

**TABLE 1
SUMMARY OF 2004/2005 SOIL INVESTIGATION ANALYTICAL RESULTS
CAP SANTE MARINE LEASE AREA
PORT OF ANACORTES, WASHINGTON**

Sample ID Depth: Collection Date:	Preliminary Screening Level (a)	GP1 (5.0) 2004	GP1 (8.0) 2004	GP2 (5.0) 2004	GP2 (10.0) 2004	GP3 (6.0) 2004	GP3 (7.0) 2004	GP3 (9.0) 2004	GP4 (7.0) 2004	GP4 (10.0) 2004
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
Gasoline	100/30 (b)	35 U	31 U	250	40 U	630	320	38 U	20	190 U
Diesel	2,000	50 U	50 U	1,800	50 U	410	NA	50 U	20	190 U
Heavy Oil	2,000	100 U	100 U	67 U	100 U	340 U	NA	100 U	45	390 U
VOLATILE ORGANIC COMPOUNDS (µg/kg)										
Benzene	30	NA	NA	270	NA	2,300	2,300	NA	150	NA
Toluene	7,000	NA	NA	140	NA	600	430	NA	35 U	NA
Ethylbenzene	6,000	NA	NA	33 U	NA	4,600	3,100	NA	35 U	NA
Xylenes (total)	9,000	NA	NA	189	NA	19,200	12,400	NA	71 U	NA

TABLE 2
SUMMARY OF 2004/2005 GROUNDWATER INVESTIGATION ANALYTICAL RESULTS
CAP SANTE MARINE LEASE AREA
PORT OF ANACORTES, WASHINGTON

Sample ID Collection Date:	Preliminary Screening Level (a)	GP1 2004	GP2 2004	GP3 2004	GP4 2004	GP5B 2004	GP6 2004	CSM07-W1 2005	CSM08-W1 2005
TOTAL PETROLEUM HYDROCARBONS (µg/L)									
Gasoline	800/1,000 (b)	0.25 U	460	4,100	250 U	400	250 U	1,000	3,500
Diesel	500	250 U	2,400	NA	250	370	250 U	2,100	6,500
Heavy Oil	500	500 U	500 U	NA	500 U	500 U	500 U	500 U	2,500 U
VOLATILE ORGANIC COMPOUNDS (µg/L)									
Benzene	5	1.0 U	1.0 U	390	1.0 U	3.4	1.0 U	80	530
Toluene	1,000	1.0 U	1.0 U	18	1.0 U	1.4	1.0 U	3.5	22
Ethylbenzene	700	1.0 U	1.0 U	65	1.0 U	2.3	1.0 U	1.0	34
Xylenes (total)	1,000	1.0 U	1.3	212	1.0 U	1.9	1.0 U	4.1	36

TABLE 2
SUMMARY OF 2004/2005 GROUNDWATER INVESTIGATION ANALYTICAL RESULTS
CAP SANTE MARINE LEASE AREA
PORT OF ANACORTES, WASHINGTON

Sample ID Collection Date:	Preliminary Screening Level (a)	CSM09-W1 2005	CSM10-W1 2005	CSM11-W1 2005
TOTAL PETROLEUM HYDROCARBONS (µg/L)				
Gasoline	800/1,000 (b)	6,700	4,000	2,900
Diesel	500	14,000	28,000	12,000
Heavy Oil	500	2,500 U	10,000 U	2,500 U
VOLATILE ORGANIC COMPOUNDS (µg/L)				
Benzene	5	21	930	270
Toluene	1,000	22	20	3.9
Ethylbenzene	700	190	260	71
Xylenes (total)	1,000	72.8	76	4.0

U = Indicates compound not detected at the given reporting limit

NA = Not analyzed.

Boxed cells indicate an exceedance of Model Toxics Control Act (MTCA) Method A cleanup levels for groundwater.

(a) MTCA Method A cleanup levels were used as preliminary screening levels during the 2004 and 2005 Investigations.

(b) The MTCA Method A cleanup level for gasoline-range petroleum hydrocarbons is 1,000 µg/L when benzene is not present and 800 µg/L when benzene is present

Notes:

- Source: Floyd Snider McCarthy. 2004. *Letter Report, Results of Limited Environmental Due Diligence Investigation, Cap Sante Boat Haven - Anacortes, Washington.* June 14.
- Source: Floyd Snider McCarthy. 2005. *Limited Environmental Due Diligence Investigation Report, Former Shell Oil Tank Farm, Cap Sante Marine Lease Area.* November 8.

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Sample ID Depth: Collection Date:	Preliminary Screening Level (a)	GP5B (6.0) 2004	GP5B (9.0) 2004	GP6 (2.5) 2004	GP6 (5.0) 2004	CSM07-SI (8.0-9.5) 2005	CSM08-S1 (4.0-5.7) 2005	CSM09-S1 (8.0-10.0) 2005	CSM09-S2 (10.0-12.0) 2005	CSM10-S1 (12.0-13.0) 2005
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
Gasoline	100/30 (b)	510	230	31 U	37 U	320 J	1,500 J	490 J	36 J	1,100 J
Diesel	2,000	NA	390	50 U	50 U	1800	4,100	1,900	280	2,600
Heavy Oil	2,000	NA	330 U	100 U	100 U	120 U	240 U	130 U	120	140 U
VOLATILE ORGANIC COMPOUNDS (µg/kg)										
Benzene	30	580	NA	NA	NA	32 J	2,500 J	620 J	86 U	540 J
Toluene	7,000	350	NA	NA	NA	64 UJ	860 J	220 J	170 UJ	250 J
Ethylbenzene	6,000	710	NA	NA	NA	64 UJ	1,500 J	820 J	170 UJ	6,700 J
Xylenes (total)	9,000	560	NA	NA	NA	110 J	1,730 J	530 J	340 UJ	970 J

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Sample ID Depth: Collection Date:	Preliminary Screening Level (a)	CSM11-S1 (4.0-5.3) 2005	CSM11-S2 (8.0-10.3) 2005
TOTAL PETROLEUM HYDROCARBONS (mg/kg)			
Gasoline	100/30 (b)	400 J	38 J
Diesel	2,000	3,800	6.8 U
Heavy Oil	2,000	270 U	14 U
VOLATILE ORGANIC COMPOUNDS (µg/kg)			
Benzene	30	250 J	40 U
Toluene	7,000	92 UJ	80 UJ
Ethylbenzene	6,000	560 J	80 UJ
Xylenes (total)	9,000	120 J	160 UJ

U = Indicates compound not detected at the given reporting limit

J = Sample exceeded allowable holding time at analytical laboratory

UJ = Compound not detected at the given reporting limit, sample exceeded allowable holding time at analytical laboratory.

NA = Not analyzed.

Boxed cells indicate an exceedance of Model Toxics Control Act (MTCA) Method A soil cleanup levels for unrestricted land use

(a) MTCA Method A cleanup levels were used as preliminary screening levels during the 2004 and 2005 Investigations.

(b) The MTCA Method A cleanup level for gasoline-range petroleum hydrocarbons is 100 mg/kg when benzene is not present and 30 mg/kg when benzene is present

Notes:

- Source: Floyd Snider McCarthy. 2004. *Letter Report, Results of Limited Environmental Due Diligence Investigation, Cap Sante Boat Haven - Anacortes, Washington*. June 14.
- Source: Floyd Snider McCarthy. 2005. *Limited Environmental Due Diligence Investigation Report, Former Shell Oil Tank Farm, Cap Sante Marine Lease Area*. November 8.

**TABLE 3
PRELIMINARY GROUNDWATER CLEANUP LEVELS FOR CONSTITUENTS ANALYZED
CAP SANTE MARINE SITE**

Constituent	AWQC for Protection of Aquatic Life - Acute (b)	AWQC for Protection of Aquatic Life - Chronic (b)	AWQC for Protection of Human Health - Organisms Only (c)	National Recommended Water Quality Criteria (a)			MTCA Method B Standard Formula Surface Water Values Carcinogen	MTCA Method B Standard Formula Surface Water Values Non Carcinogen	Concentration Associated with 10 ⁻⁵ Risk (if carcinogen)	Other Factors			Preliminary Cleanup Level (e)
				Protection of Aquatic Life - Acute	Protection of Aquatic Life - Chronic	Protection of Human Health - Organisms Only				Protective of Benthic Organisms in Sediment (d)	MTCA Method A	Background	
DISSOLVED METALS (mg/L)													
Chromium (III)	--	--	--	--	--	--	--	240	--	--	0.01	--	240
Chromium (VI)	1.1	0.05	--	1.1	0.05	--	--	0.49	--	0.05 (j)	--	--	0.05
Copper	0.005	0.003	--	0.0048	0.003	--	--	2.7	--	--	0.020 (f)	--	0.020
Lead	0.21	0.01	--	0.21	0.0081	--	--	--	--	--	--	--	0.0081
Zinc	0.090	0.081	--	0.09	0.081	26	--	16.5	--	--	0.16	--	0.16
TOTAL DIESEL RANGE PETROLEUM HYDROCARBONS (µg/L)													
Gasoline-Range	--	--	--	--	--	--	--	--	--	To be Determined (d)	800/1,000 (g,h)	--	To Be Determined
Diesel-Range	--	--	--	--	--	--	--	--	--	To be Determined (d)	500 (g)	--	To Be Determined
Motor Oil-Range	--	--	--	--	--	--	--	--	--	To be Determined (d)	500 (g)	--	To Be Determined
VOLATILES (µg/L)													
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--	20	--	20
1,2-Dibromoethane (EDB)	--	--	--	--	--	--	--	--	--	--	0.01	--	0.01
1,2-Dichloroethane (EDC)	--	--	99	--	--	37	59.4	--	594	--	5	--	37
n-Hexane	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	71	--	--	51	22.7	1,496	227	--	5	--	51
Ethylbenzene	--	--	2900	--	--	2100	--	6,914	--	--	700	--	2,100
Toluene	--	--	200,000	--	--	15,000	--	19,000	--	--	1,000	--	15,000
Xylene	--	--	--	--	--	--	--	--	--	--	1,000	--	1,000
PAHs (µg/L)													
Naphthalene	--	--	--	--	--	--	--	4,940	--	--	160 (i)	--	4940
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	-- (i)	--	--
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	-- (i)	--	--
Benzo(a)pyrene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	0.1	--	0.018
Benzo(a)anthracene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
Benzo(b)fluoranthene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
Benzo(k)fluoranthene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
Chrysene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
Dibenzo(a,h)anthracene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
Indeno(1,2,3-cd)pyrene	--	--	0.031	--	--	0.018	0.0296	--	0.296	--	--	--	0.018
cPAH TEQ	--	--	0.031	--	--	--	--	--	--	--	0.1	--	0.1
PCBs (µg/L)													
Total PCBs	10	0.03	0.00017	--	0.03	0.000064	--	--	--	--	0.1	--	0.000064

TABLE 3
PRELIMINARY GROUNDWATER CLEANUP LEVELS FOR CONSTITUENTS ANALYZED
CAP SANTE MARINE SITE

Note: Shaded cell indicates basis for preliminary cleanup level.

- (a) National Recommended Water Quality Criteria (EPA 2006).
- (b) Ambient water quality criteria for protection of aquatic life from WAC 173-201A-040 and 40 C.F.R. Part 131.
- (c) Ambient water quality criteria for protection of human health from 40 C.F.R. Part 131d (National Toxics Rule).
- (d) Cleanup level will be calculated using sediment toxicity levels and the EPA Equilibrium Partitioning Model for Sediment. However, if current sediment conditions are protective of benthic organisms as determined by bioassay testing, groundwater TPH cleanup levels protective of benthic organisms will not be calculated.
- (e) Preliminary cleanup level based on lowest soil criteria corrected for background, as indicated by shading. Further adjustments to those preliminary cleanup levels that are found to be lower than the practical quantitation limits may be necessary, in accordance with WAC 173-340-720(7)(c).
- (f) Natural background based on "Draft Report, Sections 1-7 Background Concentrations of Selected Chemicals in Water, Soil, Sediments, or Air of Washington State (PTI 1989).
- (g) Preliminary cleanup level based on MTCA Method A groundwater cleanup level in accordance with WAC 173-340-730(a)(b)(iii)(c).
- (h) MTCA Method A cleanup level is 800 µg/L when benzene is present and 1,000 µg/L when benzene is not present.
- (i) MTCA Method A cleanup level is a total value for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.
- (j) MTCA Method a cleanup level is for total chromium.

**TABLE 4
PRELIMINARY SOIL CLEANUP LEVELS
FOR CONSTITUENTS ANALYZED
CAP SANTE MARINE SITE**

Constituent	Protection of Human Health		Protection of Groundwater		Protection of Sediment	Other Factors		Preliminary Cleanup Level (e)	
	MTCA Method B Soil-Direct Contact Unrestricted Land Use Carcinogen	MTCA Method B Soil-Direct Contact Unrestricted Land Use Non Carcinogen	Unsaturated Zone	Saturated Zone	Protective of Benthic Organisms in Sediment (c)	MTCA Method A Unrestricted Land Use	Soil Background (d)	Unsaturated Zone	Saturated Zone
			MTCA Method B Protective of Groundwater as Marine Surface Water (a)	MTCA Method B Protective of Groundwater as Marine Surface Water (b)					
Total Metals (mg/kg)									
Chromium III	--	120,000	1,000,000	1,000,000		2,000	42	120,000	120,000
Hexavalent Chromium	--	240	19	1	--	19	--	19	1
Copper	--	2960	1.4	0.07	--	--	36	36	36
Lead	--	--	1,600	81	--	250	17	250	81
Zinc	--	24,000	101	5	--	--	86	101	86
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Gasoline-Range	--	--	--	--	To Be Determined (c)	100/30 (f)		100/30 (g)	100/30 (g)
Diesel-Range	--	--	--	--	To Be Determined (c)	2,000	--	2,000 (g)	2,000 (g)
Motor Oil-Range	--	--	--	--	To Be Determined (c)	2,000	--	2,000 (g)	2,000 (g)
PAHs (µg/kg)									
Naphthalene	--	1,600,000	138,000	700	--	5	--	138,000	700
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	137	--	350	17	--	100	--	137	17
Benzo(a)anthracene	TEQ (h)	--	130	6.4	--	--	--	-- (h)	6.4
Benzo(b)fluoranthene	TEQ (h)	--	440	22	--	--	--	-- (h)	22
Benzo(k)fluoranthene	TEQ (h)	--	440	22	--	--	--	-- (h)	22
Chrysene	TEQ (h)	--	140	7	--	--	--	-- (h)	7
Dibenzo(a,h)anthracene	TEQ (h)	--	640	32	--	--	--	-- (h)	32
Indeno(1,2,3-cd)pyrene	TEQ (h)	--	1,200	62	--	--	--	-- (h)	62
Total cPAH - benzo(a)pyrene TEQ (i)	137	--	--	--	--	100	--	137	--
VOLATILES (µg/kg)									
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	100		100	--
1,2-Dibromoethane (EDB)	11.8	--	--	--	--	5		12	--
1,2-Dichloroethane (EDC)	11,000	--	180	12	--	--		180	12
n-Hexane	--	4,800,000	--	--	--	--		4,800,000	4,800,000
Benzene	18,200	240,000	290	18	--	30		290	18
Ethylbenzene	--	8,000,000	18,000	1,030	--	6,000		18,000	1,030
Toluene	--	16,000,000	109,000	6,400	--	7,000		109,000	6,400
Xylene	--	160,000,000	--	--	--	--		160,000,000	160,000,000
PCBs (µg/kg)									
Total PCBs	--	--	--	--	--	1,000	--	1,000	--

**TABLE 4
SOIL CLEANUP LEVELS
FOR CONSTITUENTS ANALYZED
CAP SANTE MARINE SITE**

- (a) Calculated using fixed parameter 3-phase partitioning model, WAC 173-340-747(4) and preliminary groundwater cleanup levels shown in Table 3 of this report.
- (b) Calculated using fixed parameter 3-phase partitioning model, WAC 173-340-747(4)(e) and preliminary groundwater cleanup levels shown in Table 3 of this report.
- (c) Cleanup level will be calculated using sediment toxicity levels and the EPA Equilibrium Partitioning Model for Sediment. However, if current sediment conditions are protective of benthic organisms as determined by bioassay testing, soil TPH cleanup levels protective of benthic organisms will not be calculated.
- (c) Natural background (statewide 90th percentile value) from Natural Background Soil Metals Concentrations in Washington State, Ecology 1994.
- (e) Preliminary cleanup level based on lowest soil criteria corrected for background, as indicated by shading. Further adjustments to those preliminary cleanup levels that are found to be lower than the practical quantitation limits may be necessary, in accordance with WAC 173-340-740(5)(c).
- (f) MTCA Method A cleanup level is 100 mg/kg when benzene is not present and 30 mg/kg when benzene is present.
- (g) TPH cleanup levels will be adjusted downward, as necessary, to protect benthic organisms in sediment.
- (h) In addition to this proposed cleanup level for individual PAHs, a TEQ will be computed for each sample containing carcinogenic PAHs above reporting limits and compared to the benzo(a)pyrene cleanup level in accordance with WAC 173-340-708(8)(e).
- (i) Toxicity equivalency methodology in WAC 173-340-708(8).