

MEMORANDUM FOR RECORD

February 02, 2017

SUBJECT: DMMP RECENCY EXTENSION FOR MAINTENANCE DREDGING AT THE PORT OF EVERETT 10TH STREET BOAT LAUNCH, EVERETT, WA.

1. Introduction. This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers [USACE], Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) regarding the application of the DMMP recency guidelines to proposed dredging of the Port of Everett (Port) 10th Street Boat Launch (boat launch) for disposal at the Port Gardner nondispersive open-water site or for beneficial use at Jetty Island, WA.

2. Background. The most recent suitability determination for the boat launch – issued December 9, 2009 – approved the removal of up to 32,000 cubic yards (cy) of material to -10 ft MLLW (plus 2 ft overdepth) for disposal at the Port Gardner nondispersive open-water site (DMMP, 2009a). The boat launch was ranked low, and the recency period for low-ranked projects is seven years. Therefore, the previous characterization for the boat launch expired in October 2016, seven years from the most recent sampling event in October 2009.

The Port requested an extension to the recency period in an email to USACE on October 25, 2016 for maintenance dredging associated with extreme siltation at the boat launch (Anderson, 2016). Dredging is planned for the 2017/2018 work window. A dredged material volume estimate of 36,500 cy was provided by the Port on January 20, 2017. The area to be dredged (Figure 1) is the same as that covered in the 2009 suitability determination. The proposed dredge depth also remains the same at -10 ft MLLW plus 2 ft overdepth.

3. Recency Evaluation. Since the 2009 boat launch suitability determination, the DMMP screening levels for two chemicals (hexachlorobutadiene and dieldrin; Table 1) have been revised (11 and 1.9 mg/kg dry-weight (dw) normalized, respectively) to levels that are now below the maximum non-detect concentrations reported in the 2009 sediment data (20 and 2.0 mg/kg dw, respectively). Given that hexachlorobutadiene and dieldrin were non-detects in all samples and the primary source of sediment is the Snohomish River, which has historically had uncontaminated sediment suitable for open-water disposal and beneficial re-use, the DMMP agencies determined that the presence of these compounds above the screening level is unlikely.

Dioxin testing during a partial characterization of the area in 2009 (DMMP, 2009b) reported a concentration of 1.87 ng/kg toxicity equivalents (TEQ) (with non-detects = ½ detection limit). This was below the dioxin guidelines in effect at the time, and on this basis the DMMP agencies agreed that dioxin testing would not be required during full characterization in October 2009. This concentration is also below the current DMMP site management objective of 4.0 ng/kg TEQ.

The 2009 suitability determination used the analytical results from the dredged material as a proxy for sediment that would be exposed by dredging. Hexachlorobenzene (1.74 mg/kg organic carbon (oc)

normalized; Table 2) was undetected, but the reporting limit exceeded the State of Washington Sediment Quality Standard (SQS; Ecology 1995) of 0.38 mg/kg oc. However, the DMMP agencies believed the probability that this reporting-limit exceedance was masking an actual exceedance of SQS was low. Therefore, the exceedance was deemed insignificant and the agencies agreed that there was no need for analysis of Z-samples for this project. The sediment that would be exposed by dredging was not anticipated to have any exceedances of SQS.

A review of the Washington State Department of Ecology's Spills Database found no spills reported at the boat launch between July 2011 and March 2015 (Figure 2). The three nearest spills were in the North Marina downstream and to the south of the boat launch. Two of these spills were between 1 and 2 gallons of gasoline or oil; the third was less than a gallon. Due to their small size and downstream location, it is unlikely for these spills to have impacted the sediments in the boat launch area. No spills have been reported by the Port at the boat launch since March 2015. Therefore, there is no reason to believe that the condition of the sediments at the site have changed due to spills from what was documented in the December 2009 suitability determination.

4. Recency Determination. On the basis of the existing information, the DMMP agencies are in agreement that a recency extension for the Port of Everett 10th Street Boat Launch is acceptable. This recency extension covers maintenance dredging in the boat launch through the end of the in-water work window in February 2018. Any proposed dredging work after this date will require a full characterization of the material to be removed. A pre-dredge meeting or conference call with the USACE Seattle District Regulatory Branch project manager and DMMP agencies is still required prior to dredging.

5. Debris Management. The DMMP agencies implemented a debris screening requirement following the 2015 SMARM in order to prevent the disposal of solid waste and large debris at open-water disposal sites in Puget Sound (DMMP, 2015). The clarification stated that "all projects must use a screen to remove debris unless it can be demonstrated that debris is unlikely to be present or that the debris present is large woody debris that can be easily observed and removed by other means during dredging."

Email and phone communications with the Port Director of Planning, Graham Anderson, provided information to evaluate debris management practices and the likelihood of encountering debris during dredging. The boat launch was last dredged in 2010 to -10 ft MLLW (plus 2 ft overdepth) and Port staff members do not recall any major debris issues during that dredging event. Periodic removal of sediment from the concrete launch lane aprons at low tide with excavators also occurs and debris has not been an issue.

Potential sources of debris include boaters, who can moor up to 14 days at the Port's guest docks, as well as the Snohomish River located to the west of the boat launch entrance. Heavy rains, flooding, and extreme high tides can bring woody debris from the river into the boat launch area. Port security and marina staff members actively monitor and remove debris entering the boat launch area from boaters and the river.

Based on this information from the Port, the DMMP agencies concur that there is a low likelihood of debris being present at the site during dredging operations and, therefore, a debris screening grid is not required. However, the dredging and disposal quality control plan (QCP) must include a debris management plan for any debris encountered during dredging. The QCP must be developed and

submitted to the Seattle District Regulatory project manager at least 7 days prior to the pre-dredge meeting.

6. References:

Anderson, G., 2016. *Email RE: Port of Everett Boat Launch Maintenance Dredging Suitability Determination Extension Request*. October 25, 2016.

DMMP, 2009a. *Determination Regarding the Suitability of Proposed Dredged Material from the Port of Everett 10th Street Boat Launch, for Unconfined Open-Water Disposal at the Port Gardner Nondispersive Site (NWS-2009-1245)*. December 09, 2009.

DMMP, 2009b. *Determination Regarding the Partial Characterization of Proposed Dredged Material from the Port of Everett 10th Street Boat Launch and Settling Basin Realignment Project for Downranking under DMMP Guidelines*. September 18, 2009.

DMMP, 2015. *Debris Screening Requirements for Dredged Material Disposed at Open-Water Sites*. Final DMMP Clarification Paper. October 02, 2015.

Ecology, 1995. *Sediment Management Standards – Chapter 173-204 WAC*. Washington State Department of Ecology, December 1995.

7. Agency Signatures:

Concur:

signed copy on file in the Seattle District Dredged Material
Management Office

Date David Fox – U.S. Army Corps of Engineers, Seattle District

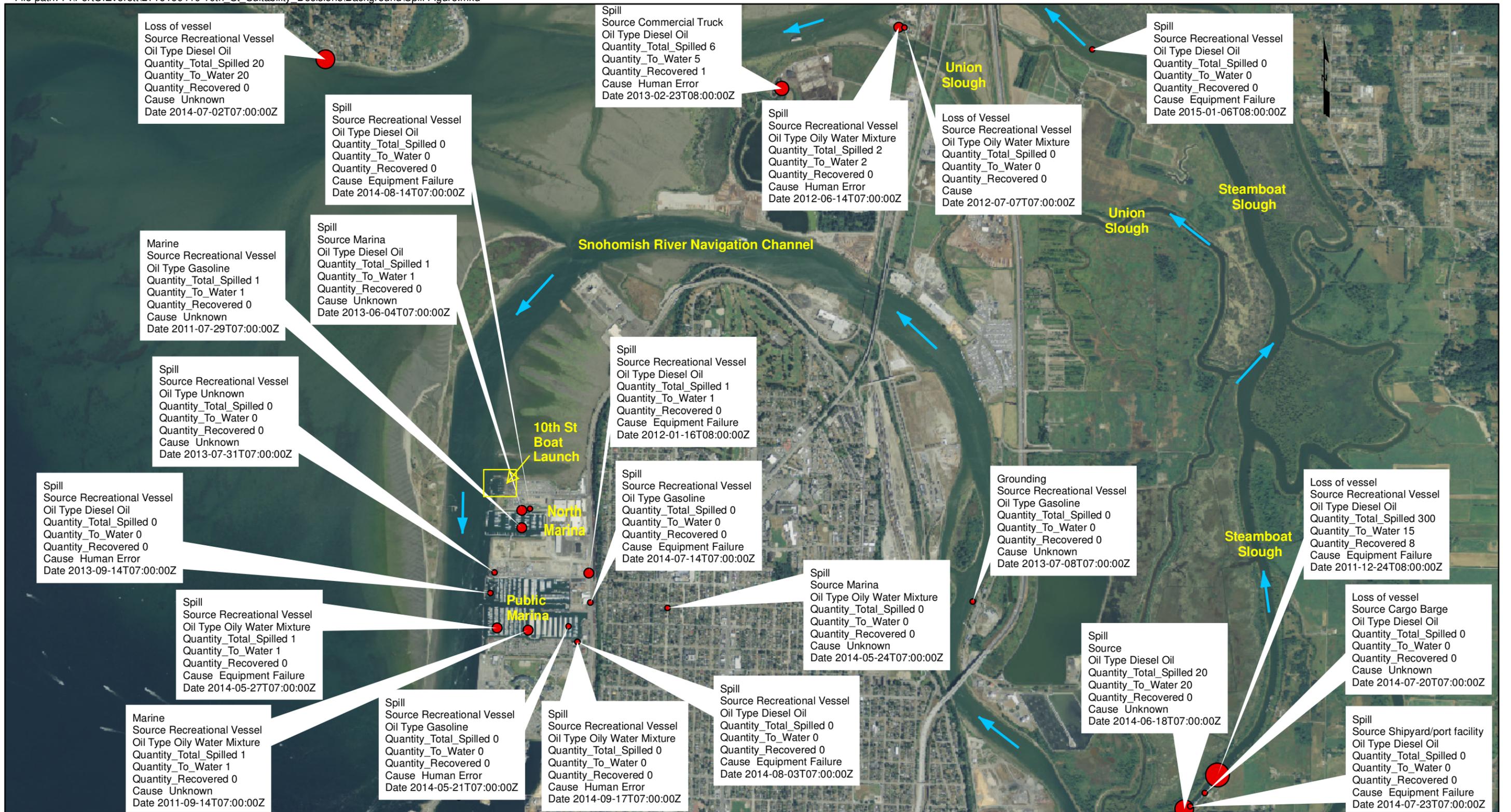
Date Erika Hoffman - Environmental Protection Agency

Date Laura Inouye, Ph.D. - Washington Department of Ecology

Date Celia Barton - Washington Department of Natural Resources

Copies furnished:

DMMP signatories
Frank Nichols, Project Manager, Seattle District Regulatory Branch
Graham Anderson, Port of Everett
Laura Gurley, Port of Everett



Total Gallons Spilled

- < 1.0
- 1.0 - 2.0
- 2.0 - 6.0
- 6.0 - 22.0
- 22.0 - 300.0



Note:
 Reorted spills are from the Washington Department of Ecology
 Reported Spills Database Map
https://fortress.wa.gov/ecy/coastalatlasc/storymaps/spills/spills_sm.html.
 Reported spills are from July 2011 to March 2015.
 Spill quantities (Quantity Total Spilled, To Water, and Recovered) are reported in gallons.
 Symbols are scaled to total quantity spilled.

SPILLS ON THE LOWER SNOHOMISH RIVER
 Lower Snohomish River
 Everett, Washington

By: RHG Date: 10/26/2016 Project No. LY16160410

TABLE 1

DMMP CONVENTIONAL AND CONTAMINANT CHEMISTRY RESULTS¹

DMMP Full Characterization for Maintenance Dredging

at the Port of Everett's 10th Street Boat Launch

Everett, Washington

Parameter	Sample ID DMMU Sample Type Date				13116003C-1 C-1 Composite 10/08/09		
	DMMP				Value	Q1	Q2
	SL	BT	ML				
Conventionals (%)							
Total Solids	—	—	—		60.9		
Total Volatile Solids	—	—	—		5.7		
Total Organic Carbon	—	—	—		1.15		
N-Ammonia (mg-N/kg)	—	—	—		22.7		
Sulfide (mg/kg)	—	—	—		743		
Grain Size							
Gravel (phi <-1)	—	—	—		0.3		
Very Coarse Sand (phi -1 to 0)	—	—	—		0.9		
Coarse Sand (phi 0 to 1)	—	—	—		1.6		
Medium Sand (phi 1 to 2)	—	—	—		2.9		
Fine Sand (phi 2 to 3)	—	—	—		12.6		
Very Fine Sand (phi 3 to 4)	—	—	—		33.4		
Coarse Silt (phi 4 to 5)	—	—	—		17.6		
Medium Silt (phi 5 to 6)	—	—	—		10.3		
Fine Silt (phi 6 to 7)	—	—	—		6.6		
Very Fine Silt (phi 7 to 8)	—	—	—		3.8		
Clay (phi 8 to 9)	—	—	—		2.8		
Clay (phi 9 to 10)	—	—	—		2.4		
Clay (phi >10)	—	—	—		4.8		
Total Fines (<63 µm)	—	—	—		48.3		
Metals (mg/kg dry wt)							
Antimony	150	—	200		8	U	R
Arsenic	57	507.1	700		11		
Cadmium	5.1	11.3	14		0.5		
Chromium	—	267	—		45.9		
Copper	390	1,027	1,300		50.6		
Lead	450	—	1,200		7		
Mercury	0.41	1.5	2.3		0.07		
Nickel	140	370	370		44		
Silver	6.1	6.1	8.4		0.5	U	
Zinc	410	2,783	3,800		78		

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 at the Port of Everett's 10th Street Boat Launch
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Parameter	Sample ID DMMU Sample Type Date				13116003C-1 C-1 Composite 10/08/09		
	SL	BT	ML		Value	Q1	Q2
Organics (µg/kg dry wt)							
LPAH							
2-Methylnaphthalene	670	—	1,900		20	U	
Acenaphthene	500	—	2,000		20	U	
Acenaphthylene	560	—	1,300		20	U	
Anthracene	960	—	13,000		10	J	
Fluorene	540	—	3,600		20	U	
Naphthalene	2,100	—	2,400		20	U	
Phenanthrene	1,500	—	21,000		26		
Total LPAH	5,200	—	29,000		36	J	
HPAH							
Benzo(a)anthracene	1,300	—	5,100		26	M	
Benzo(a)pyrene	1,600	—	3,600		14	J	
Benzo(g,h,i)perylene	670	—	3,200		20	U	
Benzo(a)fluoranthene	3,200	—	9,900		40		
Chrysene	1,400	—	21,000		59	M	
Dibenzo(a,h)anthracene	230	—	1,900		20	U	
Fluoranthene	1,700	4,600	30,000		230		
Indeno(1,2,3-c,d)pyrene	600	—	4,400		20	U	
Pyrene	2,600	11,980	16,000		120		
Total HPAH	12,000	—	69,000		389	J	
Chlorinated Hydrocarbons							
1,2,4-Trichlorobenzene	31	—	64		6.4	U	
1,2-Dichlorobenzene	35	—	110		1.3	U	UJ
1,3-Dichlorobenzene	170	—	—		1.3	U	UJ
1,4-Dichlorobenzene	110	—	120		1.3	U	UJ
Hexachlorobenzene	22	168	230		20	U	

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 at the Port of Everett's 10th Street Boat Launch
 Everett, Washington

Parameter	Sample ID DMMU Sample Type Date			13116003C-1 C-1 Composite 10/08/09		
	SL	BT	ML	Value	Q1	Q2
Phthalates						
Bis(2-ethylhexyl)phthalate	1,300	—	8,300	44		
Butyl benzyl phthalate	63	—	970	20	U	
Di-n-butyl phthalate	1,400	—	5,100	20	U	
Di-n-octyl phthalate	6,200	—	6,200	20	U	
Diethyl phthalate	200	—	1,200	20	U	
Dimethyl phthalate	71	—	1,400	20	U	
Phenols						
2 Methylphenol	63	—	77	20	U	
2,4-Dimethylphenol	29	—	210	20	U	
4 Methylphenol	670	—	3,600	20	U	
Pentachlorophenol	400	504	690	98	U	
Phenol	420	—	1,200	20	U	
Miscellaneous Extractables						
Benzoic acid	650	—	760	200	U	UJ
Benzyl alcohol	57	—	870	20	U	
Dibenzofuran	540	—	1,700	20	U	
Hexachlorobutadiene	29	—	270	20	U	
Hexachloroethane	1,400	—	14,000	20	U	
N-Nitrosodiphenylamine	28	—	130	20	U	
Volatile Organics						
Ethylbenzene	10	—	50	1.3	U	UJ
Tetrachloroethene	57	—	210	1.3	U	
Total Xylene	40	—	160	1.3	U	UJ
Trichloroethene	160	—	1,600	1.3	U	

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 at the Port of Everett's 10th Street Boat Launch
 Everett, Washington

Parameter	Sample ID DMMU Sample Type Date				13116003C-1 C-1 Composite 10/08/09		
	SL	BT	ML		Value	Q1	Q2
Pesticides							
Aldrin	10	—	—		0.97	U	
Chlordane	10	37	—		0.97	U	
Dieldrin	10	—	—		1.9	U	
Heptachlor	10	—	—		0.97	U	
Lindane	10	—	—		0.97	U	
Total DDT	7	50	69		1.9	U	
Total PCBs	130	38 ^a	3,100		20	U	

Notes(s)

- Data qualifiers are as follows.
 J = Estimated value.
 U = Undetected at the reporting limit.
 M = Estimated value for an analyte detected and confirmed but with poor spectral match parameters.
- BT value for PCBs expressed as parts per million organic carbon.

Abbreviation(s)

BT = bioaccumulation trigger
 bgs = below ground surface
 DMMP = Dredged Material Management Program
 HPAH = high-molecular-weight polycyclic aromatic hydrocarbon
 LPAH = low-molecular-weight polycyclic aromatic hydrocarbon
 mg/kg dry wt = milligrams per kilogram dry weight
 mg-N/kg = milligrams Nitrogen per kilogram
 ML = maximum level
 PCBs = polychlorinated biphenyls
 Q1 = laboratory assigned qualifier
 Q2 = qualifier assigned during data validation
 SL = screening level
 µg/kg dry wt = micrograms per kilogram
 µm = micrometers

TABLE 2

SMS CONTAMINANT CHEMISTRY RESULTS
DMMP Full Characterization for Maintenance Dredging
at the Port of Everett's 10th Street Boat Launch
Everett, Washington

Parameter	Sample ID DMMU Sample Type SMS			13116003C-1 C-1 Composite 10/08/09		
	SQS	CSL		Value	Q1	Q2
Metals (mg/kg dry wt)						
Arsenic	57	93		11		
Cadmium	5.1	6.7		0.5		
Chromium	260	270		45.9		
Copper	390	390		50.6		
Lead	450	530		7		
Mercury	0.41	0.59		0.07		
Silver	6.1	6.1		0.5	U	
Zinc	410	960		78		
Organics						
LPAH (mg/kg OC)						
2-Methylnaphthalene	38	64		1.7	U	
Acenaphthene	16	57		1.7	U	
Acenaphthylene	66	66		1.7	U	
Anthracene	220	1,200		0.9	J	
Fluorene	23	79		1.7	U	
Naphthalene	99	170		1.7	U	
Phenanthrene	100	480		2.3		
Total LPAH	370	780		3.1	J	
HPAH (mg/kg OC)						
Benzo(a)anthracene	110	270		2.3	M	
Benzo(a)pyrene	99	210		1.2	J	
Benzo(g,h,i)perylene	34	88		1.7	U	
Benzofluoranthenes	230	450		3.5		
Chrysene	110	460		5.1	M	
Dibenzo(a,h)anthracene	12	33		1.7	U	
Fluoranthene	160	1,200		20		
Indeno(1,2,3-c,d)pyrene	34	88		1.7	U	
Pyrene	1,000	1,400		10		
Total HPAH	960	5,300		34	J	
Chlorinated Hydrocarbons (mg/kg OC)						
1,2,4-Trichlorobenzene	0.81	1.8		0.56	U	
1,2-Dichlorobenzene	2.3	2.3		0.11	U	UJ
1,4-Dichlorobenzene	3.1	9		0.11	U	UJ
Hexachlorobenzene	0.38	2.3		1.74	U	

TABLE 2

SMS CONTAMINANT CHEMISTRY RESULTS
DMMP Full Characterization for Maintenance Dredging
at the Port of Everett's 10th Street Boat Launch
Everett, Washington

Parameter	Sample ID		13116003C-1			
	DMMU		C-1			
	Sample Type		Composite			
	SMS		Date			
	SQS	CSL		Value	Q1	Q2
Phthalates (mg/kg OC)						
Bis(2-ethylhexyl)phthalate	47	78		3.8		
Butyl benzyl phthalate	4.9	64		1.7	U	
Di-n-butyl phthalate	220	1,700		1.7	U	
Di-n-octyl phthalate	58	4,500		1.7	U	
Diethyl phthalate	61	110		1.7	U	
Dimethyl phthalate	53	53		1.7	U	
Phenols (ug/kg dry)						
2 Methylphenol	63	63		20	U	
2,4-Dimethylphenol	29	29		20	U	
4 Methylphenol	670	670		20	U	
Pentachlorophenol	360	690		98	U	
Phenol	420	1,200		20	U	
Miscellaneous Extractables (ug/kg dry)						
Benzoic acid	650	650		200	U	UJ
Benzyl alcohol	57	73		20	U	
Miscellaneous Extractables (mg/kg OC)						
Dibenzofuran	15	58		1.7	U	
Hexachlorobutadiene	4	6		1.7	U	
N-Nitrosodiphenylamine	11	11		1.7	U	
PCBs (mg/kg OC)						
Total PCBs	12	65		1.7	U	

Notes(s)

- Data qualifiers are as follows.
 J = Estimated value.
 U = Undetected at the reporting limit.
 M = Estimated value for an analyte detected and confirmed but with poor spectral match parameters.

Abbreviation(s)

- CSL = cleanup screening level
- HPAH = high-molecular-weight polycyclic aromatic hydrocarbon
- LPAH = low-molecular-weight polycyclic aromatic hydrocarbon
- mg/kg dry wt = milligrams per kilogram dry weight
- mg/kg OC = milligrams per kilogram organic-carbon normalized
- PCBs = polychlorinated biphenyls
- Q1 = laboratory assigned qualifier
- Q2 = qualifier assigned during data validation
- SMS = Sediment Management Standards
- SQS = sediment quality standard
- µg/kg dry wt = micrograms per kilogram dry-weight normalized