Operations Division
Technical Support Branch
Dredged Material Management Office

June 27, 1997

Memorandum For Record:

SUBJECT: DMMP AGENCY DETERMINATION REGARDING FREQUENCY/RECENCY GUIDELINES FOR THE 1997 MAINTENANCE DREDGING OF THE SWINOMISH CHANNEL OPERATIONS AND MAINTENANCE PROJECT (CENPS-OP-TS-NS-100 / 23 January 1997) AND THE SUITABILITY OF THIS MATERIAL FOR BENEFICIAL USES AT AN EELGRASS MITIGATION SITE IN FIDALGO BAY.

1. This memorandum documents the DMMP agency determination regarding the frequency/recency of previous collected PSDDA characterization data for the above referenced project for either open-water disposal and/or an appropriate beneficial uses project.

2. The Corps of Engineers is scheduled to maintenance dredge approximately 40,000 to 60,000 cubic yards of predominately clean sand from the Swinomish Channel and dispose of the material at either the Rosario Straits dispersive open-water disposal site, or use as fill material at an eelgrass habitat restoration project in Fidalgo Bay.

3. Sediments from the low ranked Swinomish Channel maintenance project were sequentially characterized in 1988/1989 and again in 1994. Under current recency and frequency guidelines, dredging without additional testing is allowed for up to 5-7 years if there is no "reason to believe" that sediment quality has been degraded since the last testing date. There is no "reason to believe" that sediment quality has been degraded since the 1994 evaluation of the material.

4. Sediment characterization results from 1989 and 1994 were repackaged and evaluated relative to SMS sediment quality standards (SQS) to validate the quality of the material for a beneficial use alternative in Fidalgo Bay.

5. An examination of the chemistry data for the four 1988/1989 and three 1994 carbon normalized samples results in the following findings. As shown in Table 1, the total organic carbon (TOC) concentrations were very low in all of the 1989 samples (e.g., 0.04% to 0.09%) and also very low for all three 1994 samples (e.g., 0.02% to 0.07%). This makes analyzing the carbon normalized chemistry results problematic. Under the SMS guidelines, low organic carbon values less than 0.5% can lead to arbitrary exceedances of the sediment management standards. In those instances caution should be exercised when comparing carbon normalized chemistry to SMS criteria, and an alternative is to compare the dry weight values with PSDDA screening level guidelines or comparison to chemical specific lowest apparent effects threshold (LAET) values. Table 1 depicts the results of these analyses compared to the PSDDA

SL, SMS-SQS, and LAET for those chemicals exceeding the SMS SQS guidelines. In all cases the exceedances for SMS criteria are directly attributable to either the low organic carbon values noted in these samples or attributable to the sample specific detection limits. All samples were below the PSDDA screening levels, and all the chemicals exceeding the SMS criteria were below the dry weight LAET values.

6. The Agencies concluded based on the above discussion of testing recency and frequency that no testing of this material is necessary. Additionally, examination of the sediment quality data relative to SMS criteria indicate that all the 40,000 to 60,000 cy of material is suitable for either open-water disposal at the Rosario Straits disposal site and/or placement in Fidalgo Bay at an eelgrass mitigation site.

7. This memorandum documents the suitability of proposed dredged sediments for placement at either a PSDDA open-water disposal site and/or at a potential eelgrass mitigation site in Fidalgo Bay. It does not constitute final agency approval of the project. During the public comment period which follows a public notice, the resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under Section 404(b)(1) of the Clean Water Act.

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Concur:

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Table 1. Comparative analysis of Swinomish Channel O&M 1989/1994 data to PSDDA, SMS, and LAET criteria

PARAMETERS:	PSDDA SL	SMS SQS*	LAET (dry wgt)	1989 C1 (1989) (dry wgt)	C1 (1989) (c-norm)	C2 (1989) (dry wgt)	C2 (1989) (c-norm)	C3 (1989) (dry wgt)	C3 (1989) (c-norm)	C4 (1989) (dry wgt)	C4 (1989) (c-norm)	1994 C1 (1994) (dry wgt)	C1 (1994) (c-norm)	C2 (1994) (dry wgt)	C2 (1994) (c-norm)	C3 (1994) (dry wgt)	C3 (1994) (c-norm)
Total Organic Carbon		>0.5%			0.09%		0.04%		0.04%		0.08%		0.07%		0.03%		0.02%
SEMIVOLATILE ORGANICS-LPAH (ppb)																	
2-Methylnaphthalene	67	38	670											18.00 u	60.00	18.00 u	90.00
Acenaphthene	63	16	500									19.00 u	27.14	18.00 u	60.00	18.00 u	90.00
Acenaphthylene	64	66	1300													18.00 u	90.00
Fluorene	64	23	540									19.00 u	27.14	18.00 u	60.00	18.00 u	90.00
Phenanthrene	320	100	1500													42.00	210.00
SEMIVOLATILE ORGANICS-HPAH (ppb)																	
Benzo(g,h,i)perylene	540	31	670											18.00 u	60.00	18.00 u	90.00
Benzofluoranthenes	800	230	3200											18.00 u	60.00	18.00 u	90.00
Chrysene	670	110	1400											18.00 u	60.00	18.00 u	90.00
Dibenzo(a,h)anthracene	120	12	230			8.00 u	20.00					19.00 u	27.14	18.00 u	60.00	18.00 u	90.00
Fluoranthene	630	160	1700									19.00 u	27.14	18.00 u	60.00	51.00	255.00
Indeno(1,2,3-c,d)pyrene	69	34	600											18.00 u	60.00	18.00 u	90.00
CHLORINATED HYDROCARBONS (ppb)																	
1,2,4-Trichlorobenzene	13	0.81	31	0.80 u	0.89	0.80 u	2.00	2.00 u	5.00	2.00 u	2.50	5.60 u	8.00	5.30 u	17.67	5.30 u	26.50
1,2-Dichlorobenzene	19	2.3	35	6.00 u	6.67	6.00 u	15.00	5.00 u	12.50	6.00 u	7.50	2.00 u	2.86	2.00 u	6.67	2.00 u	10.00
1,4-Dichlorobenzene	26	3.1	11	6.00 u	6.67	6.00 u	15.00	5.00 u	12.50	6.00 u	7.50			2.00 u	6.67	2.00 u	10.00
Hexachlorobenzene	23	0.38	22					0.20 u	0.50			11.00 u	15.71	11.00 u	36.67	11.00 u	55.00
PHTHALATES (ppm)																	
Bis(2-ethylhexyl)phthalate	3100	47	1300			21.00	52.50							18.00 u	60.00	18.00 u	90.00
Butyl benzyl phthalate	470	4.9	63	5.00 u	5.56	3.00 u	7.50	9.00 u	22.50	8.00 u	10.00	19.00 u	27.14	18.00 u	60.00	18.00 u	90.00
Di-n-octyl phthalate	6200	58	6200											18.00 u	60.00	18.00 u	90.00
Diethyl phthalate	97	61	200											18.00 u	60.00	18.00 u	90.00
Dimethyl phthalate	160	53	71											18.00 u	60.00	18.00 u	90.00
MISC EXTRACTABLES (ppb)																	
Dibenzofuran	54	15	540									19.00 u	27.14	18.00 u	60.00	18.00 u	90.00
Hexachlorobutadiene	29	3.9	11									15.00 u	21.43	14.00 u	46.67	14.00 u	70.00
N-Nitrosodiphenylamine	28	11	28									11.00 u	15.71	11.00 u	36.67	11.00 u	55.00
Total PCBs	130	12	130									38 u	54.29	35.00 u	116.67	36.00 u	180

* carbon normalized organics expressed in ppm