CENPS-OP-DMMO

MEMORANDUM FOR RECORD 18 November 1992

SUBJECT: DECISION ON THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA GUIDELINES FOR THE PORT OF SEATTLE TERMINAL 91 PROJECT (92-2-00811), FOR DISPOSAL AT THE PSDDA ELLIOTT BAY OPEN-WATER NONDISPERSIVE SITE.

1. The Port of Seattle proposes to dredge 11,000 cubic yards of sediments from the Terminal 91 Apron Development Project. The following summary reflects the PSDDA agencies' (Corps, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) suitability determination for disposal of this material at the PSDDA Elliott Bay open-water nondispersive site.

2. The PSDDA agencies ranked the project area "high", based on the guidance provided in the PSDDA Management Plan Report, Phase II (page A-11) for projects in Elliott Bay.

3. A sampling and analysis plan was developed for this project and approved by the PSDDA agencies 29 October 1991.

4. Three dredged material management units (DMMUs) were characterized. DMMUs S1, S2 and S3 consisted of uncomposited sediments from three sampling locations.

5. The chemistry data indicated that numerous detected and undetected exceedances of the Dredging Year 1993 PSDDA screening levels (SL) occurred for S1, S2 and S3. In addition, there was one detection limit above the bioaccumulation trigger (BT) for S1 and S3 and there were two detection limits and one detected concentration above BT for S2. There were eight detected and one undetected exceedances of maximum level (ML) for S1; two detected and five undetected exceedances of ML for S2; and seven detected exceedances of ML for S3. Attachment 1 summarizes the exceedances of PSDDA guideline values.

6. Concurrent biological testing was conducted for S1, S2 and S3. The amphipod 10-day acute toxicity test, echinoderm sediment larval combined mortality and abnormality (effective mortality) test, the *Neanthes* 10-day acute toxicity test, and the Microtox bacterial luminescence test were conducted. PSDDA interpretation guidelines specified in the Phase II Management Plan Report (Sept 1989), modified by changes made at the second annual review meeting, were used to evaluate the bioassay data. The control sediment for the amphipod and *Neanthes* bioassays was collected at West Beach, while the seawater control for the sediment larval test came from the Burrard Inlet, BC. The reference sediment (all bioassays) came from Carr Inlet.

7. There were hits under the single-hit rule for the amphipod and *Neanthes* tests for both S1 and S3. Test sediment mortalities were greater than 20% over control, significantly different from reference and greater than 30% over reference. There was also a hit under the two-hit rule in the Microtox test for S3, with blank-corrected light diminution greater than 20% and significantly different from reference. There were no hits in any of these three bioassays for S2.

8. In the sediment larval test, the Carr Inlet reference sediment did not meet its performance standard. The seawater-normalized effective mortality was 32%, which is greater than the 20% allowed under PSDDA guidelines. The data for this test were not interpretable.

9. DMMUs S1 and S3 failed PSDDA guidelines for open-water disposal based on the hits exhibited during biological testing. In addition, on the basis of the two detected (and numerous detection limit) exceedances of ML for S2, there is a reason to believe that this DMMU is unacceptable for open-water disposal (PSDDA MPR-Phase II, pg. A-23) in the absence of bioaccumulation and special biological testing data.

10. In summary, the PSDDA-approved sampling and testing plan was followed, and quality assurance, quality control guidelines specified by PSDDA were generally complied with. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the PSDDA program. Based on the results of the chemical and biological testing, the following consensus decision was made by the PSDDA agencies:

All 11,000 cubic yards proposed for dredging from the Port of Seattle's Terminal 91 Apron Development project (92-2-00811) are unsuitable for disposal at the Elliott Bay open-water nondispersive site.

11. This memorandum documents the suitability or unsuitability of proposed dredged sediments for disposal at a PSDDA open-water disposal site. It does not constitute final agency review of the project. A public notice will be issued for this project. During the public comment period which follows the public notice, the resource agencies will provide input on the overall project. A final permit 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.

Port of Seattle Terminal 91
92-2-00811

Concur:

23 NOV 1992
Date

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David Kendall, Ph.D
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18 Nov 1992
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David F. Fox
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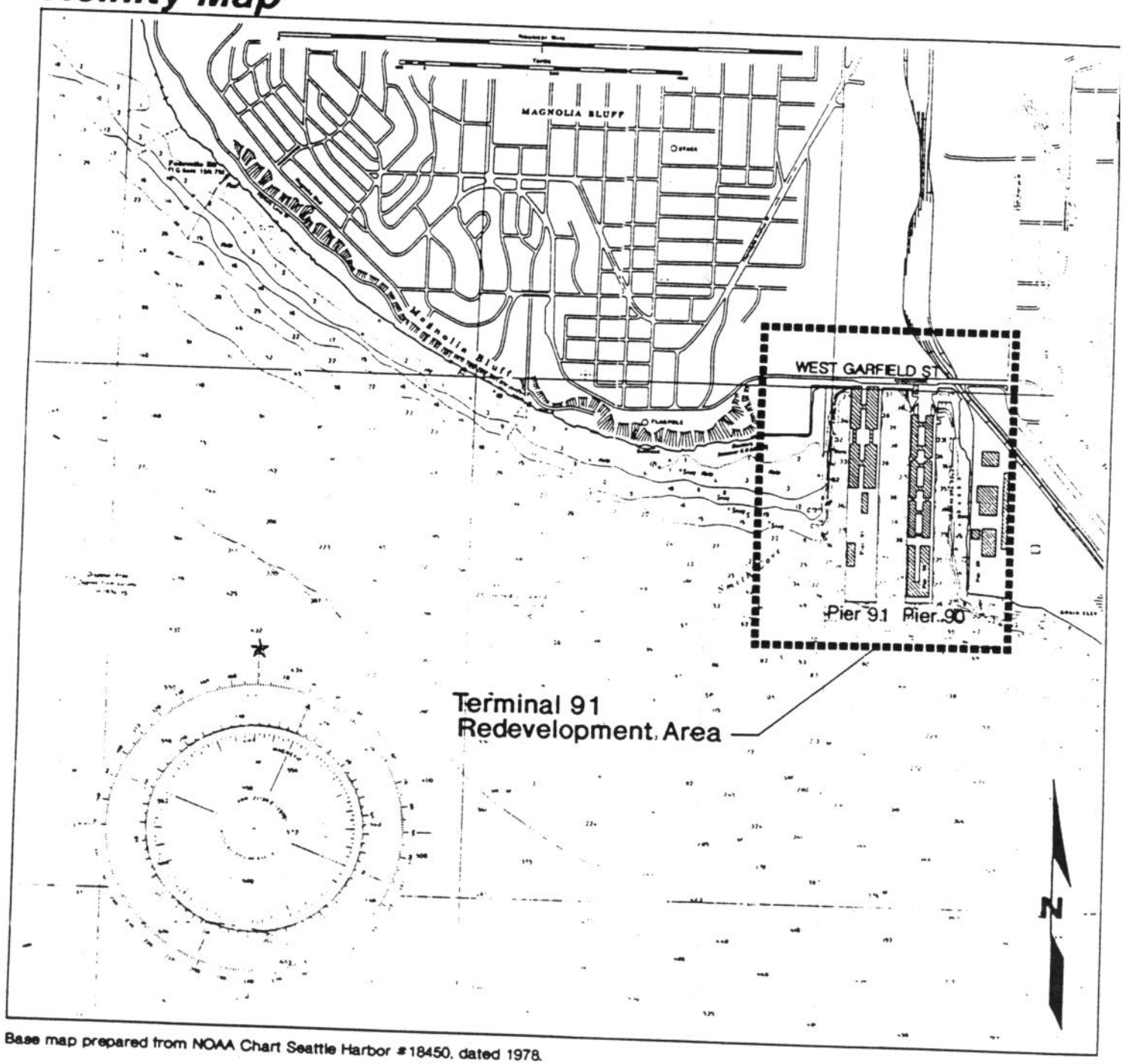
	S1/1/1	S2/1/1	S3/1/1
METALS - OTHERS			
Mercury	S	S	S
Cadmium (1)	S	S	
Copper (1)	S		
Lead (1)	S		
Zinc (1)	S	S	
SEMIVOLATILE ORGANICS-LPAH			
2-Methylnaphthalene (1)	S	S	M
Acenaphthene (1)	M	S	M
Acenaphthylene (1)	S	S	S
Anthracene (1)	M	M	M
Fluorene (1)	M	S	M
Naphthalene (1)	S	S	M
Phenanthrene (1)	M	S	S
Total LPAH (1)	M	S	M
SEMIVOLATILE ORGANICS-HPAH			
Benzo(a)anthracene (1)	M	S	S
Benzo(a)pyrene	S	S	S
Benzo(g,h,i)perylene (1)	S	S	S
Benzofluoranthenes (1)	S	S	S
Chrysene (1)	S	S	S
Dibenzo(a,h)anthracene (1)	S	S	S
Fluoranthene	S d	B	S
Indeno(1,2,3-c,d)pyrene (1)	S	S	S
Pyrene (1)	M d	M	S d
Total HPAH (1)	M	S	S
SEMIVOLATILE ORGANICS-CHLORINATED HYDROCARBONS			
1,2,4-Trichlorobenzene (1)	S u	M u	S u
1,2-Dichlorobenzene	B u	B u	B u
1,4-Dichlorobenzene	S u	S u	S u
Hexachlorobenzene	S u	S u	S u
SEMIVOLATILE ORGANICS-PHTHALATES			
Di-n-butyl phthalate (2)	S b		
Diethyl phthalate (3)		S u	
2 Methylphenol (1)	S u	M u	S u
2,4-Dimethylphenol (1)	M u	M u	S u
4 Methylphenol (1)		S	
Pentachlorophenol	S u	B u	S u
Phenol		S	
SEMIVOLATILE ORGANICS-MISC EXTRACTABLES			
Benzoic acid (1)	S u	M u	S u

Benzyl alcohol (1)	S u	M u	S u
Dibenzofuran (1)	S	S	M
Hexachlorobutadiene	S u	S u	S u
N-Nitrosodiphenylamine	S u	S u	S u
VOLATILE ORGANICS			
Ethylbenzene	S u	S u	
Tetrachloroethene	S u	S u	
Total Xylene (1)	S u	S u	
PESTICIDES			
Chlordane (2)	S u	S u	S u
Total DDT	S d	S d	S

(1) = no bioaccumulation trigger exists for this analyte
(2) = no maximum level exists for this analyte
(3) = no bioaccumulation trigger or maximum level exists for this analyte
S = reported concentration exceeds screening level
B = reported concentration exceeds bioaccumulation trigger
M = reported concentration exceeds maximum level
u = undetected at the concentration reported
d = concentration reported from a diluted sample
b = analyte was detected in the blank

Vicinity Map



Base map prepared from NOAA Chart Seattle Harbor #18450, dated 1978.

Note: Soundings depth below MLLW.

0 1500 3000

Scale in Feet

HARTCROWSER

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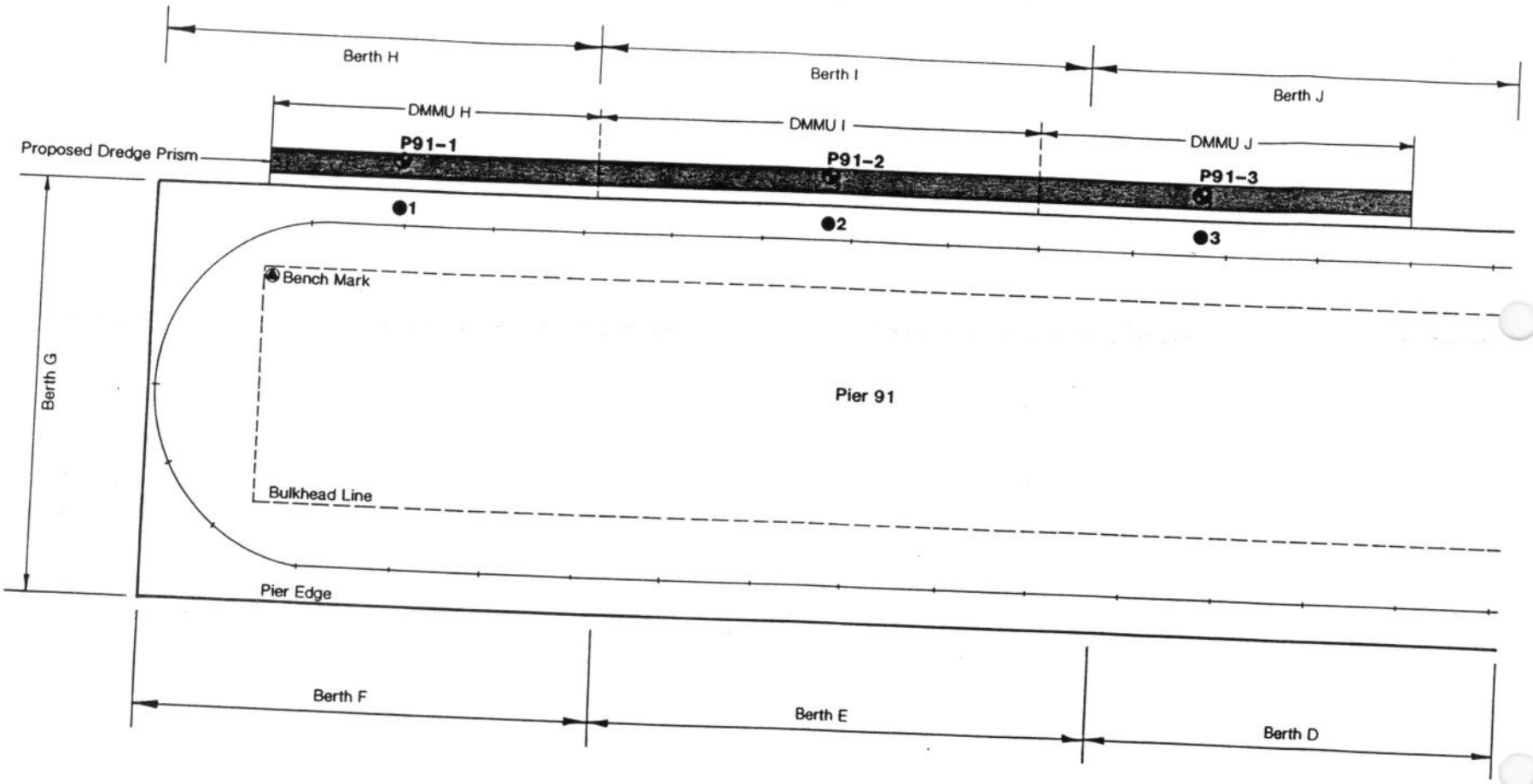
Figure 1

Site Plan



SEDIMENT CORE LOCATIONS (ft)		
Sampling Number	Northing	Easting
P91-1	232,552	1,258,131
P91-2	232,927	1,258,133
P91-3	233,252	1,258,136

P91-1 Sediment Core Location and Number

1 Sampling Station Location and Number

0
Scale in Feet