CENWS-OD-TS-DMMO

MEMORANDUM FOR: RECORD July 21, 2008

SUBJECT: DETERMINATION ON THE SUITABILITY OF PROPOSED MAINTENANCE DREDGED MATERIAL FROM NEWPORT YACHT CLUB, COAL CREEK DELTA DREDGING PROJECT IN LAKE WASHINGTON EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT FOR OPEN-WATER DISPOSAL AT A DMMP NON-DISPERSIVE DISPOSAL SITE.

1. 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 Newport Yacht Club, Coal Creek Delta Dredging Project in Lake Washington, on the suitability o 32,800 cubic yards for open-water unconfined disposal at the Elliott Bay disposal site.

Table 1. Project Details

SAP received	February 12, 2008
SAP approved	February 26, 2008
Sampling dates	May 22, 2008
Final data report submitted	July 7, 2008
Recency Determination: Moderate Concern (5 years)	May 2013
DAIS reference number	NYCLW-1-A-F-255

2. Background. The proposed dredge area in Lake Washington has not undergone previous DMMP characterization, but an area just south of the proposed project, at the entrance to the keys for the Newport Shores neighborhood, did undergo DMMP characterization in 1998. However, this project never completed the DMMP process due to problems with the bioassay performance that were never satisfactorily resolved. These sediments were deemed unsuitable for open-water disposal based on chemical guideline exceedances,and unresolved bioassay results. Ten separate compounds were found at concentrations exceeding the screening levels (SLs) and 2 compounds exceeded the maximum levels (MLs) for 2-methylnaphthalene and Dibenzofuran from that characterization effort.

3. Sampling. The DMMP agencies approved sampling and analysis plan required testing of the proposed dredged material, for potential disposal at a DMMP non-dispersive open-water disposal site. The nearest open-water disposal site available would be the Elliott Bay site. Five sampling stations (see Figure 1 for Vicinity Map and Figure 2 for plan view of coring locations) were occupied on May 22, 2008, and samples collected using a small Acker drill supported on a small wood barge constructed specifically for use on this project. The Acker drill advances a 7-inch outside diameter, hollow-stem auger. Samples collected included an archived z-sample representing the top 1 foot of sediment that would be exposed after dredging/excavation. The approved sampling and analysis plan was generally followed. The sampling and analysis report was submitted to the DMMP agencies for review on July 15, 2008, and the DMMP agencies concluded that the quality assurance/quality control guidelines specified by the DMMP were generally complied with, and these data were deemed suitable for decision-making using best-professional-judgment.

4. Chemical Analysis and Comparison with DMMP Marine and SEF Freshwater/DMMP Guidelines. The Agencies' approved sampling and analysis plan was followed and quality assurance/quality control guidelines specified by PSEP and DMMP were generally complied with. A summary of Chemical analysis results are provided in Table 2, demonstrate that both DMMU's evaluated had no detected or undetected chemicals exceeding either DMMP marine or SEF-SL1-Freshwater guidelines. Based on these chemical testing results, no toxicity testing is required. Furthermore, based on these testing results, there is no reason-to-believe that would trigger the requirement to analyze the archived Z-samples underlying the five core stations.

5. Suitability for Unconfined-Open Water Disposal. Therefore, based on these testing results, all 32,800 cubic yards is suitable for unconfined-open-water disposal at the Elliott Bay non-dispersive site, or at other DMMP dispersive and/or non-dispersive sites based on best-professional-judgement.

6. This memorandum affirms the suitability of the sediment proposed for dredging at the Newport Shores Yacht Club for an unconfined-open-water disposal at an appropriate DMMP non-dispersive disposal 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.

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Concur:

8/14/08
Date

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

8/14/08
Date

Erika Hoffman, Environmental Protection Agency

08/17/08
Date

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

8/14/08
Date

Courtney Wasson, Washington Department of Natural Resources

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DMMO file

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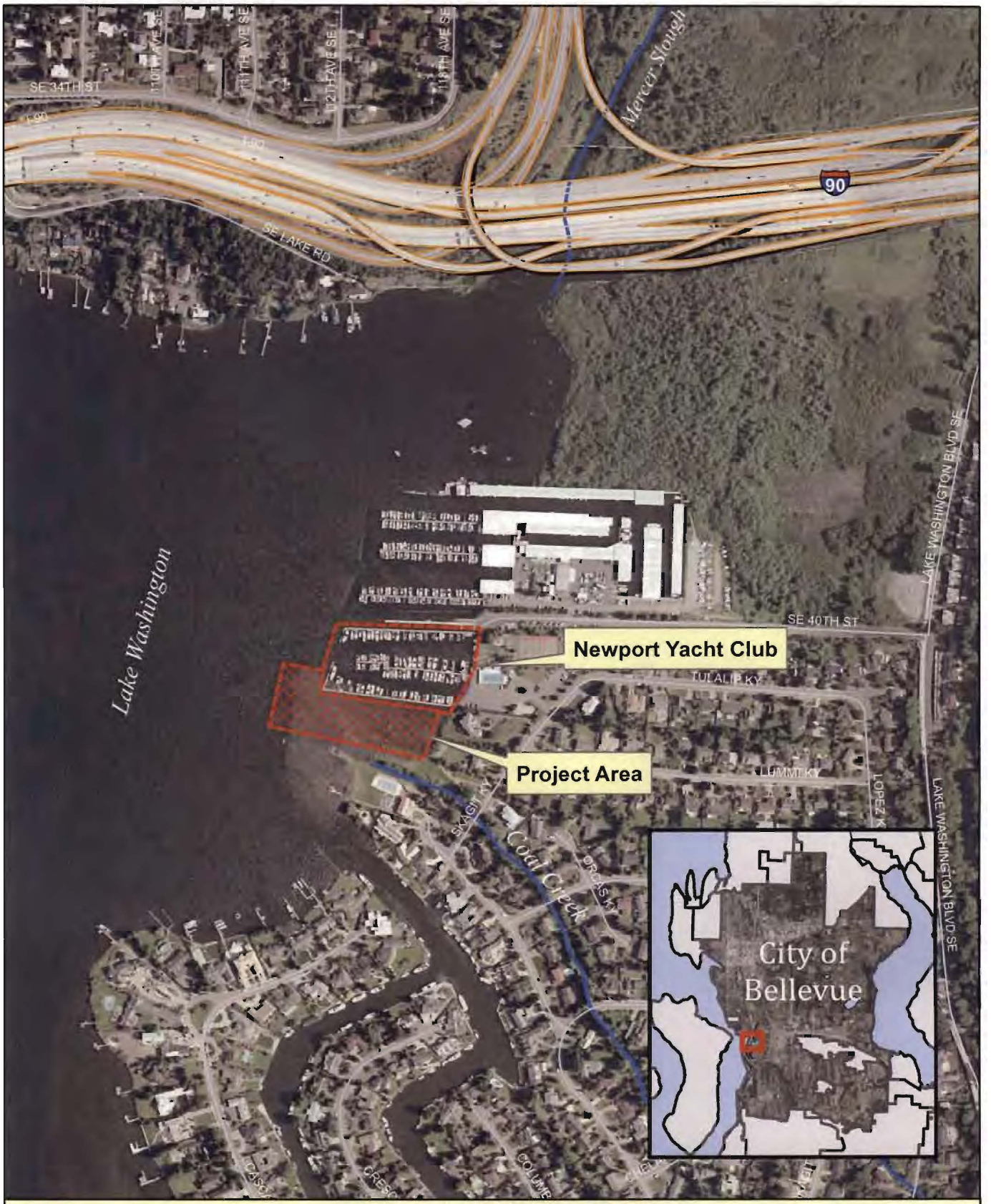


Figure 1: Vicinity Map

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland WA 98033
425.822.5242
425.827.8136
watershedco.com

Streets

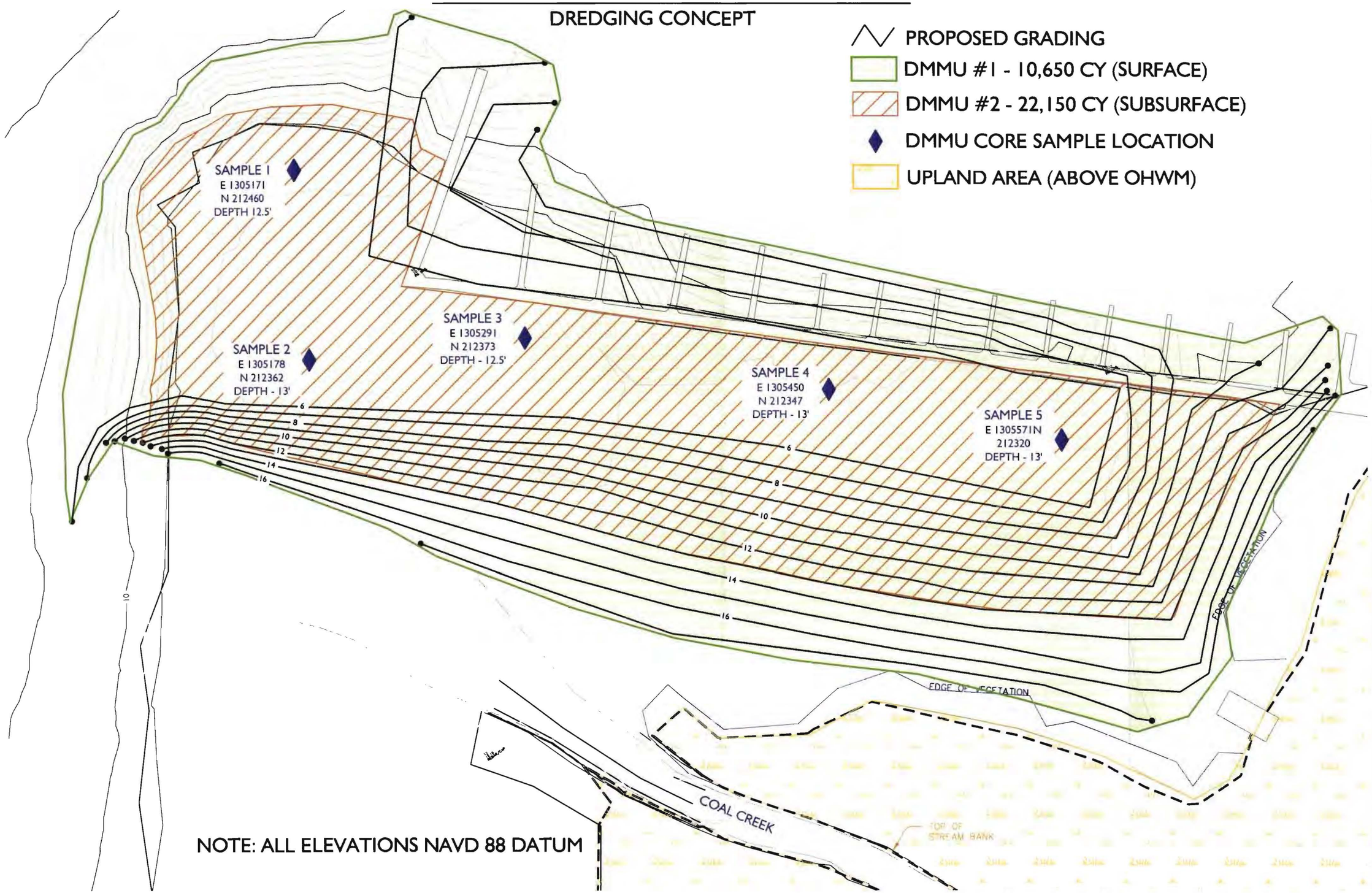
Streams

N

0 212.5 425 850 Feet

NEWPORT YACHT CLUB

DREDGING CONCEPT



NOTE: ALL ELEVATIONS NAVD 88 DATUM

FIGURE 2 - CONCEPTUAL DREDGING & SAMPLING PLAN

0 25 50 100
SCALE: 1"= 50'
NORTH

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PHASE:
PRELIMINARY

NO.	DATE	ISSUE
1	2-4-07	REVIEW SET
2	2-27-07	REVISE DMMU

REMARKS/NOTES:
PLAN IS 11"X17", SCALE ACCORDINGLY

Project Manager: BW,MI
Designed: CL
Drafted: MI,CL
Checked: BW,MI
File name: WS051126-REV2.DWG

JOB NUMBER:
051126

SHEET NUMBER:
1 OF 1

Table 2. Newport Yacht Club, Coal Creek Delta Dredging Project DMMP/SEF-Freshwater Guidelines Characterization Summary

								DMMU ID:	DMMU-C1 (Surface)		DMMU-C2 (Subsur.)	
	DMMP Marine				Freshwater SEF				mg/kg-dry wgt	VQ	mg/kg-dry wgt	VQ
CHEMICAL NAME	Units	SL	BT	ML	Units	SL1	SL2					
Antimony		150		200		--	--		0.22	u	0.21	u
Arsenic	mg/kg	57	507.1	700	mg/kg	20	51		**4.55**		**4.23**	
Cadmium	mg/kg	5.1	11.3	14	mg/kg	1.1	1.5		0.11	u	0.11	u
Chromium	mg/kg	(2)	267	(2)	mg/kg	95	100		**9.7**		**13.0**	
Copper	mg/kg	390	1,027	1,300	mg/kg	80	830		**22.0**		**19.0**	
Lead	mg/kg	450	975	1,200	mg/kg	340	430		**7.7**		**13.0**	
Mercury	mg/kg	0.41	1.5	2.3	mg/kg	0.28	0.75		0.013	u	**0.03**	
Nickel	mg/kg	140	370	370	mg/kg	60	70		**17.0**		**22.0**	
Selenium	mg/kg	(2)	3	(2)	mg/kg	--	--		2.1	u	2.1	u
Silver	mg/kg	6.1	6.1	8.4	mg/kg	2.0	2.5		0.22	u	0.21	u
Zinc	mg/kg	410	2,783	3,800	mg/kg	130	400		**28.0**		**45.0**	
TBT ion (porewater)	ug/TBT/L	0.15	0.15		ug/TBT/L				**NA**		**NA**	
TBT ion (bulk sediment)	ug/TBT/kg	73.2	73.2		ug/TBT/kg	75	75		**NA**		**NA**	
Naphthalene	ug/kg	2,100		2,400	ug/kg	500	1,300		19.0	u	21.0	u
Acenaphthylene	ug/kg	560		2,000	ug/kg	470	640		19.0	u	21.0	u
Acenaphthene	ug/kg	500		2,000	ug/kg	1,100	1,300		19.0	u	21.0	u
Fluorene	ug/kg	540		3,600	ug/kg	1,000	3,000		19.0	u	21.0	u
Phenanthrene	ug/kg	1,500		2,100	ug/kg	6,100	7,600		19	u	**34**	
Anthracene	ug/kg	560		13,000	ug/kg	1,200	1,600		**37.0**		21.0	u
2-Methylnapthalene	ug/kg	670		1,900	ug/kg	470	560		19.0	u	21.0	u
Total LPAH	ug/kg	5,200		29,000	ug/kg	6,600	9,200		**37**		**34**	
Fluoranthene	ug/kg	1,700	4,600	30,000	ug/kg	11,000	15,000		**52**		**49**	
Pyrene	ug/kg	2,600	11,980	16,000	ug/kg	8,800	16,000		**36**		**39**	
Benzo(a)anthracene	ug/kg	1,300		5,100	ug/kg	4,300	5,800		19.0	u	21.0	u
Chrysene	ug/kg	1,400		21,000	ug/kg	5,900	6,400		**26**		21.0	u
Total Benzo(b+k)fluoranthenes	ug/kg	3,200		9,900	ug/kg	600	4,000		19.0	u	21.0	u
Benzo(a)pyrene	ug/kg	1,600		3,600	ug/kg	3,300	4,800		19.0	u	21.0	u
Indeno(1,2,3-cd)pyrene	ug/kg	600		4,400	ug/kg	4,100	5,300		19.0	u	21.0	u
Dibenzo(a,h)anthracene	ug/kg	230		1,900	ug/kg	800	840		19.0	u	21.0	u
Benzo(g,h,I)perylene	ug/kg	670		3,200	ug/kg	4000	5200		19.0	u	21.0	u
Total HPAH	ug/kg	12,000		69,000	ug/kg	31,000	55,000		**114**		**88**	
1,3-Dichlorobenzene	ug/kg	170			ug/kg	--	--		3.0	u	3.0	u
1,4-Dichlorobenzene	ug/kg	110		120	ug/kg	--	--		3.0	u	3.0	u
1,2-Dichlorobenzene	ug/kg	35		110	ug/kg	--	--		3.0	u	3.0	u
1,2,4-Trichlorobenzene	ug/kg	31		64	ug/kg	--	--		19.0	u	21.0	u
Hexachlorobenzne (HCB)	ug/kg	22	168	230	ug/kg	--	--		19.0	u	21.0	u
Dimethylphthalate	ug/kg	71		1,400	ug/kg	46	440		19.0	u	**24.0**	
Diethylphthalate	ug/kg	200		1,200	ug/kg	--	--		19.0	u	21.0	u
Di-n-butylphthalate	ug/kg	1,400		5,100	ug/kg	--	--		19.0	u	21.0	u
Butylbenzylphthalate	ug/kg	63		970	ug/kg	260.0	370		19.0	u	21.0	u
Bis(2-ethylhexyl)phthalate	ug/kg	1,300		8,300	ug/kg	220	320		**140**		21.0	u
Di-n-octylphthalate	ug/kg	6,200		6,200	ug/kg	26	45		19.0	u	21.0	u
Phenol	ug/kg	420		1,200	ug/kg	--	--		19.0	u	21.0	u
2-Methylphenol	ug/kg	63		77	ug/kg	--	--		19.0	u	21.0	u
4-Methylphenol	ug/kg	670		3,600	ug/kg	--	--		**56.0**		21.0	u
2,4-Dimethylphenol	ug/kg	29		210	ug/kg	--	--		19.0	u	21.0	u
Pentachlorophenol	ug/kg	400		690	ug/kg	--	--		19.0	u	21.0	u
Benzyl alcohol	ug/kg	57		87	ug/kg	--	--		19.0	u	21.0	u
Benzoic acid	ug/kg	650		760	ug/kg	--	--		19.0	u	21.0	u
Dibenzofuran	ug/kg	540		1,700	ug/kg	400	440		19.0	u	21.0	u

Legend:

- SL/SL1 = Screening Level exceedance
- BT = Bioaccumulation Trigger exceedance
- S = Suitable for UCOWD & BU
- U = Unsuitable for UCOWD & BU
- VQ = Validation Qualifier
- U = undetected at the reported concentratio
- NA = Not analyzed
- UCOWD = unconfined open-water disposal
- BU = beneficial uses

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CHEMICAL NAME	Units	SL	BT	ML	Units	SL1	SL2				
Hexachloroethane	ug/kg	600		1,600	ug/kg	--	--	19.0	u	21.0	u
Hexachlorobutadiene	ug/kg	29		270	ug/kg	--	--	19.0	u	21.0	u
N-Nitrosodiphenylamine	ug/kg	280		130	ug/kg	--	--	19.0	u	21.0	u
Trichloroethene	ug/kg	160		1,600	ug/kg	--	--	3.0	u	3.0	u
Tetrachloroethene	ug/kg	57		210	ug/kg	--	--	3.0	u	3.0	u
Ethylbenzene	ug/kg	10		50	ug/kg	--	--	3.0	u	3.0	u
Total Zylene (sum of o-,m-,p-)	ug/kg	40		160	ug/kg	--	--	3.0	u	3.0	u
Total DDT (sum of 4,4'-DDD, 4,4'-DDE and 4,4'-DDT)	ug/kg	6.9	50	69	ug/kg	--	--	0.56	u	0.56	u
Aldrin	ug/kg	10			ug/kg	--	--	0.56	u	0.53	u
Chlordane	ug/kg	10	37		ug/kg	--	--	0.56	u	0.53	u
Dieldrin	ug/kg	10			ug/kg	--	--	0.56	u	0.53	u
Heptachlor	ug/kg	10			ug/kg	--	--	0.56	u	**3.7**	
Alpha-BHC	ug/kg		10		ug/kg	--	--	**NA**		**NA**	
Gamma-BHC (Lindane)	ug/kg	10			ug/kg	--	--	0.56	u	0.53	u
Total PCBs	ug/kg	130	38***	3,100.0	ug/kg	60	120	37.0	u	36.0	u
Total Solids	%							**75.6**		**70.5**	
Total Volatile Solids	%							**13.0**		**11.0**	
Total Organic Carbon	%							**3.0**		**2.8**	
Total Ammonia	mg/kg							**5.4**		**17.0**	
Total Sulfides	mg/kg							5.0	u	5.0	u
Gravel	%							**6.9**		**9.9**	
Sand	%							**76.6**		**44.1**	
Silt	%							**13.8**		**40.1**	
Clay	%							**2.9**		**5.9**	
Fines (percent silt + clay)*	%							**16.7**		**46.0**	
Bioassay Determination: (P/F)								**NA**		**NA**	
BTs exceeded:								**no**		**no**	
Bioaccumulation conducted:								**no**		**no**	
ML Rule exceeded:								**no**		**no**	
PSDDA Determination:								**Suitable**		**Suitable**	
DMMU Volume:	cy							**10,650**		**22,150**	
Rank								**M**		**M**	
Mean core sampling depth	ft							**4.0**		**14.7**	
Maximum sampling depth (mudline)	ft							**4.0**		**15.0**	
DMMU ID:								**DMMU-C1 (Surface)**		**DMMU-C2 (Subsur.)**	

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