**		NA		**1.27**		**2.25**
129		Fluorene	0.7		**3.96**		**2.81**		**2.65**		**3.73**		**3.69**		NA		**3.01**		**5.24**
130		Anthracene	0.43		**0.135**		**0.162**		**0.146**		**0.154**		**0.364**		NA		0.150	U	1.00 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D
4			FZ04V		0402115-08		0406040-08		0408056-07		0411065-03		0502088-07		P5F0441-12		P5H0813-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/10/05		08/18/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.3	U	2.13	U	2.04	U	1.99	U	1.97	U	1.94	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.2	U	10.7	U	10.2	U	9.96	U	9.84	U	9.69	U	5.00	U	5.00 U
21	15	Isophorone	1.2	U	1.07	U	1.02	U	0.996	U	0.984	U	0.969	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.5	U	3.2	U	3.06	U	2.99	U	2.95	U	2.91	U	10.00	U	10.0 U
23	17	Benzoic Acid	12	U	21.3	U	20.4	U	19.9	U	19.7	U	19.4	U	50.0	U	50.0 U
24	18	Naphthalene	1.2	U	1.07	U	1.02	U	0.996	U	0.984	U	0.969	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.2	U	1.07	U	1.02	U	0.996	U	0.984	U	0.969	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.8	U	5.34	U	5.11	U	4.98	U	4.92	U	4.84	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.8	U	5.34	U	5.11	U	4.98	U	4.92	U	4.84	U	5.00	U	5.00 U
28	22	Acenaphthene	1.2	U	1.07	U	1.02	U	**1.93**		**1.4**		**1.03**		5.00	U	5.00 U
29	23	Dibenzofuran	1.2	U	1.07	U	1.02	U	0.996	U	0.984	U	0.969	U	5.00	U	5.00 U
30	24	Fluorene	1.2	U	1.29	U	1.02	U	**4.12**		**2.98**		**2.15**		5.00	U	5.00 U
31	25	Pentachlorophenol	5.8	U	5.34	U	5.11	U	4.98	U	4.92	U	4.84	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.2	U	1.07	U	**3.53**		**2.95**		**5.88**		**4.57**		10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	**1.6**		2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	**1.36**		1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**5.6**		**5.01**		**1.29**		**17.8**		**4.09**		1	U	2.00	U	**5.99**
49	43	n-Propylbenzene	**2**		1	U	1	U	**5.78**		1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	**1.2**		**2.43**		**1.4**		**4.59**		**1.77**		1	U	1.00	U	**2.36**
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	**1.87**		1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**1.3**		**6.67**		**2.31**		**3.17**		**2.54**		**2.2**		**0.52**		**0.336**
60	53	**TPH-D Motor Oil**	0.5	U	**1.32**		0.494	U	0.502	U	**1.04**		0.519	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.43**		**0.88**		**0.409**	J	**0.98**		**1.38**		**0.526**		**0.182**		**0.333**
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D
4			FZ04V		0402115-08		0406040-08		0408056-07		0411065-03		0502088-07		P5F0441-12		P5H0813-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/10/05		08/18/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.032**		**0.026**		**0.028**		**0.0425**		**0.064**		**0.0951**		**0.0235**		**0.112**
66	59	Chromium (6010)	**0.31**		**0.0517**		**0.0345**		**0.0161**		**0.0862**		**0.0199**		**0.00126**		**0.101**
67	60	Copper (6010)	**0.373**		**0.0441**		**0.0179**		0.01	U	**0.0865**		**0.0196**		0.002	U	**0.116**
68	61	Lead (7421)	**0.15**		**0.0233**		**0.0108**		**0.00816**		**0.0658**		**0.0222**		**0.00186**		**0.0652**
69	62	Nickel (6010)	**0.28**		**0.0158**		**0.0084**		**0.0065**		**0.0603**		0.005	U	**0.00572**		**0.0962**
70	63	Zinc (6010)	**0.83**		**0.113**		**0.0647**		**0.0831**		**0.269**		**0.0594**		**0.00586**		**0.292**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**210**		**250**		**232**		**152**		**253**		**211**		**247**		**257**
81	74	Chloride (mg/L) (EPA 325.2)	**12**		**1.96**		**1.51**		**2.13**		**2.26**		**1.92**		**1.63**		**1.85**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D
4			FZ04V		0402115-08		0406040-08		0408056-07		0411065-03		0502088-07		P5F0441-12		P5H0813-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/10/05		08/18/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.55		6.58		5.05		5.93		6.8		6.59		6.17		6.75
89	82	Temperature (° C) (avg)	18.1		14.8		16		16.3		15.2		14.9		14.3		17.0
90	83	Conductivity (um/hos)	290		381		232		456		384		207		411		405
91	84	Dissolved oxygen (mg/L) (avg)	2.68		1.36		3.2		2.36		0.56		0.07		2.24		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D		LW25D
4			FZ04V		0402115-08		0406040-08		0408056-07		0411065-03		0502088-07		P5F0441-12		P5H0813-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/11/04		2/18/05		6/10/05		08/18/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.12	U	**0.352**		**0.397**		**0.478**		**0.694**		**0.55**		1.60	U	1.80 U
126		2-Methylnaphthalene	0.12	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.12	U	**0.0771**		0.0509	U	**0.211**		**0.262**		**0.305**		0.400	U	0.800 U
128		Acenaphthene	0.45		**0.639**		**0.112**		**1.16**		**1.13**		**1.1**		**1.07**		**1.72**
129		Fluorene	0.57		**0.738**		**0.285**		**1.98**		**2.57**		**2.9**		**2.14**		**2.12**
130		Anthracene	0.12	U	**0.0771**		**0.214**		**0.289**		**0.231**		**0.448**		**0.257**		**0.625**
131		Dibenzofuran	0.12	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D
4			FZ04T		0402115-05		0406040-06		0408066-01		0411059-05		0502110-04		P5F0666-08		P5H0852-02
5			10/28/03		2/24/04		6/7/04		8/10/04		11/10/04		2/24/05		6/15/05		08/19/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.2	U	2.22	U	1.94	U	2	U	1.95	U	1.97	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.1	U	11.1	U	9.72	U	10	U	9.75	U	9.87	U	5.00	U	5.00 U
21	15	Isophorone	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.3	U	3.33	U	2.92	U	3.01	U	2.92	U	2.96	U	10.00	U	10.0 U
23	17	Benzoic Acid	11	U	22.2	U	19.4	U	20	U	19.5	U	19.7	U	50.0	U	50.0 U
24	18	Naphthalene	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.5	U	5.56	U	4.86	U	5.01	U	4.87	U	4.94	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.5	U	5.56	U	4.86	U	5.01	U	4.87	U	4.94	U	5.00	U	5.00 U
28	22	Acenaphthene	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
30	24	Fluorene	1.1	U	1.11	U	0.972	U	1	U	0.975	U	0.987	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.5	U	5.56	U	4.86	U	5.01	U	4.87	U	4.94	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.1	U	1.11	U	0.972	U	**3.77**		0.975	U	**32.8**		10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**11**		50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	**0.4**		**5.6**		1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	**1.02**		1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	**1**		**7.35**		2.00	U	**2.19**
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	**4.47**		1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	**1.2**		1	U	1	U	**2.38**		**3.32**		**5.38**		**4.68**		**3.96**
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**1.1**		**1.74**		**4.07**		**1.37**		**2.18**		**1.56**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	**0.541**		0.491	U	0.497	U	**1.4**		0.491	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.35**		**0.27**		**0.129**		**0.202**	J	**0.211**		**0.469**		**0.181**		**0.120**
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D
4			FZ04T		0402115-05		0406040-06		0408066-01		0411059-05		0502110-04		P5F0666-08		P5H0852-02
5			10/28/03		2/24/04		6/7/04		8/10/04		11/10/04		2/24/05		6/15/05		08/19/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.007**		**0.010**		**0.006**		**0.0112**		**0.0108**		**0.0152**		**0.00373**		**0.0113**
66	59	Chromium (6010)	**0.012**		**0.0159**		**0.0185**		**0.0171**		**0.0212**		**0.0119**		**0.00377**		**0.0268**
67	60	Copper (6010)	**0.016**		0.01	U	0.01	U	**0.0812**		**0.0132**		0.01	U	**0.00714**		**0.0355**
68	61	Lead (7421)	**0.006**		**0.0027**		**0.0021**		**0.0028**		**0.00353**		**0.0026**		**0.00219**		**0.0105**
69	62	Nickel (6010)	**0.01**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00365**		**0.0198**
70	63	Zinc (6010)	**0.036**		**0.0116**		**0.0161**		**0.0173**		**0.0276**		**0.0174**		**0.0177**		**0.0648**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**300**		**349**		**356**		**294**		**331**	J	**451**		**333**		**348**
81	74	Chloride (mg/L) (EPA 325.2)	**18**		**2.84**		**2.6**		**2.97**		**2.93**		**2.36**		**2.86**		**2.71**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D
4			FZ04T		0402115-05		0406040-06		0408066-01		0411059-05		0502110-04		P5F0666-08		P5H0852-02
5			10/28/03		2/24/04		6/7/04		8/10/04		11/10/04		2/24/05		6/15/05		08/19/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.8		6.93		5.53		5.86		7.06		7.1		6.73		6.38
89	82	Temperature (° C) (avg)	19.0		13		17.8		16.4		14		13.1		15.5		16.1
90	83	Conductivity (um/hos)	509		388		397		704		442		219		265		452
91	84	Dissolved oxygen (mg/L) (avg)	2.65		1.38		3.7		1.36		1.6		0		NA		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D		LW26D
4			FZ04T		0402115-05		0406040-06		0408066-01		0411059-05		0502110-04		P5F0666-08		P5H0852-02
5			10/28/03		2/24/04		6/7/04		8/10/04		11/10/04		2/24/05		6/15/05		08/19/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.11	U	**0.0843**		0.0482	U	0.0498	U	**0.0916**		**0.121**		0.500	U	**0.559**
126		2-Methylnaphthalene	0.11	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	**0.116**		0.0482	U	0.0498	U	**0.0509**		0.0504	U	0.500	U	0.100 U
128		Acenaphthene	0.11	U	**0.0632**		0.0482	U	0.0498	U	**0.0509**		**0.0907**		0.500	U	0.100 U
129		Fluorene	0.11	U	**0.432**		0.0482	U	**0.129**		**0.204**		0.0504	U	0.500	U	0.100 U
130		Anthracene	0.11	U	0.0527	U	0.0482	U	0.0498	U	0.0509	U	0.0504	U	0.100	U	0.100 U
131		Dibenzofuran	0.11	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D
4			FZ04S		0402115-06		0406040-05		0408056-11		0411059-06		0502110-05		P5F0666-09		P5H0852-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/10/04		2/24/05		6/15/05		08/19/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.2	U	1.99	U	1.98	U	2.16	U	1.93	U	2.1	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.1	U	9.93	U	9.89	U	10.8	U	9.67	U	10.5	U	5.00	U	5.00 U
21	15	Isophorone	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.2	U	2.98	U	2.97	U	3.24	U	2.9	U	3.15	U	10.00	U	10.0 U
23	17	Benzoic Acid	11	U	19.9	U	19.8	U	21.6	U	19.3	U	21	U	50.0	U	50.0 U
24	18	Naphthalene	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.4	U	4.97	U	4.95	U	5.39	U	4.84	U	5.25	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.4	U	4.97	U	4.95	U	5.39	U	4.84	U	5.25	U	5.00	U	5.00 U
28	22	Acenaphthene	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
30	24	Fluorene	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	1.05	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.4	U	4.97	U	4.95	U	5.39	U	4.84	U	5.25	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.1	U	0.993	U	0.989	U	1.08	U	0.967	U	**17.8**		10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**7.9**		50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1	U	**3.02**		**7.68**		**4.83**		**12.9**
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**0.54**		**0.598**		**2.43**		**1.25**		**0.969**		**1.02**		0.788	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.497	U	0.557	U	0.539	U	**0.647**		0.509	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	**0.24**		**0.336**		**0.188**		0.11	U	0.08	U	0.08 U
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D
4			FZ04S		0402115-06		0406040-05		0408056-11		0411059-06		0502110-05		P5F0666-09		P5H0852-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/10/04		2/24/05		6/15/05		08/19/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.006**		**0.006**		**0.007**		**0.00745**		**0.00534**		**0.0156**		**0.00483**		**0.00593**
66	59	Chromium (6010)	**0.009**		**0.0181**		**0.0203**		**0.0211**		**0.0177**		**0.112**		**0.00177**		**0.00668**
67	60	Copper (6010)	**0.02**		0.01	U	0.01	U	**0.0157**		0.01	U	**0.118**		**0.00341**		**0.00923**
68	61	Lead (7421)	**0.014**		**0.0021**		**0.0006**		**0.0019**		**0.00136**		**0.0407**		0.001	U	**0.00222**
69	62	Nickel (6010)	**0.01**		0.005	U	0.005	U	0.005	U	0.005	U	**0.0821**		**0.00411**		**0.0067**
70	63	Zinc (6010)	**0.047**		**0.0145**		0.01	U	**0.0528**		**0.0173**		**0.299**		**0.00924**		**0.0208**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**240**		**306**		**318**		**264**		**284**	J	**349**		**309**		**312**
81	74	Chloride (mg/L) (EPA 325.2)	**24**		**7.2**		**3.72**		**3.43**		**2.85**		**2.87**		**2.97**		**2.98**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D
4			FZ04S		0402115-06		0406040-05		0408056-11		0411059-06		0502110-05		P5F0666-09		P5H0852-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/10/04		2/24/05		6/15/05		08/19/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.84		6.73		5.53		6.16		7.06		6.82		6.60		6.82
89	82	Temperature (° C) (avg)	15.0		13.8		14.5		15.3		14.2		16		16.3		16.4
90	83	Conductivity (um/hos)	329		345		363		609		372		207		323		359
91	84	Dissolved oxygen (mg/L) (avg)	1.07		1.34		1.56		1.5		1.57		0		3.03		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	NA
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D		LW27D
4			FZ04S		0402115-06		0406040-05		0408056-11		0411059-06		0502110-05		P5F0666-09		P5H0852-03
5			10/28/03		2/24/04		6/7/04		8/09/04		11/10/04		2/24/05		6/15/05		08/19/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.11	U	**0.0584**		**0.126**		**0.104**		**0.128**		**0.0749**		0.200	U	0.250 U
126		2-Methylnaphthalene	0.11	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	0.0584	U	0.0484	U	0.0522	U	0.0492	U	0.0535	U	0.500	U	0.100 U
128		Acenaphthene	0.11	U	**0.0701**		**0.0871**		**0.104**		**0.0689**		0.0535	U	0.500	U	**0.117**
129		Fluorene	0.11	U	0.0584	U	0.0484	U	**0.146**		0.0492	U	0.0535	U	0.500	U	0.100 U
130		Anthracene	0.11	U	0.0584	U	0.0484	U	0.0522	U	0.0492	U	0.0535	U	0.100	U	0.100 U
131		Dibenzofuran	0.11	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D
4			FZ04D		0402080-07		0406050-07		0408006-07		0411047-03		0502059-01		P5F0343-05		P5H0625-10
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.1	U	1.92	UJ	1.97	U	2.03	U	2.02	U	1.92	U	5.00	U	5.00 U
20	14	4-Methylphenol	1	U	9.61	UJ	9.87	U	10.1	U	10.1	U	9.59	U	5.00	U	5.00 U
21	15	Isophorone	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.1	U	2.88	UJ	2.96	U	3.04	U	3.03	U	2.88	U	10.00	U	10.0 U
23	17	Benzoic Acid	10	U	19.2	UJ	19.7	U	20.3	U	20.2	U	19.2	U	50.0	U	50.0 U
24	18	Naphthalene	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.2	U	4.8	UJ	4.94	U	5.07	U	5.05	U	4.79	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.2	U	4.8	UJ	4.94	U	5.07	U	5.05	U	4.79	U	5.00	U	5.00 U
28	22	Acenaphthene	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
29	23	Dibenzofuran	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
30	24	Fluorene	1	U	0.961	UJ	0.987	U	1.01	U	1.01	U	0.959	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.2	U	4.8	UJ	4.94	U	5.07	U	5.05	U	4.79	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1	U	2.13	UJ	0.987	U	**1.37**		**1.33**		0.959	U	10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	**1.1**		2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	0.25	U	0.242	U	0.249	U	**0.306**		0.252	U	0.239	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.483	U	0.497	U	0.476	U	0.503	U	0.478	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	**0.106**		0.08	U	0.08 U
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D
4			FZ04D		0402080-07		0406050-07		0408006-07		0411047-03		0502059-01		P5F0343-05		P5H0625-10
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.004**		**0.006**		**0.006**		**0.00694**		**0.00658**		**0.00823**		**0.0111**		**0.00719**
66	59	Chromium (6010)	**0.019**		**0.0137**		**0.0164**		**0.015**		**0.024**		**0.0088**		**0.00177**		**0.00371**
67	60	Copper (6010)	**0.019**		0.01	U	0.01	U	0.01	U	**0.0115**		0.01	U	0.002	U	**0.00458**
68	61	Lead (7421)	**0.006**		**0.0017**		**0.0013**		**0.000613**		**0.00274**		**0.00132**		0.001	U	**0.00113**
69	62	Nickel (6010)	**0.02**		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.00459**		**0.00533**
70	63	Zinc (6010)	**0.04**		**0.0336**		**0.0105**		0.01	U	**0.0216**		0.01	U	**0.00809**		**0.0141**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**370**		**391**		**432**		**362**		**462**		**405**		**443**		**434**
81	74	Chloride (mg/L) (EPA 325.2)	**30**		**4.25**		**4.33**		**3.43**		**4.18**		**4.2**		**4.18**		**3.52**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D
4			FZ04D		0402080-07		0406050-07		0408006-07		0411047-03		0502059-01		P5F0343-05		P5H0625-10
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.69		7.14		7.02		6.05		6.89		7.13		6.98		7.04
89	82	Temperature (° C) (avg)	16.0		13		14.5		14.7		14.3		12.6		16.8		15.0
90	83	Conductivity (um/hos)	569		529		474		726		511		261		471		495
91	84	Dissolved oxygen (mg/L) (avg)	3.36		2.18		1.41		NM		0.94		1.03		3.79		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D		LW29D
4			FZ04D		0402080-07		0406050-07		0408006-07		0411047-03		0502059-01		P5F0343-05		P5H0625-10
5			10/27/03		2/17/04		6/8/04		8/02/04		11/8/04		2/15/05		6/8/05		08/15/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0495	U	0.0479	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.1	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0495	U	0.0479	U	0.100	U	0.100 U
128		Acenaphthene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0495	U	0.0479	U	0.100	U	0.100 U
129		Fluorene	0.1	U	0.0489	UJ	0.05	U	0.05	U	0.0495	U	0.0479	U	0.100	U	0.100 U
130		Anthracene	0.1	U	0.0489	UJ	0.05	U	1.01	U	0.0495	U	0.0479	U	0.100	U	0.100 U
131		Dibenzofuran	0.1	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D
4			FZ04F		0402085-02		0406050-09		0408020-05		0411047-05		0502059-04		P5F0441-08		P5H0625-09
5			10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.2	U	2.06	U	1.95	U	1.98	U	1.99	U	2.04	U	5.00	U	5.00 U
20	14	4-Methylphenol	1.1	U	10.3	U	9.76	U	9.92	U	9.97	U	10.2	U	5.00	U	5.00 U
21	15	Isophorone	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.3	U	3.09	U	2.93	U	2.98	U	2.99	U	3.07	U	10.00	U	10.0 U
23	17	Benzoic Acid	11	U	20.6	U	19.5	U	19.8	U	19.9	U	20.4	U	50.0	U	50.0 U
24	18	Naphthalene	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.6	U	5.15	U	4.88	U	4.96	U	4.99	U	5.11	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.6	U	5.15	U	4.88	U	4.96	U	4.99	U	5.11	U	5.00	U	5.00 U
28	22	Acenaphthene	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
30	24	Fluorene	1.1	U	1.03	U	0.976	U	0.992	U	0.997	U	1.02	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.6	U	5.15	U	4.88	U	4.96	U	4.99	U	5.11	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.1	U	1.03	U	0.976	U	**1.73**		**2.04**		1.02	U	10.00	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**5.1**		50	UJ	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	**2.11**	J	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	UJ	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	UJ	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	UJ	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	UJ	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	UJ	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	UJ	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	0.25	U	**0.352**		**0.488**		**0.539**		**0.319**		**0.37**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.493	U	0.517	U	0.478	U	0.525	U	0.545	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	0.1	U	**0.211**		0.08	UJ	0.08 U
62	55																

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D
4			FZ04F		0402085-02		0406050-09		0408020-05		0411047-05		0502059-04		P5F0441-08		P5H0625-09
5			10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.01**		**0.009**		**0.015**		**0.0128**		**0.0128**		**0.0114**		**0.0144**		**0.0148**
66	59	Chromium (6010)	**0.026**		**0.0196**		**0.119**		0.005	U	**0.0442**		**0.0084**		**0.0134**		**0.0245**
67	60	Copper (6010)	**0.04**		**0.016**		**0.156**		0.01	U	**0.0385**		0.01	U	**0.0258**		**0.0347**
68	61	Lead (7421)	**0.008**		**0.0033**		**0.0292**		**0.00221**		**0.00785**		**0.00081**		**0.00501**		**0.00785**
69	62	Nickel (6010)	**0.03**		0.005	U	**0.0682**		0.005	U	0.005	U	0.005	U	**0.0154**		**0.0197**
70	63	Zinc (6010)	**0.07**		**0.0383**		**0.264**		**0.0504**		**0.0736**		**0.0107**		**0.0421**		**0.0567**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**270**		**304**		**248**		**356**		**344**		**327**		**335**		**341**
81	74	Chloride (mg/L) (EPA 325.2)	**7.3**		**8.36**		**7.41**		**7.88**		**6.54**		**6.28**		**6.44**		**6.24**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D
4			FZ04F		0402085-02		0406050-09		0408020-05		0411047-05		0502059-04		P5F0441-08		P5H0625-09
5			10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.65		6.86		6.69		6.12		6.71		6.84		7.06		6.59
89	82	Temperature (° C) (avg)	13.8		13.8		14.7		14.8		14.6		12.5		17.2		16.3
90	83	Conductivity (um/hos)	426		450		478		677		476		285		416		448
91	84	Dissolved oxygen (mg/L) (avg)	1.96		2		1.34		3.06		0.9		0.39		4.21		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D		LW30D
4			FZ04F		0402085-02		0406050-09		0408020-05		0411047-05		0502059-04		P5F0441-08		P5H0625-09
5			10/27/03		2/18/04		6/8/04		8/03/04		11/8/04		2/15/05		6/9/05		08/15/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.11	U	0.0506	U	0.05	U	0.05	U	0.05	U	0.0508	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.11	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	0.0506	U	0.05	U	0.05	U	0.05	U	0.0508	U	0.100	U	0.100 U
128		Acenaphthene	0.11	U	0.0506	U	0.05	U	0.05	U	0.05	U	0.0508	U	0.100	U	0.100 U
129		Fluorene	0.11	U	0.0506	U	0.05	U	0.05	U	0.05	U	0.0508	U	0.100	U	0.100 U
130		Anthracene	0.11	U	0.0506	U	0.05	U	0.05	U	0.05	U	0.0508	U	0.100	U	0.100 U
131		Dibenzofuran	0.11	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D
4			FZ04I		0402080-06		0406050-05		0408006-05		0411052-04		0502056-03		P5F0343-02		P5H0701-04
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.1	U	1.93	U	2.02	U	2.02	U	1.96	U	1.9	U	5.00	U	5.56 U
20	14	4-Methylphenol	1.1	U	9.65	U	10.1	U	10.1	U	9.78	U	9.52	U	5.00	U	5.56 U
21	15	Isophorone	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
22	16	2,4-Dimethylphenol	3.2	U	2.9	U	3.04	U	3.03	U	2.93	U	2.86	U	10.00	U	11.1 U
23	17	Benzoic Acid	11	U	19.3	U	20.2	U	20.2	U	19.6	U	19	U	50.0	U	55.6 U
24	18	Naphthalene	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
25	19	2-Methylnaphthalene	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
26	20	2,4,6-Trichlorophenol	5.3	U	4.83	U	5.06	U	5.05	U	4.89	U	4.76	U	5.00	U	5.56 U
27	21	2,4,5-Trichlorophenol	5.3	U	4.83	U	5.06	U	5.05	U	4.89	U	4.76	U	5.00	U	5.56 U
28	22	Acenaphthene	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
29	23	Dibenzofuran	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
30	24	Fluorene	1.1	U	0.965	U	1.01	U	1.01	U	0.978	U	0.952	U	5.00	U	5.56 U
31	25	Pentachlorophenol	5.3	U	4.83	U	5.06	U	5.05	U	4.89	U	4.76	U	10	U	6 UJ
32	26	bis(2-Ethylhexyl)phthalate	**2.2**		2.51	U	**2.21**		**2.01**		**1.05**		0.952	U	10.00	U	11.1 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	5	U	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**0.35**		**0.504**		**0.72**		**0.863**		**0.6**		**0.579**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.491	U	0.559	U	0.496	U	**0.501**		0.5	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	0.1	U	0.1	U	**0.105**		**0.221**		0.08	U	0.08 UJ
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D
4			FZ04I		0402080-06		0406050-05		0408006-05		0411052-04		0502056-03		P5F0343-02		P5H0701-04
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.004**		**0.009**		**0.010**		**0.01**		**0.0104**		**0.00956**		**0.00959**		**0.0111**
66	59	Chromium (6010)	**0.063**		**0.0202**		**0.0261**		**0.0183**		**0.0446**		**0.0093**		**0.00175**		**0.030**
67	60	Copper (6010)	**0.082**		**0.0109**		0.01	U	0.01	U	**0.0305**		0.01	U	**0.00249**		**0.0349**
68	61	Lead (7421)	**0.018**		**0.0028**		**0.0020**		**0.00195**		**0.00582**		**0.0013**		**0.00162**		**0.00821**
69	62	Nickel (6010)	**0.05**		0.005	U	0.005	U	0.005	U	**0.013**		0.005	U	**0.00283**		**0.0236**
70	63	Zinc (6010)	**0.146**		**0.0251**		**0.0189**		**0.0238**		**0.0734**		0.01	U	**0.00992**		**0.0692**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**270**		**332**		**343**		**272**		**345**		**338**		**361**		**366**
81	74	Chloride (mg/L) (EPA 325.2)	**2.7**		**2.77**		**2.92**		**2.72**		**3.18**		**2.83**		**3.53**		**4.41**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D
4			FZ04I		0402080-06		0406050-05		0408006-05		0411052-04		0502056-03		P5F0343-02		P5H0701-04
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.80		6.82		6.85		6.05		6.91		7.14		6.96		6.93
89	82	Temperature (° C) (avg)	15.8		13.1		14.6		14.8		13.5		12.5		15.3		14.4
90	83	Conductivity (um/hos)	436		474		421		646		467		278		397		474
91	84	Dissolved oxygen (mg/L) (avg)	5.75		2.29		1.35		NM		1.76		1.01		4.26		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D		LW32D
4			FZ04I		0402080-06		0406050-05		0408006-05		0411052-04		0502056-03		P5F0343-02		P5H0701-04
5			10/27/03		2/17/04		6/8/04		8/02/04		11/9/04		2/14/05		6/8/05		08/16/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.11	U	0.0473	UJ	0.05	U	**0.07**		0.0498	U	0.0478	U	0.100	U	0.100 U
126		2-Methylnaphthalene	0.11	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.11	U	0.0473	UJ	0.05	U	0.05	U	0.0498	U	0.0478	U	0.100	U	0.100 U
128		Acenaphthene	0.11	U	0.0473	UJ	0.05	U	0.05	U	0.0498	U	0.0478	U	0.100	U	0.100 U
129		Fluorene	0.11	U	0.0473	UJ	0.05	U	0.05	U	0.0498	U	0.0478	U	0.100	U	0.100 U
130		Anthracene	0.11	U	0.0473	UJ	0.05	U	0.05	U	0.0498	U	0.0478	U	0.100	U	0.100 U
131		Dibenzofuran	0.11	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D
4			FZ04K		0402115-09		0406040-02		0408056-02		0411059-07		0502099-08		P5F0554-03		P5H0813-05
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/18/05
6																	
7	1	**CHLORINATED PHENOLS (µg/L)**															
8	2	**EPA Method SW8040**															
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA
16	10																
17	11	**SEMIVOLATILES (µg/L)**															
18	12	**EPA Method SW8270**															
19	13	Phenol	2.9	U	1.99	U	2.01	U	1.95	U	2.05	U	2	U	5.56	U	5.00 U
20	14	4-Methylphenol	1.4	U	9.95	U	10	U	9.75	U	10.2	U	10	U	5.56	U	5.00 U
21	15	Isophorone	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
22	16	2,4-Dimethylphenol	4.3	U	2.99	U	3.01	U	2.92	U	3.07	U	3	U	11.1	U	10.0 U
23	17	Benzoic Acid	14	U	19.9	U	20.1	U	19.5	U	20.5	U	20	U	55.6	U	50.0 U
24	18	Naphthalene	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
25	19	2-Methylnaphthalene	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
26	20	2,4,6-Trichlorophenol	7.1	U	4.98	U	5.02	U	4.87	U	5.12	U	5	U	5.56	U	5.00 U
27	21	2,4,5-Trichlorophenol	7.1	U	4.98	U	5.02	U	4.87	U	5.12	U	5	U	5.56	U	5.00 U
28	22	Acenaphthene	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
29	23	Dibenzofuran	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
30	24	Fluorene	1.4	U	0.995	U	1	U	0.975	U	1.02	U	1	U	5.56	U	5.00 U
31	25	Pentachlorophenol	7.1	U	4.98	U	5.02	U	4.87	U	5.12	U	5	U	11.1	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**2.7**		0.995	U	1	U	0.975	U	**2.73**		**2.33**		11.1	U	10.0 U
33	27																
34	28	**VOLATILES (µg/L)**															
35	29	**EPA Method SW8260**															
36	30	Acetone	**7.9**	M	50	U	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	1	U	2	U	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	5	U	10	U	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	1	U	0.4	U	0.3	U	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	1	U	2	U	2	U	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**2.2**		**2.05**		1	U	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	5	U	1	U	1	U	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	**1.5**		1	U	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56	49																
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**															
58	51	**Method OR-DEQ**															
59	52	**TPH-Diesel**	**3.1**		**0.491**		**4.13**		**2.71**		**1.96**		**1.42**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.486	U	0.492	U	0.48	U	**1.45**		1.35	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.25	U	0.1	U	**0.102**		0.1	U	0.1	U	0.1	U	0.08	U	0.08 U
62	55																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D
4			FZ04K		0402115-09		0406040-02		0408056-02		0411059-07		0502099-08		P5F0554-03		P5H0813-05
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/18/05
63	56	**PRIORITY POLLUTANT**															
64	57	**METALS (mg/L)**															
65	58	Arsenic (7060)	**0.018**		**0.002**		**0.004**		0.001	U	**0.0166**		**0.0063**		**0.00147**		**0.0331**
66	59	Chromium (6010)	**0.35**		**0.0165**		**0.0326**		**0.0172**		**0.051**		**0.0146**		**0.00365**		**0.131**
67	60	Copper (6010)	**0.37**		0.01	U	**0.0107**		**0.0241**		**0.0354**		0.01	U	**0.00449**		**0.165**
68	61	Lead (7421)	**0.12**		**0.0042**		**0.0082**		**0.00314**		**0.0307**		**0.00763**		**0.0031**		**0.0578**
69	62	Nickel (6010)	**0.32**		0.005	U	**0.0114**		**0.0186**		**0.0647**		**0.0058**		**0.0113**		**0.183**
70	63	Zinc (6010)	**0.93**		**0.0128**		**0.0444**		**0.0427**		**0.168**		**0.0223**		**0.0146**		**0.590**
71	64																
72	65	**MAJOR IONS AND CONVENTIONALS**															
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**240**		**263**		**364**		**322**		**868**	J	**423**		**324**		**443**
81	74	Chloride (mg/L) (EPA 325.2)	**3.2**		**1.53**		**1.97**		**1.63**		**1.64**		**1.56**		**1.68**		**1.71**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA
86	79																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D
4			FZ04K		0402115-09		0406040-02		0408056-02		0411059-07		0502099-08		P5F0554-03		P5H0813-05
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/18/05
87	80	**FIELD PARAMETERS**															
88	81	pH (avg)	6.51		6.44		5.19		5.59		6.79		6.62		6.13		6.63
89	82	Temperature (° C) (avg)	14.9		13.3		13.8		14.1		13.4		13.8		14.0		15.0
90	83	Conductivity (um/hos)	526		272		428		722		473		250		410		479
91	84	Dissolved oxygen (mg/L) (avg)	0.58		4.29		2.15		3.09		2.67		1.91		8.83		NM
92	85																
93	86	**DIOXINS AND FURANS (ng/L)**															
94	87	**Method 8290**															
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA
120																	
121																	
122																	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2																	
3			LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D		LW35D
4			FZ04K		0402115-09		0406040-02		0408056-02		0411059-07		0502099-08		P5F0554-03		P5H0813-05
5			10/27/03		2/24/04		6/7/04		8/09/04		11/10/04		2/22/05		6/13/05		08/18/05
123		**PAHs (µg/L)**															
124		**EPA Method SW8270 SIM**															
125		Naphthalene	0.14	U	0.0509	U	**0.133**		0.0487	U	0.0503	U	0.0482	U	0.100	U	0.150 U
126		2-Methylnaphthalene	0.14	U	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	0.14	U	0.0509	U	0.0513	U	**0.0584**		0.0503	U	0.0482	U	0.100	U	0.150 U
128		Acenaphthene	0.14	U	0.0509	U	0.0513	U	0.0487	U	0.0503	U	0.0482	U	0.100	U	0.100 U
129		Fluorene	0.14	U	0.0509	U	0.0513	U	**0.477**		0.0503	U	0.0482	U	0.100	U	0.100 U
130		Anthracene	0.14	U	0.0509	U	0.0513	U	0.0487	U	**0.0603**		**0.0674**		0.100	U	**0.202**
131		Dibenzofuran	0.14	U	NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW36D		LW36D		LW36D		LW36D
4			0411059-08		0502088-01		P5F0441-04		P5H0734-08
5			11/10/04		2/17/05		6/8/05		08/17/05
6									
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	1.98	U	1.9	U	5.00	U	5.00 U
20	14	4-Methylphenol	9.9	U	9.51	U	5.00	U	5.00 U
21	15	Isophorone	0.99	U	0.951	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	2.97	U	2.85	U	10.00	U	10.0 U
23	17	Benzoic Acid	19.8	U	19	U	50.0	U	50.0 U
24	18	Naphthalene	0.99	U	0.951	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	0.99	U	0.951	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	4.95	U	4.76	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	4.95	U	4.76	U	5.00	U	5.00 U
28	22	Acenaphthene	0.99	U	0.951	U	5.00	U	5.00 U
29	23	Dibenzofuran	0.99	U	0.951	U	5.00	U	5.00 U
30	24	Fluorene	0.99	U	0.951	U	5.00	U	5.00 U
31	25	Pentachlorophenol	4.95	U	4.76	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	0.99	U	0.951	U	10.00	U	10.0 U
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	**0.252**		0.243	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	**0.58**		0.486	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.1	U	0.1	U	0.08	U	0.08 U
62	55								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW36D		LW36D		LW36D		LW36D
4			0411059-08		0502088-01		P5F0441-04		P5H0734-08
5			11/10/04		2/17/05		6/8/05		08/17/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	0.001	U	0.001	U	**0.00106**		0.001 U
66	59	Chromium (6010)	0.005	U	**0.0064**		0.001	U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	**0.00111**
68	61	Lead (7421)	0.00025	U	0.0001	U	0.001	U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	0.002	U	**0.00561**
70	63	Zinc (6010)	0.01	U	0.01	U	0.005	U	0.01 U
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**180**	J	**78**		**84**		**308**
81	74	Chloride (mg/L) (EPA 325.2)	**3.32**		**1.48**		**1.75**		**1.68**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		0.100 U
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		**1.88**
86	79								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW36D		LW36D		LW36D		LW36D
4			0411059-08		0502088-01		P5F0441-04		P5H0734-08
5			11/10/04		2/17/05		6/8/05		08/17/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	6.84		6.81		6.75		6.38
89	82	Temperature (° C) (avg)	16.2		11.6		15.8		16.8
90	83	Conductivity (um/hos)	212		61		65		352
91	84	Dissolved oxygen (mg/L) (avg)	1.84		2.25		3.65		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121									
122									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW36D		LW36D		LW36D		LW36D
4			0411059-08		0502088-01		P5F0441-04		P5H0734-08
5			11/10/04		2/17/05		6/8/05		08/17/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	0.0505	U	0.0478	U	0.100	U	0.300 U
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	0.0505	U	0.0478	U	0.100	U	0.100 U
128		Acenaphthene	0.0505	U	0.0478	U	0.100	U	0.100 U
129		Fluorene	0.0505	U	0.0478	U	0.100	U	0.100 U
130		Anthracene	0.0505	U	0.0478	U	0.100	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW37D		LW37D		LW37D		LW37D
4			0411059-09		0502088-02		P5F0441-05		P5H0734-09
5			11/10/04		2/17/05		6/8/05		08/17/05
6									
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	2.03	U	2.02	U	5.00	U	5.00 U
20	14	4-Methylphenol	10.1	U	10.1	U	5.00	U	5.00 U
21	15	Isophorone	1.01	U	1.01	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.04	U	3.02	U	10.00	U	10.0 U
23	17	Benzoic Acid	20.3	U	20.2	U	50.0	U	50.0 U
24	18	Naphthalene	1.01	U	1.01	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.01	U	1.01	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.07	U	5.04	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.07	U	5.04	U	5.00	U	5.00 U
28	22	Acenaphthene	1.01	U	1.01	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.01	U	1.01	U	5.00	U	5.00 U
30	24	Fluorene	1.01	U	1.01	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.07	U	5.04	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.01	U	1.01	U	10.00	U	10.0 U
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	0.25	U	0.248	U	0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	0.5	U	0.495	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	0.1	U	0.1	U	0.08	U	0.08 U
62	55								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW37D		LW37D		LW37D		LW37D
4			0411059-09		0502088-02		P5F0441-05		P5H0734-09
5			11/10/04		2/17/05		6/8/05		08/17/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	**0.00578**		0.001	U	0.001	U	0.001 U
66	59	Chromium (6010)	**0.0261**		**0.0078**		0.001	U	**0.00158**
67	60	Copper (6010)	**0.0196**		0.01	U	0.002	U	**0.00196**
68	61	Lead (7421)	**0.0098**		**0.000728**		0.001	U	0.001 U
69	62	Nickel (6010)	**0.0117**		0.005	U	0.002	U	**0.00249**
70	63	Zinc (6010)	**0.0505**		0.01	U	0.005	U	0.01 U
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**90**	J	**79**		**86**		**145**
81	74	Chloride (mg/L) (EPA 325.2)	**6.91**		**3.41**		**2.81**		**1.96**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA
86	79								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW37D		LW37D		LW37D		LW37D
4			0411059-09		0502088-02		P5F0441-05		P5H0734-09
5			11/10/04		2/17/05		6/8/05		08/17/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	7.1		7.12		6.30		6.34
89	82	Temperature (° C) (avg)	14.5		10.8		14.4		16.0
90	83	Conductivity (um/hos)	79		39		93		139
91	84	Dissolved oxygen (mg/L) (avg)	2.19		3.39		9.97		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121									
122									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW37D		LW37D		LW37D		LW37D
4			0411059-09		0502088-02		P5F0441-05		P5H0734-09
5			11/10/04		2/17/05		6/8/05		08/17/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	0.054	U	0.0499	U	0.100	U	0.100 U
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	0.054	U	0.0499	U	0.100	U	0.100 U
128		Acenaphthene	0.054	U	0.0499	U	0.100	U	0.100 U
129		Fluorene	0.054	U	0.0499	U	0.100	U	0.100 U
130		Anthracene	0.054	U	0.0499	U	0.100	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										Dup of LW38D
3			LW38D		LW38D		LW38D		LW38D	Y
4			0411059-10		0502088-03		P5F0441-03		P5H0734-10	P5H0734-12
5			11/10/04		2/17/05		6/8/05		08/17/05	08/17/05
6										
7	1	**CHLORINATED PHENOLS (µg/L)**								
8	2	**EPA Method SW8040**								
9	3	Pentachlorophenol	NA		NA		NA		NA	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA	NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA	NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA	NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA	NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA	NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA	NA
16	10									
17	11	**SEMIVOLATILES (µg/L)**								
18	12	**EPA Method SW8270**								
19	13	Phenol	1.97	U	1.99	U	5.00	U	5.00 U	5.00 U
20	14	4-Methylphenol	9.84	U	9.97	U	5.00	U	5.00 U	5.00 U
21	15	Isophorone	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
22	16	2,4-Dimethylphenol	2.95	U	2.99	U	10.00	U	10.0 U	10.0 U
23	17	Benzoic Acid	19.7	U	19.9	U	50.0	U	50.0 U	50.0 U
24	18	Naphthalene	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
25	19	2-Methylnaphthalene	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
26	20	2,4,6-Trichlorophenol	4.92	U	4.99	U	5.00	U	5.00 U	5.00 U
27	21	2,4,5-Trichlorophenol	4.92	U	4.99	U	5.00	U	5.00 U	5.00 U
28	22	Acenaphthene	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
29	23	Dibenzofuran	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
30	24	Fluorene	0.984	U	0.997	U	5.00	U	5.00 U	5.00 U
31	25	Pentachlorophenol	4.92	U	4.99	U	10	U	5 UJ	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	0.984	U	0.997	U	10.00	U	10.0 U	10.0 U
33	27									
34	28	**VOLATILES (µg/L)**								
35	29	**EPA Method SW8260**								
36	30	Acetone	50	U	50	U	25.0	U	25.0 U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U	10.0 U
39	33	Benzene	0.3	U	0.3	U	1.00	U	1.00 U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00 U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	2.00	U	2.00 U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U	1.00 U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	5.00	U	5.00 U	5.00 U
54	48	Naphthalene	1	U	1	U	2.00	U	2.00 U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00 U	1.00 U
56	49									
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**								
58	51	**Method OR-DEQ**								
59	52	**TPH-Diesel**	**0.954**		**0.375**		0.25	U	0.250 UJ	0.250 U
60	53	**TPH-D Motor Oil**	**0.702**		0.475	U	0.5	U	0.500 UJ	0.500 U
61	54	**TPH-Gasoline**	**0.12**		0.1	U	0.08	U	0.08 U	0.08 U
62	55									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										Dup of LW38D
3			LW38D		LW38D		LW38D		LW38D	Y
4			0411059-10		0502088-03		P5F0441-03		P5H0734-10	P5H0734-12
5			11/10/04		2/17/05		6/8/05		08/17/05	08/17/05
63	56	**PRIORITY POLLUTANT**								
64	57	**METALS (mg/L)**								
65	58	Arsenic (7060)	**0.00867**		**0.00391**		**0.00438**		**0.00507**	**0.00493**
66	59	Chromium (6010)	**0.0138**		**0.008**		0.001	U	0.001 U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.002	U	0.001 U	0.001 U
68	61	Lead (7421)	0.0002	U	**0.000117**		0.001	U	0.001 U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	0.002	U	**0.00334**	**0.00324**
70	63	Zinc (6010)	0.01	U	0.01	U	0.005	U	0.01 U	0.01 U
71	64									
72	65	**MAJOR IONS AND CONVENTIONALS**								
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA	NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA	NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA	NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA	NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA	NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**157**	J	**115**		**101**		**173**	**186**
81	74	Chloride (mg/L) (EPA 325.2)	**6.2**		**2.76**		**4.10**		**3.16**	**3.01**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA	NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA	NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA	NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA	NA
86	79									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										Dup of LW38D
3			LW38D		LW38D		LW38D		LW38D	Y
4			0411059-10		0502088-03		P5F0441-03		P5H0734-10	P5H0734-12
5			11/10/04		2/17/05		6/8/05		08/17/05	08/17/05
87	80	**FIELD PARAMETERS**								
88	81	pH (avg)	6.84		6.52		6.72		6.30	6.27
89	82	Temperature (° C) (avg)	16.2		10.7		16.0		16.9	16.9
90	83	Conductivity (um/hos)	159		81		80		169	169
91	84	Dissolved oxygen (mg/L) (avg)	1.59		0		3.02		NM	NM
92	85									
93	86	**DIOXINS AND FURANS (ng/L)**								
94	87	**Method 8290**								
95	88	2,3,7,8-TCDF	NA		NA		NA		NA	NA
96	89	Total TCDF	NA		NA		NA		NA	NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA	NA
98	91	Total TCDD	NA		NA		NA		NA	NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA	NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA	NA
101	94	Total PeCDF	NA		NA		NA		NA	NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA	NA
103	96	Total PeCDD	NA		NA		NA		NA	NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA	NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA	NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA	NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA	NA
108	101	Total HxCDF	NA		NA		NA		NA	NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA	NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA	NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA	NA
112	105	Total HxCDD	NA		NA		NA		NA	NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA	NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA	NA
115	108	Total HpCDF	NA		NA		NA		NA	NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA	NA
117	110	Total HpCDD	NA		NA		NA		NA	NA
118	111	OCDF	NA		NA		NA		NA	NA
119	112	OCDD	NA		NA		NA		NA	NA
120										
121										
122										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J
1										
2										Dup of LW38D
3			LW38D		LW38D		LW38D		LW38D	Y
4			0411059-10		0502088-03		P5F0441-03		P5H0734-10	P5H0734-12
5			11/10/04		2/17/05		6/8/05		08/17/05	08/17/05
123		**PAHs (µg/L)**								
124		**EPA Method SW8270 SIM**								
125		Naphthalene	**0.08**		0.0515	U	0.100	U	0.200 U	0.222 U
126		2-Methylnaphthalene	NA		NA		NA		NA	NA
127		Acenaphthylene	0.05	U	0.0515	U	0.100	U	0.100 U	0.111 U
128		Acenaphthene	**0.12**		**0.0515**		0.100	U	0.100 U	0.111 U
129		Fluorene	**0.19**		**0.0515**		0.100	U	0.100 U	0.111 U
130		Anthracene	0.05	U	0.0515	U	0.100	U	0.100 U	0.111 U
131		Dibenzofuran	NA		NA		NA		NA	NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2							Dup of LW39D				
3			LW39D		LW39D		Y		LW39D		LW39D
4			0411059-11		0502088-04		0502088-05		P5F0441-02		P5H0734-11
5			11/10/04		2/17/05		2/17/05		6/8/05		08/17/05
6											
7	1	**CHLORINATED PHENOLS (µg/L)**									
8	2	**EPA Method SW8040**									
9	3	Pentachlorophenol	NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA
16	10										
17	11	**SEMIVOLATILES (µg/L)**									
18	12	**EPA Method SW8270**									
19	13	Phenol	2.12	U	1.96	U	1.98	U	5.00	U	5.00 U
20	14	4-Methylphenol	10.6	U	9.78	U	9.9	U	5.00	U	5.00 U
21	15	Isophorone	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.17	U	2.93	U	2.97	U	10.00	U	10.0 U
23	17	Benzoic Acid	21.2	U	19.6	U	19.8	U	50.0	U	50.0 U
24	18	Naphthalene	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.29	U	4.89	U	4.95	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.29	U	4.89	U	4.95	U	5.00	U	5.00 U
28	22	Acenaphthene	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
30	24	Fluorene	1.06	U	0.978	U	0.99	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.29	U	4.89	U	4.95	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.06	U	0.978	U	**1.25**		10.00	U	10.0 U
33	27										
34	28	**VOLATILES (µg/L)**									
35	29	**EPA Method SW8260**									
36	30	Acetone	50	U	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	0.3	U	0.3	U	0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	1	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	1	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1	U	1.00	U	1.00 U
56	49										
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**									
58	51	**Method OR-DEQ**									
59	52	**TPH-Diesel**	**0.455**		0.247	U	**0.758**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	**0.52**		0.494	U	0.509	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.133**		0.1	U	0.1	U	0.08	U	0.08 U
62	55										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2							Dup of LW39D				
3			LW39D		LW39D		Y		LW39D		LW39D
4			0411059-11		0502088-04		0502088-05		P5F0441-02		P5H0734-11
5			11/10/04		2/17/05		2/17/05		6/8/05		08/17/05
63	56	**PRIORITY POLLUTANT**									
64	57	**METALS (mg/L)**									
65	58	Arsenic (7060)	**0.0107**		**0.00292**		**0.00274**		**0.00105**		**0.00406**
66	59	Chromium (6010)	**0.0124**		**0.0063**		**0.0064**		0.001	U	0.001 U
67	60	Copper (6010)	0.01	U	0.01	U	0.01	U	0.002	U	**0.00147**
68	61	Lead (7421)	**0.0003**		**0.000132**		**0.0001**		0.001	U	0.001 U
69	62	Nickel (6010)	0.005	U	0.005	U	0.005	U	**0.00365**		**0.0243**
70	63	Zinc (6010)	0.01	U	0.01	U	0.01	U	0.005	U	0.01 U
71	64										
72	65	**MAJOR IONS AND CONVENTIONALS**									
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**127**	J	**71**		**75**		**119**		**162**
81	74	Chloride (mg/L) (EPA 325.2)	**5.1**		**3.74**		**3.74**		**4.00**		**3.38**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA
86	79										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2							Dup of LW39D				
3			LW39D		LW39D		Y		LW39D		LW39D
4			0411059-11		0502088-04		0502088-05		P5F0441-02		P5H0734-11
5			11/10/04		2/17/05		2/17/05		6/8/05		08/17/05
87	80	**FIELD PARAMETERS**									
88	81	pH (avg)	6.75		6.59		6.59		5.83		6.00
89	82	Temperature (° C) (avg)	15.8		10.7		10.7		14.3		16.3
90	83	Conductivity (um/hos)	154		68		68		132		165
91	84	Dissolved oxygen (mg/L) (avg)	1.91		0.03		0.03		11.35		NM
92	85										
93	86	**DIOXINS AND FURANS (ng/L)**									
94	87	**Method 8290**									
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA
120											
121											
122											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2							Dup of LW39D				
3			LW39D		LW39D		Y		LW39D		LW39D
4			0411059-11		0502088-04		0502088-05		P5F0441-02		P5H0734-11
5			11/10/04		2/17/05		2/17/05		6/8/05		08/17/05
123		**PAHs (µg/L)**									
124		**EPA Method SW8270 SIM**									
125		Naphthalene	**0.114**		0.0509	U	0.051	U	0.100	U	0.100 U
126		2-Methylnaphthalene	NA		NA		NA		NA		NA
127		Acenaphthylene	0.0517	U	0.0509	U	0.051	U	0.100	U	0.100 U
128		Acenaphthene	**0.145**		**0.061**		**0.0612**		0.100	U	0.100 U
129		Fluorene	0.0517	U	0.0509	U	0.051	U	0.100	U	0.100 U
130		Anthracene	0.0517	U	0.0509	U	0.051	U	0.100	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2									Dup of LW40D		
3			LW40D		LW40D		LW40D		Y		LW40D
4			0411150-01		0502099-09		P5F0554-05		P5F0554-01		P5H0734-07
5			11/29/04		2/22/05		6/13/05		6/13/05		08/17/05
6											
7	1	**CHLORINATED PHENOLS (µg/L)**									
8	2	**EPA Method SW8040**									
9	3	Pentachlorophenol	NA		NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA
16	10										
17	11	**SEMIVOLATILES (µg/L)**									
18	12	**EPA Method SW8270**									
19	13	Phenol	2.13	U	2	U	5.00	U	5.00	U	5.00 U
20	14	4-Methylphenol	10.6	U	9.99	U	5.00	U	5.00	U	5.00 U
21	15	Isophorone	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.19	U	3	U	10.00	U	10.00	U	10.0 U
23	17	Benzoic Acid	21.3	U	20	U	50.0	U	50.0	U	50.0 U
24	18	Naphthalene	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.32	U	5	U	5.00	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.32	U	5	U	5.00	U	5.00	U	5.00 U
28	22	Acenaphthene	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
30	24	Fluorene	1.06	U	0.999	U	5.00	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.32	U	5	U	10	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	1.06	U	**1.38**		10.00	U	10.00	U	10.0 U
33	27										
34	28	**VOLATILES (µg/L)**									
35	29	**EPA Method SW8260**									
36	30	Acetone	50	U	50	U	25.0	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.00	U	10.0 U
39	33	Benzene	0.3	U	0.3	U	1.00	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00	U	2.00 U
45	39	o-Xylene	1	U	1	U	1.00	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
48	42	Isopropylbenzene	1	U	1	U	2.00	U	2.00	U	2.00 U
49	43	n-Propylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	1	U	1	U	1.00	U	1.00	U	1.00 U
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00	U	2.00 U
53	47	n-Butylbenzene	1	U	1	U	5.00	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	2.00	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	1	U	1	U	1.00	U	1.00	U	1.00 U
56	49										
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**									
58	51	**Method OR-DEQ**									
59	52	**TPH-Diesel**	**0.263**		0.25	U	0.25	UJ	0.294	U	0.250 U
60	53	**TPH-D Motor Oil**	**0.672**		0.667	U	0.5	UJ	0.588	U	0.500 U
61	54	**TPH-Gasoline**	0.1	U	0.1	U	0.08	U	0.08	U	0.08 U
62	55										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2									Dup of LW40D		
3			LW40D		LW40D		LW40D		Y		LW40D
4			0411150-01		0502099-09		P5F0554-05		P5F0554-01		P5H0734-07
5			11/29/04		2/22/05		6/13/05		6/13/05		08/17/05
63	56	**PRIORITY POLLUTANT**									
64	57	**METALS (mg/L)**									
65	58	Arsenic (7060)	**0.00411**		**0.00832**		**0.00422**		**0.00446**		**0.00174**
66	59	Chromium (6010)	**0.0071**		**0.0527**		**0.0265**		**0.0272**		**0.00905**
67	60	Copper (6010)	0.01	U	**0.0485**		**0.034**		**0.0347**		**0.00909**
68	61	Lead (7421)	**0.00167**		**0.0119**		**0.00808**		**0.00861**		**0.00267**
69	62	Nickel (6010)	**0.0211**		**0.0355**		**0.0319**		**0.0335**		**0.0138**
70	63	Zinc (6010)	**0.206**		**0.126**		**0.0753**		**0.077**		**0.0257**
71	64										
72	65	**MAJOR IONS AND CONVENTIONALS**									
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**200**		**178**		**189**		**191**		**165**
81	74	Chloride (mg/L) (EPA 325.2)	**2.42**		**2.15**		**2.08**		**2.04**		**2.17**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA
86	79										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2									Dup of LW40D		
3			LW40D		LW40D		LW40D		Y		LW40D
4			0411150-01		0502099-09		P5F0554-05		P5F0554-01		P5H0734-07
5			11/29/04		2/22/05		6/13/05		6/13/05		08/17/05
87	80	**FIELD PARAMETERS**									
88	81	pH (avg)	6.1		6.91		6.16		6.19		5.92
89	82	Temperature (° C) (avg)	11.8		12.6		14.3		13.9		14.8
90	83	Conductivity (um/hos)	207		99		140		140		151
91	84	Dissolved oxygen (mg/L) (avg)	999		1.08		6.10		5.97		NM
92	85										
93	86	**DIOXINS AND FURANS (ng/L)**									
94	87	**Method 8290**									
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA
120											
121											
122											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K
1											
2									Dup of LW40D		
3			LW40D		LW40D		LW40D		Y		LW40D
4			0411150-01		0502099-09		P5F0554-05		P5F0554-01		P5H0734-07
5			11/29/04		2/22/05		6/13/05		6/13/05		08/17/05
123		**PAHs (µg/L)**									
124		**EPA Method SW8270 SIM**									
125		Naphthalene	0.09	U	0.0511	U	0.100	U	0.100	U	0.100 U
126		2-Methylnaphthalene	NA		NA		NA		NA		NA
127		Acenaphthylene	0.05	U	0.0511	U	0.100	U	0.100	U	0.100 U
128		Acenaphthene	0.05	U	0.0511	U	0.100	U	0.100	U	0.100 U
129		Fluorene	0.05	U	0.0511	U	0.100	U	0.100	U	0.100 U
130		Anthracene	0.05	U	0.0511	U	0.100	U	0.100	U	0.100 U
131		Dibenzofuran	NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW45D		LW45D		LW45D		LW45D
4			0411065-04		0502099-12		P5F0666-02		P5H0625-07
5			11/11/04		2/22/05		6/15/05		08/15/05
6									
7	1	**CHLORINATED PHENOLS (µg/L)**							
8	2	**EPA Method SW8040**							
9	3	Pentachlorophenol	NA		NA		NA		NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA
16	10								
17	11	**SEMIVOLATILES (µg/L)**							
18	12	**EPA Method SW8270**							
19	13	Phenol	2.08	U	1.92	U	5.00	U	5.00 U
20	14	4-Methylphenol	10.4	U	9.62	U	5.00	U	5.00 U
21	15	Isophorone	1.04	U	0.962	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	3.12	U	2.89	U	10.00	U	10.0 U
23	17	Benzoic Acid	20.8	U	19.2	U	50.0	U	50.0 U
24	18	Naphthalene	1.04	U	0.962	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	1.04	U	0.962	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	5.19	U	4.81	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	5.19	U	4.81	U	5.00	U	5.00 U
28	22	Acenaphthene	1.04	U	0.962	U	5.00	U	5.00 U
29	23	Dibenzofuran	1.04	U	0.962	U	5.00	U	5.00 U
30	24	Fluorene	1.06	U	0.962	U	5.00	U	5.00 U
31	25	Pentachlorophenol	5.19	U	4.81	U	10	U	5 UJ
32	26	bis(2-Ethylhexyl)phthalate	**3.97**		**7.91**		10.00	U	**27.5**
33	27								
34	28	**VOLATILES (µg/L)**							
35	29	**EPA Method SW8260**							
36	30	Acetone	50	U	50	U	25.0	U	25.0 U
37	31	Carbon Disulfide	2	U	2	U	10.00	U	10.0 U
38	32	2-Butanone	10	U	10	U	10.00	U	10.0 U
39	33	Benzene	**0.4**		0.3	U	1.00	U	1.00 U
40	34	Bromoform	1	U	1	U	1.00	U	1.00 U
41	35	Toluene	1	U	1	U	1.00	U	1.00 U
42	36	Ethylbenzene	1	U	1	U	1.00	U	1.00 U
43	37	Styrene	1	U	1	U	1.00	U	1.00 U
44	38	m,p-Xylene	2	U	2	U	2.00	U	2.00 U
45	39	o-Xylene	**1.53**		1	U	1.00	U	1.00 U
46	40	1,3,5-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
47	41	1,2,4-Trimethylbenzene	1	U	1	U	1.00	U	1.00 U
48	42	Isopropylbenzene	**18.3**		**2.38**		2.00	U	**6.22**
49	43	n-Propylbenzene	**4.92**		1	U	1.00	U	1.00 U
50	44	tert-Butylbenzene	1	U	1	U	1.00	U	1.00 U
51	45	sec-Butylbenzene	**2.85**		1	U	1.00	U	**1.25**
52	46	4-Isopropyltoluene	1	U	1	U	2.00	U	2.00 U
53	47	n-Butylbenzene	**1.33**		1	U	5.00	U	5.00 U
54	48	Naphthalene	1	U	1	U	2.00	U	2.00 U
55		Methyl tert-butyl ether	**1.88**		1	U	1.00	U	1.00 U
56	49								
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**							
58	51	**Method OR-DEQ**							
59	52	**TPH-Diesel**	**3.91**		**3.35**		0.25	U	0.250 U
60	53	**TPH-D Motor Oil**	**1.9**		1.48	U	0.5	U	0.500 U
61	54	**TPH-Gasoline**	**0.776**		**0.334**		0.08	U	**0.0984**
62	55								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW45D		LW45D		LW45D		LW45D
4			0411065-04		0502099-12		P5F0666-02		P5H0625-07
5			11/11/04		2/22/05		6/15/05		08/15/05
63	56	**PRIORITY POLLUTANT**							
64	57	**METALS (mg/L)**							
65	58	Arsenic (7060)	**0.0532**		**0.0902**		**0.0479**		**0.0514**
66	59	Chromium (6010)	**0.14**		**0.0171**		**0.0398**		**0.0731**
67	60	Copper (6010)	**0.12**		**0.0142**		**0.0409**		**0.0911**
68	61	Lead (7421)	**0.106**		**0.0776**		**0.0268**		**0.0360**
69	62	Nickel (6010)	**0.132**		**0.0125**		**0.0484**		**0.0988**
70	63	Zinc (6010)	**0.416**		**0.06**		**0.11**		**0.342**
71	64								
72	65	**MAJOR IONS AND CONVENTIONALS**							
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**388**		**456**		**182**		**361**
81	74	Chloride (mg/L) (EPA 325.2)	**0.51**		**1.87**		**1.54**		**1.90**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA
86	79								

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW45D		LW45D		LW45D		LW45D
4			0411065-04		0502099-12		P5F0666-02		P5H0625-07
5			11/11/04		2/22/05		6/15/05		08/15/05
87	80	**FIELD PARAMETERS**							
88	81	pH (avg)	6.59		6.5		5.46		6.42
89	82	Temperature (° C) (avg)	14		13.5		14.2		16.1
90	83	Conductivity (um/hos)	597		268		166		494
91	84	Dissolved oxygen (mg/L) (avg)	0.58		1.67		3.18		NM
92	85								
93	86	**DIOXINS AND FURANS (ng/L)**							
94	87	**Method 8290**							
95	88	2,3,7,8-TCDF	NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA
120									
121									NA
122									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I
1									
2									
3			LW45D		LW45D		LW45D		LW45D
4			0411065-04		0502099-12		P5F0666-02		P5H0625-07
5			11/11/04		2/22/05		6/15/05		08/15/05
123		**PAHs (µg/L)**							
124		**EPA Method SW8270 SIM**							
125		Naphthalene	**0.557**		0.405	U	0.100	U	0.300 U
126		2-Methylnaphthalene	NA		NA		NA		NA
127		Acenaphthylene	**0.105**		**0.0709**		0.100	U	0.100 U
128		Acenaphthene	**0.473**		**0.263**		0.100	U	**0.263**
129		Fluorene	**0.935**		**0.233**		0.100	U	**0.547**
130		Anthracene	**5.44**		**3.75**		0.100	U	**4.61**
131		Dibenzofuran	NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																															
2																															
3			O		O		O		O		O		O		O		O		O		O		O		O		O		O		
4			S177M		T176J		U235P		V208J		W391L		Y314M		Z225S		Z960Y		AH27A		AU45O		BC30B		BH96A		BR64A		CB85C		
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00		
6																															
7	1	**CHLORINATED PHENOLS (µg/L)**																													
8	2	**EPA Method SW8040**																													
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
16	10																														
17	11	**SEMIVOLATILES (µg/L)**																													
18	12	**EPA Method SW8270**																													
19	13	Phenol	**8.9**		**20**		**2.8**		2.0	U	2.0	U	2.0	U	**4.1**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		**1.0**		1.0	U	**1.2**		1.0	U	1.0	U	1.0	U	**1.9**		
29	23	Dibenzofuran	1.0	U	**2.2**		**2.0**		1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.2**		1.0	U	1.0	U	**1.9**		1.0	U	1.0	U	**1.7**		**2.9**		
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	**1.0**	J2	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27																														
34	28	**VOLATILES (µg/L)**																													
35	29	**EPA Method SW8260**																													
36	30	Acetone	5.0	U	**6.2**		**9.4**		**6.0**		8.5	U	**7.0**		**27**		5.0	U	5.0	U	**17**		5.0	U	17	U	**6.7**	M	**45**		
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	**7.1**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	**180**		**690**		**94**		1.0	U	1.0	U	**34**		**39**		**2.3**		**37**		**28**		1.0	U	1.0	U	1.0	U	**18**		
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	**1.1**		**1.6**		1.0	U	1.0	U	**6.3**		**5.3**		1.0	U	1.0	U	**2.5**		1.0	U	**1.5**		1.0	U	**1.8**		
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	**1.5**		1.0	U	1.0	U	**5.0**		**3.8**		1.0	U	1.0	U	**1.6**		1.0	U	**1.1**		1.0	U	**1.3**		
45	39	o-Xylene	1.0	U	**1.3**		1.0	U	1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	**1.0**	J2	1.0	U	1.0	U	**2.2**		**4.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	1.0	U	**15**		**22**	J2	**1.2**		**18**		**28**		**71**		1.0	U	**2.2**		**20**		**7.8**		**27**		**6.0**		**26**		
49	43	n-Propylbenzene	1.0	U	**9.8**		**7.2**		1.0	U	1.0	U	**14**		**51**		1.0	U	**2.0**		**15**		**2.3**		**12**		**3.0**		**15**		
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**	J1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	1.0	U	**7.7**		**6.1**	J2	**1.3**		**5.2**		**10**	J2	**7.4**		**8.5**		**7.9**		**6.4**		**1.6**		**4.3**		**6.9**		**5.1**		
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	**1.9**		**1.2**	J2	1.0	U	1.0	U	**2.9**		**3.7**		**1.4**		**2.9**		**2.7**		1.0	U	**1.1**		**1.0**		**2.0**		
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
56	49																														
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																													
58	51	**Method OR-DEQ**																													
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		
62	55																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		O		O		O		O		O		O		O		O		O		O		O		O		O	
4		CL03P		CT55I		DE87A		DM30S		DW48E		ED23F		EM75L		ER93A		EY88A		FF88I		FL66B		FU45T		FY82Q	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
6																											
7	**CHLORINATED PHENOLS (µg/L)**																										
8	**EPA Method SW8040**																										
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																											
17	**SEMIVOLATILES (µg/L)**																										
18	**EPA Method SW8270**																										
19	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.2	U	2.2	U	2	U	2	U	2.3	U	2.1	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1.1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1.1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.3	U	3.3	U	3.1	U	3	U	3.4	U	3.1	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	30	U	50	U	50	U	56	U	54	U	51	U	50	U	57	U	10	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1.1	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1.1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.4	U	5.1	U	5	U	5.7	U	5.2	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.4	U	5.1	U	5	U	5.7	U	5.2	U
28	Acenaphthene	**1.8**		1.0	U	1.0	U	**1.3**		1.0	U	1.0	U	1.0	U	1.1	U	**1.7**		1	U	1	U	1.1	U	**1.2**	
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1.1	U	1	U
30	Fluorene	**3.5**		**2.0**		**1.6**		**1.6**		1.0	U	1.0	U	1.0	U	1.1	U	**2.1**		1	U	1	U	1.1	U	**1.8**	
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.6	U	5.4	U	5.1	U	5	U	5.7	U	5.2	U
32	bis(2-Ethylhexyl)phthalate	**2.2**		1.0	U	**1.1**		**2.0**		1.0	U	4.0	U	4.0	U	4.4	U	4.3	U	1	U	1	U	1.1	U	1	U
33																											
34	**VOLATILES (µg/L)**																										
35	**EPA Method SW8260**																										
36	Acetone	**11**			R	**8.7**		5.0	U	5.0	U	5.0	U	**11**		**5.7**		5	U	5	U	5	U	**11**	J	**11**	
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
39	Benzene	**7.7**		1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	1.0	U	**2.6**		**40**		1	U	1	U	1	U	**1.5**	
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	**3.0**		**2.3**		**1.6**		**1.1**		**2.4**		1.0	U	1.0	U	1	U	**2.5**		1	U	1	U	**1.4**		**1.4**	
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	**2.6**		**2.6**		**1.9**		**1.1**		**2.5**		1.0	U	1.0	U	1	U	**2.1**		1	U	1	U	1	U	1	U
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	**1.4**		1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	**33**		**26**		**37**		**32**		**64**		**31**		**30**		**5.6**		**46**		1	U	**3.4**		**27**		**27**	
49	n-Propylbenzene	**18**		**15**		**22**		**13**		**36**		**19**		**7.3**		**4.1**		**46**		1	U	**3.3**		**35**		**29**	
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	**6.7**		**4.4**		**5.7**		**5.0**		**6.3**		**6.6**		**5.5**		**5.9**		**7.7**		**1.5**		**5.4**		**8**		**5.6**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	**2.5**		**1.6**		**2.2**		**2.0**		**2.8**		**2.9**		**1.8**		**1.2**		**5.3**		1	U	1	U	**4.1**		**3**	
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																											
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	**Method OR-DEQ**																										
59	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			O		O		O		O		O		O		O		O		O		O		O		O		O		O	
4			S177M		T176J		U235P		V208J		W391L		Y314M		Z225S		Z960Y		AH27A		AU45O		BC30B		BH96A		BR64A		CB85C	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**330**	J2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		O		O		O		O		O		O		O		O		O		O		O		O		O	
4		CL03P		CT55I		DE87A		DM30S		DW48E		ED23F		EM75L		ER93A		EY88A		FF88I		FL66B		FU45T		FY82Q	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
63	**PRIORITY POLLUTANT**																										
64	**METALS (mg/L)**																										
65	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71																											
72	**MAJOR IONS AND CONVENTIONALS**																										
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			O		O		O		O		O		O		O		O		O		O		O		O		O		O	
4			S177M		T176J		U235P		V208J		W391L		Y314M		Z225S		Z960Y		AH27A		AU45O		BC30B		BH96A		BR64A		CB85C	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.77		6.82		6.86		6.79		6.43		6.39		6.32		6.62		5.57		6.70		6.27		6.62		6.39		5.85	
89	82	Temperature (° C) (avg)	12.3		15.7		13.6		14.2		14.1		15.0		13.3		14.6		15.0		17.8		13.0		15.0		15.6		15.9	
90	83	Conductivity (um/hos)	413		412		389		471		437		531		183		366		391		441		337		427		413		409	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		3.36		1.68		1.41		2.44		1.85		1.93		1.58		1.58		1.82		1.16	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		O		O		O		O		O		O		O		O		O		O		O		O		O	
4		CL03P		CT55I		DE87A		DM30S		DW48E		ED23F		EM75L		ER93A		EY88A		FF88I		FL66B		FU45T		FY82Q	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
87	**FIELD PARAMETERS**																										
88	pH (avg)	5.70		6.27		6.43		6.80		6.62		6.27		6.43		6.18		6.79		6.67		6.39		6.85		6.62	
89	Temperature (° C) (avg)	13.4		16.5		14.5		15.9		12.5		15.3		17.3		17.3		14.0		14.7		14		17.9		14.9	
90	Conductivity (um/hos)	437		445		510		563		536		500		471		464		592		431		327		514		467	
91	Dissolved oxygen (mg/L) (avg)	0.39		2.15		2.40		1.89		4.34		7.41		4.16		2.18		1.93		0		2.01		0.88		3.07	
92																											
93	**DIOXINS AND FURANS (ng/L)**																										
94	**Method 8290**																										
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																											
121																											
122																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			O		O		O		O		O		O		O		O		O		O		O		O		O		O	
4			S177M		T176J		U235P		V208J		W391L		Y314M		Z225S		Z960Y		AH27A		AU45O		BC30B		BH96A		BR64A		CB85C	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
6																														
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		**0.47**		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		**0.31**		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		**0.92**		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		**0.28**	M	NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		0.10	U	NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		O		O		O		O		O		O		O		O		O		O		O		O		O	
4		CL03P		CT55I		DE87A		DM30S		DW48E		ED23F		EM75L		ER93A		EY88A		FF88I		FL66B		FU45T		FY82Q	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
123	**PAHs (µg/L)**																										
124	**EPA Method SW8270 SIM**																										
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			R		R		R		R		R		R		R		R		R		R		R		R		R		R	
4			S177N		T176K		U235Q		V208K		W391M		Y314N		Z225T		Z960Z		AH27B		AU45P		BC30C		BH96Y		BR64B		CB85D	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
6																														
7	1	**CHLORINATED PHENOLS (µg/L)**																												
8	2	**EPA Method SW8040**																												
9	3	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16	10																													
17	11	**SEMIVOLATILES (µg/L)**																												
18	12	**EPA Method SW8270**																												
19	13	Phenol	**18**		**8.4**		2.0	U	2.0	U	2.0	U	**6.1**		**22**		**16**		**3.8**		**6.3**		2.0	U	2.0	U	2.0	U	**8.4**	
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	**4.0**	J2	**2.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U
33	27																													
34	28	**VOLATILES (µg/L)**																												
35	29	**EPA Method SW8260**																												
36	30	Acetone	5.0	U	**13**		**6.9**		5.0	U	**11**		**8.9**		**17**		15	U	**7.5**		5.0	U	5.0	U	14	U	5.0	U	**22**	
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	15	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	**410**		**990**		**4.7**		1.0	U	**2.5**		**160**		**120**		**740**		**57**		**120**		1.0	U	**2.1**		**9.3**		**120**	
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	2.9		1.0	U	1.0	U	1.0	U	**6.0**		**3.5**		3.0	U	1.0	U	**6.0**		1.0	U	**1.2**		1.0	U	**6.3**	
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**14**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	2.9		1.0	U	1.0	U	1.0	U	**6.4**		**2.1**		**4.9**		1.0	U	**6.9**		1.0	U	1.0	U	1.0	U	**5.8**	
45	39	o-Xylene	1.0	U	1.8		1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	3.0	U	1.0	U	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.5**		**1.4**		**15**		1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.5**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	**2.6**		**16**		**5.1**	J2	1.0	U	**12**		**43**		**37**		**46**		**11**		**43**		1.0	U	**8.4**		**4.8**		**33**	
49	43	n-Propylbenzene	**1.7**		**3.7**		**1.6**		1.0	U	**2.4**		**19**		**19**		**51**		**3.9**		19	U	1.0	U	**5.4**		**1.2**		**18**	
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	**2.7**		**5.4**		**2.0**	J2	1.0	U	**3.2**		**5.1**	J2	**5.0**		**4.8**		**3.2**		**6.0**		1.0	U	**2.5**		**3.0**		**5.6**	
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	3.0		1.0	U	1.0	U	1.0	U	**2.3**		**1.4**		**16**		**1.0**		2.5	U	1.0	U	1.0	U	1.0	U	2.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	15	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56	49																													
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																												
58	51	**Method OR-DEQ**																												
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62	55																													

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
3		R		R		R		R		R		R		R		R		R		R		R		R		R	
4		CL03Q		CT55J		DE87B		DM30T		DW48F		ED23G		EM75M		ER93B		EY88B		FF88J		FL66C		FU45U		FY82R	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
7	**CHLORINATED PHENOLS (µg/L)**																										
8	**EPA Method SW8040**																										
9	Pentachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																											
17	**SEMIVOLATILES (µg/L)**																										
18	**EPA Method SW8270**																										
19	Phenol	**6.4**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.1	U	2.2	U	2	U	2	U	2	U	2	U
20	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
21	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
22	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.2	U	3.3	U	3	U	3	U	3	U	3	U
23	Benzoic Acid	10	U	10	U	10	U	10	U	30	U	50	U	50	U	53	U	54	U	50	U	50	U	50	U	10	U
24	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
25	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
26	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.4	U	5	U	5	U	5	U	5	U
27	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.4	U	5	U	5	U	5	U	5	U
28	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
29	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
30	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.1	U	1.1	U	1	U	1	U	1	U	1	U
31	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.3	U	5.4	U	5	U	5	U	5	U	5	U
32	bis(2-Ethylhexyl)phthalate	1.0	U	**1.6**		1.0	U	**5.4**		1.0	U	4.0	U	4.0	U	4.3	U	4.3	U	1	U	1	U	1	U	1	U
33																											
34	**VOLATILES (µg/L)**																										
35	**EPA Method SW8260**																										
36	Acetone	**12**			R	5.0	U	**10**		**5.0**		5.0	U	**11**		**14**		5	U	**7.4**		5	U	**18**	J	**16**	
37	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
38	2-Butanone	**5.0**	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
39	Benzene	**77**		**36**		**3.1**		**13**		1.0	U	**41**		1.0	U	**32**		**7.7**		1	U	1	U	1	U	1	U
40	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	**3.6**		**3.0**		**2.9**		**2.8**		**1.5**		1.0	U	1.0	U	**2.9**		**1.6**		1	U	1	U	**2.4**		**2.5**	
42	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	**14**		**3.8**	
43	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	**2.4**		**1.8**		**4.1**		**3.4**		**1.6**		1.0	U	1.0	U	**3.5**		**1.4**		1	U	1	U	**26**	J	**9.4**	
45	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
46	1,3,5-Trimethylbenzene	1.0	U	1.0	U	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
47	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
48	Isopropylbenzene	**24**		**11**		**26**		**30**		**17**		**2.6**		**7.3**		**36**		**34**		**8.8**		1	U	**46**		**43**	
49	n-Propylbenzene	**14**		**5.1**		**9.1**		**16**		**6.8**		1.0	U	1.0	U	**14**		**20**		**3.3**		1	U	**37**		**20**	
50	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
51	sec-Butylbenzene	**4.4**		**3.4**		**4.7**		**3.8**		**2.9**		**2.3**		**2.2**		**5.4**		**4.7**		**2**		**1.4**		**6.8**		**4.3**	
52	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U	1	U	1	U
53	n-Butylbenzene	1.3	U	1.0	U	1.4	U	1.0	U	1.0	U	1.0	U	1.0	U	2.2	U	**2**		1	U	1	U	**3.9**		**1.7**	
54	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U	5	U	5	U
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																											
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																										
58	**Method OR-DEQ**																										
59	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
60	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
61	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
62																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			R		R		R		R		R		R		R		R		R		R		R		R		R		R	
4			S177N		T176K		U235Q		V208K		W391M		Y314N		Z225T		Z960Z		AH27B		AU45P		BC30C		BH96Y		BR64B		CB85D	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
63	56	**PRIORITY POLLUTANT**																												
64	57	**METALS (mg/L)**																												
65	58	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	59	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	60	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	61	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	62	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	63	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71	64																													
72	65	**MAJOR IONS AND CONVENTIONALS**																												
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**340**	J2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86	79																													

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		R		R		R		R		R		R		R		R		R		R		R		R		R	
4		CL03Q		CT55J		DE87B		DM30T		DW48F		ED23G		EM75M		ER93B		EY88B		FF88J		FL66C		FU45U		FY82R	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
63	**PRIORITY POLLUTANT**																										
64	**METALS (mg/L)**																										
65	Arsenic (7060)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
66	Chromium (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
67	Copper (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
68	Lead (7421)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
69	Nickel (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
70	Zinc (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
71																											
72	**MAJOR IONS AND CONVENTIONALS**																										
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
81	Chloride (mg/L) (EPA 325.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			R		R		R		R		R		R		R		R		R		R		R		R		R		R	
4			S177N		T176K		U235Q		V208K		W391M		Y314N		Z225T		Z960Z		AH27B		AU45P		BC30C		BH96Y		BR64B		CB85D	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
87	80	**FIELD PARAMETERS**																												
88	81	pH (avg)	6.66		6.78		6.72		6.84		6.60		6.55		6.36		6.06		5.72		6.87		6.86		6.75		6.42		6.10	
89	82	Temperature (° C) (avg)	12.8		15.8		14.1		14.3		14.8		15.0		13.5		14.4		15.2		16.5		15.7		14.1		15.8		15.0	
90	83	Conductivity (um/hos)	503		629		1007		319		510		591		179		246		471		566		578		533		502		560	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		3.54		1.35		1.16		2.27		1.61		2.26		1.33		0.93		2.10		1.90	
92	85																													
93	86	**DIOXINS AND FURANS (ng/L)**																												
94	87	**Method 8290**																												
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																														
121																														
122																														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		R		R		R		R		R		R		R		R		R		R		R		R		R	
4		CL03Q		CT55J		DE87B		DM30T		DW48F		ED23G		EM75M		ER93B		EY88B		FF88J		FL66C		FU45U		FY82R	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
87	**FIELD PARAMETERS**																										
88	pH (avg)	5.91		6.43		6.88		7.00		6.68		5.95		6.64		6.75		NM		6.88		6.23		7.01		6.75	
89	Temperature (° C) (avg)	13.5		15.4		14.5		15.1		14.2		14.5		15.2		15.8		NM		14.6		13.7		17		15.5	
90	Conductivity (um/hos)	571		661		694		628		600		170		591		631		NM		598		244		630		644	
91	Dissolved oxygen (mg/L) (avg)	0.69		2.01		1.49		1.26		4.02		7.80		4.86		1.19		NM		0		3.12		0.44		3.62	
92																											
93	**DIOXINS AND FURANS (ng/L)**																										
94	**Method 8290**																										
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																											
121																											
122																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1																														
2																														
3			R		R		R		R		R		R		R		R		R		R		R		R		R		R	
4			S177N		T176K		U235Q		V208K		W391M		Y314N		Z225T		Z960Z		AH27B		AU45P		BC30C		BH96Y		BR64B		CB85D	
5			4/1/97		7/15/97		10/22/97		1/28/98		5/19/98		8/18/98		11/13/98		2/17/99		5/17/99		9/22/99		12/7/99		2/16/00		5/23/00		8/30/00	
6																														
123		**PAHs (µg/L)**																												
124		**EPA Method SW8270 SIM**																												
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1																											
2																											
3		R		R		R		R		R		R		R		R		R		R		R		R		R	
4		CL03Q		CT55J		DE87B		DM30T		DW48F		ED23G		EM75M		ER93B		EY88B		FF88J		FL66C		FU45U		FY82R	
5		11/8/00		2/13/01		6/5/01		8/14/01		11/29/01		2/26/02		6/25/02		08/26/02		11/11/02		2/13/03		5/9/03		8/28/03		10/24/03	
6																											
123	**PAHs (µg/L)**																										
124	**EPA Method SW8270 SIM**																										
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3			OX8D		OX8D		OX8D		OX8D		OX8D		OX8D		OX8D
4			FY72F		0402086-05		0408026-10		0411066-07		0502070-08		P5F0342-07		P5H1000-06
5			10/22/03		2/18/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05
6															
7	1	**CHLORINATED PHENOLS (µg/L)**													
8	2	**EPA Method SW8040**													
9	3	Pentachlorophenol	**0.62**		**1.31**		NA		NA		NA		0.485	U	NA
10	4	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA
16	10														
17	11	**SEMIVOLATILES (µg/L)**													
18	12	**EPA Method SW8270**													
19	13	Phenol	NA		NA		2	U	1.91	U	2	U	5.00	U	5.00 U
20	14	4-Methylphenol	NA		NA		10	U	9.55	U	9.99	U	5.00	U	5.00 U
21	15	Isophorone	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
22	16	2,4-Dimethylphenol	NA		NA		3	U	2.87	U	3	U	10.00	U	10.0 U
23	17	Benzoic Acid	NA		NA		20	U	19.1	U	20	U	50.0	U	50.0 U
24	18	Naphthalene	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
25	19	2-Methylnaphthalene	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
26	20	2,4,6-Trichlorophenol	NA		NA		5	U	4.78	U	5	U	5.00	U	5.00 U
27	21	2,4,5-Trichlorophenol	NA		NA		5	U	4.78	U	5	U	5.00	U	5.00 U
28	22	Acenaphthene	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
29	23	Dibenzofuran	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
30	24	Fluorene	NA		NA		1	U	0.955	U	0.999	U	5.00	U	5.00 U
31	25	Pentachlorophenol	NA		NA		5	U	4.78	U	5	U	10	U	10.0 U
32	26	bis(2-Ethylhexyl)phthalate	NA		NA		4.47	U	**2.18**		**20.9**		10.00	U	10.0 U
33	27														
34	28	**VOLATILES (µg/L)**													
35	29	**EPA Method SW8260**													
36	30	Acetone	NA		NA		50	U	50	U	50	U	NA		25.0 U
37	31	Carbon Disulfide	NA		NA		2	U	2	U	2	U	NA		10.0 U
38	32	2-Butanone	NA		NA		10	U	10	U	10	U	NA		10.0 U
39	33	Benzene	NA		NA		0.3	U	0.3	U	0.3	U	NA		1.00 U
40	34	Bromoform	NA		NA		1	U	1	U	1	U	NA		1.00 U
41	35	Toluene	NA		NA		1	U	1	U	1	U	NA		1.00 U
42	36	Ethylbenzene	NA		NA		1	U	1	U	1	U	NA		1.00 U
43	37	Styrene	NA		NA		1	U	1	U	1	U	NA		1.00 U
44	38	m,p-Xylene	NA		NA		2	U	2	U	2	U	NA		2.00 U
45	39	o-Xylene	NA		NA		1	U	1	U	1	U	NA		1.00 U
46	40	1,3,5-Trimethylbenzene	NA		NA		1	U	1	U	1	U	NA		1.00 U
47	41	1,2,4-Trimethylbenzene	NA		NA		**2.49**	J	**4.05**		**2.59**		NA		1.00 U
48	42	Isopropylbenzene	NA		NA		1	U	**1.1**		1	U	NA		2.00 U
49	43	n-Propylbenzene	NA		NA		1	U	1	U	1	U	NA		1.00 U
50	44	tert-Butylbenzene	NA		NA		1	U	1	U	1	U	NA		1.00 U
51	45	sec-Butylbenzene	NA		NA		1	U	1	U	**2.64**		NA		1.00 U
52	46	4-Isopropyltoluene	NA		NA		1	U	1	U	1	U	NA		2.00 U
53	47	n-Butylbenzene	NA		NA		1	U	1	U	1	U	NA		5.00 U
54	48	Naphthalene	NA		NA		1	U	1	U	1	U	NA		2.00 U
55		Methyl tert-butyl ether	NA		NA		1	U	1	U	1	U	NA		1.00 U
56	49														
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**													
58	51	**Method OR-DEQ**													
59	52	**TPH-Diesel**	NA		NA		NA		NA		NA		NA		NA
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA
62	55														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3			OX8D		OX8D		OX8D		OX8D		OX8D		OX8D		OX8D
4			FY72F		0402086-05		0408026-10		0411066-07		0502070-08		P5F0342-07		P5H1000-06
5			10/22/03		2/18/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05
63	56	**PRIORITY POLLUTANT**													
64	57	**METALS (mg/L)**													
65	58	Arsenic (7060)	NA		NA		**0.0224**		**0.0246**		**0.0216**		**0.0136**		**0.0221**
66	59	Chromium (6010)	NA		NA		**0.0204**		**0.0305**		**0.0448**		**0.00282**		**0.036**
67	60	Copper (6010)	NA		NA		0.01	U	**0.0183**		**0.0428**		**0.0041**		**0.0414**
68	61	Lead (7421)	NA		NA		**0.00274**		**0.00723**		**0.0236**		**0.00125**		**0.0125**
69	62	Nickel (6010)	NA		NA		0.005	U	0.005	U	**0.0159**		**0.00464**		**0.026**
70	63	Zinc (6010)	NA		NA		**0.0238**		**0.034**		**0.0865**		**0.0129**		**0.0697**
71	64														
72	65	**MAJOR IONS AND CONVENTIONALS**													
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA		**326**		**329**		**298**		NA		NA
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA		**7.67**		**6.71**		**5.93**		NA		NA
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA
86	79														

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3			OX8D		OX8D		OX8D		OX8D		OX8D		OX8D		OX8D
4			FY72F		0402086-05		0408026-10		0411066-07		0502070-08		P5F0342-07		P5H1000-06
5			10/22/03		2/18/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05
87	80	**FIELD PARAMETERS**													
88	81	pH (avg)	7.00		7.02		6.38		7.02		7.22		7.03		6.56
89	82	Temperature (° C) (avg)	15.5		14.1		14.6		14.2		13.4		16.4		16.5
90	83	Conductivity (um/hos)	406		418		605		410		235		347		363
91	84	Dissolved oxygen (mg/L) (avg)	1.24		20.49		3.01		1.39		1.91		3.23		NM
92	85														
93	86	**DIOXINS AND FURANS (ng/L)**													
94	87	**Method 8290**													
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA
120															
121															
122															

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3			OX8D		OX8D		OX8D		OX8D		OX8D		OX8D		OX8D
4			FY72F		0402086-05		0408026-10		0411066-07		0502070-08		P5F0342-07		P5H1000-06
5			10/22/03		2/18/04		8/04/04		11/11/04		2/16/05		6/7/05		08/23/05
123		**PAHs (µg/L)**													
124		**EPA Method SW8270 SIM**													
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		1	U	NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		1	U	NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA

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PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
2															Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2
3			RW2		RW2		RW2		RW2		RW2		RW2		X		RW2		X		RW2		X		RW2		X
4			AH76G		AU45N		BC30E		BH96F		BR64P		CD97A		CD97B		CL03N		CL03M		CT37L		CT37M		DE87P		DE87O
5			5/20/99		9/23/99		12/7/99		2/17/00		5/25/00		9/13/00		9/13/00		11/9/00		11/9/00		2/13/01		2/13/01		6/6/01		6/6/01
7	1	**CHLORINATED PHENOLS (µg/L)**																									
8	2	**EPA Method SW8040**																									
9	3	Pentachlorophenol	**210**		**7.7**		0.25	U	**300**		**46**		**580**		**630**		**45**		**38**		**21**	J	**19**	J	0.25	U	**0.68**
10	4	2,4,6-Trichlorophenol	**1.9**		0.25	U	0.25	U	**3.1**		0.25	U	**2.3**		**2.5**		0.25	U	0.25	U	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	**0.31**		0.25	U	0.25	U	**0.45**		0.25	U	0.48	U	0.51	U	0.25	U	0.25	U	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	5.2	U	0.70	U	0.53	U	13	U	1.2	U	10	U	11	U	1.2	U	**1.1**		NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**15**		**0.71**		**0.33**		**18**		**8.0**		**42**		**45**		**3.6**		**3.5**		NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	**1.8**		**0.91**		0.25	U	**3.4**		**1.3**		**7.0**		**7.8**		**1.3**		**1.2**		NA		NA		NA		NA
16	10																										
17	11	**SEMIVOLATILES (µg/L)**																									
18	12	**EPA Method SW8270**																									
19	13	Phenol	2.0	U	**13**		2.0	U	2.0	U	2.0	U	**170**	J2	**150**	J2	**85**		**97**		**8.1**		**8.0**		2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**6.0**	J2	**5.3**	J2	**14**		**18**		**2.9**		**2.7**		1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	**21**		**22**		10	U	10	U	10	U	10
24	18	Naphthalene	**1.3**		**18**		**3.8**		**9.7**		**3.7**		**16**		**16**		**13**		**14**		**2.5**		**2.2**		1.0	U	1.0
25	19	2-Methylnaphthalene	1.0	U	**33**		**1.8**		**20**		**23**		**44**		**41**		**31**		**32**		**10**		**9.1**		**2.0**		**2.0**
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	**4.5**	J1	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	**25**		5.0	U	**16**	J	**14**	J	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	**140**		**9.6**		5.0	U	**680**		**51**		**490**	J2	**440**	J2	**77**		**95**		**26**	J	**30**	J	5.0	U	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.5	U	**1.7**		**1.1**		**1.0**		1.0	U	1.0	U	**2.9**	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
33	27																										
34	28	**VOLATILES (µg/L)**																									
35	29	**EPA Method SW8260**																									
36	30	Acetone	15	U	**17**	M	5.0	U	10	U	5.0	U	**24**	M	**27**	M	**20**		**17**		14	U	13	U	5.0	U	5.0
37	31	Carbon Disulfide	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	15	U	**22**	M	5.0	U	**23**	M	5.0	U	**24**		**28**		**30**		**24**		5.0	U	5.0	U	5.0	U	5.0
39	33	Benzene	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.8**		**2.7**		**1.2**		**1.2**		1.0	U	1.0
40	34	Bromoform	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	3.0	U	**2.6**		1.0	U	1.0	U	1.0	U	**2.1**		**2.2**		2.0	U	**1.5**		1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	**25**		**45**		**13**		**22**		**3.9**		**28**		**27**		**27**		**29**		**4.8**		**4.3**		1.0	U	1.0
43	37	Styrene	3.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	**61**		**120**		**25**		**53**		**8.2**		**78**		**76**		**78**		**81**		**10**		**9.6**		1.0	U	1.0
45	39	o-Xylene	**20**		**37**		**11**		**26**		**2.6**		**28**		**28**		**15**		**15**		**2.1**		**2.2**		1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	**100**		**91**		**42**		**120**		**49**		**100**		**100**		**58**		**66**		**12**		**11**		1.0	U	1.0
47	41	1,2,4-Trimethylbenzene	**370**		**330**		**110**		**360**		**150**		**180**	M	**190**	M	**200**		**220**		**42**		**40**		**3.6**		**3.8**
48	42	Isopropylbenzene	**78**		**65**		**29**		**79**		**52**		**70**		**73**		**57**		**68**		**30**		**29**		**11**		**11**
49	43	n-Propylbenzene	**130**		**77**		**38**		**110**		**86**		**88**		**90**		**75**		**90**		**37**		**34**		**12**		**12**
50	44	tert-Butylbenzene	**4.0**		**3.1**		1.0	U	**3.5**		**3.3**		**3.2**		**3.4**		**2.1**		**2.8**		**1.2**		**1.3**		1.0	U	1.0
51	45	sec-Butylbenzene	**18**		**17**		**5.5**		**21**		**16**		**15**		**16**		**11**		**14**		**4.9**		**4.7**		**1.6**		**1.7**
52	46	4-Isopropyltoluene	**19**		**13**		**4.6**		**20**		**7.7**		**11**		**12**		**5.7**		**7.6**		1.0	U	1.0	U	1.0	U	1.0
53	47	n-Butylbenzene	**20**		17.0	U	5.2	U	**24**		**15**	M	**16**	M	**17**	M	**11**		14	U	**3.5**		**3.4**		1.2	U	1.2
54	48	Naphthalene	**18**		**30**		**8.3**		**25**		**7.0**		**28**		**30**		**22**		**25**		5.0	U	5.0	U	5.0	U	5.0
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																										
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	51	**Method OR-DEQ**																									
59	52	**TPH-Diesel**	**2.2**		**2.6**		**1.2**		**2.4**		**1.5**		**3.4**		**3.8**		**5.2**		**5.0**		**1.7**		**1.7**		**0.86**		**0.88**
60	53	**TPH-D Motor Oil**	0.50	U	0.50	U	0.50	U	NA		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50
61	54	**TPH-Gasoline**	**5.7**		**10**		**1.9**		NA		**5.1**		**7.7**		**7.7**		**4.6**		**5.0**		**1.8**		**1.7**		**0.60**		**0.66**
62	55																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
2					Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2	
3			RW2		W		RW2		W		RW2		W		RW2		W		RW2		W		RW2		W	
4			DM30I		DM30H		DW29E		DW29C		ED30D		ED30A		EN00D		EN00A		ER93G		ER93I		EZ17D		EZ17B	
5			8/13/01		8/13/01		11/27/01		11/27/01		2/27/02		2/27/02		6/27/02		6/27/02		08/27/02		08/27/02		11/13/02		11/13/02	
7	**CHLORINATED PHENOLS (µg/L)**																									
8	**EPA Method SW8040**																									
9	Pentachlorophenol		**5.0**		**5.0**		**1.7**		**1.8**		NA		NA		NA		NA		NA		NA		NA		NA	
10	2,4,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																										
17	**SEMIVOLATILES (µg/L)**																									
18	**EPA Method SW8270**																									
19	Phenol	U	2.0	U	2.0	U	2.0	UJ	2.0	U	**10**		**10**		2.0	U	**5.9**	J	**15**		**13**		2.2	U	2.2	U
20	4-Methylphenol	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.8**	J	1.0	UJ	1.0	U	**1.1**		**1.8**		**1.5**		1.1	U	1.1	U
21	Isophorone	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1.1	U	1.1	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.8	U	3.3	U	3.3	U	3.3	U
23	Benzoic Acid	U	10	U	10	U	30	U	30	U	50	U	50	U	50	U	50	U	62	U	54	U	54	U	54	U
24	Naphthalene	U	**1.6**		**1.8**		**1.8**	J	**1.8**	J	**7.4**		**7.0**		**5.2**	J	**6.4**	J	**5.9**		**5.6**		**4.1**		**3.7**	
25	2-Methylnaphthalene		**6.5**		**6.4**		**5.7**	J	**7.0**	J	**18**		**17**		**11**	J	**14**	J	**15**		**13**		**11**		**9.6**	
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6.2	U	5.4	U	5.4	U	5.4	U
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	6.2	U	5.4	U	5.4	U	5.4	U
28	Acenaphthene	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1.1	U	1.1	U
29	Dibenzofuran	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1.1	U	1.1	U
30	Fluorene	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.2	U	1.1	U	1.1	U	1.1	U
31	Pentachlorophenol	U	5.0	U	5.0	U	5.0	UJ	5.0	U	**8.6**		**8.2**		**76**		**75**		**26**	J	**36**	J	**37**		**35**	
32	bis(2-Ethylhexyl)phthalate	U	1.0	U	1.0	U	1.0	UJ	1.0	U	4.0	U	4.0	U	4.0	U	4.0	U	5	U	4.3	U	4.3	U	4.3	U
33																										
34	**VOLATILES (µg/L)**																									
35	**EPA Method SW8260**																									
36	Acetone	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.1	U	**5.2**		**6.4**		5	U	5	U
37	Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
38	2-Butanone	U	**5.2**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5	U	5	U	5	U	5	U
39	Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.5**		**2.5**		**2.3**		**2.2**		**3.4**		**3.3**		**3.4**		**3.1**	
40	Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
41	Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		**1.7**		1.0	U	1.0	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	U	**3.1**		**3.4**		**1.5**		**1.4**		**27**		**28**		**15**		**15**		**13**		**13**		**7.9**		**7.3**	
43	Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	U	**6.8**		**7.8**		**3.0**		**2.6**		**59**		**62**		**32**		**33**		**38**		**34**		**17**		**16**	
45	o-Xylene	U	1.0	U	**1.6**		1.0	U	1.0	U	**14**		**14**		1.0	U	1.0	U	**6.5**		**5.9**		**2.3**		**2.2**	
46	1,3,5-Trimethylbenzene	U	**6.5**		**6.7**		**3.9**		**3.7**		**44**		**44**		**21**		**23**		**27**		**24**		**9.8**		**9.6**	
47	1,2,4-Trimethylbenzene		**23**		**26**		**13**		**12**		**150**		**150**		**62**		**62**		**84**		**78**		**37**		**36**	
48	Isopropylbenzene		**24**		**25**		**30**		**30**		**54**		**51**		**46**		**44**		**44**		**45**		**37**		**36**	
49	n-Propylbenzene		**28**		**29**		**36**		**37**		**76**		**73**		**58**		**57**		**58**		**59**		**46**		**45**	
50	tert-Butylbenzene	U	**1.1**	M	**1.0**		**1.1**		**1.1**		**2.0**		**1.9**		**1.6**		**1.4**		**1.7**		**1.8**		**1.6**		**1.5**	
51	sec-Butylbenzene		**3.9**		**4.1**		**4.7**		**4.7**		**9.6**		**9.5**		**8.4**		**8.2**		**8.3**		**8.4**		**6.7**		**6.3**	
52	4-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.4**		**4.3**		**2.1**		**2.0**		**2.6**		**2.6**		**1.3**		**1.2**	
53	n-Butylbenzene	U	**3.0**	M	**3.3**		**3.7**	M	**3.9**	M	**9.0**		**9.0**		6.5	U	6.1	U	7.6	U	7	U	**4.9**	M	**4.8**	M
54	Naphthalene	U	5.0	U	**5.0**		5.0	U	5.0	U	**15**		**16**		**8.7**		**8.5**		**10**		**9.9**		**6.3**		**5.7**	
55	Methyl tert-butyl ether		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
56																										
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	**Method OR-DEQ**																									
59	**TPH-Diesel**		**1.4**		**1.2**		**1.4**		**1.4**		**1.9**	J	**0.89**	J	**1.8**		**1.9**		**1.7**		**1.6**		**1.3**		**1.3**	
60	**TPH-D Motor Oil**	U	0.50	U	0.50	U	0.50	U	NA		0.50	U	0.50	U	0.50	U	0.50	U	0.5	U	0.5	U	0.5	U	0.5	U
61	**TPH-Gasoline**		**1.3**		**1.3**		**1.2**		NA		**4.0**	J	**3.8**		**2.6**		**2.6**		**2.9**		**3**		**2.1**		**2.4**	
62																										

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2									
3		RW2		W		RW2		W		RW2		W		RW2		W		RW2		RW2		Dup of RW2		RW2	
4		FF65I		FF65K		FL41O		FL41Q		FU31F		FU31E		FY82D		FY82A		0402113-04		0406059-02		0406059-01		0408036-06	
5		2/11/03		2/11/03		5/7/03		5/7/03		8/27/03		8/27/03		10/23/03		10/23/03		2/23/04		6/9/04		6/9/04		8/05/04	
7	**CHLORINATED PHENOLS (µg/L)**																								
8	**EPA Method SW8040**																								
9	Pentachlorophenol	NA		NA		NA		NA		**10**		NA		NA		NA		**8.51**		NA		NA		NA	
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
16																									
17	**SEMIVOLATILES (µg/L)**																								
18	**EPA Method SW8270**																								
19	Phenol	2	U	2	U	2	U	2	U	2.1	U	2.1	U	2	U	2	U	1.98	U	2.05	U	1.95	U	2	U
20	4-Methylphenol	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	9.89	U	10.2	U	9.75	U	10	U
21	Isophorone	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.989	U	1.02	U	0.975	U	1	U
22	2,4-Dimethylphenol	3	U	3	U	3	U	3.1	U	3.1	U	3.1	U	3	U	3	U	2.97	U	3.07	U	2.92	U	3	U
23	Benzoic Acid	50	U	50	U	50	U	51	U	52	U	52	U	10	U	10	U	19.8	U	20.5	U	19.5	U	20	U
24	Naphthalene	**4.9**		**5.3**		**4.2**		**4**		**1.3**		**1.7**		**1.8**		**1.3**		0.989	U	**1.56**		**1.69**		**1.58**	
25	2-Methylnaphthalene	**13**		**14**		**13**		**12**		**4.8**	J	**6.2**	J	**7.2**	J	**5.4**	J	0.989	U	**5.41**		**6.08**		**5.49**	
26	2,4,6-Trichlorophenol	5	U	5	U	5	U	5.1	U	5.2	U	5.2	U	5	U	5	U	4.95	U	5.12	U	4.87	U	5	U
27	2,4,5-Trichlorophenol	5	U	5	U	5	U	5.1	U	5.2	U	5.2	U	5	U	5	U	4.95	U	5.12	U	4.87	U	5	U
28	Acenaphthene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.989	U	1.02	U	0.975	U	1	U
29	Dibenzofuran	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.989	U	1.02	U	0.975	U	1	U
30	Fluorene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.989	U	1.02	U	0.975	U	1	U
31	Pentachlorophenol	**28**		**33**		**12**		**12**		**5.5**		**6.9**		**8.1**		**6.4**		4.95	U	**47.3**		**46.7**		**12.9**	
32	bis(2-Ethylhexyl)phthalate	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.989	U	1.02	U	0.975	U	1	U
33																									
34	**VOLATILES (µg/L)**																								
35	**EPA Method SW8260**																								
36	Acetone	5	U	5	U	5	U	**6.2**	M	5	U	5	U	5	U	5	U	50	U	50	U	50	U	50	U
37	Carbon Disulfide	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U
38	2-Butanone	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	10	U	10	U	10	U	10	U
39	Benzene	**2.4**		**2.4**		**3.4**		**3.8**		**5.1**		**5.4**		**3.6**		**3.4**		**5.5**		**3.57**		**3.32**		**3.88**	
40	Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
41	Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
42	Ethylbenzene	**8.2**		**8.1**		**9.5**		**10**		**4.2**		**4.2**		**2.6**		**2.7**		**10.5**		**3.41**		**3.97**		**6.19**	
43	Styrene	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
44	m,p-Xylene	**15**		**14**		**12**		**13**		**7**		**7.4**		**4.3**		**4.5**		**4.66**		**3.34**		**3.08**		**9.61**	
45	o-Xylene	**2.4**		**2.2**		1	U	1	U	1	U	1	U	1	U	1	U	**1.67**		1	U	1	U	**2.75**	
46	1,3,5-Trimethylbenzene	**14**		**13**		**19**		**19**		**8.6**		**8.5**		**4.4**		**5.1**		**18.1**		**6.98**		**7.1**		**11.5**	
47	1,2,4-Trimethylbenzene	**46**		**44**		**59**		**62**		**28**		**29**		**16**		**17**		**61**		**20.5**		**19.8**		**36**	
48	Isopropylbenzene	**50**		**51**		**41**		**45**		**30**		**29**		**28**		**29**		**36.5**		**39.3**		**41**		**60.9**	
49	n-Propylbenzene	**60**		**62**		**56**		**60**		**40**		**39**		**35**		**36**		**55.3**		**60.8**		**62.7**		**68.1**	
50	tert-Butylbenzene	**1.7**		**1.8**		**1.8**		**2**		**1.4**		**1.3**		**1.2**		**1.2**		1	U	**1.56**		**1.64**		**1.75**	
51	sec-Butylbenzene	**8**		**8.1**		**8.2**		**8.8**		**5.9**		**5.7**		**5.1**		**5.4**		**7.63**		**8.48**		**8.82**		**10.7**	
52	4-Isopropyltoluene	**1.5**		**1.4**		**1.9**		**2**		**1**		**1**		1	U	1	U	**1.85**		1	U	1	U	**1.25**	
53	n-Butylbenzene	**6**	M	**6**	M	**6.5**		**6.8**		**4.4**		**4.2**		**3.6**		**3.9**		**4.54**		**4.62**		**4.5**		**5.36**	
54	Naphthalene	**6.2**		**6.3**		**6.9**		**7.5**		5	U	5	U	5	U	5	U	**3.26**		**5.64**		**6.03**		**2.99**	
55	Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		1	U	1	U	1	U	1	U
56																									
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																								
58	**Method OR-DEQ**																								
59	**TPH-Diesel**	**1.7**		**1.8**		**1.5**		**1.5**		**1.1**		**1**		**0.73**		**0.72**		**1.04**		**1.64**		**1.45**		**1.42**	
60	**TPH-D Motor Oil**	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.493	U	0.517	U	0.5	U	0.499	U
61	**TPH-Gasoline**	**2.5**		**2.6**		**2.2**		**2.4**		**1.6**		**1.6**		**1.2**		**1.2**		**2.6**		**1.72**		**1.83**		**1.72**	
62																									

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI
2		Dup of RW2				Dup of RW2						
3		W		RW2		W		RW2		RW2		RW2
4		0408036-03		0411051-04		0411051-01		0502102-12		P5F0223-06		P5H0853-03
5		8/05/04		11/9/04		11/9/04		2/23/05		6/6/05		08/19/05
7	**CHLORINATED PHENOLS (µg/L)**											
8	**EPA Method SW8040**											
9	Pentachlorophenol	NA		**1.84**		**2.12**		**1.13**		0.495	U	0.500 U
10	2,4,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
11	2,3,6-Trichlorophenol	NA		NA		NA		NA		NA		NA
12	2,4,5-Trichlorophenol	NA		NA		NA		NA		NA		NA
13	2,3,4-Trichlorophenol	NA		NA		NA		NA		NA		NA
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
15	2,3,4,5-Tetrachlorophenol	NA		NA		NA		NA		NA		NA
16												
17	**SEMIVOLATILES (µg/L)**											
18	**EPA Method SW8270**											
19	Phenol	2	U	2.02	U	1.97	U	2	U	5.00	U	5.00 U
20	4-Methylphenol	10	U	10.1	U	9.84	U	9.98	U	5.00	U	5.00 U
21	Isophorone	1	U	1.01	U	0.984	U	0.998	U	5.00	U	5.00 U
22	2,4-Dimethylphenol	3	U	3.04	U	2.95	U	2.99	U	10.00	U	10.0 U
23	Benzoic Acid	20	U	20.2	U	19.7	U	20	U	50.0	U	50.0 U
24	Naphthalene	**1.87**		1.01	U	0.984	U	0.998	U	5.00	U	5.00 U
25	2-Methylnaphthalene	**6.18**		**2.22**		**2.67**		**1.47**		5.00	U	5.00 U
26	2,4,6-Trichlorophenol	5	U	5.06	U	4.92	U	4.99	U	5.00	U	5.00 U
27	2,4,5-Trichlorophenol	5	U	5.06	U	4.92	U	4.99	U	5.00	U	5.00 U
28	Acenaphthene	1	U	1.01	U	0.984	U	0.998	U	5.00	U	5.00 U
29	Dibenzofuran	1	U	1.01	U	0.984	U	0.998	U	5.00	U	5.00 U
30	Fluorene	1	U	1.01	U	0.984	U	0.998	U	5.00	U	5.00 U
31	Pentachlorophenol	**13.5**		5.06	U	4.92	U	4.99	U	10	U	10.0 U
32	bis(2-Ethylhexyl)phthalate	1	U	1.01	U	0.984	U	0.998	U	10.00	U	10.0 U
33												
34	**VOLATILES (µg/L)**											
35	**EPA Method SW8260**											
36	Acetone	50	U	50	U	50	U	50	U	25.0	U	25.0 U
37	Carbon Disulfide	2	U	2	U	2	U	2	U	10.00	U	10.0 U
38	2-Butanone	10	U	10	U	10	U	10	U	10.00	U	10.0 U
39	Benzene	**3.84**	J	**1**		**1.06**		0.3	U	1.00	U	1.00 U
40	Bromoform	1	U	1	U	1	U	1	U	1.00	U	1.00 U
41	Toluene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
42	Ethylbenzene	**5.97**	J	**1.89**		**2.06**		**3.04**		**3.39**		**1.77**
43	Styrene	1	U	1	U	1	U	1	U	1.00	U	1.00 U
44	m,p-Xylene	**8.88**	J	2	U	2	U	2	U	**2.06**		2.00 U
45	o-Xylene	**2.51**	J	**1.7**		**1.82**		1	U	1.00	U	1.00 U
46	1,3,5-Trimethylbenzene	**10.2**	J	**1.03**		**1.31**		**2.21**		**1.20**		1.00 U
47	1,2,4-Trimethylbenzene	**33.8**	J	**4.51**		**5.6**		**8.71**		**5.39**		**2.89**
48	Isopropylbenzene	**64.8**	J	**57.3**		**62.4**		**33.6**		**33.2**		**31.4**
49	n-Propylbenzene	**69.7**	J	**72.2**		**77.6**		**40.9**		**37.8**		**38.8**
50	tert-Butylbenzene	**1.82**	J	**1.48**		**1.66**		1	U	**1.79**		**1.77**
51	sec-Butylbenzene	**10.7**	J	**7.84**		**9.22**		**6.18**		**6.13**		**6.24**
52	4-Isopropyltoluene	**1.1**	J	1	U	1	U	1	U	2.00	U	2.00 U
53	n-Butylbenzene	**5.13**	J	**4.91**		**6.09**		**7.07**		5.00	U	5.00 U
54	Naphthalene	**2.74**	J	1	U	1	U	**1.97**		2.00	U	**2.46**
55	Methyl tert-butyl ether	1	U	1	U	1	U	1	U	1.00	U	1.00 U
56												
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**											
58	**Method OR-DEQ**											
59	**TPH-Diesel**	**1.42**		**0.904**		**0.991**		**0.928**		0.25	U	**0.300**
60	**TPH-D Motor Oil**	0.493	U	0.477	U	0.491	U	0.5	U	0.5	U	0.500 U
61	**TPH-Gasoline**	**1.8**		**1.18**		**1.23**		**1.01**		**0.488**		**0.377 J**
62												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2															Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2
3			RW2		RW2		RW2		RW2		RW2		RW2		X		RW2		X		RW2		X		RW2		X
4			AH76G		AU45N		BC30E		BH96F		BR64P		CD97A		CD97B		CL03N		CL03M		CT37L		CT37M		DE87P		DE87O
5			5/20/99		9/23/99		12/7/99		2/17/00		5/25/00		9/13/00		9/13/00		11/9/00		11/9/00		2/13/01		2/13/01		6/6/01		6/6/01
63	56	**PRIORITY POLLUTANT**																									
64	57	**METALS (mg/L)**																									
65	58	Arsenic (7060)	**0.034**		**0.025**		**0.022**		**0.032**		**0.036**		**0.022**		**0.022**		**0.021**		**0.021**		**0.016**		**0.016**		**0.017**		**0.016**
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005
67	60	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.005**		**0.007**		0.002	U	**0.004**		0.002	U	0.002	U	**0.003**		0.002
68	61	Lead (7421)	**0.001**		**0.001**		0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01
70	63	Zinc (6010)	**0.016**		**0.042**		**0.025**		**0.031**		**0.016**		**0.022**	J2	**0.030**	J2	**0.116**		**0.122**		**0.022**		**0.022**		**0.058**	J	**0.189**
71	64																										
72	65	**MAJOR IONS AND CONVENTIONALS**																									
73	66	Calcium (mg/L) (6010)	**30.0**		NA		NA		NA		NA		NA		NA		NA		NA		**39.8**		**36.8**		**36.5**		**40.7**
74	67	Magnesium (mg/L) (6010)	**9.90**		NA		NA		NA		NA		NA		NA		NA		NA		**17.1**		**15.8**		**17.2**		**19.1**
75	68	Potassium (mg/L) (6010)	**2.5**		NA		NA		NA		NA		NA		NA		NA		NA		**2.4**		**2.1**		**3.1**		**3.0**
76	69	Sodium (mg/L) (6010)	**7.68**		NA		NA		NA		NA		NA		NA		NA		NA		**12.6**		**11.7**		**12.6**		**13.6**
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**140**		NA		NA		NA		NA		NA		NA		NA		NA		**220**		**220**		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	1.0	U	NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**140**		NA		NA		NA		NA		NA		NA		NA		NA		**220**		**220**		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**190**		**190**		**160**		**150**		**160**		**390**		**360**		**320**		**310**		**290**		**280**		**300**	J	**290**
81	74	Chloride (mg/L) (EPA 325.2)	**4.7**		**8.8**		**6.7**		**6.6**		**4.2**		**9.1**	J2	**7.4**	J2	**4.7**		**5.0**		**8.9**		**8.5**		**7.7**		**7.4**
82	75	N-Nitrate (mg-N/L) (Calculated)	**0.017**		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	0.010	U	NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	0.010	U	NA		NA		NA		NA		NA		NA		NA		NA		**0.018**		**0.016**		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.017**		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	0.010	U	NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	**9.3**		NA		NA		NA		NA		NA		NA		NA		NA		**5.2**		**4.3**		NA		NA
86	79																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
2					Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2	
3			RW2		W		RW2		W		RW2		W		RW2		W		RW2		W		RW2		W	
4			DM30I		DM30H		DW29E		DW29C		ED30D		ED30A		EN00D		EN00A		ER93G		ER93I		EZ17D		EZ17B	
5			8/13/01		8/13/01		11/27/01		11/27/01		2/27/02		2/27/02		6/27/02		6/27/02		08/27/02		08/27/02		11/13/02		11/13/02	
63	**PRIORITY POLLUTANT**																									
64	**METALS (mg/L)**																									
65	Arsenic (7060)		**0.019**		**0.020**		**0.018**		**0.022**		**0.020**		**0.022**		**0.019**		**0.020**		**0.021**		**0.021**		0.05	U	0.05	U
66	Chromium (6010)	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	Copper (6010)	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	**0.008**	J	0.002	UJ
68	Lead (7421)	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.001**		0.02	U	0.02	U
69	Nickel (6010)	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	Zinc (6010)	J	**0.020**	J	**0.028**	J	**0.010**		**0.013**		**0.043**	J	**0.016**	J	**0.015**	J	**0.037**	J	**0.034**	J	**0.02**	J	**0.022**		**0.017**	
71																										
72	**MAJOR IONS AND CONVENTIONALS**																									
73	Calcium (mg/L) (6010)		**39.0**		**41.0**		**39.4**		**41.6**		**38.9**		**37.5**		**42.3**		**43.3**		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)		**17.1**		**17.8**		**16.4**		**17.5**		**16.2**		**15.3**		**17.0**		**17.5**		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)		**2.8**		**2.8**		**2.4**		**2.4**		**2.5**		**2.2**		**2.3**		**2.3**		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)		**12.3**		**12.9**		**11.7**		**12.4**		**11.2**		**10.9**		**12.0**		**12.3**		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		**220**		**200**		NA		NA		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		1.0	U	1.0	U	NA		NA		NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		NA		NA		NA		NA		**220**		**200**		NA		NA		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	J	**270**	J	**290**	J	**260**		**280**		**270**		**290**		**250**		**270**		**270**		**270**		**270**		**270**	
81	Chloride (mg/L) (EPA 325.2)		**8.9**		**8.2**		**5.5**		**5.7**		**24**	J	**4.1**	J	**6.1**		**5.8**		**4.6**		**5.1**		**4.8**		**4.6**	
82	N-Nitrate (mg-N/L) (Calculated)		NA		NA		NA		NA		**0.019**		0.010	U	NA		NA		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		NA		NA		NA		NA		**0.014**	J	**0.038**	J	NA		NA		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		NA		NA		NA		NA		**0.033**		**0.028**		NA		NA		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)		NA		NA		NA		NA		**6.3**	J	**9.8**	J	NA		NA		NA		NA		NA		NA	
86																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2									
3		RW2		W		RW2		W		RW2		W		RW2		W		RW2		RW2		Dup of RW2		RW2	
4		FF65I		FF65K		FL41O		FL41Q		FU31F		FU31E		FY82D		FY82A		0402113-04		0406059-02		0406059-01		0408036-06	
5		2/11/03		2/11/03		5/7/03		5/7/03		8/27/03		8/27/03		10/23/03		10/23/03		2/23/04		6/9/04		6/9/04		8/05/04	
63	**PRIORITY POLLUTANT**																								
64	**METALS (mg/L)**																								
65	Arsenic (7060)	**0.019**		**0.018**		**0.019**		**0.019**		**0.018**		**0.019**		**0.019**		**0.018**		**0.022**		**0.019**		**0.019**		**0.0194**	
66	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	**0.0076**		**0.0136**		**0.0144**		**0.0152**	
67	Copper (6010)	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.01	U	0.01	U	0.01	U	0.01	U
68	Lead (7421)	0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U	0.001	U	0.001	U	**0.0051**		0.0001	U	0.0001	U	0.0001	U
69	Nickel (6010)	**0.01**		0.01	U	**0.01**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.005	U	0.005	U	0.005	U	0.005	U
70	Zinc (6010)	**0.013**	J	**0.016**	J	**0.067**		**0.064**		**0.013**		**0.014**		**0.062**	J	**0.008**	J	**0.0724**		**0.0105**		**0.011**		0.01	U
71																									
72	**MAJOR IONS AND CONVENTIONALS**																								
73	Calcium (mg/L) (6010)	**41.8**		**41.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
74	Magnesium (mg/L) (6010)	**16.4**		**16.2**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
75	Potassium (mg/L) (6010)	**2.5**		**2.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
76	Sodium (mg/L) (6010)	**11.7**		**11.7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
77	Alkalinity (mg/L CaCO3) (SM 2320)	**240**		**240**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1	U	1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**240**		**240**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**260**		**260**		**270**		**270**		**290**		**280**		**230**		**250**		**237**		**254**		**276**		**258**	
81	Chloride (mg/L) (EPA 325.2)	**4.4**		**4.4**		**4.4**		**4.4**		**4.3**		**4.2**		**5.2**		**4.9**		**3.8**		**4.16**		**3.74**		**3.95**	
82	N-Nitrate (mg-N/L) (Calculated)	0.01	U	**0.015**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)	**0.041**		**0.043**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.037**	J	**0.058**	J	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
85	Sulfate (mg/L) (EPA 375.2)	**3**		2.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
86																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI
2		Dup of RW2				Dup of RW2						
3		W		RW2		W		RW2		RW2		RW2
4		0408036-03		0411051-04		0411051-01		0502102-12		P5F0223-06		P5H0853-03
5		8/05/04		11/9/04		11/9/04		2/23/05		6/6/05		08/19/05
63	**PRIORITY POLLUTANT**											
64	**METALS (mg/L)**											
65	Arsenic (7060)	**0.02**		**0.0202**		**0.0207**		**0.0218**		**0.0249**		**0.0211**
66	Chromium (6010)	**0.0143**		**0.0129**		**0.0197**		**0.0086**		0.001	U	0.001 U
67	Copper (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.002	U	**0.00328**
68	Lead (7421)	0.0001	U	0.00014	UJ	**0.00372**	J	0.0001	U	0.001	U	0.001 U
69	Nickel (6010)	0.005	U	**0.0113**		**0.0412**		**0.014**		**0.0268**		**0.0255**
70	Zinc (6010)	0.01	U	0.0116	UJ	**0.0306**	J	0.01	U	**0.114**		**0.0164**
71												
72	**MAJOR IONS AND CONVENTIONALS**											
73	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
74	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
75	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
76	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA
77	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA
80	Total Dissolved Solids (mg/L) (EPA 160.1)	**254**		**266**		**265**		**345**		**286**		**264**
81	Chloride (mg/L) (EPA 325.2)	**3.82**		**8.68**		**6.63**		**3.62**		**3.72**		**3.37**
82	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA
83	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA
85	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA
86												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2															Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2
3			RW2		RW2		RW2		RW2		RW2		RW2		X		RW2		X		RW2		X		RW2		X
4			AH76G		AU45N		BC30E		BH96F		BR64P		CD97A		CD97B		CL03N		CL03M		CT37L		CT37M		DE87P		DE87O
5			5/20/99		9/23/99		12/7/99		2/17/00		5/25/00		9/13/00		9/13/00		11/9/00		11/9/00		2/13/01		2/13/01		6/6/01		6/6/01
87	80	**FIELD PARAMETERS**																									
88	81	pH (avg)	6.63		6.65		6.58		6.67		6.56		6.19		6.19		5.55		5.54		6.33		6.33		6.66		6.65
89	82	Temperature (° C) (avg)	14.2		14.7		13.1		14.4		15.0		15.6		15.6		12.7		12.7		12.6		12.7		13.6		13.6
90	83	Conductivity (um/hos)	294		292		260		278		365		463		463		513		513		475		479		573		573
91	84	Dissolved oxygen (mg/L) (avg)	1.61		1.37		2.46		0.68		0.74		11.94		11.94		0.53		0.55		0.90		0.95		0.83		0.82
92	85																										
93	86	**DIOXINS AND FURANS (ng/L)**																									
94	87	**Method 8290**																									
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																											
121																											
122																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1																										
2					Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2	
3			RW2		W		RW2		W		RW2		W		RW2		W		RW2		W		RW2		W	
4			DM30I		DM30H		DW29E		DW29C		ED30D		ED30A		EN00D		EN00A		ER93G		ER93I		EZ17D		EZ17B	
5			8/13/01		8/13/01		11/27/01		11/27/01		2/27/02		2/27/02		6/27/02		6/27/02		08/27/02		08/27/02		11/13/02		11/13/02	
87	**FIELD PARAMETERS**																									
88	pH (avg)		6.70		6.68		6.50		6.5		6.27		6.27		6.47		6.47		6.52		6.56		6.19		6.17	
89	Temperature (° C) (avg)		15.7		15.6		13.1		13.1		13.5		13.5		14.5		14.5		13.9		13.9		13.6		13.6	
90	Conductivity (um/hos)		455		454		458		458		422		422		450		448		408		409		461		461	
91	Dissolved oxygen (mg/L) (avg)		0.52		0.37		3.34		3.22		7.06		7.05		4.87		4.72		0.60		0.31		0.55		0.34	
92																										
93	**DIOXINS AND FURANS (ng/L)**																									
94	**Method 8290**																									
95	2,3,7,8-TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																										
121																										
122																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																									
2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2									
3		RW2		W		RW2		W		RW2		W		RW2		W		RW2		RW2		Dup of RW2		RW2	
4		FF65I		FF65K		FL41O		FL41Q		FU31F		FU31E		FY82D		FY82A		0402113-04		0406059-02		0406059-01		0408036-06	
5		2/11/03		2/11/03		5/7/03		5/7/03		8/27/03		8/27/03		10/23/03		10/23/03		2/23/04		6/9/04		6/9/04		8/05/04	
87	**FIELD PARAMETERS**																								
88	pH (avg)	6.84		6.84		6.87		6.86		6.69		6.71		6.52		6.53		6.36		5.41		5.41		6.09	
89	Temperature (° C) (avg)	13.9		13.9		13.6		13.5		15.5		15.7		13.8		13.8		14.3		15.2		15.2		15.7	
90	Conductivity (um/hos)	542		542		392		390		414		411		392		392		348		395		395		530	
91	Dissolved oxygen (mg/L) (avg)	2.24		2.24		3.22		3.32		0.98		0.82		2.37		2.15		1.48		1.12		1.12		3.58	
92																									
93	**DIOXINS AND FURANS (ng/L)**																								
94	**Method 8290**																								
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																									
121																									
122																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI
1												
2		Dup of RW2				Dup of RW2						
3		W		RW2		W		RW2		RW2		RW2
4		0408036-03		0411051-04		0411051-01		0502102-12		P5F0223-06		P5H0853-03
5		8/05/04		11/9/04		11/9/04		2/23/05		6/6/05		08/19/05
87	**FIELD PARAMETERS**											
88	pH (avg)	6.15		6.6		6.7		6.78		7.04		6.68
89	Temperature (° C) (avg)	16		13.6		13.7		14.5		14.7		14.9
90	Conductivity (um/hos)	531		356		359		184		347		360
91	Dissolved oxygen (mg/L) (avg)	3.58		2.14		2.17		1.47		4.32		NM
92												
93	**DIOXINS AND FURANS (ng/L)**											
94	**Method 8290**											
95	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA
96	Total TCDF	NA		NA		NA		NA		NA		NA
97	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA
98	Total TCDD	NA		NA		NA		NA		NA		NA
99	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA
100	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA
101	Total PeCDF	NA		NA		NA		NA		NA		NA
102	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA
103	Total PeCDD	NA		NA		NA		NA		NA		NA
104	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA
105	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
106	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA
107	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA
108	Total HxCDF	NA		NA		NA		NA		NA		NA
109	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA
110	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA
111	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA
112	Total HxCDD	NA		NA		NA		NA		NA		NA
113	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA
114	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA
115	Total HpCDF	NA		NA		NA		NA		NA		NA
116	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA
117	Total HpCDD	NA		NA		NA		NA		NA		NA
118	OCDF	NA		NA		NA		NA		NA		NA
119	OCDD	NA		NA		NA		NA		NA		NA
120												
121												
122												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2															Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2
3			RW2		RW2		RW2		RW2		RW2		RW2		X		RW2		X		RW2		X		RW2		X
4			AH76G		AU45N		BC30E		BH96F		BR64P		CD97A		CD97B		CL03N		CL03M		CT37L		CT37M		DE87P		DE87O
5			5/20/99		9/23/99		12/7/99		2/17/00		5/25/00		9/13/00		9/13/00		11/9/00		11/9/00		2/13/01		2/13/01		6/6/01		6/6/01
123		**PAHs (µg/L)**																									
124		**EPA Method SW8270 SIM**																									
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
132																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1																										
2					Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2	
3			RW2		W		RW2		W		RW2		W		RW2		W		RW2		W		RW2		W	
4			DM30I		DM30H		DW29E		DW29C		ED30D		ED30A		EN00D		EN00A		ER93G		ER93I		EZ17D		EZ17B	
5			8/13/01		8/13/01		11/27/01		11/27/01		2/27/02		2/27/02		6/27/02		6/27/02		08/27/02		08/27/02		11/13/02		11/13/02	
123	**PAHs (µg/L)**																									
124	**EPA Method SW8270 SIM**																									
125	Naphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128	Acenaphthene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131	Dibenzofuran		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
132																			NA		NA					

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX
1																									
2				Dup of RW2				Dup of RW2				Dup of RW2				Dup of RW2									
3		RW2		W		RW2		W		RW2		W		RW2		W		RW2		RW2		Dup of RW2		RW2	
4		FF65I		FF65K		FL41O		FL41Q		FU31F		FU31E		FY82D		FY82A		0402113-04		0406059-02		0406059-01		0408036-06	
5		2/11/03		2/11/03		5/7/03		5/7/03		8/27/03		8/27/03		10/23/03		10/23/03		2/23/04		6/9/04		6/9/04		8/05/04	
123	**PAHs (µg/L)**																								
124	**EPA Method SW8270 SIM**																								
125	Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127	Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U
128	Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129	Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130	Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		1	U
131	Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
132																									

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI
1												
2		Dup of RW2				Dup of RW2						
3		W		RW2		W		RW2		RW2		RW2
4		0408036-03		0411051-04		0411051-01		0502102-12		P5F0223-06		P5H0853-03
5		8/05/04		11/9/04		11/9/04		2/23/05		6/6/05		08/19/05
123	**PAHs (µg/L)**											
124	**EPA Method SW8270 SIM**											
125	Naphthalene	NA		NA		NA		NA		NA		NA
126	2-Methylnaphthalene	NA		NA		NA		NA		NA		NA
127	Acenaphthylene	1	U	NA		NA		NA		NA		NA
128	Acenaphthene	NA		NA		NA		NA		NA		NA
129	Fluorene	NA		NA		NA		NA		NA		NA
130	Anthracene	1	U	NA		NA		NA		NA		NA
131	Dibenzofuran	NA		NA		NA		NA		NA		NA
132												

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1																
2																
3			J3		J3		J3		J3		J3		J3		J3	
4			S177K		T176R		U235L		V224Q		W371M		Y314K		Z225Q	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98	
6																
7	1	**CHLORINATED PHENOLS (µg/L)**														
8	2	**EPA Method SW8040**														
9	3	Pentachlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	**0.36**		0.25	U	0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
16	10															
17	11	**SEMIVOLATILES (µg/L)**														
18	12	**EPA Method SW8270**														
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
21	15	Isophorone	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U
24	18	Naphthalene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
25	19	2-Methylnaphthalene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
28	22	Acenaphthene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
29	23	Dibenzofuran	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
30	24	Fluorene	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
31	25	Pentachlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
33	27															
34	28	**VOLATILES (µg/L)**														
35	29	**EPA Method SW8260**														
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
37	31	Carbon Disulfide	1.0	U	1.0	U	**110**		1.0	U	1.0	U	1.0	U	1.0	U
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
46	40	1,3,5-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
47	41	1,2,4-Trimethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA	
56	49															
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**														
58	51	**Method OR-DEQ**														
59	52	**TPH-Diesel**	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA	
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA	
62	55															

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1																
2																
3			J3		J3		J3		J3		J3		J3		J3	
4			S177K		T176R		U235L		V224Q		W371M		Y314K		Z225Q	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98	
63	56	**PRIORITY POLLUTANT**														
64	57	**METALS (mg/L)**														
65	58	Arsenic (7060)	**0.010**		**0.012**		0.05	U	0.05	U	**0.011**		**0.014**		**0.017**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	**0.014**		**0.018**		**0.012**	
67	60	Copper (6010)	0.002	U	**0.005**		0.002	U	**0.005**		**0.017**		**0.020**		**0.013**	
68	61	Lead (7421)	0.001	U	**0.002**		0.02	U	0.02	U	**0.006**		**0.007**		**0.003**	
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	**0.01**		**0.01**		**0.01**	
70	63	Zinc (6010)	0.004	U	**0.013**		**0.018**		**0.010**		**0.034**	J2	**0.048**		**0.036**	
71	64															
72	65	**MAJOR IONS AND CONVENTIONALS**														
73	66	Calcium (mg/L) (6010)	**94.6**		**101**		**103**		**90.2**		NA		NA		NA	
74	67	Magnesium (mg/L) (6010)	**51.7**		**56.1**		**56.1**		**50.6**		NA		NA		NA	
75	68	Potassium (mg/L) (6010)	**1.8**		**1.9**		**2.0**		**1.6**		NA		NA		NA	
76	69	Sodium (mg/L) (6010)	**22.5**		**23.5**		**23.8**		**22.1**		NA		NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	**470**		**460**	J2	**510**		**470**		NA		NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	1.0	U	1.0	U	1.0	U	1.0	U	NA		NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	**470**		**460**	J2	**510**		**470**		NA		NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NT		**580**	J2	**480**		**510**		**480**		**540**		**470**	
81	74	Chloride (mg/L) (EPA 325.2)	**9.9**		**9.3**		**11**		**12**		**12**		**13**		**12**	
82	75	N-Nitrate (mg-N/L) (Calculated)	0.010	U	0.010	U	**0.013**		**0.016**	J2	NA		NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	**0.012**	J	**0.012**	J2	0.010	U	0.010	UJ	NA		NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	**0.014**		0.010	U	**0.013**		**0.016**	J2	NA		NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	**2.8**	J	2.5	U	2.5	U	2.5	U	NA		NA		NA	
86	79															

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1																
2																
3			J3		J3		J3		J3		J3		J3		J3	
4			S177K		T176R		U235L		V224Q		W371M		Y314K		Z225Q	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98	
87	80	**FIELD PARAMETERS**														
88	81	pH (avg)	6.78		6.80		6.85		6.70		6.53		6.46		6.43	
89	82	Temperature (° C) (avg)	13.9		16.3		13.7		13.4		13.4		14.9		11.9	
90	83	Conductivity (um/hos)	859		765		673		771		788		916		422	
91	84	Dissolved oxygen (mg/L) (avg)	NA		NA		NA		NA		0.74		3.45		2.45	
92	85															
93	86	**DIOXINS AND FURANS (ng/L)**														
94	87	**Method 8290**														
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA	
120																
121																
122																

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1																
2																
3			J3		J3		J3		J3		J3		J3		J3	
4			S177K		T176R		U235L		V224Q		W371M		Y314K		Z225Q	
5			4/2/97		7/16/97		10/22/97		1/29/98		5/19/98		8/18/98		11/12/98	
123		**PAHs (µg/L)**														
124		**EPA Method SW8270 SIM**														
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2					Dup of LW-12D1								Dup of LW12D1														
3			LW12D1		LW120D1		LW12D1		LW12D1		LW12D1		Y		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1
4			AH76C		AH76A		AU45L		BC27S		BH96M		BH96O		BR55B		CB85I		CL03K		CT67E		DE87M		DM52H		DW48J
5			5/20/99		5/20/99		9/23/99		12/9/99		2/18/00		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01
6																											
7	1	**CHLORINATED PHENOLS (µg/L)**																									
8	2	**EPA Method SW8040**																									
9	3	Pentachlorophenol	**28**		**32**		**1.4**		**200**		**0.28**		**0.23**	J1	0.25	UJ	0.25	U	0.25	U	**0.62**		0.25	U	0.25	U	0.25
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	**1.1**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	1.2	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	**1.2**		**1.4**		**0.13**	J1	**6.2**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
15	9	2,3,4,5-Tetrachlorophenol	**1.0**		**1.0**		**0.36**		**8.0**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA
16	10																										
17	11	**SEMIVOLATILES (µg/L)**																									
18	12	**EPA Method SW8270**																									
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	30
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	**2.2**	J1	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	**1.7**	J1	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
31	25	Pentachlorophenol	**110**	J2	**81**	J2	5.0	U	**380**		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	1.0	U	**1.0**	J1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		1.0	U	1.0
33	27																										
34	28	**VOLATILES (µg/L)**																									
35	29	**EPA Method SW8260**																									
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
38	32	2-Butanone	**7.6**		5.0	U	**12**	M	5.0	U	5.0	U	5.0	U	5.0	U	9.5	U	**8.4**		5.0	U	5.0	U	**5.7**		**5.6**
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	1.0	U	1.0
46	40	1,3,5-Trimethylbenzene	**11**		**9.7**		**3.6**		**1.5**		1.0	U	1.0	U	**2.4**		**3.3**		**4.8**		**4.4**		**1.9**		**1.5**		**3.4**
47	41	1,2,4-Trimethylbenzene	**46**		**46**		**15**		**4.8**		**5.1**		**4.9**		**15**		**17**		**22**		**23**		**13**		**7.5**		**21**
48	42	Isopropylbenzene	**2.6**		**2.6**		**1.7**		**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	**1.3**		**1.4**		**1.6**		1.0	U	**1.6**
49	43	n-Propylbenzene	**3.9**		**3.8**		**2.4**		**1.3**		1.0	U	1.0	U	**1.5**		**1.5**		**2.2**		**2.5**		**2.0**		1.0	U	**2.8**
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
51	45	sec-Butylbenzene	**1.7**		**1.7**		**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		**1.6**		**1.9**		**1.3**		1.0	U	**2.8**
52	46	4-Isopropyltoluene	**2.0**		**2.0**		**1.3**		1.0	U	1.0	U	1.0	U	1.0	U	**1.1**		**1.6**		**1.9**		1.0	U	1.0	U	**2.2**
53	47	n-Butylbenzene	**1.7**		**1.7**	M	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.4	U	**1.7**	M	1.0	U	1.0	U	2.0
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
56	49																										
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																									
58	51	**Method OR-DEQ**																									
59	52	**TPH-Diesel**	**0.96**		**0.86**		**0.98**		**0.88**		**0.66**		**0.66**		**0.82**		**0.64**		**0.78**		**0.83**		**0.77**		**0.81**		**0.97**
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		NA		NA		0.50	U	NA		NA		NA		NA
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
62	55																										

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF
1						
2						
3			LW12D1		LW12D1	
4			ED34H		EN00K	
5			2/28/02		6/27/02	
6						
7	**CHLORINATED PHENOLS (µg/L)**					
8	**EPA Method SW8040**					
9	Pentachlorophenol	U	0.25	U	**1.6**	
10	2,4,6-Trichlorophenol		NA		NA	
11	2,3,6-Trichlorophenol		NA		NA	
12	2,4,5-Trichlorophenol		NA		NA	
13	2,3,4-Trichlorophenol		NA		NA	
14	2,3,5,6- and 2,3,4,6-Tetrachlorophenol		NA		NA	
15	2,3,4,5-Tetrachlorophenol		NA		NA	
16						
17	**SEMIVOLATILES (µg/L)**					
18	**EPA Method SW8270**					
19	Phenol	U	2.0	U	2.0	U
20	4-Methylphenol	U	1.0	U	1.0	U
21	Isophorone	U	1.0	U	1.0	U
22	2,4-Dimethylphenol	U	3.0	U	3.0	U
23	Benzoic Acid	U	50	U	50	U
24	Naphthalene	U	1.0	U	1.0	U
25	2-Methylnaphthalene	U	1.0	U	1.0	U
26	2,4,6-Trichlorophenol	U	5.0	U	5.0	U
27	2,4,5-Trichlorophenol	U	5.0	U	5.0	U
28	Acenaphthene	U	1.0	U	1.0	U
29	Dibenzofuran	U	1.0	U	1.0	U
30	Fluorene	U	1.0	U	1.0	U
31	Pentachlorophenol	U	5.0	U	5.0	U
32	bis(2-Ethylhexyl)phthalate	U	4.0	U	4.0	U
33						
34	**VOLATILES (µg/L)**					
35	**EPA Method SW8260**					
36	Acetone	U	5.0	U	5.0	U
37	Carbon Disulfide	U	1.0	U	1.0	U
38	2-Butanone		**8.6**		5.0	U
39	Benzene	U	1.0	U	1.0	U
40	Bromoform	U	1.0	U	1.0	U
41	Toluene	U	1.0	U	1.0	U
42	Ethylbenzene	U	1.0	U	1.0	U
43	Styrene	U	1.0	U	1.0	U
44	m,p-Xylene	U	1.0	U	1.0	U
45	o-Xylene	U	1.0	U	1.0	U
46	1,3,5-Trimethylbenzene		**1.5**		1.0	U
47	1,2,4-Trimethylbenzene		**8.5**		**4.7**	
48	Isopropylbenzene		1.0	U	1.0	U
49	n-Propylbenzene		**1.1**		**1.3**	
50	tert-Butylbenzene	U	1.0	U	1.0	U
51	sec-Butylbenzene		1.0	U	**1.1**	
52	4-Isopropyltoluene		1.0	U	1.0	U
53	n-Butylbenzene	U	1.0	U	1.0	U
54	Naphthalene	U	5.0	U	5.0	U
55	Methyl tert-butyl ether		NA		NA	
56						
57	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**					
58	**Method OR-DEQ**					
59	**TPH-Diesel**		**1.2**		**1.0**	
60	**TPH-D Motor Oil**		NA		NA	
61	**TPH-Gasoline**		NA		NA	
62						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2					Dup of LW-12D1								Dup of LW12D1														
3			LW12D1		LW120D1		LW12D1		LW12D1		LW12D1		Y		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1
4			AH76C		AH76A		AU45L		BC27S		BH96M		BH96O		BR55B		CB85I		CL03K		CT67E		DE87M		DM52H		DW48J
5			5/20/99		5/20/99		9/23/99		12/9/99		2/18/00		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01
63	56	**PRIORITY POLLUTANT**																									
64	57	**METALS (mg/L)**																									
65	58	Arsenic (7060)	**0.017**		**0.017**		**0.039**		**0.034**		**0.020**		**0.020**		**0.030**		**0.033**		**0.019**		**0.022**		**0.020**		**0.017**		**0.014**
66	59	Chromium (6010)	**0.007**		**0.007**		**0.035**		**0.091**		**0.017**		**0.019**		0.005	U	**0.006**		**0.010**		**0.008**		**0.012**		**0.032**		**0.009**
67	60	Copper (6010)	**0.008**		**0.008**		**0.036**		**0.122**		**0.022**		**0.024**		**0.007**		**0.007**		**0.016**		**0.012**		**0.015**		**0.038**		0.012
68	61	Lead (7421)	**0.002**		**0.002**		**0.011**		**0.030**		**0.005**		**0.005**		**0.003**		**0.002**		**0.006**		**0.003**		**0.013**		**0.012**		**0.005**
69	62	Nickel (6010)	0.01	U	0.01	U	0.03	U	**0.07**		**0.02**		**0.02**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.03**		0.01
70	63	Zinc (6010)	**0.026**		**0.030**		**0.079**		**0.212**		**0.047**		**0.053**		**0.016**		**0.024**		**0.037**		**0.033**		**0.029**		**0.074**		**0.021**
71	64																										
72	65	**MAJOR IONS AND CONVENTIONALS**																									
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**54.8**		**60.5**		**53.1**		**58.4**
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**26.2**		**29.5**		**29.0**		**29.4**
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.9**		**1.8**		**1.9**		**1.5**
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**10.9**		**12.3**		**11.5**		**12.2**
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**320**		NA		NA		NA
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**320**		NA		NA		NA
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**360**		**360**		**360**		**350**		**350**		**350**		**320**		**320**		**330**		**320**		**340**	J	**320**		**350**
81	74	Chloride (mg/L) (EPA 325.2)	**3.8**		**3.8**		**3.3**		**4.5**		**3.8**		**4.2**		**4.1**		**6.8**		**3.3**		**4.2**	J	**3.7**		**7.8**		**3.7**
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		NA		NA		**5.8**		NA		NA		NA
86	79																										

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF
1						
2						
3			LW12D1		LW12D1	
4			ED34H		EN00K	
5			2/28/02		6/27/02	
63	**PRIORITY POLLUTANT**					
64	**METALS (mg/L)**					
65	Arsenic (7060)		**0.016**		**0.028**	
66	Chromium (6010)		**0.015**		**0.006**	
67	Copper (6010)	U	**0.020**		**0.007**	
68	Lead (7421)		**0.006**		**0.002**	
69	Nickel (6010)	U	0.01	U	0.01	U
70	Zinc (6010)		**0.032**		**0.022**	
71						
72	**MAJOR IONS AND CONVENTIONALS**					
73	Calcium (mg/L) (6010)		**55.1**		**59.3**	
74	Magnesium (mg/L) (6010)		**25.4**		**28.1**	
75	Potassium (mg/L) (6010)		**1.5**		**1.0**	
76	Sodium (mg/L) (6010)		**12.5**		**12.4**	
77	Alkalinity (mg/L CaCO3) (SM 2320)		**260**		NA	
78	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		1.0	U	NA	
79	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)		**260**		NA	
80	Total Dissolved Solids (mg/L) (EPA 160.1)		**330**		**300**	
81	Chloride (mg/L) (EPA 325.2)		**5.2**		**3.8**	
82	N-Nitrate (mg-N/L) (Calculated)		**0.027**		NA	
83	N-Nitrite (mg-N/L) (EPA 354.1)		0.010	U	NA	
84	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)		**0.027**		NA	
85	Sulfate (mg/L) (EPA 375.2)		**5.1**		NA	
86						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2					Dup of LW-12D1								Dup of LW12D1														
3			LW12D1		LW120D1		LW12D1		LW12D1		LW12D1		Y		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1
4			AH76C		AH76A		AU45L		BC27S		BH96M		BH96O		BR55B		CB85I		CL03K		CT67E		DE87M		DM52H		DW48J
5			5/20/99		5/20/99		9/23/99		12/9/99		2/18/00		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01
87	80	**FIELD PARAMETERS**																									
88	81	pH (avg)	6.96		6.96		7.13		6.96		6.95		6.85		6.95		6.85		5.68		6.82		7.15		7.20		6.92
89	82	Temperature (° C) (avg)	13.2		13.0		14.7		11.9		11.7		11.7		15.0		13.0		12.2		13.1		14.0		14.4		13.3
90	83	Conductivity (um/hos)	486		502		504		346		526		524		495		485		444		454		481		469		434
91	84	Dissolved oxygen (mg/L) (avg)	1.86		1.67		1.01		2.36		1.79		1.43		1.26		1.74		0.93		0.13		2.10		1.96		4.12
92	85																										
93	86	**DIOXINS AND FURANS (ng/L)**																									
94	87	**Method 8290**																									
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
120																											
121																											
122																											

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF
1						
2						
3			LW12D1		LW12D1	
4			ED34H		EN00K	
5			2/28/02		6/27/02	
87	**FIELD PARAMETERS**					
88	pH (avg)		6.80		7.07	
89	Temperature (° C) (avg)		13.8		14.3	
90	Conductivity (um/hos)		431		410	
91	Dissolved oxygen (mg/L) (avg)		7.61		4.73	
92						
93	**DIOXINS AND FURANS (ng/L)**					
94	**Method 8290**					
95	2,3,7,8-TCDF		NA		NA	
96	Total TCDF		NA		NA	
97	2,3,7,8-TCDD		NA		NA	
98	Total TCDD		NA		NA	
99	1,2,3,7,8-PeCDF		NA		NA	
100	2,3,4,7,8-PeCDF		NA		NA	
101	Total PeCDF		NA		NA	
102	1,2,3,7,8-PeCDD		NA		NA	
103	Total PeCDD		NA		NA	
104	1,2,3,4,7,8-HxCDF		NA		NA	
105	1,2,3,6,7,8-HxCDF		NA		NA	
106	2,3,4,6,7,8-HxCDF		NA		NA	
107	1,2,3,7,8,9-HxCDF		NA		NA	
108	Total HxCDF		NA		NA	
109	1,2,3,4,7,8-HxCDD		NA		NA	
110	1,2,3,6,7,8-HxCDD		NA		NA	
111	1,2,3,7,8,9-HxCDD		NA		NA	
112	Total HxCDD		NA		NA	
113	1,2,3,4,6,7,8-HpCDF		NA		NA	
114	1,2,3,4,7,8,9-HpCDF		NA		NA	
115	Total HpCDF		NA		NA	
116	1,2,3,4,6,7,8-HpCDD		NA		NA	
117	Total HpCDD		NA		NA	
118	OCDF		NA		NA	
119	OCDD		NA		NA	
120						
121						
122						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2					Dup of LW-12D1								Dup of LW12D1														
3			LW12D1		LW120D1		LW12D1		LW12D1		LW12D1		Y		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1		LW12D1
4			AH76C		AH76A		AU45L		BC27S		BH96M		BH96O		BR55B		CB85I		CL03K		CT67E		DE87M		DM52H		DW48J
5			5/20/99		5/20/99		9/23/99		12/9/99		2/18/00		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01
6																											
123		**PAHs (µg/L)**																									
124		**EPA Method SW8270 SIM**																									
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	B	AB	AC	AD	AE	AF
1						
2						
3			LW12D1		LW12D1	
4			ED34H		EN00K	
5			2/28/02		6/27/02	
6						
123	**PAHs (µg/L)**					
124	**EPA Method SW8270 SIM**					
125	Naphthalene		NA		NA	
126	2-Methylnaphthalene		NA		NA	
127	Acenaphthylene		NA		NA	
128	Acenaphthene		NA		NA	
129	Fluorene		NA		NA	
130	Anthracene		NA		NA	
131	Dibenzofuran		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB							
1																																			
2																																			
3			LW-12D2		LW-12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2								
4			AH76B		AU45M		BC27T		BH96N		BR55A		CB85J		CL03L		CT67F		DE87R		DM52F		DW48I		ED34I		EN00L								
5			5/20/99		9/23/99		12/9/99		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01		2/28/02		6/27/02								
6																																			
7	1	**CHLORINATED PHENOLS (µg/L)**																																	
8	2	**EPA Method SW8040**																																	
9	3	Pentachlorophenol	**0.91**		0.25	U	**3.7**		0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U	**1.7**		0.25	U	0.25	U	NA		0.25	U								
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U	**0.22**	J1	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U	**0.50**		0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		NA		NA		NA								
16	10																																		
17	11	**SEMIVOLATILES (µg/L)**																																	
18	12	**EPA Method SW8270**																																	
19	13	Phenol	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U							
20	14	4-Methylphenol	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
21	15	Isophorone	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
22	16	2,4-Dimethylphenol	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U							
23	17	Benzoic Acid	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	30	U	50	U	50	U							
24	18	Naphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
25	19	2-Methylnaphthalene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
26	20	2,4,6-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
27	21	2,4,5-Trichlorophenol	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
28	22	Acenaphthene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
29	23	Dibenzofuran	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
30	24	Fluorene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
31	25	Pentachlorophenol	5.0	U	5.0	U	**2.8**	J1	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
32	26	bis(2-Ethylhexyl)phthalate	1.0	U	1.0	U	**20**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U	**5.4**							
33	27																																		
34	28	**VOLATILES (µg/L)**																																	
35	29	**EPA Method SW8260**																																	
36	30	Acetone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
37	31	Carbon Disulfide	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
38	32	2-Butanone	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
39	33	Benzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
40	34	Bromoform	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
41	35	Toluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
42	36	Ethylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
43	37	Styrene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
44	38	m,p-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
45	39	o-Xylene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
46	40	1,3,5-Trimethylbenzene	**1.1**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
47	41	1,2,4-Trimethylbenzene	**3.7**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
48	42	Isopropylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
49	43	n-Propylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
50	44	tert-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
51	45	sec-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
52	46	4-Isopropyltoluene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
53	47	n-Butylbenzene	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U							
54	48	Naphthalene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U							
55		Methyl tert-butyl ether	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
56	49																																		
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**																																	
58	51	**Method OR-DEQ**																																	
59	52	**TPH-Diesel**	0.25	U	0.25	U	**0.32**		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	NA		NA		NA		0.25	U	NA								
60	53	**TPH-D Motor Oil**	NA		NA		NA		NA		NA		NA		0.50	U	NA		NA		NA		NA		NA		NA								
61	54	**TPH-Gasoline**	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
62	55																																		

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW-12D2		LW-12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2	
4			AH76B		AU45M		BC27T		BH96N		BR55A		CB85J		CL03L		CT67F		DE87R		DM52F		DW48I		ED34I		EN00L	
5			5/20/99		9/23/99		12/9/99		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01		2/28/02		6/27/02	
63	56	**PRIORITY POLLUTANT**																										
64	57	**METALS (mg/L)**																										
65	58	Arsenic (7060)	**0.020**		**0.021**		**0.003**		**0.019**		**0.024**		**0.022**		**0.020**		**0.022**		**0.022**		**0.024**		**0.024**		**0.020**		**0.018**	
66	59	Chromium (6010)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
67	60	Copper (6010)	0.002	U	0.002	U	**0.005**		0.002	U	0.002	U	0.002	U	**0.004**		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
68	61	Lead (7421)	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.002**		0.001	U	0.001	U
69	62	Nickel (6010)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
70	63	Zinc (6010)	**0.007**		0.004	U	**0.306**		**0.009**		0.006	U	0.006	U	0.006	U	**0.009**		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U
71	64																											
72	65	**MAJOR IONS AND CONVENTIONALS**																										
73	66	Calcium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**36.1**		**38.3**		**29.4**		**31.9**		**39.1**		**52.5**	
74	67	Magnesium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**16.4**		**17.3**		**13.7**		**14.0**		**17.3**		**23.0**	
75	68	Potassium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**2.4**		**2.4**		**2.4**		**2.2**		**2.8**		**3.1**	
76	69	Sodium (mg/L) (6010)	NA		NA		NA		NA		NA		NA		NA		**15.0**		**17.6**		**13.5**		**14.0**		**16.8**		**21.7**	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**220**		NA		NA		NA		**230**		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		1.0	U	NA		NA		NA		1.0	U	NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA		NA		NA		NA		NA		NA		**220**		NA		NA		NA		**230**		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	**340**		**270**		**160**		**290**		**320**		**280**		**280**		**240**		**280**	J	**210**		**210**		**330**		**330**	
81	74	Chloride (mg/L) (EPA 325.2)	**3.9**		**2.7**		**4.7**		**3.9**		**3.7**		**8.2**		**3.3**		**5.6**	J	**3.2**		**7.9**		**3.1**		**24**		**4.1**	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA		NA		NA		NA		NA		NA		0.010	U	NA		NA		NA		0.010	U	NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA		NA		NA		NA		NA		NA		**0.029**	J	NA		NA		NA		**0.042**		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA		NA		NA		NA		NA		NA		**0.031**		NA		NA		NA		**0.048**		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA		NA		NA		NA		NA		NA		**7.3**		NA		NA		NA		**6.5**		NA	
86	79																											

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW-12D2		LW-12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2	
4			AH76B		AU45M		BC27T		BH96N		BR55A		CB85J		CL03L		CT67F		DE87R		DM52F		DW48I		ED34I		EN00L	
5			5/20/99		9/23/99		12/9/99		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01		2/28/02		6/27/02	
87	80	**FIELD PARAMETERS**																										
88	81	pH (avg)	6.69		6.81		6.88		6.75		6.61		6.64		5.48		6.56		6.89		6.96		6.68		6.50		6.66	
89	82	Temperature (° C) (avg)	13.8		14.2		11.9		13.0		13.9		13.7		13.3		13.3		13.9		14.0		13.1		13.1		14.2	
90	83	Conductivity (um/hos)	514		391		250		475		468		443		442		429		473		356		375		439		528	
91	84	Dissolved oxygen (mg/L) (avg)	2.40		0.42		2.80		1.42		0		0.52		0.29		0.00		0.50		0.34		3.45		7.16		4.25	
92	85																											
93	86	**DIOXINS AND FURANS (ng/L)**																										
94	87	**Method 8290**																										
95	88	2,3,7,8-TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
96	89	Total TCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
97	90	2,3,7,8-TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
98	91	Total TCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
101	94	Total PeCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
103	96	Total PeCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
108	101	Total HxCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
112	105	Total HxCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
115	108	Total HpCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
117	110	Total HpCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
118	111	OCDF	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
119	112	OCDD	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
120																												
121																												
122																												

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TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1																												
2																												
3			LW-12D2		LW-12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2		LW12D2	
4			AH76B		AU45M		BC27T		BH96N		BR55A		CB85J		CL03L		CT67F		DE87R		DM52F		DW48I		ED34I		EN00L	
5			5/20/99		9/23/99		12/9/99		2/18/00		5/22/00		8/31/00		11/10/00		2/15/01		6/6/01		8/15/01		11/29/01		2/28/02		6/27/02	
6																												
123		**PAHs (µg/L)**																										
124		**EPA Method SW8270 SIM**																										
125		Naphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
126		2-Methylnaphthalene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
127		Acenaphthylene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
128		Acenaphthene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
129		Fluorene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
130		Anthracene	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
131		Dibenzofuran	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW15D		LW15D	
4			BR64T		CL03T	
5			5/25/00		11/9/00	
6						
7	1	**CHLORINATED PHENOLS (µg/L)**				
8	2	**EPA Method SW8040**				
9	3	Pentachlorophenol	**0.33**		0.25	U
10	4	2,4,6-Trichlorophenol	0.25	U	0.25	U
11	5	2,3,6-Trichlorophenol	0.25	U	0.25	U
12	6	2,4,5-Trichlorophenol	0.25	U	0.25	U
13	7	2,3,4-Trichlorophenol	0.25	U	0.25	U
14	8	2,3,5,6- and 2,3,4,6-Tetrachlorophenol	0.25	U	0.25	U
15	9	2,3,4,5-Tetrachlorophenol	0.25	U	0.25	U
16	10					
17	11	**SEMIVOLATILES (µg/L)**				
18	12	**EPA Method SW8270**				
19	13	Phenol	NA		NA	
20	14	4-Methylphenol	NA		NA	
21	15	Isophorone	NA		NA	
22	16	2,4-Dimethylphenol	NA		NA	
23	17	Benzoic Acid	NA		NA	
24	18	Naphthalene	NA		NA	
25	19	2-Methylnaphthalene	NA		NA	
26	20	2,4,6-Trichlorophenol	NA		NA	
27	21	2,4,5-Trichlorophenol	NA		NA	
28	22	Acenaphthene	NA		NA	
29	23	Dibenzofuran	NA		NA	
30	24	Fluorene	NA		NA	
31	25	Pentachlorophenol	NA		NA	
32	26	bis(2-Ethylhexyl)phthalate	NA		NA	
33	27					
34	28	**VOLATILES (µg/L)**				
35	29	**EPA Method SW8260**				
36	30	Acetone	NA		NA	
37	31	Carbon Disulfide	NA		NA	
38	32	2-Butanone	NA		NA	
39	33	Benzene	NA		NA	
40	34	Bromoform	NA		NA	
41	35	Toluene	NA		NA	
42	36	Ethylbenzene	NA		NA	
43	37	Styrene	NA		NA	
44	38	m,p-Xylene	NA		NA	
45	39	o-Xylene	NA		NA	
46	40	1,3,5-Trimethylbenzene	NA		NA	
47	41	1,2,4-Trimethylbenzene	NA		NA	
48	42	Isopropylbenzene	NA		NA	
49	43	n-Propylbenzene	NA		NA	
50	44	tert-Butylbenzene	NA		NA	
51	45	sec-Butylbenzene	NA		NA	
52	46	4-Isopropyltoluene	NA		NA	
53	47	n-Butylbenzene	NA		NA	
54	48	Naphthalene	NA		NA	
55		Methyl tert-butyl ether	NA		NA	
56	49					
57	50	**TOTAL PETROLEUM HYDROCARBONS (mg/L)**				
58	51	**Method OR-DEQ**				
59	52	**TPH-Diesel**	NA		NA	
60	53	**TPH-D Motor Oil**	NA		NA	
61	54	**TPH-Gasoline**	NA		NA	
62	55					

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW15D		LW15D	
4			BR64T		CL03T	
5			5/25/00		11/9/00	
63	56	**PRIORITY POLLUTANT**				
64	57	**METALS (mg/L)**				
65	58	Arsenic (7060)	NA		NA	
66	59	Chromium (6010)	NA		NA	
67	60	Copper (6010)	NA		NA	
68	61	Lead (7421)	NA		NA	
69	62	Nickel (6010)	NA		NA	
70	63	Zinc (6010)	NA		NA	
71	64					
72	65	**MAJOR IONS AND CONVENTIONALS**				
73	66	Calcium (mg/L) (6010)	NA		NA	
74	67	Magnesium (mg/L) (6010)	NA		NA	
75	68	Potassium (mg/L) (6010)	NA		NA	
76	69	Sodium (mg/L) (6010)	NA		NA	
77	70	Alkalinity (mg/L CaCO3) (SM 2320)	NA		NA	
78	71	Carbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
79	72	Bicarbonate (Alkalinity) (mg/L CaCO3) (SM 2320)	NA		NA	
80	73	Total Dissolved Solids (mg/L) (EPA 160.1)	NA		NA	
81	74	Chloride (mg/L) (EPA 325.2)	NA		NA	
82	75	N-Nitrate (mg-N/L) (Calculated)	NA		NA	
83	76	N-Nitrite (mg-N/L) (EPA 354.1)	NA		NA	
84	77	Nitrate + Nitrite (NO2+NO3) (mg-N/L) (EPA 353.2)	NA		NA	
85	78	Sulfate (mg/L) (EPA 375.2)	NA		NA	
86	79					

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW15D		LW15D	
4			BR64T		CL03T	
5			5/25/00		11/9/00	
87	80	**FIELD PARAMETERS**				
88	81	pH (avg)	6.69		6.12	
89	82	Temperature (° C) (avg)	14.6		12.8	
90	83	Conductivity (um/hos)	324		265	
91	84	Dissolved oxygen (mg/L) (avg)	0.67		1.25	
92	85					
93	86	**DIOXINS AND FURANS (ng/L)**				
94	87	**Method 8290**				
95	88	2,3,7,8-TCDF	NA		NA	
96	89	Total TCDF	NA		NA	
97	90	2,3,7,8-TCDD	NA		NA	
98	91	Total TCDD	NA		NA	
99	92	1,2,3,7,8-PeCDF	NA		NA	
100	93	2,3,4,7,8-PeCDF	NA		NA	
101	94	Total PeCDF	NA		NA	
102	95	1,2,3,7,8-PeCDD	NA		NA	
103	96	Total PeCDD	NA		NA	
104	97	1,2,3,4,7,8-HxCDF	NA		NA	
105	98	1,2,3,6,7,8-HxCDF	NA		NA	
106	99	2,3,4,6,7,8-HxCDF	NA		NA	
107	100	1,2,3,7,8,9-HxCDF	NA		NA	
108	101	Total HxCDF	NA		NA	
109	102	1,2,3,4,7,8-HxCDD	NA		NA	
110	103	1,2,3,6,7,8-HxCDD	NA		NA	
111	104	1,2,3,7,8,9-HxCDD	NA		NA	
112	105	Total HxCDD	NA		NA	
113	106	1,2,3,4,6,7,8-HpCDF	NA		NA	
114	107	1,2,3,4,7,8,9-HpCDF	NA		NA	
115	108	Total HpCDF	NA		NA	
116	109	1,2,3,4,6,7,8-HpCDD	NA		NA	
117	110	Total HpCDD	NA		NA	
118	111	OCDF	NA		NA	
119	112	OCDD	NA		NA	
120						
121						
122						

TABLE F-11
PHASE II REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - DEEP WELLS
DETECTED CONSTITUENTS
APRIL 1997 - AUGUST 2005
TIME OIL - NORTHWEST TERMINAL

	A	B	C	D	E	F
1						
2						
3			LW15D		LW15D	
4			BR64T		CL03T	
5			5/25/00		11/9/00	
123		**PAHs (µg/L)**				
124		**EPA Method SW8270 SIM**				
125		Naphthalene	NA		NA	
126		2-Methylnaphthalene	NA		NA	
127		Acenaphthylene	NA		NA	
128		Acenaphthene	NA		NA	
129		Fluorene	NA		NA	
130		Anthracene	NA		NA	
131		Dibenzofuran	NA		NA	