CENWS-OD-TS-DM

MEMORANDUM FOR RECORD 11 June 2001

SUBJECT: **DETERMINATION OF THE SUITABILITY OF SEDIMENT PROPOSED TO BE DREDGED FROM THE PORT OF SKAGIT COUNTY, LA CONNER MARINA, SKAGIT COUNTY, WASHINGTON (93-2-00076) FOR DISPOSAL AT THE ROSARIO STRAIT OPEN-WATER DISPERSIVE SITE, AS EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT.**

1. The following summary reflects the consensus determination of the Agencies that comprise the regional Dredged Material Management Program (DMMP) for the State of Washington. The agencies include the Corps of Engineers, Department of Ecology, Department of Natural Resources, and the Environmental Protection Agency. The agencies are charged with determining the suitability of dredged material for unconfined in-water disposal and have evaluated the sediments proposed to be dredged at the La Conner Marina, La Conner, Washington. The Agencies assessed the suitability of an estimated 82,000 cubic yards of sediment (North Basin: 54,500 cy + South Basin: 27,500 cy) proposed for disposal at the Rosario Strait dispersive site.

2. The project was ranked **moderate** for testing purposes, and the sampling and analysis plan was approved on December 28, 2000 by the DMMP agencies for an estimated volume of sediment of 82,000 cubic yards. Sampling of the proposed dredging footprint (see figures 1 and 2) was conducted on March 20-21, 2001, and consisted of collecting twenty core samples which were composited into five surface Dredged Material Management Units (DMMUs) designated C1,C2, C3, C4 and C5. Each composited DMMU was comprised of four core samples.

3. The Sampling and Analysis Plan approved by the Agencies for testing of the five DMMUs was followed, and quality assurance/quality control guidelines specified by the Puget Sound Dredged Disposal Analysis (PSDDA) Program Users Manual were generally complied with. The data gathered are deemed sufficient and acceptable for decision making by the DMMP agencies based on best professional judgment.

4. Relevant dates for regulatory tracking purposes are included in Table 1.

Table 1. Regulatory Tracking Dates

SAP submittal date:	December 7, 2000
SAP Approval date:	December 28, 2000
Sampling date(s):	March 20-21, 2001
Sediment data characterization report submittal date:	June 8, 2001
Recency Determination Date: Moderate (5-7 Years)	March 2006-2008

5. Table 2 summarizes the results of the conventional parameters analyzed in the five composited DMMUs. Chemical analysis of the five composited DMMUs indicated that no detected chemicals or undetected chemicals exceeded the screening level guidelines for the chemicals-of-concern.In addition, TBT was specifically sampled for in the three North Basin DMMUs (C1, C2, and C3) and was found to not exceed screening level guidelines. None of the DMMU's had levels of chemicals-of-concern that exceeded bioaccumulation triggers or maximum level guidelines and therefore no biological testing was required to render a suitability determination.

6. The results of the chemical analysis indicated that all five DMMUs passed the dispersive disposal guidelines for open-water disposal. Thus, the 82,000 cy of dredged material is deemed suitable for placement at the Rosario Strait dispersive disposal site.

7. This memorandum documents the suitability of sediment to be dredged from the La Conner Marina for disposal at the Rosario Strait dispersive open-water site. However, this suitability determination does not constitute final agency approval of the project. A dredging plan for this project must be completed as part of the final project approval process. 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:

3 July 2001
Date

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

27 June 2001
Date

Justine Barton, Environmental Protection Agency

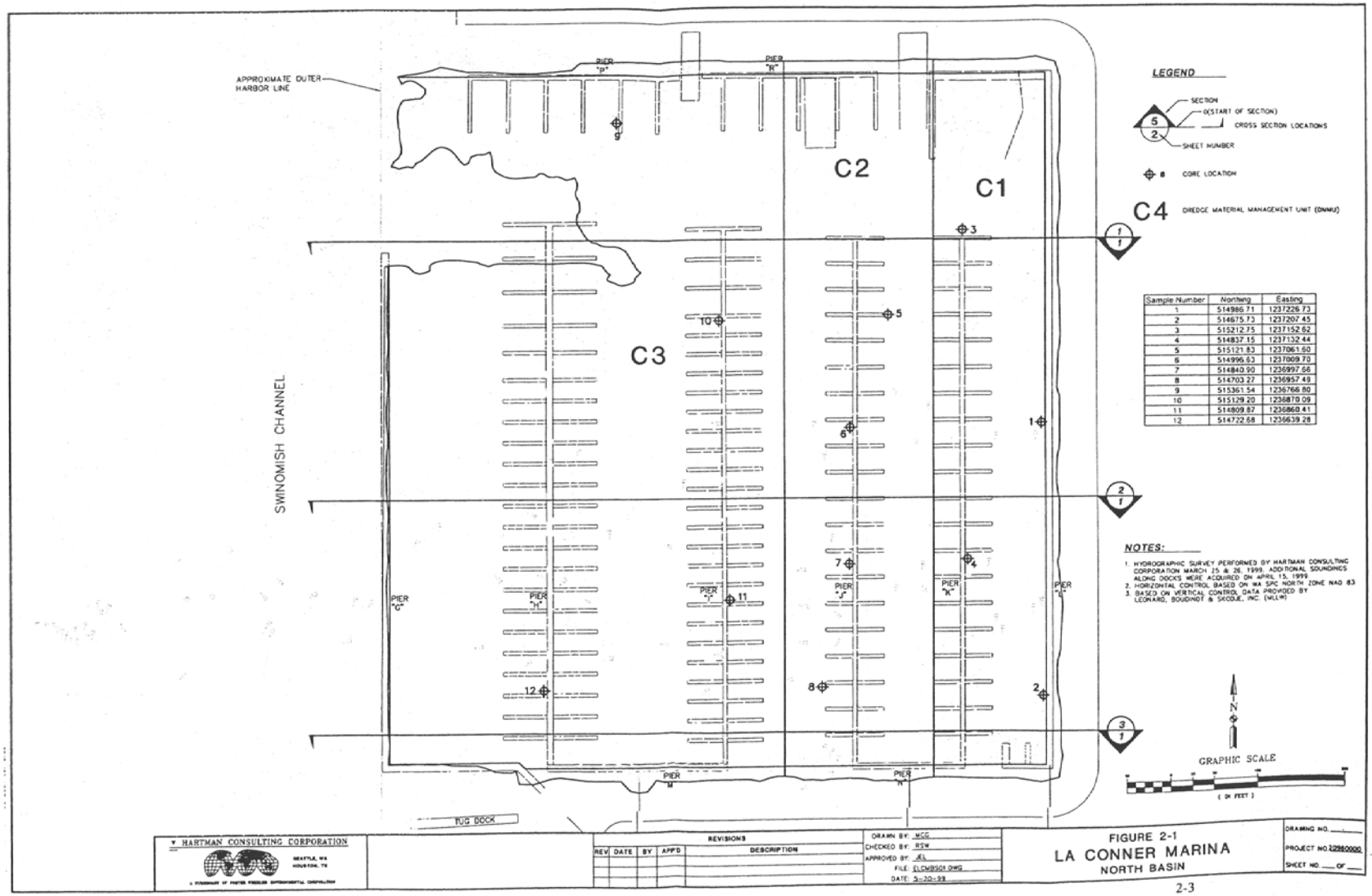
July 2, 2001
Date

Rick Vining, Washington Department of Ecology

02 July 2001
Date

Robert Brenner, Washington Department of Natural Resources

Copies Furnished:
Regulatory Branch Project Manager
Justine Barton, EPA
Rick Vining, Ecology
Robert Brenner, DNR
DMMO File



Sample Number	Northing	Easting
1	514986.71	1237226.73
2	514675.73	1237207.45
3	515212.75	1237152.62
4	514837.15	1237132.44
5	515121.83	1237061.50
6	514996.63	1237009.70
7	514840.90	1236997.66
8	514703.27	1236957.49
9	515361.54	1236766.80
10	515129.20	1236870.09
11	514809.87	1236860.41
12	514722.68	1236639.28

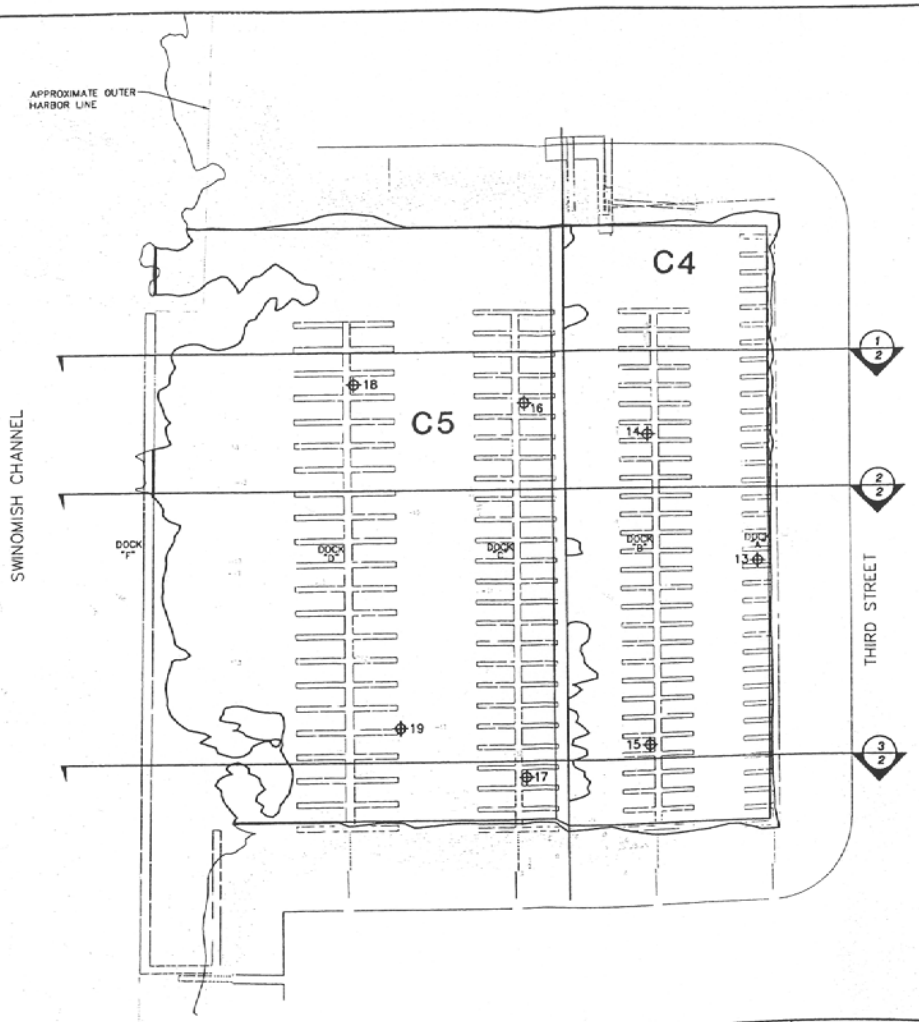
HARTMAN CONSULTING CORPORATION
SEATTLE, WA
HOUSTON, TX
A SUBSIDIARY OF PORTER WHEELER ENVIRONMENTAL CORPORATION

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

DRAWN BY: MCC
CHECKED BY: RSW
APPROVED BY: JEL
FILE: ELCMBSO1.DWG
DATE: 5-20-99

FIGURE 2-1
LA CONNER MARINA
NORTH BASIN

DRAWING NO. ____
PROJECT NO. 22960000
SHEET NO. ____ OF ____



LEGEND

- SECTION (START OF SECTION) — CROSS SECTION LOCATIONS
- SHEET NUMBER
- 8 — CORE LOCATION
- C4 — DREDGE MATERIAL MANAGEMENT UNIT (DMMU)

Sample Number	Northing	Easting
13	513488.32	1236890.80
14	513608.81	1236792.72
15	513322.24	1236784.75
16	513642.30	1236678.28
17	513299.75	1236668.24
18	513684.15	1236522.40
19	513346.74	1236554.12

NOTES:

1. HYDROGRAPHIC SURVEY PERFORMED BY HARTMAN CONSULTING CORPORATION MARCH 25 & 26, 1999. ADDITIONAL SOUNDINGS ALONG DOCKS WERE ACQUIRED ON APRIL 15, 1999.
2. HORIZONTAL CONTROL BASED ON WA SPC NORTH ZONE NAD 83.
3. BASED ON VERTICAL CONTROL DATA PROVIDED BY LEONARD, BOUDINOT & SKOOG, INC. (MLLW).

N

GRAPHIC SCALE

(IN FEET)

HARTMAN CONSULTING CORPORATION
SEATTLE, WA
HOUSTON, TX

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

DRAWN BY: MCC
CHECKED BY: JEL
APPROVED BY: RSW
FILE: FLCNBSO1.DWG
DATE: 3-20-99

FIGURE 2-2
LA CONNER MARINA
SOUTH BASIN

DRAWING NO. ____
PROJECT NO. 20960000
SHEET NO. ___ OF ___

Table 2. Summary of sediment conventional chemistry and grain size results.

Analyte	C1	C2	C3	C4	C5
Total Solids (%)	45.0	46.8	47.3	47.8	49.2
Total Volatile Solids (%)	5.8	6.4	5.0	6.4	5.0
Total Organic Carbon (%)	1.6	1.6	1.7	1.6	1.1
Total Sulfides (mg/kg)	1400	1600	1600	1600	830
Ammonia as Nitrogen (mg/kg)	64	64	62	62	58
Grain Size					
% Gravel	0.4	0.2	0.2	0.2	0.8
% Sand	<0.1	0.6	2.9	2.3	4.3
% Silt	82.2	83.2	80.2	81.1	76.9
% Clay	17.4	15.8	16.6	16.4	18.1
% Fines	96.0	95.4	91.7	92.7	89.9

DAIS Value Table - Dry Weight Basis

Project: **Laconner Marina - 2001 DMMP Characterization (LACON1AF164)**

	units	C1		C2		C3		C4		C5		C6	
SEDIMENT CONVENTIONALS													
Total Solids	%	45		46.8		47.3		47.8		49.2		44.8	
Volatile Solids	%	5.8		6.4		5		6.4		5		6.3	
Total Organic Carbon	%	1.6		1.6		1.7		1.6		1.1		1.3	
Ammonia	MG/KG	64		64		62		62		58		44	
Total Sulfides	MG/KG	1400		1600		1600		1600		830		1500	
METALS													
Antimony (1)	MG/KG	1.1	u	0.8	u	0.8	u	0.9	u	0.7	u	1	u
Arsenic	MG/KG	11		11		11		11		9.8		13	
Cadmium	MG/KG	1.7		1.8		1.7		1.7		1.7		1.8	
Chromium	MG/KG	-		-		-		-		-		-	
Copper	MG/KG	50		48		49		46		44		54	
Lead (1)	MG/KG	8		7.4		7.8		7.6		7.2		8.8	
Mercury	MG/KG	0.09		0.11		0.1		0.1		0.09	u	0.11	
Nickel	MG/KG	53		53		54		55		50		57	
Selenium	MG/KG	-		-		-		-		-		-	
LPAH													
Silver	MG/KG	0.11	u	0.08	u	0.08	u	0.09	u	0.09	u	0.1	u
Zinc	MG/KG	81		82		79		79		75		98	
2-Methylnaphthalene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Acenaphthene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Acenaphthylene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Anthracene (1)	UG/KG	32	u	30	u	28	u	30	u	84		32	u
Fluorene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Naphthalene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
HPAH													
Phenanthrene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Total LPAH (1)	UG/KG	32	u	30	u	28	u	30	u	84	j	32	u
Benzo(a)anthracene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Benzo(a)pyrene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Benzo(g,h,i)perylene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Benzofluoranthenes (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Chrysene (1)	UG/KG	32	u	30	u	28	u	30	u	67		32	u
Dibenzo(a,h)anthracene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Fluoranthene	UG/KG	72		30	u	86		30	u	180		32	u
Indeno(1,2,3-c,d)pyrene (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
CHLORINATED HYDROCARBONS													
Pyrene	UG/KG	32	u	30	u	71		30	u	110		81	
Total HPAH (1)	UG/KG	72		30	u	157		30	u	357	j	81	
1,2,4-Trichlorobenzene (1)	UG/KG	10	u	9	u	8	u	9	u	9	u	9.9	u
1,2-Dichlorobenzene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
1,3-Dichlorobenzene (3)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
PHTHALATES													
1,4-Dichlorobenzene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
Hexachlorobenzene	UG/KG	16	u	15	u	14	u	15	u	15	u	17	u
Bis(2-ethylhexyl)phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Butyl benzyl phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	71	
Di-n-butyl phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Di-n-octyl phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
PHENOLS													
Diethyl phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Dimethyl phthalate (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u

2 Methylphenol (1)	UG/KG	16	u	15	u	14	u	15	u	15	u	16	u
2,4-Dimethylphenol (1)	UG/KG	16	u	15	u	14	u	15	u	15	u	16	u
4 Methylphenol (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
MISCELLANEOUS EXTRACTABLES													
Pentachlorophenol	UG/KG	130	u	120	u	110	u	120	u	120	u	130	u
Phenol (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Benzoic acid (1)	UG/KG	160	u	150	u	140	u	150	u	150	u	160	u
Benzyl alcohol (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Dibenzofuran (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
Hexachlorobutadiene (1)	UG/KG	19	u	18	u	17	u	18	u	18	u	19	u
VOLATILE ORGANICS													
Hexachloroethane (1)	UG/KG	32	u	30	u	28	u	30	u	29	u	32	u
N-Nitrosodiphenylamine (1)	UG/KG	16	u	15	u	14	u	15	u	15	u	16	u
Ethylbenzene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
Tetrachloroethene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
PESTICIDES AND PCBs													
Total Xylene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
Trichloroethene (1)	UG/KG	4.6	u	4.3	u	4.3	u	4.3	u	4.1	u	4.6	u
Aldrin (3)	UG/KG	1.1	u	1.1	u	0.97	u	1	u	1	u	1.1	u
Chlordane (2)	UG/KG	3	u	2.9	u	2.6	u	2.7	u	2.7	u	3	u
Dieldrin (3)	UG/KG	1.5	u	1.4	u	1.3	u	1.4	u	1.4	u	1.5	u
Heptachlor (3)	UG/KG	1.1	u	1.1	u	0.97	u	1	u	1	u	1.1	u
Lindane (3)	UG/KG	1.1	u	1.1	u	0.97	u	1	u	1	u	1.1	u
ORGANOMETALLICS													
Total DDT	UG/KG	3.7	u	3.6	u	3.2	u	3.4	u	3.4	u	3.8	u
Total PCBs	UG/KG	75	u	72	u	65	u	68	u	69	u	75	u
Tributyltin (porewater) (2)	UG/L	0.02	u	0.02	u	0.02	u	-	u	-	u	-	u

A dash indicates that no data exists for this analyte in DAIS

(1) = No BT exists (2) = No ML exists (3) = No BT or ML exists

END OF REPORT