

MEMORANDUM FOR RECORD

11 November 1991

SUBJECT: DECISION ON THE SUITABILITY OF DREDGED MATERIAL TESTED FOR THE PORT OF WILLAPA HARBOR'S TOKELAND MARINA AT TOKEPOINT, WILLAPA HARBOR, WASHINGTON (OYB-2-014585) TO BE DISPOSED OF AT THE CAPE SHOALWATER OPEN WATER DISPOSAL SITE.

1. The following summary reflects the consensus decision of the Agencies with jurisdiction over the dredging and disposal of dredged material (Corps, Department of Ecology, Department of Natural Resources, and the Environmental Protection Agency) on the acceptability of the sampling plan and all relevant test data (i.e., contained in Chemistry Data Report (North Creek Analytical) received by DMMO on October 14, 1991, and Bioassay Report (Invert-Aid) received by DMMO on October 31, 1991) to make a determination of suitability of the 55,000 cubic yards of material proposed for dredging from the Port of Willapa Harbor's Tokeland Marina at Tokeland, Washington for disposal at the Cape Shoalwater open-water disposal site.
2. The Agency (Corps, Ecology, DNR, EPA) approved sampling and testing plan was followed, and quality assurance/quality control guidelines specified by PSEP and the PSDDA program were generally complied with. The data gathered were deemed sufficient and acceptable for regulatory decision making.
3. Chemistry data from the single composited sample indicated there were three detected chemical of concern exceedances of the current PSDDA screening level (SL) guideline values for 4-methylphenol (1000 ppb), phenol (340 ppb), and pyrene (1000 ppb), as well as detection limit exceedances for a number of chemicals noted in enclosure 1. Screening levels are used in Puget Sound to establish a concern for biological effects, where chemicals below the SL have a low level of concern. In this context, they are used in Willapa Harbor only as a qualitative yardstick to evaluate chemical concentration levels measured in sediments. Because 4-methylphenol was quantified close to the PSDDA maximum level (ML = 1200 ppb), and due to the multiple exceedances of screening level of various organic chemicals, the Agencies unanimous decision was that bioassay testing of the dredged material would be necessary in order to make a decision on its suitability for unconfined open-water disposal.
4. A review of the bioassay results indicated that they were adequate for regulatory decision making. The results indicated that the amphipod, Neanthes, and Microtox bioassays passed the PSDDA nondispersive guidelines for unconfined open-water disposal, although the echinoderm sediment larval bioassay showed a "hit" under the two hit guidelines (28 percent absolute combined mortality+abnormality over seawater control). The test sediment was interpreted relative to the seawater control (conservative approach) for the echinoderm sediment larval bioassay, because the reference sample outperformed the seawater control (reference = 198.4 versus seawater control = 174.4). Administratively the reference sediment mortality should be equal to or greater than the seawater control mortality in order to allow test interpretation. Comparing the test sediment combined mortality+abnormality count (125.6) with the seawater control count (174.4) results in an absolute mortality+abnormality of 28 percent, which is statistically significant. Therefore, the test results for this bioassay would fit a "hit" under the two

hit rule, and since there are no other hits among the three other bioassays, the dredged material passes the disposal guidelines (as applied under the PSDDA Program) and is suitable for unconfined open-water disposal.

5. Based on the above discussion of chemistry and bioassay results for the Port of Willapa Harbor's Tokeland Marina maintenance dredging project, the Agencies concluded that all the material (55,000 cubic yards) is suitable for disposal at the Cape Shoalwater open-water disposal site.

Concur:

11/12/91
Date

David R. Kendall
David R. Kendall, Ph.D
Seattle District Corps of Engineers

Date

Justine Smith/John Malek
Justine Smith/John Malek
Environmental Protection Agency
Region X

*EPA/MS concurred
telephone 11/11/91
will sign when she
returns from vacation*

11/15/91
Date

Russ McMillan
Russ McMillan
Washington Department of Ecology

11/12/91
Date

Gene Revelas
Gene Revelas
Washington Department of Natural Resources

Enclosures

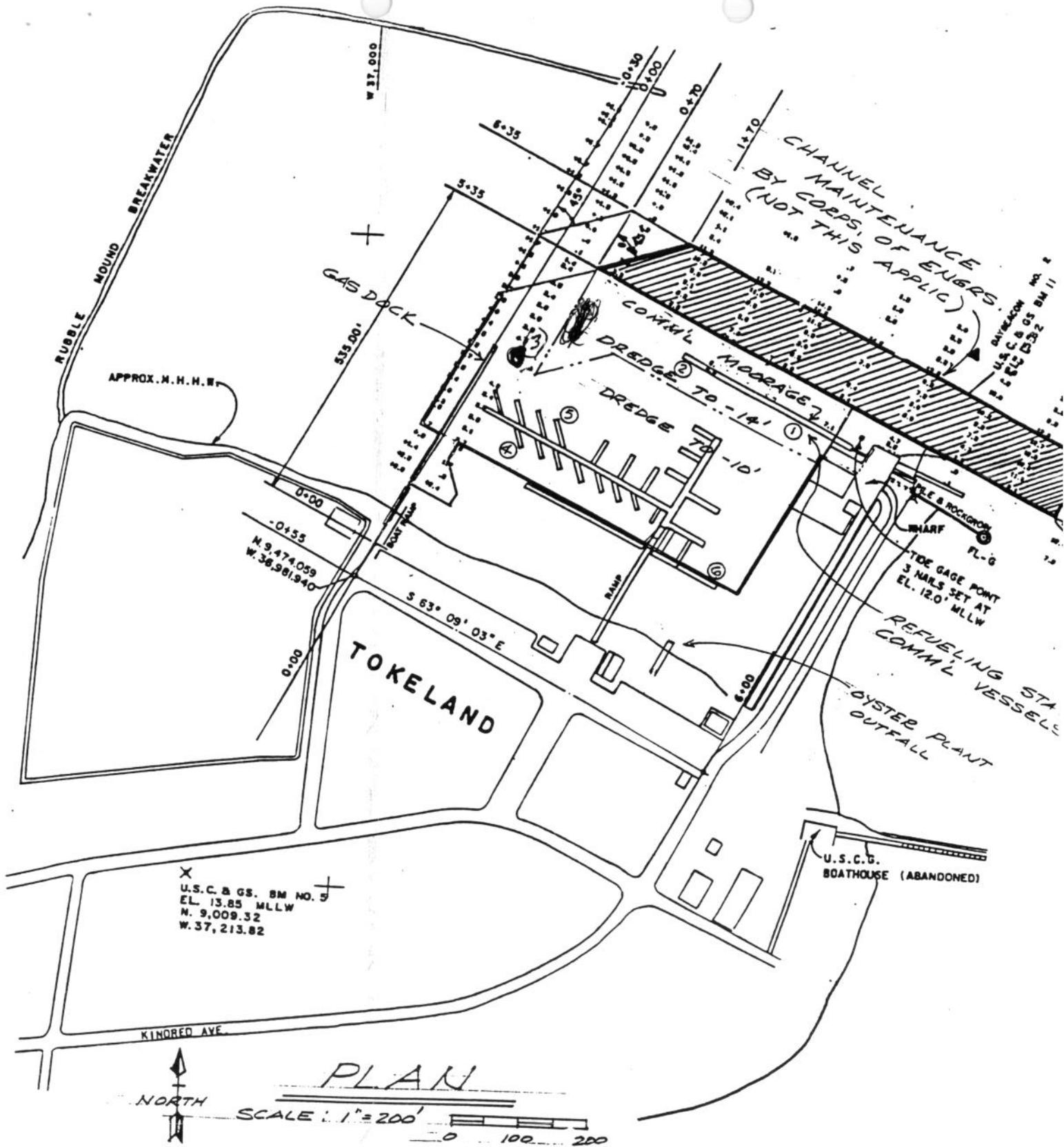
Copies Furnished:

- Frank Urabeck/Steve Babcock, Corps
 - Dick Berg, Corps
 - John Malek/Justine Smith, EPA
 - Russ McMillan, Ecology
 - Gene Revelas, DNR
- DNDNO File

CHEMICAL (ppb)	Guidelines SL/BT/ML	TEST SAMPLE	CONTROL	REFERENCE
4-methylphenol	120/1200	1000		
phenol	120/876/1200	340		
pyrene	430/7300	1000		
2-methylphenol	20/72	25u		
1,2-dichlorobenzene	19/37/350	25u		
1,2,4-trichlorobenzene	13/64	25u		
hexachlorobenzene	23/168/230	25u		
bulk ammonia (mg/kg-dry)	none	120		
total sulfides (mg/kg-dry)	none	680		
BIOASSYS: <u>Rhepoxynius abronius</u> (% mortality)		10	0	5
<u>Neanthes</u> <u>arenacedentata</u> (% mortality)		2	2	6
<u>Dendraster</u> <u>excentricus</u> (% combined mortality)		28*	0	0**
Microtox (toxic/nontoxic)		nontoxic		
TEST OUTCOME: PASS/FAIL		PASS		

* single hit under two hit rule

** reference mortality lower than seawater control, and therefore administratively reset to 0 for interpretation purposes.



PLAN

SCALE: 1" = 200'



NOTE:
 --- SEE APPENDIX C
 --- FOR VICINITY MAP

APPROX. M. H. H. W.

