



DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
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CELRB-DE

18 May 2016

MEMORANDUM FOR RECORD

SUBJECT: Cleveland Harbor, Cuyahoga County, Ohio—Determination of Federal Standard for Management of Upper Cuyahoga River Channel Dredged Sediments

1. References:

a. CELRD-PD-G Memorandum dated 26 Aug 2013, Subject: Great Lakes Dredged Material Management Conceptual Determination of the Federal Standard and Base Plan for Regional Consistency.

b. 33 CFR Parts 335-337, Discharge of Dredged Material into Waters of the U.S. or Ocean Waters, Operations and Maintenance, U.S. Army Corps of Engineers (USACE), 1988.

c. CELRB-PM-PL Memorandum dated 17 Dec 2014, Subject: Determination of Federal Standard for Management for Upper Cuyahoga River Channel Dredged Material, Cleveland Harbor, Cuyahoga County, Ohio.

d. 40 CFR Part 230, Guidelines for Specification of Disposal Sites for Dredged or Fill Material, U.S. Environmental Protection Agency (USEPA), 1980.

e. Cleveland Harbor (Upper Cuyahoga River Channel) Dredged Sediment Evaluation, USACE-Buffalo District, 2016.

f. Great Lakes Dredged Material Testing and Evaluation Manual, USEPA/USACE, 1998.

g. Evaluation of Dredged Material for Discharge in Waters of the U.S.—Testing Manual, USEPA/USACE, 1998.

h. Clean Water Act Section 404(b)(1) Evaluation, Operations and Maintenance, Cleveland Harbor, Cuyahoga County, Ohio, Discharge of Sediments Dredged from Upper Cuyahoga River Channel, May 2016.

i. Clean Water Act Section 404(a) Public Notice, Operation and Maintenance, Dredging and Discharge of Dredged Sediment, Cleveland Harbor, Cuyahoga County, Ohio, November 20, 2015.

2. In accordance with paragraph 4(b) of Reference (a), this Memorandum for Record (MFR) serves to document Buffalo District's Federal Standard determination for the management of sediments dredged from the Upper Cuyahoga River Channel of Cleveland Harbor, Ohio, in

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accordance with Reference (b). This determination considers a substantial volume of new sediment quality data and other information in addition to that which was considered in Reference (c). This determination is outlined as follows:

a. Per 40 CFR 230.11(d) “contaminant determination” (Reference [d]), an evaluation of Upper Cuyahoga River Channel dredged sediments was completed (Reference [e]) based on formal federal guidance pursuant to Clean Water Act Section 404(b)(1) Guidelines prescribed in References [f] and [g]). This segment of Federal navigation channel at the upstream reach of Cleveland Harbor is represented by dredged material management units (DMMUs)-1, 2a and 2b, and comprises approximately 80 percent of the sediments dredged from the harbor on an annual basis. The evaluation was primarily based on extensive sampling and testing of sediments collected from the channel and the proposed open water reference/placement area in Lake Erie (CLA-1) as well as regional lake background sediments offshore of Cleveland between 2012 and 2015. This evaluation also contains relevant data on Upper Cuyahoga River and Lake Erie sediments generated by the Ohio Environmental Protection Agency (Ohio EPA) between 2013 and 2015. The evaluation has determined that the placement of sediments dredged from DMMU-1, 2a and 2b at CLA-1 would not result in any unacceptable or significantly adverse contaminant-related effects to the affected aquatic ecosystem. A brief summary of this evaluation is provided as follows:

(1) Acute toxicity tests (bioassays) showed that the dredged sediments were not toxic and that placement at CLA-1 would not result in any significant increase in toxicity to benthic organisms.

(2) Bioaccumulation tests for dichlorodiphenyltrichloroethane (DDT)-related isomers and polychlorinated biphenyls (PCBs) do not indicate that bioaccumulation of these contaminants from the dredged sediments would result in an ecologically meaningful increase relative to existing lake reference sediments.

(3) Acute elutriate bioassays and water quality modeling showed that placement of the dredged sediments in the lake would result in insignificant toxicity to water column organisms.

(4) Elutriate tests, acute elutriate bioassays and water quality modeling indicated that the release of any contaminants from the dredged sediments to the water column during placement in the lake would comply with applicable Ohio water quality standards (WQSs) for the protection of aquatic life.

b. In tandem with Reference (e), the Clean Water Act Section 404(b)(1) Evaluation (Reference [f]) concludes that placement of these dredged sediments would not result in unacceptable or significantly adverse effects to the aquatic ecosystem of Lake Erie. In this case, several additional contemporary public concerns were thoroughly investigated and addressed in the Section 404(b)(1) Evaluation:

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(1) Testing, water quality modeling and evaluation showed that placement of the dredged sediments at CLA-1 would have no effect on the quality of water at any potable water intake (PWI), and therefore have no potential to influence public drinking water supplies.

(2) Testing, water quality modeling and evaluation showed that placement of the dredged sediments at CLA-1 would release small amounts of phosphorus to the water column which would rapidly dilute and disperse to ambient conditions within the immediate vicinity. These small and short-lived phosphorus plumes would be insufficient to trigger or pose an effect on the occurrence of Lake Erie harmful algal blooms (HABs), or significantly affect water quality.

(3) Testing and evaluation did not indicate that placement of the dredged sediments at CLA-1 would have any effect on PCB residues in Lake Erie walleye. Therefore, it would have no potential to influence the existing Lake Erie walleye PCB fish consumption advisory (FCA).

I have determined that placement of the dredged sediments at CLA-1 meets Clean Water Act Section 404(b)(1) Guidelines. The U.S. Army Engineer Research and Development Center (USAERDC) has reviewed References (e) and (h), and supports this determination.

c. The Federal Standard is the dredged material management alternative identified by USACE that represents the least costly alternative(s), consistent with sound engineering practices and selected through Clean Water Act Section 404(b)(1) Guidelines (Reference [b]). Based on recent private contract bids on the dredging operation, placement of sediments dredged from the Upper Cuyahoga River Channel at CLA-1 is the least costly alternative. The next more costly alternative, which was based on placement of the dredged sediments in confined disposal facilities (CDFs), was more than double the cost of placement at CLA-1. Open water placement at CLA-1 is sound from an engineering viewpoint because it is feasible to accurately discharge dredged sediment at a specified open water site, and it also meets Clean Water Act Section 404(b)(1) Guidelines (Reference [h]). Therefore, I have determined open water placement of this dredged sediment to be the Federal Standard for the management of Upper Cuyahoga River Channel dredged sediment.

3. USACE has responded to the State of Ohio's various concerns regarding the open water placement of Upper Cuyahoga River Channel dredged sediments (e.g., Reference [h]). With respect to PCBs, Ohio EPA maintains that open water placement of this dredged sediment would violate the State's Antidegradation Rule. Using several lines of evidence and as required by References (d), (f) and (g), USACE has shown that open water placement of this dredged sediment would not result in any ecologically meaningful increase in PCB bioaccumulation (References [e] and [h]). USACE will continue to work with the State of Ohio to accommodate its concern in this area to the extent practicable.

4. Placement of the Upper Cuyahoga River Channel dredged sediments over impaired sediments identified within the southeast quadrant of CLA-1 has been proposed as a beneficial use (References [e], [h] and [i]). Such an action would provide a beneficial use of this sediment by initiating an isolation of localized high PAH-related sediment toxicity and a reduction in the

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benthic bioaccumulation of PCBs in that area. It would improve conditions by directly benefiting benthically-coupled aquatic organisms that reside and feed on the deep-water lake bottom.

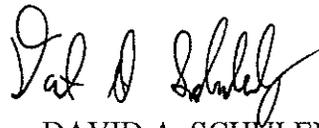
5. Periodic channel sediment sampling, testing and evaluation will be performed in the future to determine if a change in the Federal Standard for the Upper Cuyahoga River Channel dredged sediments is warranted. The level of evaluation applied to the Upper Cuyahoga River Channel sediments has not yet been extended to the remaining portions of Cleveland Harbor Federal navigation channel sediments which contribute the remaining approximately 20 percent of the total annual dredging by volume. Therefore, those dredged sediments have not been determined to meet Clean Water Act Section 404(b)(1) Guidelines for open water placement. Placement of sediments dredged from these remaining areas of the harbor into existing Cleveland Harbor CDFs will serve as the Federal Standard until such time that they have been determined to meet Clean Water Act Section 404(b)(1) guidelines for open water placement.

6. The POC in this matter is Mr. Scott W. Pickard, who can be reached at (716) 879-4404.



KARL D. JANSEN
LTC, EN
Commanding

I hereby certify that this MFR is technically sufficient and compliant with policy for this stage of the project.



DAVID A. SCHULENBERG
Chief, Planning Branch



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