

CENWS-OD-TS-DMMO

MEMORANDUM FOR: RECORD

October 3, 2000

Project Reference #: 2000-2-01177; 2006-1403-NO

SUBJECT: DETERMINATION ON THE SUITABILITY OF PROPOSED MAINTENANCE DREDGED MATERIAL FROM PORT OF EVERETT MARINA AND 10TH STREET BOAT LAUNCH, PORT GARDNER BAY, PUGET SOUND, EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT (CWA) FOR OPEN-WATER DISPOSAL AT THE PORT GARDNER NON-DISPERSIVE DISPOSAL SITE.

49,340

1. Introduction. The following summary reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) on the suitability of material from the Port of Everett's Marina, 10th Street Boat Launch, and Jetty Island Boat Dock in Everett, Washington for unconfined open-water disposal. For this project an estimated 49,340 cy of material were proposed to be dredged from three areas at the Port of Everett, with the majority coming from the marina (Figure 1). Minor amounts from the 10th Street Boat Launch and the Jetty Island Boat Dock also are proposed for dredging under this project. All underwent PSDDA sampling (Table 1 and Figures 2-4). Disposal is anticipated to be at the Port Gardner non-dispersive PSDDA disposal site. Project depth of -12 ft. MLLW would be provided along with one foot of allowable overdepth (to -13 ft. MLLW) in the project area.

Table 1. Regulatory Tracking Dates

SAP received	March 6, 2000
SAP approved	March 29, 2000
Sampling dates	April 4-5, 2000
Data report submitted	July 28, 2000
Recency Determination: Moderate Concern (5-7 years)	April 2005 - 2007

DAIS: POE10-1-A-F-146

2. Background. The Port of Everett marina was constructed in 1964 and was last dredged in 1990. Sedimentation since that time has reduced navigation depths and interfered with marina operations. Areas to be dredged include the northwest, northeast, and southeast corners of the marina, and between four sets of floating docks along the southern edge of the marina. Areas under floating docks and within the boat slips or covered moorages will not be dredged. Sampling at the marina and Jetty Island dock were last accomplished in 1988, when both chemical and bioassay tests were run on the sediments. All material was found suitable for open water disposal under current guidelines.

The Jetty Island boat dock was improved and expanded during the 1990's. Dredging in this location is proposed because current bottom depths do not allow access to larger sightseeing and foot ferry vessels that unload at the facility, and because the floating restroom grounds at low tides. Areas to be dredged include an approach channel from the main channel to a -11

surface sub
 mod = 16,000 24,000
 4,000 4,000

foot MLLW design dredge depth plus one foot of allowable overdepth, and a small area under the restroom facility.

The 10th Street Boat launch was originally constructed in the 1970's, and was last dredged in 1991. Subtidal portions of the boat launch area and approach channel will be dredged. Sampling and testing at the boat launch were last performed in 1991. All sediments were found suitable for openwater disposal under current guidelines.

Table 2. Project Synopsis.

Time of proposed dredging	2000-2001
Proposed disposal sites	Pt. Gardner non-dispersive PSDDA site
Sediment ranking	moderate
Project last dredged	1990 - 1991

3. Sampling. This project area is ranked "moderate" by the PSDDA program. The 2000 field sampling effort, on April 4-5, included collection of a total of 22 core samples for compositing into six dredged material management units (DMMU) samples. A total of 15 core samples were taken for four samples in the Everett marina; three core samples were composited into one DMMU at the Jetty Island boat dock; and four core samples were taken at the 10th Street boat launch for one DMMU sample. Conventional parameters measured in the 6 DMMUs are depicted in Table 3.

Table 3. Sediment conventional results.

PARAMETER	Everett Marina DMMUs				Jetty Is. DMMU	10 th St. Boat Launch DMMU	
	M-1	M-2	M-3	M-4	JI-1	BL-1	
Volume (cubic yards)	13,160	13,200	12,080	4,400	3,000	3,500	
GRAIN SIZE	% Gravel	1.6	0.9	1.4	1.3	2.1	1.8
	% Sand	44.7	19.2	44.0	46.0	51.1	47.8
	% Silt	42.6	63.0	44.0	44.4	37.8	40.5
	% Clay	11.1	17.1	10.8	8.3	8.9	9.9
	(clay+silt) % Fines	53.7	80.1	54.8	52.7	46.7	50.4
Total Solids, %	60.3	57.9	60.6	71.9	62.7	57.8	
Volatile Solids, %	6.3	6.7	4.5	2.9	6.2	6.7	
Total Organic Carbon, %	2.3	2.2	2.0	0.9	2.0	2.1	
Total Sulfides, mg/kg	400	150	240	37	580	590	
Total Ammonia, mg N/kg	22	30	19	14	49	20	

4. Chemical Analysis. The Agencies' approved sampling and analysis plan was followed, though a few minor deviations in sampling location occurred which did not appear to affect the quality of data collected. Quality assurance/quality control guidelines specified by PSEP and the PSDDA program were generally complied with. Though there were minor detections of several chemicals of concern (COCs) no detected or undetected chemicals exceeded PSDDA screening levels, and thus no Tier 3 bioassay testing was required.

5. Suitability. This memo documents the suitability of proposed dredged sediments in the Everett marina, 10th Boat Launch and Jetty Island boat dock for open water disposal. The data gathered were deemed sufficient and acceptable for regulatory decision-making under the PSDDA program. Based on the results of the chemical testing, the DMMP agencies concluded that all six DMMU, representing 49,340 cy, are suitable for open water disposal at the Port Gardner non-dispersive disposal site.

6. Alternatives Analysis. This suitability determination does not constitute final agency approval of the 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. A dredging plan for this project must be completed as part of the final DMMP project approval process.

Concur:

10/4/00
Date



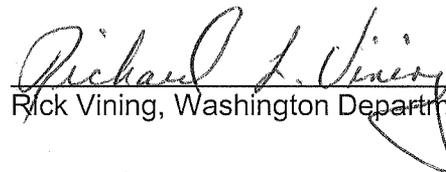
Lauran Cole Warner, Seattle District Corps of Engineers

10/5/00
Date



Justine Barton, Environmental Protection Agency

10/5/00
Date



Rick Vining, Washington Department of Ecology

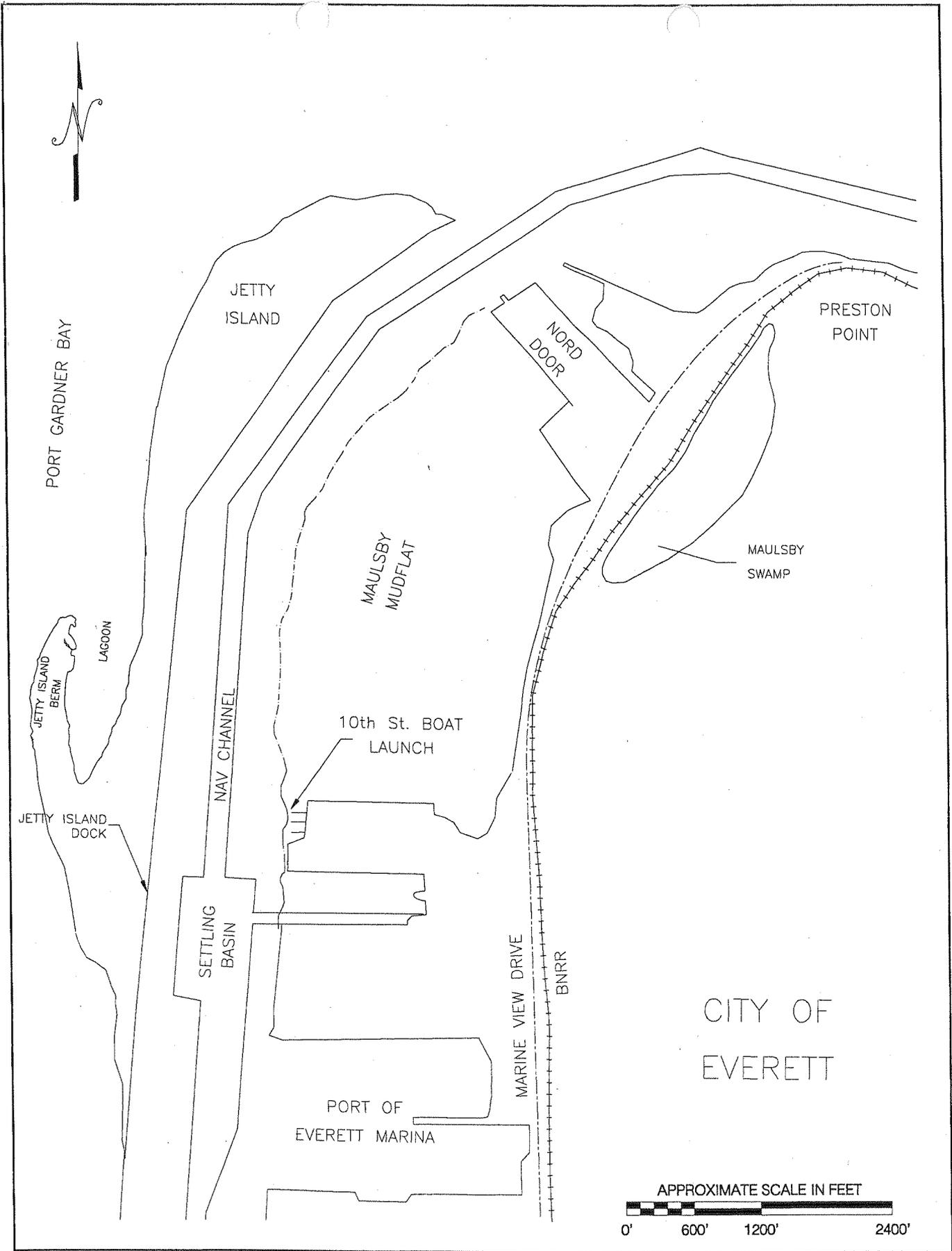
05 OCT 00
Date



Ted Benson, Washington Department of Natural Resources

Copied furnished:

Rick Vining, Ecology
Justine Barton, EPA
Ted Benson, DNR
Susan Glenn, Corps Regulatory
Rob Gilmour, Pentec
DMMO file



Port of Everett Marina PSDDA Coring
 Everett, Washington
 for the Port of Everett

Figure 1
 Vicinity map.



N 1574.00
VA N 0° 0' 0" W 93
1302200

LEGEND:
△ Proposed Sample Location
● Actual Sample Location
A-1

APPROXIMATE SCALE IN FEET
0 100 200 400

DMMU M-2
13,200 CY

DMMU M-1
13,160 CY

DMMU M-3
12,080 CY

DMMU M-4
4,400 CY

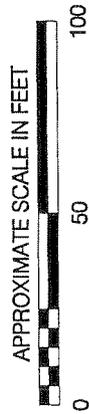
Figure 2

DMMU layout with planned and actual sampling locations at the Port of Everett Marina.

Port of Everett Marina PSDDA Coring
Everett, Washington
for the Port of Everett

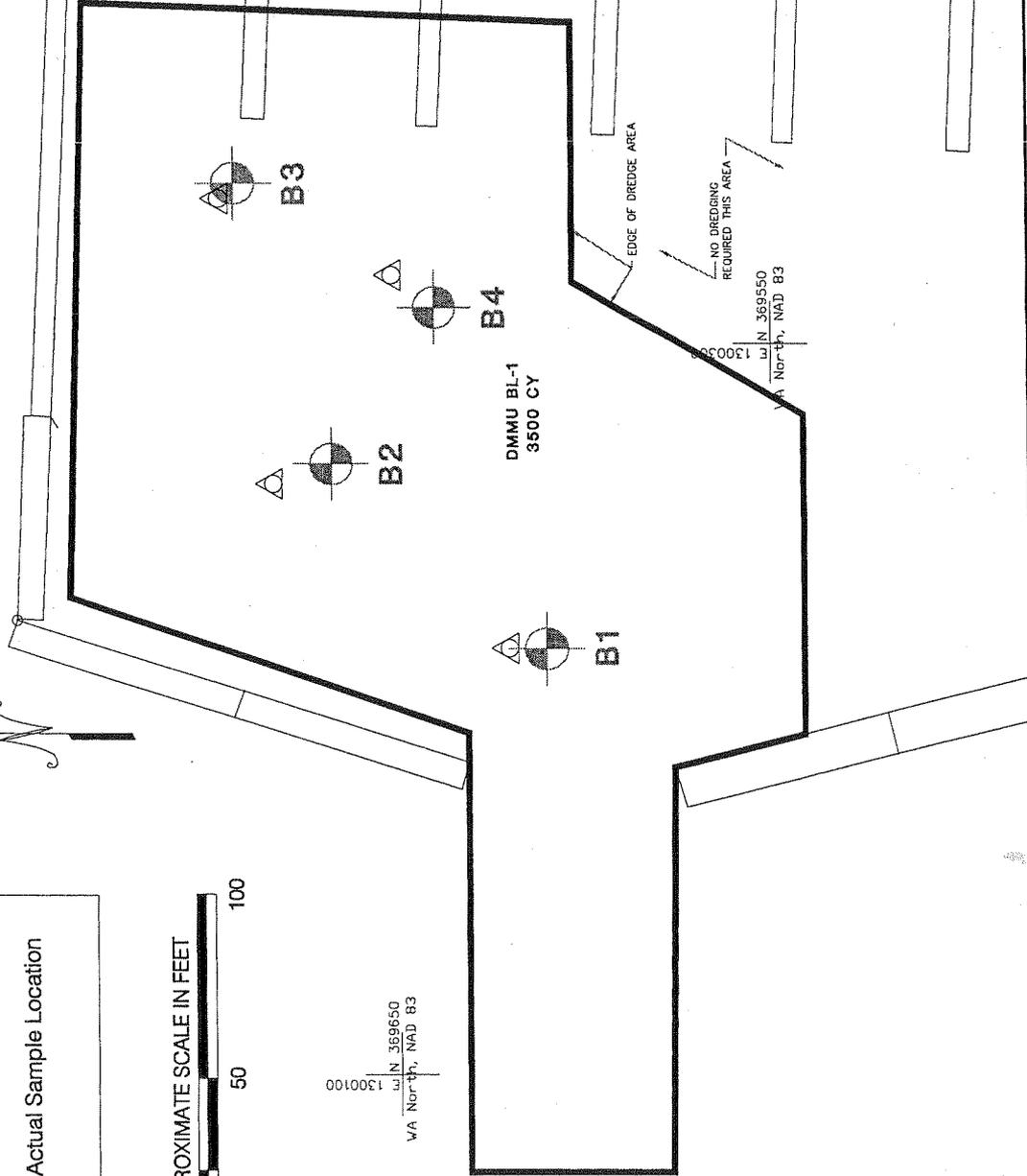
LEGEND:

- △ Proposed Sample Location
- Actual Sample Location



1300100
N 369650
VA North, NAD 83

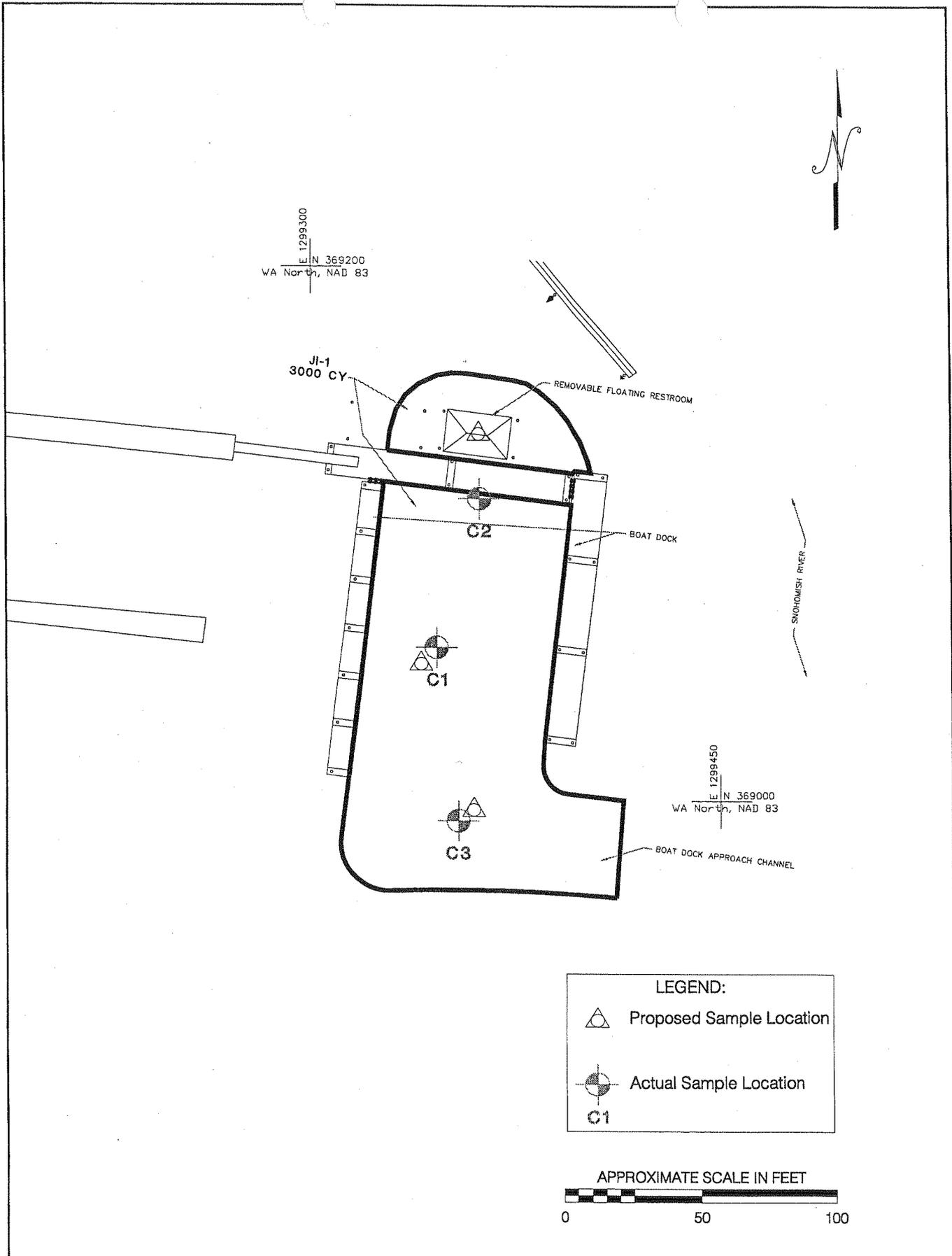
SNOMISH RIVER CHANNEL



Port of Everett Marina PSDDA Coring
Everett, Washington
for Port of Everett

Figure 3
DMMU layout with planned and actual
sampling locations at the 10th Street boat launch.





DAIS Value Table - Dry Weight Basis

Project: Port of Everett Marina & 10th Street Boatramp Project (2000-2-01177; 2006-1403-NO)

POE101AF146

	units	C1	C2	C3	C4	C5	C6
SEDIMENT CONVENTIONALS							
Total Solids	%	60.3	57.9	60.6	71.9	62.7	57.8
Volatile Solids	%	6.3	6.7	4.5	2.9	6.2	6.7
Total Organic Carbon	%	2.3	2.2	2	0.91	2	2.1
Ammonia	MG/KG	22	30	19	14	49	-1
Total Sulfides	MG/KG	400	150	240	37	580	590
METALS							
Antimony (1)	MG/KG	4	u 4	u 4	u 3	u 4	u 4
Arsenic	MG/KG	12	12	10	11	12	12
Cadmium	MG/KG	0.4	0.6	0.5	0.4	0.4	0.3
Chromium (4)	MG/KG	-	-	-	-	-	-
Copper	MG/KG	50.4	58.5	46.4	30.4	39.5	50.3
Lead (1)	MG/KG	11	17	10	4	6	8
Mercury	MG/KG	0.07	0.13	0.09	0.06	0.06	0.06
Nickel	MG/KG	41.9	45.8	45.2	34.9	38.1	42.3
Selenium (4)	MG/KG	-	-	-	-	-	-
Silver	MG/KG	1.1	1.2	1	0.8	1	1.1
Zinc	MG/KG	80.6	85	74.7	51.3	63.7	75.1
LPAH							
2-Methylnaphthalene (1)	UG/KG	20	u 20	u 66	19	u 60	19
Acenaphthene (1)	UG/KG	20	u 20	u 140	19	u 140	19
Acenaphthylene (1)	UG/KG	20	u 19	j 19	u 19	u 20	u 19
Anthracene (1)	UG/KG	21	35	97	19	u 96	25
Fluorene (1)	UG/KG	20	u 20	u 150	19	u 150	19
Naphthalene (1)	UG/KG	24	54	42	19	u 57	20
Phenanthrene (1)	UG/KG	34	66	550	19	u 490	38
Total LPAH (1)	UG/KG	79	174	979	19	u 933	83
HPAH							
Benzo(a)anthracene (1)	UG/KG	57	66	88	19	u 93	59
Benzo(a)pyrene (1)	UG/KG	38	53	44	19	u 47	27
Benzo(g,h,i)perylene (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Benzo(a)fluoranthene (1)	UG/KG	97	151	119	19	u 125	67
Chrysene (1)	UG/KG	81	100	u 110	21	120	56
Dibenzo(a,h)anthracene (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Fluoranthene	UG/KG	81	170	420	27	440	170
Indeno(1,2,3-c,d)pyrene (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Pyrene	UG/KG	120	220	350	50	360	130
Total HPAH (1)	UG/KG	474	760	1131	98	1185	509
CHLORINATED HYDROCARBONS							
1,2,4-Trichlorobenzene (1)	UG/KG	6.1	u 6.4	u 8.1	u 5.5	u 6.9	u 6.8
1,2-Dichlorobenzene (1)	UG/KG	1.2	u 1.3	u 1.6	u 1.1	u 1.4	u 1.4
1,3-Dichlorobenzene (3)	UG/KG	1.2	u 1.3	u 1.6	u 1.1	u 1.4	u 1.4
1,4-Dichlorobenzene (1)	UG/KG	1.2	u 1.3	u 1.6	u 1.1	u 1.4	u 1.4
Hexachlorobenzene	UG/KG	20	u 20	u 19	u 19	u 20	u 19
PHTHALATES							
Bis(2-ethylhexyl)phthalate (1)	UG/KG	50	52	55	25	62	42
Butyl benzyl phthalate (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Di-n-butyl phthalate (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Di-n-octyl phthalate (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19
Diethyl phthalate (1)	UG/KG	20	u 20	u 19	u 19	u 20	u 19

	units	C1		C2		C3		C4		C5		C6	
Dimethyl phthalate (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
PHENOLS													
2 Methylphenol (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
2,4-Dimethylphenol (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
4 Methylphenol (1)	UG/KG	45		29		42		19		48		27	
Pentachlorophenol	UG/KG	98	u	99	u	96	u	96	u	99	u	95	u
Phenol (1)	UG/KG	33		20	u	19	u	19	u	20	u	19	u
MISCELLANEOUS EXTRACTABLES													
Benzoic acid (1)	UG/KG	200	u	200	u	190	u	190	u	200	u	190	u
Benzyl alcohol (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
Dibenzofuran (1)	UG/KG	20	u	20	u	19	u	19	u	94		19	u
Hexachlorobutadiene (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
Hexachloroethane (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
N-Nitrosodiphenylamine (1)	UG/KG	20	u	20	u	19	u	19	u	20	u	19	u
VOLATILE ORGANICS													
Ethylbenzene (1)	UG/KG	1.2	u	1.3	u	1.6	u	1.1	u	1.4	u	1.4	u
Tetrachloroethene (1)	UG/KG	1.2	u	1.3	u	1.6	u	1.1	u	1.4	u	1.4	u
Total Xylene (1)	UG/KG	1.2	u	1.3	u	1.6	u	1.1	u	1.4	u	1.4	u
Trichloroethene (1)	UG/KG	1.2	u	1.3	u	1.6	u	1.1	u	1.4	u	1.4	u
PESTICIDES AND PCBs													
Aldrin (3)	UG/KG	0.92	u	0.94	u	0.91	u	0.9	u	0.99	u	0.95	u
Chlordane (2)	UG/KG	0.92	u	0.94	u	0.91	u	0.9	u	0.99	u	0.95	u
Dieldrin (3)	UG/KG	1.8	u	1.9	u	1.8	u	1.8	u	2	u	1.9	u
Heptachlor (3)	UG/KG	0.92	u	0.94	u	0.91	u	0.9	u	0.99	u	0.95	u
Lindane (3)	UG/KG	0.92	u	0.94	u	0.91	u	0.9	u	0.99	u	0.95	u
Total DDT	UG/KG	1.8	u	1.9	u	1.8	u	1.8	u	2	u	1.9	u
Total PCBs	UG/KG	37	u	37	u	36	u	36	u	39	u	38	u
ORGANOMETALLICS													
Tributyltin (porewater) (2)	UG/L	-		-		-		-		-		-	

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 (4) = No SL or ML exists

END OF REPORT