CENPS-OP-DMMO

MEMORANDUM FOR RECORD 15 October 1992

SUBJECT: DECISION ON THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA GUIDELINES FOR THE KING COUNTY SAMMAMISH RIVER SMALL BOAT NAVIGATION CHANNEL PROJECT (92-2-00795), FOR DISPOSAL AT THE PSDDA ELLIOTT BAY OPEN-WATER NONDISPERSIVE SITE.

1. King County proposes to dredge 16,800 cubic yards of sediments from the Sammamish River Small Boat Navigation Channel. 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-10) for projects in the vicinity of Kenmore, Washington.

3. A sampling and analysis plan was developed for this project and approved by the PSDDA agencies 9 July 1992.

4. Four dredged material management units (DMMUs) were characterized. Uncomposited surface sediments (from the sediment/water interface to the depth of proposed dredging) from four sampling locations along the centerline of the project were collected to represent DMMUs S1 through S4.

5. The chemistry data indicated that a single detected exceedance of the Dredging Year 1993 PSDDA screening levels (SL) occurred for S2. Total DDT was detected at 10 ug/kg (SL = 6.9 ug/kg). There were no SL exceedances for S1, S3 or S4. There were no detection limits reported above SL for any DMMU.

6. The SL exceedance for S2 triggered the requirement for biological testing under the tiered testing approach. The amphipod 10-day acute toxicity test, echinoderm sediment larval combined mortality and abnormality (effective mortality) test, the *Neanthes* 20-day biomass 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 and fourth annual review meetings, 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 Deception Pass. The reference sediment (all bioassays) also came from West Beach due to the low fines content of the test sediments. The salinity of the freshwater Sammamish River sediment was adjusted for use in the amphipod and *Neanthes* bioassays per the Puget Sound Estuary Program amphipod bioassay protocol.

7. There were no hits for the *Neanthes* or Microtox bioassays. In the *Neanthes* bioassay, an equipment malfunction caused the temperature of the water bath to drop temporarily to 12°C and 7°C respectively on days 7 and 18. The biological testing subcontractor took immediate action to raise the temperature of the bath and to verify that the test had not been compromised. In the words of the subcontractor, "The fact that 100 percent of the *Neanthes* tested were recovered and appeared healthy, exhibiting full digestive systems and active movement, and the fact that an increase in biomass was observed for each test replicate indicates that these episodes had no adverse effects on the health of the organisms". The PSDDA agencies concur with this assessment. The biomass data from this project are comparable to those from other projects.

8. In the amphipod bioassay, S2 exhibited a mortality of 28 percent, which was greater than 20 percent over control (6 percent) and statistically different from reference. However, the mortality of S2 was not greater than 30 percent over reference (7 percent). Therefore, there was a hit under the two-hit rule for S2 in the amphipod test.

9. In the sediment larval test, the West Beach reference sediment did not meet its performance standard. The seawater-normalized effective mortality was 23.4 percent, which is greater than the 20 percent allowed under PSDDA guidelines. As a result, the PSDDA agencies recommended performing a retest.

The retest was initiated one day beyond the recommended 8-week holding time. The West Beach reference sediment performed adequately in the retest, exhibiting 2.4 percent effective mortality. S2 exhibited 14.7 percent effective mortality, which is less than the 20 percent required for any kind of hit. Therefore, there was no hit for the sediment larval test. The PSDDA agencies concluded that the minor holding time exceedance did not significantly impact the results of the test.

10. The single hit under the two-hit rule in the amphipod test was not corroborated by hits in any other bioassay. Therefore, S2 passed biological testing.

11. 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 16,800 cubic yards proposed for dredging from the Sammamish River Small Boat Navigation Channel (92-2-00795) are suitable for disposal at the Elliott Bay open-water nondispersive site.

King County-Sammamish River
92-2-00795

12. This memorandum documents the suitability of proposed dredged sediments for disposal at a PSDDA open-water disposal site. It does not constitute final agency approval 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.

Concur:

30 October 1992
Date

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Seattle District Corps of Engineers

15 October 1992
Date

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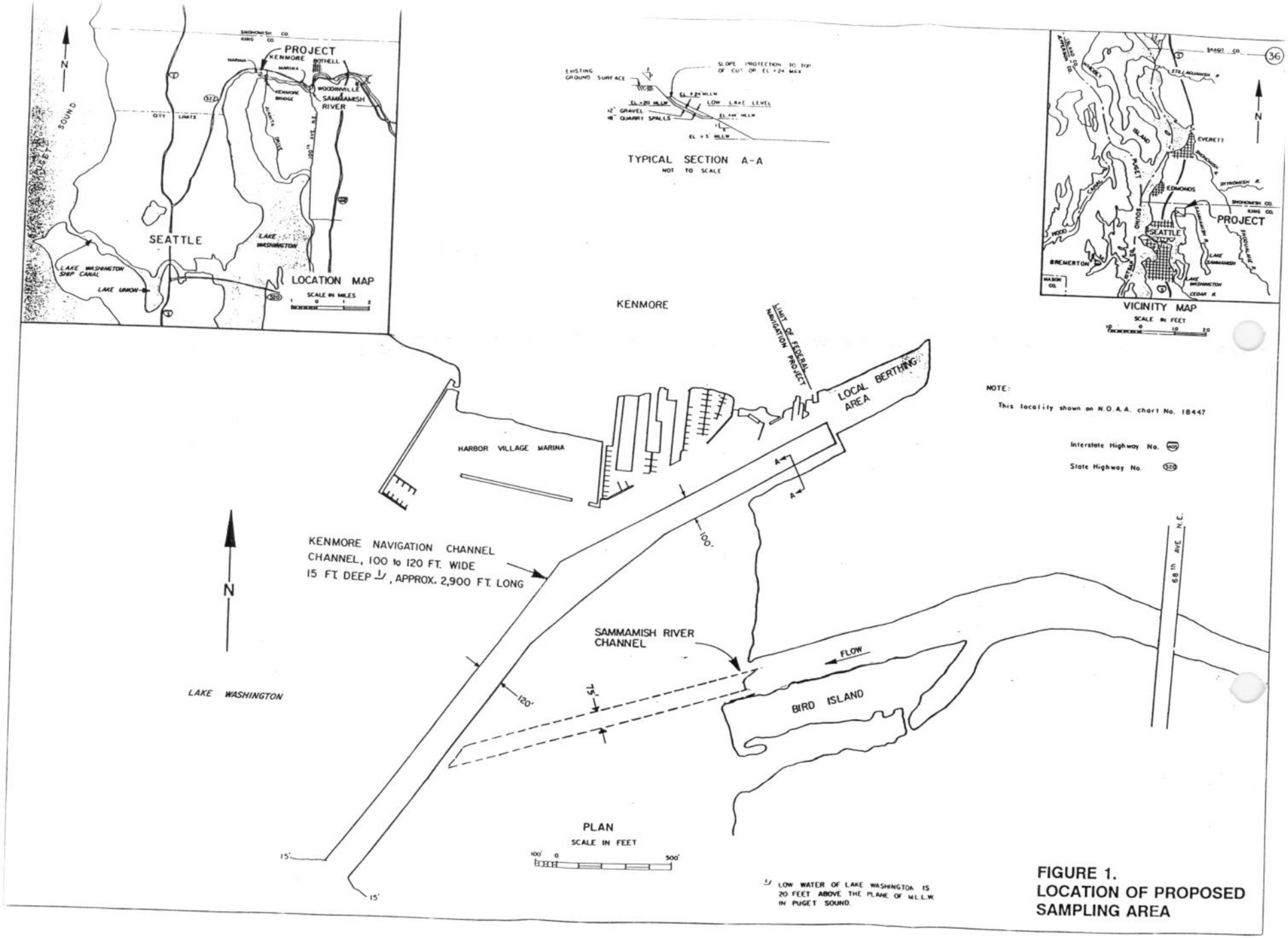

FIGURE 1.
LOCATION OF PROPOSED SAMPLING AREA