CENWS-OD-TS-DM

MEMORANDUM FOR RECORD 25 July 2002

SUBJECT: **DETERMINATION OF THE SUITABILITY OF SEDIMENT PROPOSED TO BE DREDGED FROM THE HAUG CHANNEL DREDGING PROJECT IN FAIRWEATHER BAY, LAKE WASHINGTON (APPLICATION NO: 2001-2-00677) FOR OPEN-WATER DISPOSAL AT THE ELLIOTT BAY OPEN-WATER DISPOSAL SITE, AS EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT.**

1. The following summary reflects the consensus determination of the Agencies that comprise the regional Dredged Material Management Program (DMMP) for the State of Washington. The agencies include the Corps of Engineers, Department of Ecology, Department of Natural Resources, and the Environmental Protection Agency. The agencies are charged with determining the suitability of dredged material for in-water disposal and have evaluated the proposed dredging of 10,000 cubic yards located in Fairweather Bay, Lake Washington.

2. The project was ranked moderate for testing purposes. The sampling and analysis plan was approved on February 26, 2001 by the DMMP agencies for an estimated total dredged material footprint volume of 10,000 cubic yards. Sampling of the proposed dredging footprint (see figures 1-3) was conducted on October 25, 2001, and consisted of collecting five cores by a hand driven coring device at five stations. All respective cores were collected and composited for analysis as one Dredged Material Management Unit (DMMUs).

3. The Sampling and Analysis Plan approved by the Agencies for testing of the single DMMU was followed, and quality assurance/quality control guidelines specified by the PSDDA Users Manual were generally complied with. The data gathered were deemed sufficient and acceptable for decision-making by the DMMP agencies based on best professional judgment.

4. Relevant dates for regulatory tracking purposes are included in Table 1.

Table 1. Regulatory Tracking Information and Dates

SAP submittal date:	January 24, 2001
SAP Approval date:	February 26, 2001
Sampling date(s):	October 25, 2001
Sediment data characterization report submittal date:	July 24, 2002
DAIS Tracking Number	HAUGC-1-A-F-178
Recency Determination Date: Moderate (5 years)	October 2006

5. Table 2 summarizes the results of the conventional parameters analyzed for the one composited DMMU. Chemical analysis of the one DMMU indicated that there were detected and detection limit exceedances of screening level (Acenaphthene, Phenanthrene, total LPAH, Phenol, 4-Methylphenol, Benzyl alcohol), bioaccumulation trigger (Pentachlorophenol, Hexachlorobutadiene, N-nitrosodiphenylamine), and maximum level (2-Methylphenol, 2,4-Dimethylphenol, Pentachlorophenol, Benzoic acid, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, N-nitrosodiphenylamine) guideline exceedances for the chemicals-of-concern in Lake Washington. Laboratory blank contamination was indicated for Phenol, and Benzoic acid, which may have contributed to the concentrations observed. The analysis of the sample also included an assessment of Tributyltin, which was quantitated below the SL. Because of the detected and detection limit exceedances of screening, bioaccumulation trigger, and maximum levels, biological testing was required, which would have included bioassay as well as bioaccumulation testing.

However, due to the exceedingly fine nature of the sediment with a high total organic carbon content, the bioassay laboratory (AMEC) indicated bioassays could not be performed on the sample. Therefore, using BPJ the DMMP agencies concluded that this sample without required biological testing was unsuitable for unconfined open-water disposal.

6. The results of the chemical analysis indicated that the single composited DMMU, representing 10,000 cy is **not suitable** for unconfined open-water disposal without additional biological testing.

7. This memorandum documents the suitability of sediment to be dredged from the Haug Channel maintenance dredging project, for disposal at the Elliott Bay non-dispersive open-water disposal site. However, this suitability determination 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 input, and after an alternatives analysis is done under Section 404(b)(1) of the Clean Water Act.

Concur:

8/8/02 Date	David Kendall, Ph.D., Seattle District Corps of Engineers
8/1/02 Date	Justine Barton, Environmental Protection Agency
8/05/02 Date	Loree Randall, Washington Department of Ecology
08/07/02 Date	Robert Brenner, Washington Department of Natural Resources

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DMMO File

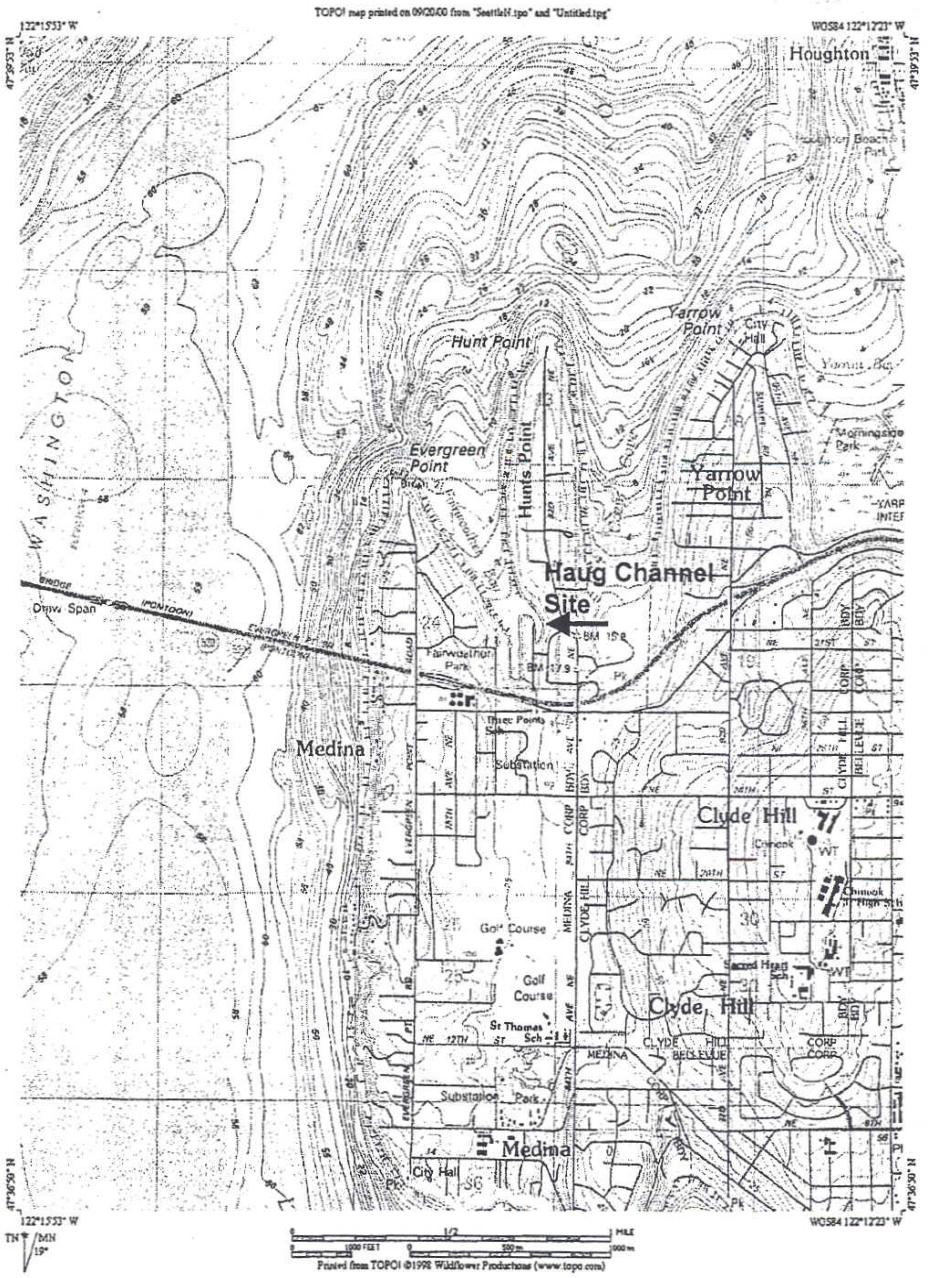

Figure 1
Vicinity Map of the Haug Channel Site
(Lake Washington, Hunts Point, WA)

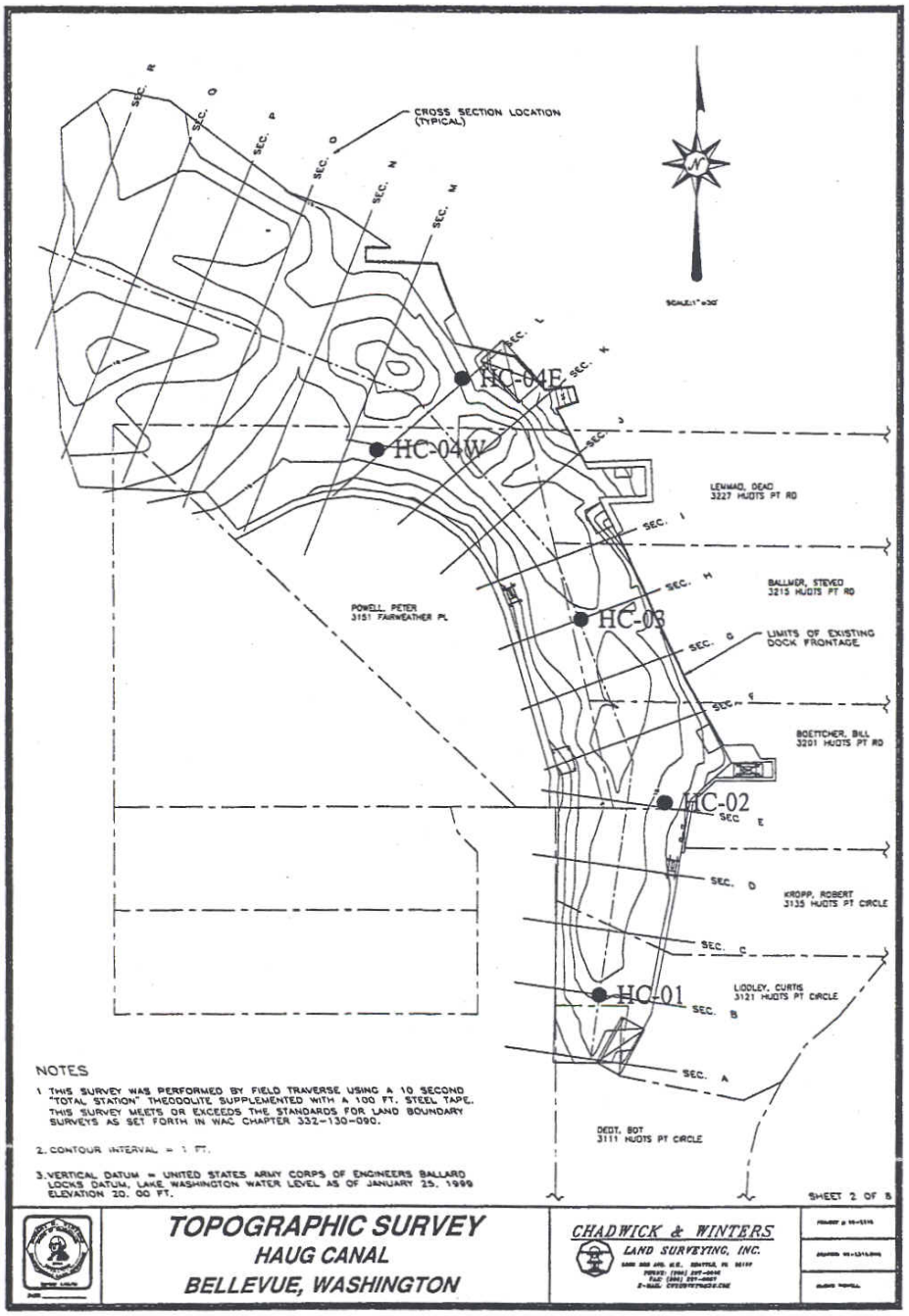

Figure 2
Sediment Sampling Stations at the Haug Channel Site
(Lake Washington, Hunts Point, WA)

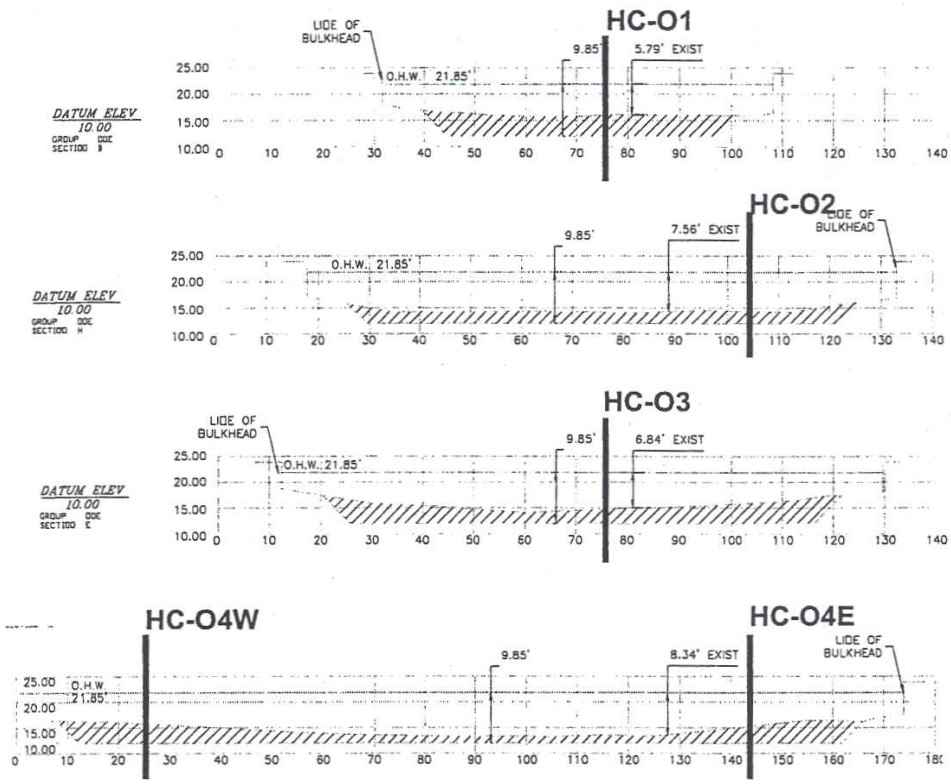

Figure 3
Sediment Sampling Stations along Transects at the Haug Channel Site
(Lake Washington, Hunts Point, WA)

Table 2. Haug Channel Characterization, Lake Washington, PSDDA Evaluation Summary

				DMMU ID	HC-P1	
				Rank:	M	
CHEMICAL NAME	Units	SL	BT	ML	Conc.	VQ
Tributyltin	ug/l	0.15	0.15		0	
Acenaphthene	ug/kg	500		2,000	1,300	
Phenanthrene	ug/kg	1,500		21,000	3,200	
Total LPAH	ug/kg	5,200		29,000	5,680	
Phenol	ug/kg	420	876	1,200	490	B
2-Methyl phenol	ug/kg	63		77	390	U
4-Methylphenol	ug/kg	670		3,600	710	M
2,4-Dimethylphenol	ug/kg	29		210	220	MJ
Pentachlorophenol	ug/kg	400	504	690	2,000	U
Benzyl alcohol	ug/kg	57		870	390	U
Benzoic acid	ug/kg	650		760	4,900	B
1,2,4-Trichlorobenzene	ug/kg	31		64	390	U
Hexachlorobutadiene	ug/kg	29	212	270	390	U
N-nitrosodiphenylamine	ug/kg	28	130	130	390	U
Total DDT	ug/kg	6.9	50	69	8.2	
Total Solids	%				13.6	
Total Volatile Solids	%				55	
Total Organic Carbon	%				20	
Total Ammonia	mg-N/kg				260	
Total Sulfides	mg/kg				20	
Gravel	%				<0.1	
Sand	%				10.9	
Silt	%				55.0	
Clay	%				34.0	
Fines (percent silt + clay)	%				89.0	
Eohaustorius estuarius mortality:	%				NA	
Mytilus galloprovincialis normal larvae:	%				NA	
Neanthes arenaceodentata growth:	ind/mg/day				NA	
Eohaustorius estuarius hits:						
Mytilus galloprovincialis hits:						
Neanthes arenaceodentata hits:						
Bioassay Determination: (P/F)						
BTs eyesceeded:					yes	
Bioaccumulation conducted:					no	
Bioaccumulation Determination:						
ML Rule exceeded:					Yes	
PSDDA Determination:					Fail (CHEM)	
DMMU Volume:	cy				10,000	
DMMU ID:					HC-P1	

Legend:

SL = Screening Level
BT = Bioaccumulation Trigger
ML = Maximum Level
F = Failure (unsuitable for UCOWD)
UCOWD = unconfined open-water disposal
U = undtected at the reporting limit
VQ = validation qualifier
B = possible/probable blank contamination
M = estimated value of analyte detected and confirmed by analyst with low spectral match.
J = estimated value when the value is less than the calculated detection limit.
NA = not analyzed