

20 August 1992

**SUBJECT: DETERMINATION OF THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA EVALUATION PROCEDURES FOR THE LONE STAR NORTHWEST - WEST TERMINAL (92-2-00452) FOR DISPOSAL AT THE PSDDA ELLIOTT BAY OPEN-WATER DISPOSAL SITE.**

1. Lone Star Northwest proposes to dredge 3,900 cubic yards of sediments from its West Terminal in the Duwamish River at Seattle, Washington. The following summary reflects the PSDDA agencies' (Corps of Engineers, Department of Ecology, Department of Natural Resources and the Environmental Protection Agency) consensus decision on the acceptability of the sampling plan and all relevant test data to make a determination of suitability for the disposal of the material at the PSDDA Elliott Bay open-water site.
2. The initial ranking for the project area was "high", based on the guidance provided in the PSDDA Management Plan Report, Phase I (page A-6) for the Duwamish River.
3. A sampling and analysis plan was developed for this project and approved by the PSDDA agencies on 4 May 1992. One dredged material management unit (DMMU), comprised of two samples, was subjected to tiered chemical and biological testing.
4. Chemistry data indicated several exceedances of the 1992 PSDDA screening levels. These are listed in Table 1. No chemicals exceeded the PSDDA bioaccumulation triggers or maximum levels.
5. Using the tiered testing approach, the screening level exceedances triggered the requirement to conduct biological tests. 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. Only two bioassays, amphipod and Microtox, are required for small projects, which are defined as less than 4,000 cubic yards in a high ranked area (MPR, page A-12). In order to be environmentally conservative, testing beyond the minimum required by PSDDA guidelines was conducted.

PSDDA interpretation guidelines specified in the Management Plan Report, Phase II, modified by changes made at the second annual review meeting, were used to evaluate the bioassay data. West Beach (Whidbey Island) was used for the negative control sediment for the amphipod and Neanthes bioassays. The reference sediment (all bioassays) came from Holmes Harbor.

6. There were no hits for the amphipod, Neanthes and microtox bioassays. In the sediment larval bioassay, the reference sediment failed to meet its performance standard, and the PSDDA agencies required that the test be rerun. During the second sediment larval test, all replicates (test, reference and seawater control) exhibited 100% mortality. The test was run a third time, with the same results. Given the 100% mortality in the control, there is reason to believe that some confounding factor (ammonia, water temperature, etc.) affected the results. Lab QA/QC on the sediment larval test reruns did not meet PSDDA requirements. For these reasons, the anomalous sediment larval results have been set aside.

Lone Star Northwest  
Screening Level Exceedances

ANALYTES	PSDDA			C1
	SL	BT	ML	
Antimony	20	146	200	35
Arsenic	57	507.1	700	87
Copper	81	--	810	160
Lead	66	--	660	140
Zinc	160	--	1600	360
Acenaphthene	63	--	630	230
Fluorene	64	--	640	170
Phenanthrene	320	--	3200	650
Anthracene	130	--	1300	140
Total LPAH	610	--	6100	1352
Fluoranthene	630	4600	6300	1100
Pyrene	430	--	7300	1300
Benzo(a)anthracene	450	--	4500	490
Indeno(1,2,3-c,d)pyrene	69	--	5200	310
Total HPAH	1800	--	51000	5349
Dibenzofuran	54	--	540	150
Total PCBs	130	38 <sup>1</sup>	2500	297

1. Total PCBs BT value in ppm carbon-normalized.

**CENPS-OP-DMMO**  
**Lone Star Northwest (92-2-00452)**

7. In summary, the PSDDA-approved sampling and testing plan was followed, and quality assurance, quality control guidelines specified by PSDDA were generally complied with during testing. The data gathered were deemed sufficient and acceptable for suitability decision-making under the PSDDA program.

8. Based on the chemical and biological results for Lone Star Northwest - West Terminal, the PSDDA agencies concluded that all 3,900 cubic yards of proposed dredged material are suitable for unconfined open-water disposal at a PSDDA site.

9. 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 a public notice, the resource agencies will provide input on the overall project. 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:

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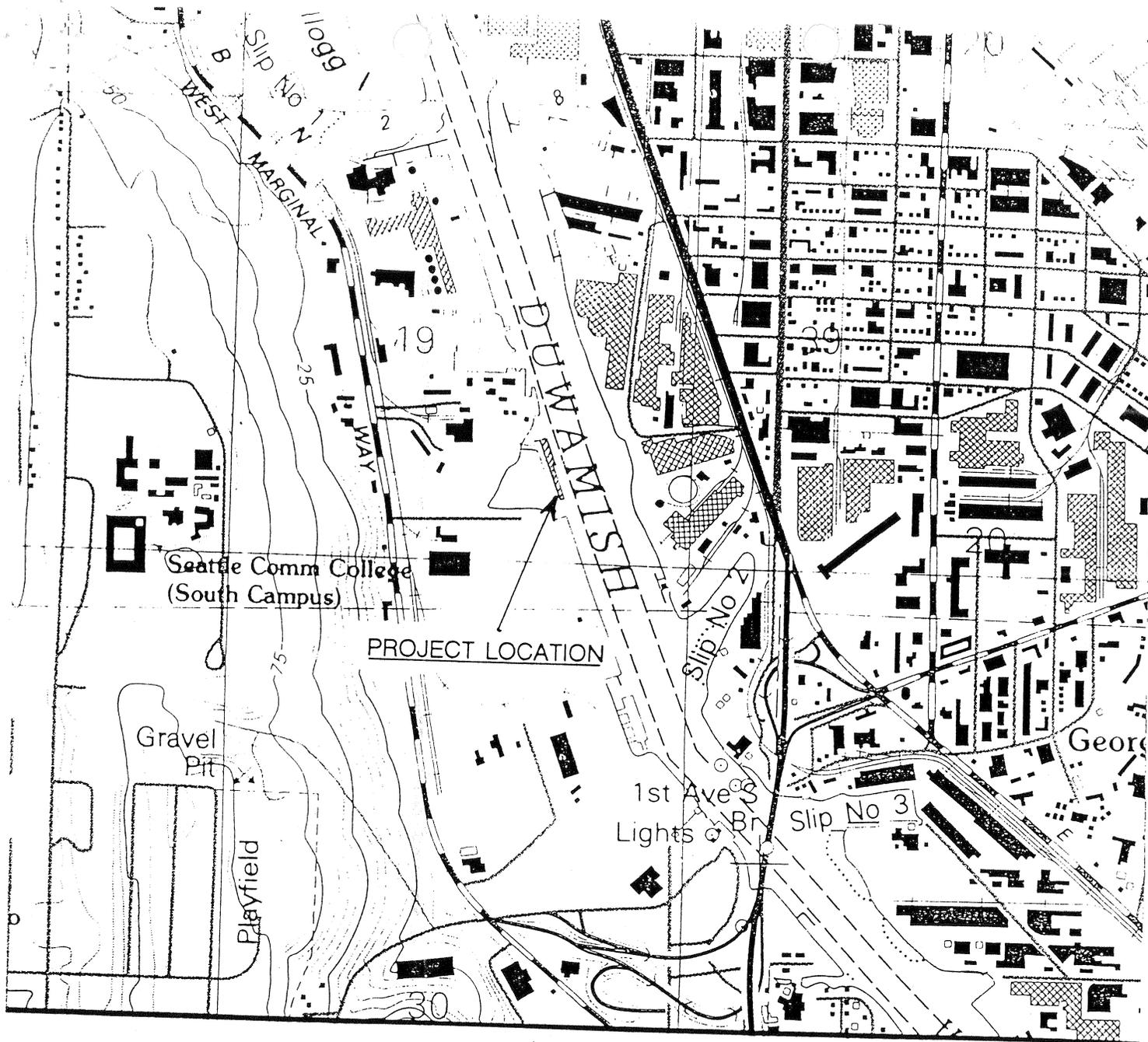
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SCALE IN FEET

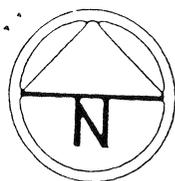
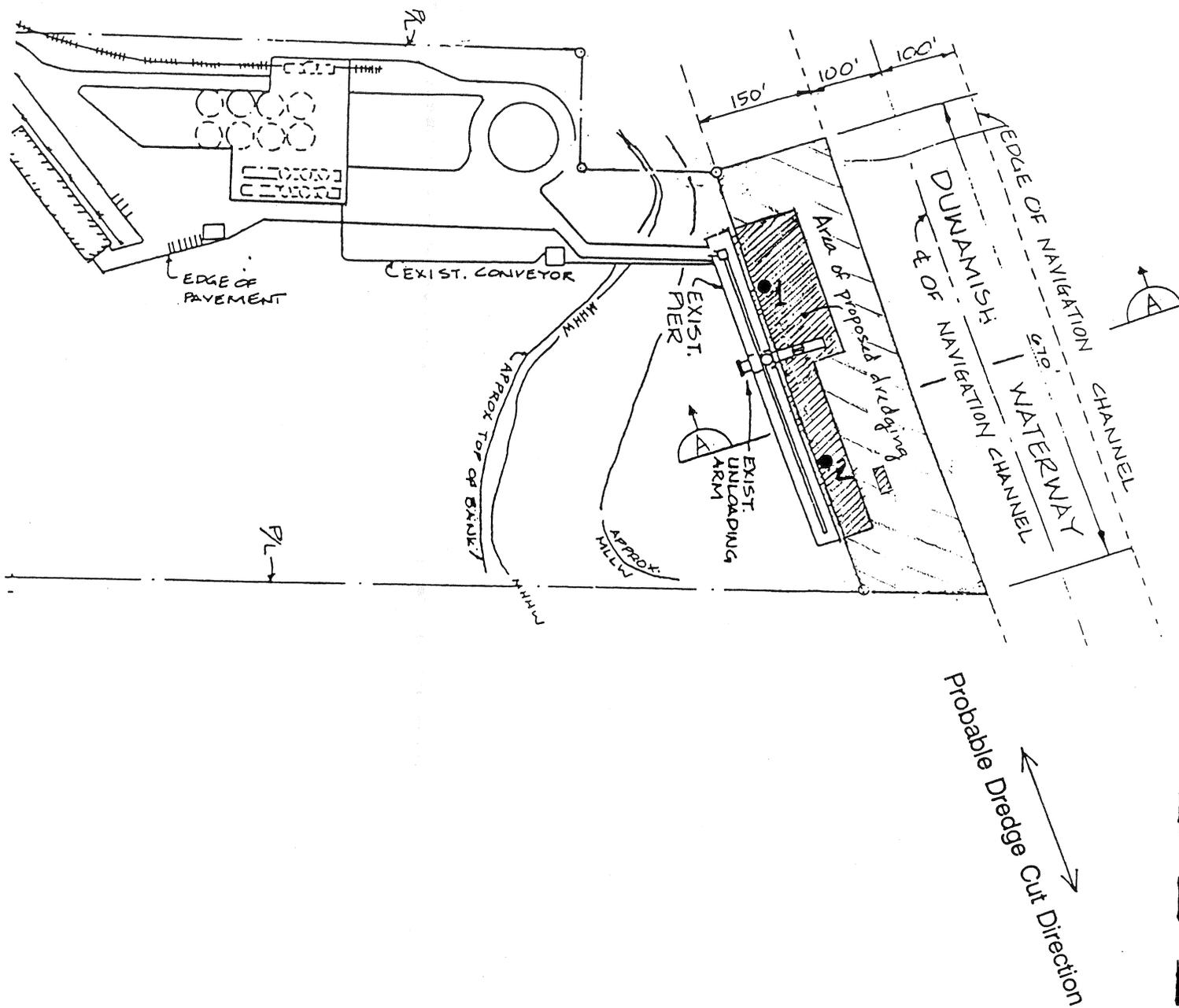


Figure 1.  
Map of Seattle, Washington  
Showing Location of  
Proposed Sampling Area



SCALE: 1" = 200'



Figure 4.  
 Conceptual Dredging Plan  
 and Sediment Boring Locations