CENPS-OP-RG

MEMORANDUM FOR RECORD 22 January 1990

SUBJECT: DECISION ON THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA CRITERIA FOR THE U.S.COAST GUARD/PIER 35 DREDGING PROJECT (OYB-2-012941) TO BE DISPOSED OF AT THE ELLIOTT BAY OPEN WATER DISPOSAL SITE.

1. The following summary reflects the PSDDA agencies (Corps, Department of Ecology, and the Environmental Protection Agency) consensus decision on the acceptability of the sampling plan and all relevant test data (i.e., contained in Dames and Moore Report dated December 6, 1989) to make a determination of suitability of the 5100 cubic yards of dredged material proposed for dredging from the U.S. Coast Guard Pier 35 Project site for disposal at a PSDDA disposal site.

2. 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.

3. Chemistry data indicated that exceedences of the 1988 PSDDA screening level (SL) and maximum level (ML) values were confined to test samples 1 and 3 as depicted in enclosure 1. Test sample 1 represented a surface (0-4 ft) composited sample (i.e comprised of subsamples from borings 1, 2, and 3) representative of the entire dredging area. Test sample 3 characterized composited subsurface samples (test borings 2 and 3) to -11 ft MLLW (see enclosure 2). Test sample 2 represented vertically composited subsurface material from boring 1, taken from +8 to -11 ft MLLW. Exceedences of PSDDA SL's and ML's were restricted to sample 1 and 3 with no exceedences of PSDDA COC SL's for test sample 2 (1989 Nickel SL values were used). Screening level and Maximum Level exceedences were noted as depicted in enclosure 1. Exceedences of ML in test samples 1 and 3, clearly demonstrate that chemistry alone fails sediments characterized by these dredged material management units. However, additional information supporting the failure of samples 1 and 3 was provided by bioassays, which were run on all three samples. The results of these bioassays are summarized below. The line separating contaminated sediments from uncontaminated sediments is depicted in Figure 2, with uncontaminated sediments below the 4 foot dredging cut extending landward of the +2 ft MLLW contour (see Figure 2). The total volume represented by the failed surface sediment was 850 cubic yards, whereas the failed subsurface sediment seaward of the +2 ft MLLW line depicted in enclosure 2 represents 1550 cubic yards for a combined total of 2400 cubic yards of contaminated sediment.

4. In summary, results for bioassay testing for the three samples tested showed that for test samples 1 and 3, all three bioassays failed the PSDDA interpretation guidelines, whereas all three passed for test sample 2. PSDDA interpretation guidelines specified in June 1988 EPTA, and Bivalve larvae/Echinoderm embryo bioassay interpretation guidelines clarified in the Phase II MPR were used to evaluate the bioassay data. Interpretation guidelines clarified in the Phase II MPR for the sediment larvae bioassay specified necessary clarifications/changes in the mortality and abnormality performance standards for control sediment, reference sediment, and dredged

material relative to those specified in June 1988 EPTA. In general the Amphipod, Echinoderm embryo, and Microtox bioassays performed well with respect to appropriate control and reference sediment guidelines as specified by PSDDA. Reference sediment (i.e., West Beach) and control sediment (i.e., West Beach) performed well within PSDDA performance guidelines specified for each bioassay. The three bioassay (i.e., Amphipod bioassay, sediment larvae bioassay (Dendraster excentricus), and saline microtox) results generally paralleled the chemistry results for the three composited sediment samples.

5. Based on the above discussion and summary of chemical and bioassay results for the U.S. Coast Guard Pier 35 Project area, the PSDDA agencies concluded that 2700 cubic yards of potential dredged material was suitable for unconfined open water disposal at the Elliott Bay PSDDA disposal site, whereas 2400 cubic yards of material was found to be unsuitable for openwater unconfined disposal (see enclosure 2).

Concur:

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Enclosures

Copies Furnished:

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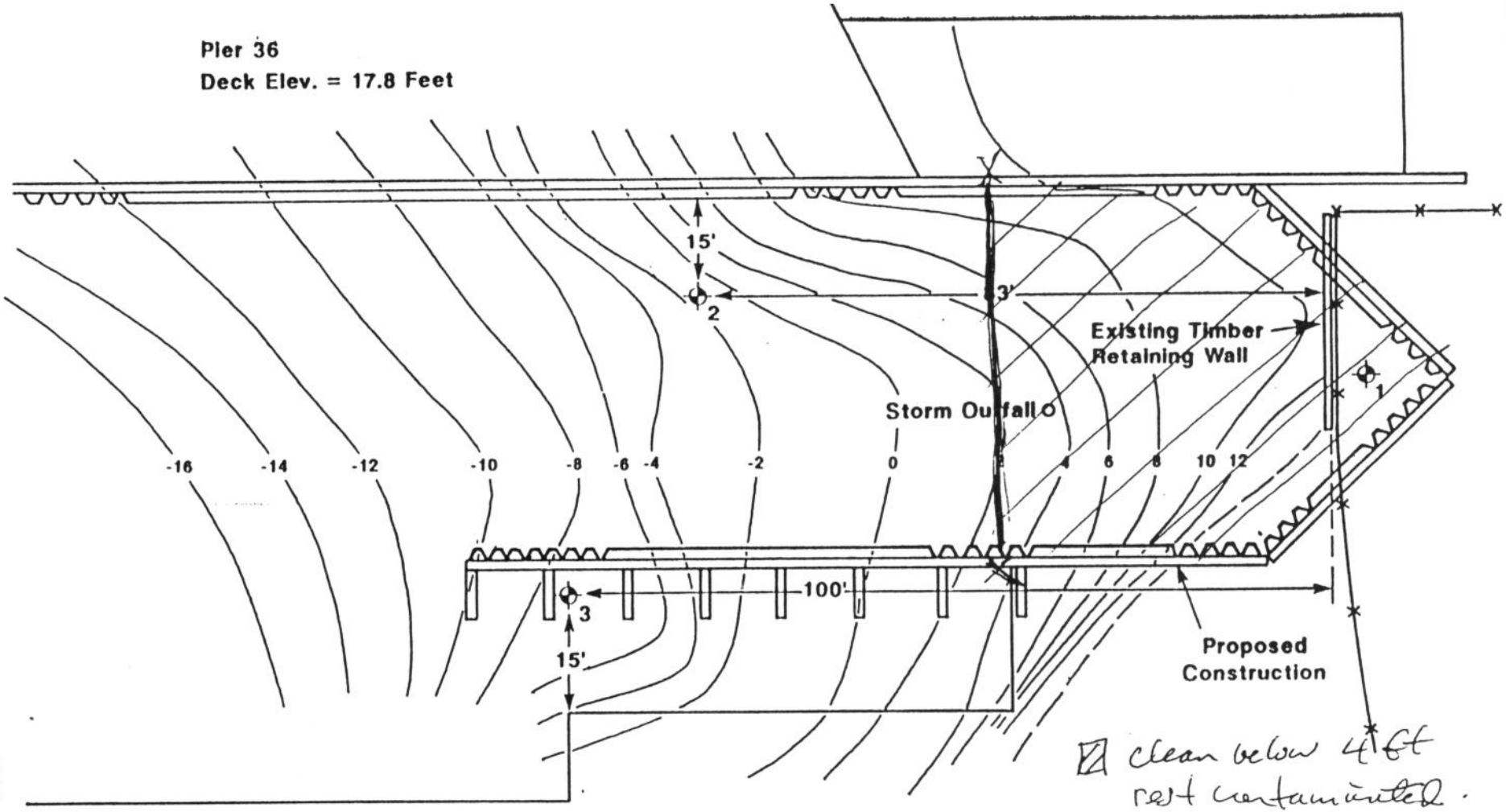
RESULTS OF CHEMICAL ANALYSES EXCEEDING PSDDA GUIDELINES: U.S.COAST GUARD PIER 35 PROJECT
(OYB-2-012941)

CHEMICAL	1988 SL	1988 ML	TEST 1	TEST 3	TEST 2	D > SL	D > ML
METALS (PPM)							
ANTIMONY	2.6	26	36	8.4		2	1
CADMIUM	0.96	9.6	1.3	3.2		2	
COPPER	81	810	170	212		2	
LEAD	66	660	599	659		2	
MERCURY	0.21	2.1		0.6		1	
NICKEL*	28	120	74	39	33	2	
SILVER	1.2	5.2		1.9		1	
ZINC	160	1,600	270	542		2	
ORGANICS (PPB)							
TOTAL LPAH	610	6,100	7,110	30,100		2	2
PHENANTHRENE	320	3,200	2,900	8,100		2	1
ANTHRACENE	130	1,300	1,700	2,200		2	2
NAPHTHALENE	210	2,100	1,300	13,000		2	1
ACENAPHTHENE	63	630	580	3,700		2	1
FLUORENE	64	640	630	3,100		2	1
TOTAL HPAH	1,800	51,000	20,510	21,390		2	
FLUORANTHENE	630	6,300	5,700	6,700		2	1
PYRENE	430	7,300	4,800	6,000		2	
BENZO(a)ANTHRACENE	450	4,500	1,700	1,700		2	
CHRYSENE	670	6,700	2,200	2,000		2	
BENZOFLUORANTHENES	800	8,000	2,400	2,300		2	
BENZO(a)PYRENE	680	6,800	1,200	1,200		2	
IDENO(1,2,3,c,d)PYRENE	69	5,200	880	640		2	
DIBENZO(a,h)ANTHRACENE	120	1,200	630			1	
BENZO(ghi)PERYLENE	540	5,400	1,000	850		2	
TOTAL XYLENES	12	160	12	460		2	1
ETHYLBENZENE	10	50		88		1	1
DIBENZOFURAN	54	540	410	2,400		2	1
BUTYLBENZYLPHTHALATE	470		760			1	
DDD (TOTAL DDT)	6.9	69	32	120		2	1
TOTAL PCB	130	2,500	232	520		2	

* NO EXCEEDENCES OF 1989 SL (140 PPM)



☒ clean below 4 ft
rest contaminated.

Boring Number	Position	Water Depth to Mudline
1	47° 35' 22" 122° 20' 28"	Not Applicable
2	47° 35' 22.5" 122° 20' 29"	12 Feet
3	47° 35' 23" 122° 20' 30"	14 Feet

All material seaward of line contaminated. TOP 4 feet of ~~All~~ material landward of line contaminated. Material below 4 ft suitable for open water unconfined Disposal

Boring Location

Contour Elevations In Feet

Figure 2
Plan View
U.S. Coast Guard/Pier 35
Dames & Moore

Reference: 071-OYB-2-012941