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US Army Corps of Engineers ®
San Francisco District

SAN FRANCISCO DISTRICT

PUBLIC NOTICE

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Use of the San Pablo Environs Reference Dataset For Dredged Material Disposal in San Francisco Bay

1. The U.S. Army Corps of Engineers San Francisco District (Corps), the U.S. Environmental Protection Agency Region 9 (EPA), the San Francisco Bay Regional Water Quality Control Board (RWQCB), and the San Francisco Bay Conservation and Development Commission (BCDC) participate in the Long-Term Management Strategy (LTMS) for Bay area dredging and disposal. The LTMS has three existing approved in-Bay disposal sites: Carquinez Strait (SF-9), San Pablo Bay (SF-10), and Alcatraz (SF-11).

2. To manage the existing in-Bay sites to minimize the potential for dredging material disposal to result in significant contaminant impacts to aquatic resources and uses, the LTMS agencies published the Dredged Material Management Office (DMMO) Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region on 21 September 2001. These testing guidelines are designed to ensure that sufficient information is available to adequately characterize each dredging project so that disposal does not result in chemical or biological degradation of existing sites.

Under these testing guidelines, dredged material can be compared to reference either by directly sampling and testing the sediment at areas around the disposal site (Environs) or by using an established reference range. Comprehensive chemical and biological testing of the San Pablo Environs has been conducted by the Corps and other entities that confirmed the Environs area has significantly lower levels of contaminants and is suitable to serve as reference for the San Pablo disposal site. The Corps produced a dataset for SF-10 based on compilation of physical, chemical, and biological testing conducted by projects from 2010 to 2021. The LTMS and DMMO agencies have reviewed and accepted this dataset as adequate for characterization of the San Pablo Environs. Therefore, applicants are no longer required to routinely test sediments from the San Pablo disposal site for comparison with the material they propose to dredge. Instead, their material can be compared against the San Pablo Environs sediments. The DMMO will use these data as the reference for dredging projects proposing disposal at the San Pablo site (SF-10). This approach is intended to reduce the variability in reference site data caused by ongoing disposal operations and will also help to offset the costs of otherwise increased sediment testing.

3. Applicants may also choose to sample and test San Pablo Environs sediments directly; however, their data must be comparable in quality to that in the reference area dataset (21 data points from 2010-2021). Applicants may propose to conduct testing using approved methods or organisms other than those in the Environs dataset, but to do so they must also generate appropriate data for the reference area that is comparable in quality. Therefore, any such proposals should be fully coordinated with the agencies in advance.

4. The initial reference area dataset for the San Pablo disposal site is enclosed with this Public Notice. The San Pablo Environs may be supplemented with additional data in the future as appropriate.

5. Nothing in the LTMS program affects any regulatory or resource agency's existing authorities, nor their ability to comment on proposed projects. Similarly, this addition of the SF-10 reference does not alter current policies governing management of existing disposal sites (e.g., monthly and yearly discharge volume restrictions) or the need to develop alternative disposal sites and methods. Meeting LTMS testing guidelines does not by itself guarantee a permit to discharge dredged material will be issued and does not eliminate the need to obtain any other applicable state or federal permits or authorizations. The addition of the San Pablo Bay Environs as reference will be applied by the DMMO agencies to project applications received after the date of this Public Notice.

6. For further information, contact:

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b. California Regional Water Quality Control Board
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c. San Francisco Bay Conservation & Development Commission
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SF-10 ENVIRONS SEDIMENT CHARACTERIZATION

Summary of Available Reference Sediment Testing (2010-2021)*

Sampling and Analysis Report Data Sites[1]	**In-Bay Thresholds Min**	**Max**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Physical & Chemical Results																								
Grain Size (%, dry wt)																								**Range**
Gravel (> 2,000µm)	-	-	-	-	0	0	-	<0.01	2.4	0	6.22	0	0.81	0	0.58	0	39.25	39.4	0.81	-	1.386	0.01	0.01	0-6.22
Sand (62.5 - 2,000µm)	-	-	-	-	18.25	21.5	-	16.72	5.56	18.75	12.2	51	44.6	31.34	27.21	16.8			44.6	-	10.45	0.01	31.36	0.01-51
Silt (3.9 - 62.5µm)	-	-	-	-	56.18	55.14	-	60.38	35.8	62.25	33.0	35	26.1	48.15	44.97	62.1	35.3	48.3	26.1	-	33.31	66.36	48.15	26.1-66.36
Clay (<3.9µm)	-	-	-	-	25.56	23.36	-	22.89	34.1	18.99	24.1	14	28.4	20.51	27.25	21.1	29.41	12.3	28.4	-	54.86	33.64	20.51	12.3-54.86
Conventionals (%)																								
Total Organic Carbon	-	-	-	-	0.65	0.924	0.661	0.95	1.09	1.4	1.0	1	1.1	1.2	1	0.97	1.07	1.2	1.1	1.2	0.71	0.67	1.2	0.65-1.4
Total Volatile Solids	-	-	-	-	60.9	53.2	40.0	48.0	54.3	47.2	53.6	55.6	53.1	45.4	-	54.9	53.8	56.8	53.1	51.9	44.8	61.4	47.9	40-61.4
Metals (ppm, dry wt)																								
Arsenic	-	-	-	-	7.61	7.82	ND	10.50	9.68	9.99	6.47	7.09	7.61	11.30	10.80	8.03	8.99	8.89	7.61	11.2	9.4	6.85	11.3	ND-11.3
Cadmium	-	-	-	-	<0.961	0.177	ND	0.26	0.214	0.473	0.14	0.43	0.384	0.659	0.275	0.397	0.206	0.374	0.384	0.258	0.537	0.249	0.659	ND-<0.961
Chromium	-	-	-	-	51.0	48.0	0.6	78.20	75.6	70.6	41.50	70.40	65.10	88.80	80.30	66.30	69.80	60.50	65.10	61.7	116	56.2	88.8	0.6-88.8
Copper	-	-	-	-	25.0	14.6	3.3	50.90	36.8	37.9	28.50	36.0	38.70	55.2	43.1	36.6	40.1	41.9	38.70	44.6	41.8	22	55.2	3.3-55.2
Lead	-	-	-	-	17.1	23.3	0.7	25.70	17.9	18.3	11.80	19.4	19.50	27.8	25.8	24.9	17.6	22.4	19.50	18.4	28.5	11.3	27.8	0.7-28.5
Mercury	0.33	0.47	-	-	0.0	0.1	0.2	0.217	0.226	0.17	0.166	0.16	0.156	0.309	0.242	0.197	0.187	0.247	0.156	0.24	0.335	0.078	0.309	0-0.335
Nickel	-	-	-	-	64.8	60.1	0.2	86.50	78.1	70.2	49.60	75.6	73.30	104.0	81.9	70.1	76.1	72.3	73.30	75.7	85	64.4	104	0.2-104
Selenium	-	-	-	-	<2.12	0.3	-	0.39	0.27	0.415	0.13	0.22	<0.067	0.547	0.310	0.194	0.180	0.479	<0.067	0.105	0.48	0.323	0.547	0.105-<2.12
Silver	-	-	-	-	<1.14	0.2	ND	0.63	0.185	0.231	0.12	0.19	0.249	0.974	0.277	0.247	0.2	0.274	0.249	0.23	0.306	0.098	0.974	ND-<1.14
Zinc	-	-	-	-	76.2	98.6	8.4	120.00	99.4	99.8	77.40	111.0	99.50	138.0	106.0	96.6	92.4	96.7	99.50	113	106	74.1	138	8.4-138
Butyltins (ppb, dry wt)																								
Monobutyltins	-	-	-	-	<2.1	<2.5	ND	<2.8	<0.66	<1.4	3.5	<1.2	<1.8	<3.0	<0.49	<1.2	-	<1.2	<1.8	1.3	4.47	2.2	3	ND-4.47
Dibutyltins	-	-	-	-	<1.1	<1.3	ND	<1.5	0.81	<1.4	3.6	2.9	<1.1	<1.6	0.63	<1.2	1.9	<1.2	<1.1	1.3	4.47	1.2	1.6	ND-4.47
Tributltins	-	-	-	-	<2.3	<2.7	ND	<3.0	1.3	<1.2	1.5	1.6	<0.67	<3.2	<0.81	<1	0.9	<1.0	<0.63	1.1	2.23	2.4	3.2	ND-3.2
Tetrabutltins	-	-	-	-	<1.1	<1.4	ND	<1.5	0.8	1.6	ND	1.4	<0.64	-	0.83	-	-	1.4	0.7	1.5	2.2	1.2	1.6	ND-2.2
PCBs (sum RMP 40 congeners)(ppb, dry wt)	18	29.5	-	-	-	13.65	ND	10.4	1.8	0	2.6	5.97	2.6	10.90	7.35	8.03	3.04	8.50	2.6	1.5	ND	2.12	15.1	ND-15.1
Chlorinated Pesticides (ppb, dry wt)																								
Chlordane	37	-	-	-	-	<0.61	-	<11	5	<6.9	7.1	<0.47	<7.5	-	<3.1	<6	0	<0.97	<7.5	6.3	5.7	5.3	11	0-11
DDTs (sum)	50	-	-	-	-	7.1	3.2	3.8	0.5	1	2.58	ND	1.4	3.7	1.24	<0.55	1.76	5.6	1.400	0.65	11.2	3.2	3.7	ND-11.2
Dieldrin	-	1.9	-	-	-	<0.12	-	<0.90	0.37	0.7	ND	0.59	<0.43	-	0.084	-	-	0.37	0.430	0.64	2.23	0.53	0.94	ND-2.23
PAHs (ppb, dry wt)																								
Total PAHs	4,500	-	-	-	556	1,112	273	1,659	1,222	583	201	873	116	1,522	1,399	1,530	1,099	1,300	116	1295	88.6	162.9	1500	88.6-1659
Bioassay Results																								
Solid Phase (% survival)																								**Average**
Amphipod (*Ampelisca abdita*)	-	-	-	-	-	-	-	96	-	95	88	96	87	-	89	96	80	-	87	-	-	94	-	90.8
Amphipod (*Leptocheirus plumulosus*)	-	-	97	96	92	97	97	-	95	-	-	-	-	98	-	-	-	-	-	-	-	-	-	96.0
Polychaete worm (*Neanthes arenaceodenata*)	-	-	100	100	-	92	100	100	98	98	90	100	100	100	96	100	98	100	100	-	-	86	-	97.5
Polychaete worm (*Nereis virens*)	-	-	-	-	-	-	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94.0
Amphipod (*Rhepoxynius abronius*)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	-	-	56.0
Amphipod (*Eohaustorius estuaries*)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-	77.0
Suspended Particulate Phase (LC50)(%)																								**Range**
Mediterranean mussel (*Mytilus galloprovincialis*)	-	-	-	-	-	-	-	75.5	-	-	-	84.6	97.2	-	91.8	>100	>100	87.2	97.2	-	-	97.2	-	75.5->100
Shrimp (*Americamysis bahia*)	-	-	-	-	-	-	-	-	-	-	>100	98	98	-	100	-	-	-	98	-	-	100	-	98->100
Fish (*Menidia beryllina*)	-	-	-	-	-	-	-	-	-	-	-	98		-	98									98
Bioaccumulation (% survival)																								**Average**

Bentnose clam (*Macoma nasuta*)	-	-	-	-	-	-	97	-	-	-	-	97	-	-	97	-	-	97	-	-	-	99	-	97.4
Clam Worms (*Nereis virens*)	-	-	-	-	-	-	-	-	-	-	-	90	-	-	98.6	-	-	98	-	-	-	96	-	95.65

*A dash denotes either data is unavailable or constituent was not analyzed

[1] Projects

1	Kinder Morgan Richmond Products Terminal 2020
2	Loch Lomond Marina SAR 2021
3	MOTCO SAR 2019
4	Richmond Inner Harbor SAR 2021
5	Petaluma Marina SAR 2020
6	Petaluma River Upper and Across the Flats Channels 2019
7	Pinole Shoal Channel SAR 2017
8	Pinole Shoal Channel SAR 2014
9	Pinole Shoal Channel SAR 2010
10	Redwood City Harbor SAR 2014
11	Redwood City Harbor SAR 2010
12	Richmond Inner Harbor SAR 2018
13	Richmond Outer Harbor SAR 2015
14	Richmond Outer Harbor SAR 2014
15	Richmond Outer Harbor SAR 2013
16	Richmond Outer Harbor 2012
17	Redwood City Harbor SAR 2011
18	Port of Oakland Berths 22,25/26/57/59,60/63 2012
19	Port of San Francisco Pier 27 2010
20	Richmond Inner Harbor 2015
21	USACE Richmond Outer Harbor 2018