

MEMORANDUM FOR RECORD

SUBJECT: DETERMINATION OF THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER DMMP EVALUATION PROCEDURES FOR PORT OF PENINSULA, NAHCOTTA BOAT BASIN MAINTENANCE DREDGING PROJECT (2003-2-01316, DAIS # POPNB-1-A-F-195) WITH PROPOSED DISPOSAL AT AN APPROVED UPLAND SITE AND AT THE GOOSE POINT OPEN WATER DISPOSAL SITE.

1. **Introduction.** The Port of Peninsula proposes to maintenance dredge 145,000 cubic yards of sediment from its moorage basin at Nahcotta, Washington. The following summary reflects the DMMP agencies (Corps of Engineers, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) consensus decision on the acceptability of the sampling plan and all relevant test data to make a determination of suitability for the disposal of the material at a Port-owned upland disposal site, and at the Goose Point open-water disposal site.

2. The ranking for this area is "moderate" based on the guidance found in the Grays Harbor and Willapa Bay Evaluation Procedures Management Manual (1995) and on review of the project by the DMMP agencies in 2003.

3. A sampling and analysis plan was completed for this project and approved by the DMMP agencies on 25 August 2003. Sampling for this project was performed on 26 September 2003.

<i>SAP submitted Date</i>	<i>1 August 2003</i>
SAP approval date	25 August 2003
Sampling date	26 September 2003
Data Report submittal date	20 February 2003
Recency determination dates	26 September 2008

4. Samples were taken from a total of 17 locations and composited for four analyses. The sampling and compositing plan is presented in Table 1. Sampling was completed using a gravity corer.

5. There were no exceedances of 2003 DMMP screening levels for the standard list of chemicals of concern. Chemistry results for detected chemicals of concern are listed in Table 2. All detection limits were below screening levels. Matrix Spike recoveries were outside quality control limits for 1,4 Dichlorobenzene, 1,2,4 Dichlorobenzene, Acenaphthene and Pyrene for Composite 1-B. Despite the low recoveries for these analytes, the method reporting limit is sufficient to indicate that they are not present in the sediment above screening levels.

6. Following completion of the sampling, the Port of Peninsula proposed an increase in volume from an original estimate of 10,000 cubic yards to 145,000 cubic yards. The increased volume is the result of a proposal to dredge one foot deeper than originally proposed. The dredging footprint remains the same. The sampling intensity for this project was reviewed, and the number of samples and analyses are adequate to characterize the increased volume, based on the guidelines for a moderate-ranked area, with the exception of DMMU III, which would have required one more sample under the guidelines. The increased one foot of dredging depth was also not sampled. The agencies reviewed the data from the sampling and testing and determined that the likelihood for this one-foot of sediment to be different in characteristics from the other tested material was small. Based on this review, the agencies determined that the sampling was adequate for decision-making on all 145,000 cubic yards.
7. In summary, the DMMP-approved sampling and analysis plan was followed, and quality assurance, quality control guidelines specified by the DMMP were generally followed. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the DMMP program. Based on the results of the chemical testing, the consensus determination of the DMMP agencies is that 145,000 cubic yards of material from the Port of Peninsula Nahcotta Boat Basin maintenance dredging project are suitable for placement at an upland site or at the Goose Point open-water disposal site.
8. This memorandum documents the suitability of proposed dredged sediments for upland disposal or for beneficial use. It does not constitute final agency approval of the project. A dredging plan for this project must be completed as part of the final project approval process. A final decision will be made after full consideration of agency and public input, and after an alternatives analysis is done under Section 404 (b) 1 of the Clean Water Act.

Port of Peninsula, Nahcotta Boat Basin
20003-2-01316

Concur:

3/10/04
Date

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Table 1. Sampling and Compositing Plan

DMMU	Sample Station	Sample Interval
DMMU 1-A	1-1	0-4 feet
	1-3	0-4 feet
	1-4	0-4 feet
	1-5	0-4 feet
	1-7	0-4 feet
DMMU1-B	1-8	0-4 feet
	1-9	0-4 feet
	1-12	0-4 feet
	1-13	0-4 feet
	1-15	0-4 feet
DMMU II	II-1	0-4 feet
	II-2	0-4 feet
	II-5	0-4 feet
	II-7	0-4 feet
DMMU III	III-2	0-4 feet
	III-3	0-4 feet
	III-6	0-4 feet

Table 2. Summary of chemical and biological testing results

Chemical Parameter	Screening Level	Composite I-A	Composite I-B	Composite II	Composite III
Metals					
Antimony	—	0.1	0.11	0.10	0.14
Arsenic	57	7.4	7.6	7.5	8.0
Cadmium	0.96	0.37	0.34	0.33	.043
Chromium	—	28.5	26.7	29.3	27.2
Copper	81	28.6	24.1	31.0	29.1
Lead	66	12	11.8	12.4	12.3
Mercury	0.21	.08	0.07	0.06	0.08
Nickel	—	18.5	17.5	19.0	19.4
Silver	1.2	0.12	0.11	0.13	0.12
Zinc	160	69.7	65.2	72.5	79.0
Chemical Parameter	Screening Level	Composite I-A	Composite I-B	Composite II	Composite III
Organics					
Acenaphthylene	64	3.8		3.7	
Phenanthrene	320	75	9.4	9.3	8.5
Anthracene	130	6.4	4.6	7.5	3.4
2-Methylnaphthalene	67	3.4			
Fluoranthene	630	100	22	40	20
Pyrene	430	79	25	53	29
Benzo(a)anthracene	450	23	14	22	12
Chrysene	670	42	23	64	18
Benzofluoranthenes (b+k)	800	56	33	78	28
Benzo(a)pyrene	680	20	16	25	14
Ideno(1,2,3-c,d)pyrene	69	16	12	20	8.8
Benzo(g,h,i)perylene	540	9.1			
Phthalates					
Di-n-butyl phthalate	1400		7.5		28
Bis(2-ethylhexyl) phthalate	3100	19	8.7	13	6.4
Phenols					
Phenol	120	13	14	17	14
Miscellaneous Extractables					
Dibenzofuran	54	8.3			
Pesticides					
Total DDT	6.9	1.06	2.22	1.9	0.28
Dieldrin	10	0.32	0.23	0.25	0.58

Table 3. Sediment Conventional and Grain Size Data

			DMMU ID:	1-a	1-b	II	III
			Rank:	M	M	M	M
	Units			Conc.			
Total Solids	%			44.2	48.2	41.3	47.5
Total Volatile Solids	%						
Total Organic Carbon	%			2.2	2.0	2.3	2.25
Total Ammonia	mg/kg			37.3	24.3	29.4	26.3
Total Sulfides	mg/kg			1,650	870	1,900	632
Gravel	%			4.4	2.4	0.3	
Sand	%			3.2	19.0	5.5	
Silt	%			56.3	47.7	58.7	
Clay	%			36.1	30.9	35.5	
Fines (percent silt + clay)	%			92.4	78.6	94.2	
preferred reference match:	%			NA	NA	NA	NA
PSDDA Determination:				P	P	P	P

DAIS Value Table - Dry Weight Basis: Port of Pennisula, Nahcotta Boat Basin, Willapa

Project:

POPNB1AF195

	units	C1	C2	C3	C4
SEDIMENT CONVENTIONALS					
Total Solids	%	44.2	48.2	41.3	47.5
Volatile Solids	%	7.28	6.28	7.03	7.4
Total Organic Carbon	%	2.21	2.03	2.29	2.25
Ammonia	MG/KG	37.3	24.3	29.4	26.3
Total Sulfides	MG/KG	1650	870	1900	632
METALS					
Antimony (1)	MG/KG	0.1 n	0.11 n	0.1 n	0.14 n
Arsenic	MG/KG	7.4	7.6	7.5	8
Cadmium	MG/KG	0.37	0.34	0.33	0.43
Chromium (4)	MG/KG	28.5	26.7	29.3	27.2
Copper	MG/KG	28.6	24.1	31	29.1
Lead	MG/KG	12	11.8	12.4	12.3
Mercury	MG/KG	0.08	0.07	0.06	0.08
Nickel	MG/KG	18.5	17.5	19	19.4
Selenium (4)	MG/KG	-	-	-	-
Silver	MG/KG	0.12	0.11	0.13	0.12
Zinc	MG/KG	69.7	65.2	72.5	79
LPAH					
2-Methylnaphthalene (1)	UG/KG	3.4 j	13 u	14 u	13 u
Acenaphthene (1)	UG/KG	14 u	13 u	14 u	13 u
Acenaphthylene (1)	UG/KG	3.8 j	13 u	3.7 j	13 u
Anthracene (1)	UG/KG	6.4 j	4.6 j	7.5 j	3.4 j
Fluorene (1)	UG/KG	14 u	13 u	14 u	13 u
Naphthalene (1)	UG/KG	14 u	13 u	14 u	13 u
Phenanthrene (1)	UG/KG	75	9.4 j	9.3 j	8.5 j
Total LPAH (1)	UG/KG	75	9.4 j	9.3 j	8.5 j
HPAH					
Benzo(a)anthracene (1)	UG/KG	23	14	22	12 j
Benzo(a)pyrene (1)	UG/KG	20	16	25	14
Benzo(g,h,i)perylene (1)	UG/KG	9.1 j	13 u	14 u	13 u
Benzofluoranthenes (1)	UG/KG	56	33	78	28 j
Chrysene (1)	UG/KG	42	23	64	18
Dibenzo(a,h)anthracene (1)	UG/KG	14 u	13 u	14 u	13 u
Fluoranthene	UG/KG	100	22	40	20
Indeno(1,2,3-c,d)pyrene (1)	UG/KG	16	12 j	20	8.8 j
Pyrene	UG/KG	79	25	53	29
Total HPAH (1)	UG/KG	343.1	145	302	129.8
CHLORINATED HYDROCARBONS					
1,2,4-Trichlorobenzene (1)	UG/KG	14 u	13 u	14 u	13 u
1,2-Dichlorobenzene (1)	UG/KG	14 u	13 u	14 u	13 u
1,3-Dichlorobenzene (3)	UG/KG	14 u	13 u	14 u	13 u
1,4-Dichlorobenzene (1)	UG/KG	14 u	13 u	14 u	13 u
Hexachlorobenzene	UG/KG	14 u	13 u	14 u	13 u
PHTHALATES					
Bis(2-ethylhexyl)phthalate (1)	UG/KG	19 j	8.7 j	13 j	6.4 j
Butyl benzyl phthalate (1)	UG/KG	14 u	13 u	14 u	13 u
Di-n-butyl phthalate (1)	UG/KG	14 u	7.5 j	14 u	28
Di-n-octyl phthalate (1)	UG/KG	14 u	13 u	14 u	13 u
Diethyl phthalate (1)	UG/KG	14 u	13 u	14 u	13 u
Dimethyl phthalate (1)	UG/KG	14 u	13 u	14 u	13 u

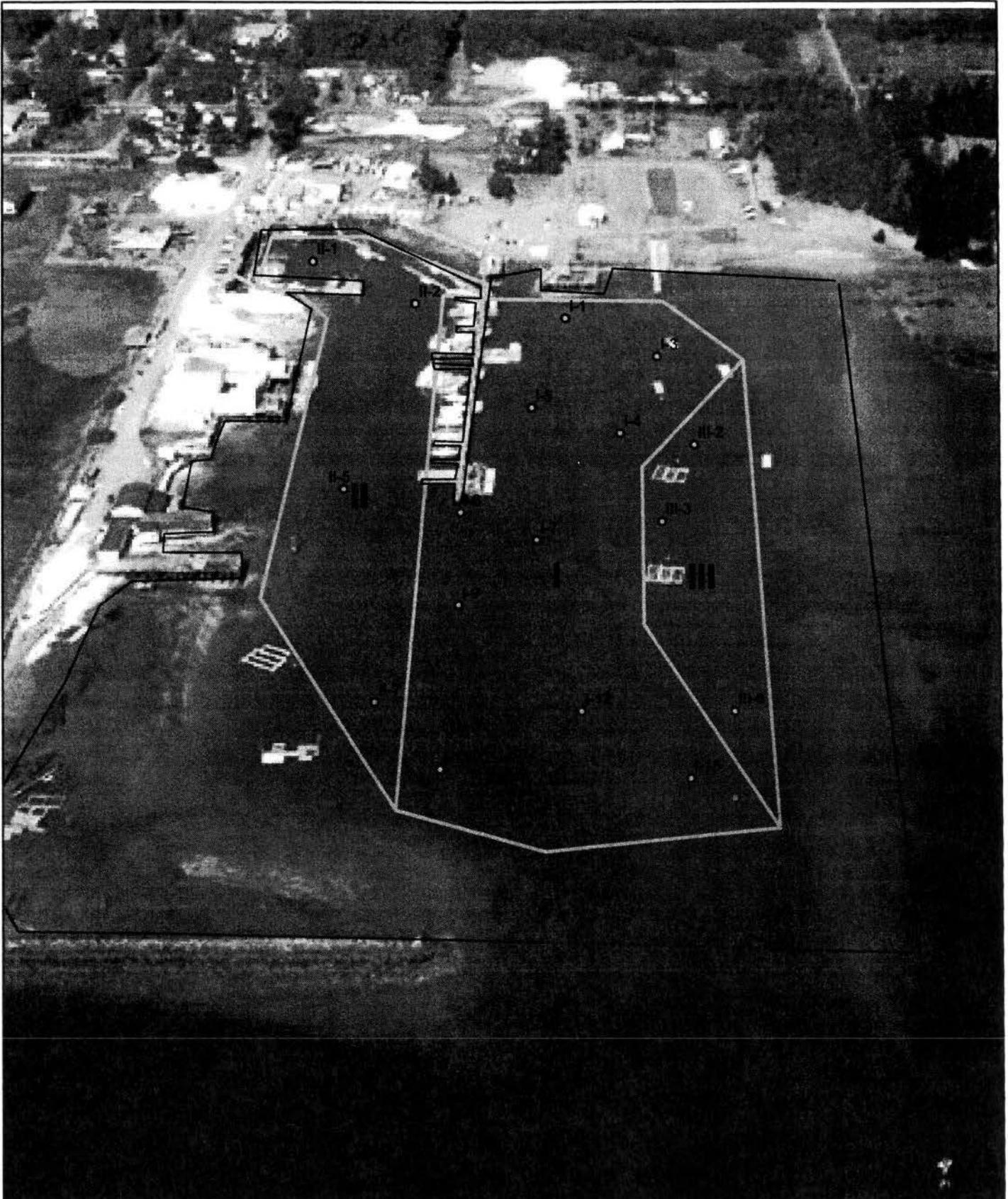
	units	C1	C2	C3	C4
PHENOLS					
2 Methylphenol (1)	UG/KG	14 u	13 u	14 u	13 u
2,4-Dimethylphenol (1)	UG/KG	13 u	12 u	14 u	12 u
4 Methylphenol (1)	UG/KG	14 u	13 u	14 u	13 u
Pentachlorophenol	UG/KG	68 u	62 u	70 u	61 u
Phenol (1)	UG/KG	13 j	14 j	17 j	14 j
MISCELLANEOUS EXTRACTABLES					
Benzoic acid (1)	UG/KG	280 u	250 u	280 u	250 u
Benzyl alcohol (1)	UG/KG	14 u	13 u	14 u	13 u
Dibenzofuran (1)	UG/KG	8.3 j	13 u	14 u	13 u
Hexachlorobutadiene (1)	UG/KG	14 u	13 u	14 u	13 u
Hexachloroethane (1)	UG/KG	14 u	13 u	14 u	13 u
N-Nitrosodiphenylamine (1)	UG/KG	14 u	13 u	14 u	13 u
VOLATILE ORGANICS					
Ethylbenzene (1)	UG/KG	-	-	-	-
Tetrachloroethene (1)	UG/KG	-	-	-	-
Total Xylene (1)	UG/KG	-	-	-	-
Trichloroethene (1)	UG/KG	-	-	-	-
PESTICIDES AND PCBs					
Aldrin (3)	UG/KG	1.4 u	1.4 u	1.4 u	1.4 u
Chlordane (2)	UG/KG	-	-	-	-
Dieldrin (3)	UG/KG	0.32 j	0.23 j	0.25 j	0.58 jp
Heptachlor (3)	UG/KG	1.4 u	1.4 u	1.4 u	1.4 ui
Lindane (3)	UG/KG	1.4 u	1.4 u	1.4 ui	1.4 ui
Total DDT	UG/KG	1.06 jp	2.22 jp	1.9 j	0.28 jp
Total PCBs	UG/KG	27 u	27 u	27 u	27 u
ORGANOMETALLICS					
Tributyltin (porewater) (2)	UG/L	-	-	-	-

A dash indicates that no data exists for this analyte in DAIS

(1) = No BT exists (2) = No ML exists (3) = No BT or ML exists (4) = No SL or ML exists

END OF REPORT

Port of Peninsula Nahcotta Boat Basin DMMUs and Sample Sites



2003 Oblique Aerial Photo