

US EPA ARCHIVE DOCUMENT

Dredged Material Management Program

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The Dredged Material Management Program is jointly managed by EPA and the U.S. Army Corps of Engineers. Today, I want to give you a brief overview of the pertinent statutes, regulations, and guidelines and how we implement the program, including a discussion about testing, particularly what tests we do and how we make decisions based on the results.

In dredged material management, there are two statutes that we must follow: the Marine Protection, Research, and Sanctuaries Act (MPRSA) and the Clean Water Act (CWA). There is some overlap between the statutes, but generally speaking, the MPRSA applies to ocean waters and the CWA applies to inland waters, including estuaries and fresh waters. Related to this activity is the London Convention of 1972 which is the international treaty on ocean dumping. We implement the terms of the London Convention through the MPRSA, which is commonly referred to as the Ocean Dumping Act. The London Convention essentially sets forth a permitting regime that includes a black list and a gray list. The black list specifies chemicals that cannot be dumped into the ocean unless they are present only as trace contaminants or they are rapidly rendered harmless; examples include mercury, cadmium, crude oil, organohalogens, and chemical or biological warfare agents. The gray list includes a group of chemical contaminants that require a permit if they are present in dredged material (or any other material) that is proposed to be dumped into the ocean.

For dredged material management, there are specific regulations and guidelines on how to make decisions regarding issuance of a permit for disposal of dredged material in ocean or fresh/estuarine waters, and they include consideration of acute and chronic toxicity, including bioaccumulation. Under the two statutes, EPA is charged with developing the environmental criteria that form the basis for judgements on the acceptability of dredged material disposal in the aquatic environment. The Corps of Engineers is the permitting authority and the Corps determines whether or not the dredged material meets the environmental criteria. EPA has a review and concurrence role in the permit issuance process. For ocean waters, EPA has site designation responsibility which means that we designate an actual site in the ocean where dredged material can be disposed.

The statutes and regulations require that dumping of dredged material will not unreasonably degrade or endanger human health or the environment. Results of biological effects-based testing (i.e., bioassays) are the basis for decision-making in the Dredged Material Program. We consider both acute and chronic toxicity. EPA and the Corps jointly develop the testing procedures to assess the potential risks to human health and the environment of disposal of dredged material in aquatic environments. Testing manuals have been developed by the Corps and EPA; the manual for ocean disposal is commonly referred to as the Green Book. The Inland Testing Manual is a companion document currently in draft form; the final document should be available soon. Methods are included in the testing manuals for acute toxicity and bioaccumulation.

The overall framework that is used in the Dredged Material Management Program to make determinations on acceptability for aquatic disposal is provided below. We use a reference site approach. This approach has already been described by Norm Rubinstein in an earlier session at this conference; briefly, we compare the results of testing of the dredged material to those of a reference site. For acute toxicity, we use a criterion for decision-making of an increase of 20 percent acute toxicity due to the dredged material compared to the reference material. For bioaccumulation, we proceed through a logical progression of evaluations to determine the acceptability of dredged material for aquatic disposal. One tool that is available are U.S. Food and Drug Administration (FDA) action levels. If contaminant levels in the dredged material exceed the FDA action level, then the material would fail the criteria for open water disposal. If contaminant levels in the dredged material do not exceed the FDA action level, then further evaluation is required. The dredged material is then evaluated for additional factors, including such factors as how many contaminants have bioaccumulated, the magnitude of that bioaccumulation, the toxicological importance of the contaminants, and the potential for biomagnification. Evaluations of potential impacts upon both human and ecological health are carried out.

Progress is being made in regard to assessing the results of bioaccumulation tests to determine the acceptability for dredged material aquatic disposal. However,



there is a need for better information and data, such as has been presented in this conference. The Corps of Engineers and EPA sponsored a joint workshop a year ago on interpreting the consequences of bioaccumulation. Those proceedings should be out soon. The Corps of Engineers is also developing a bioaccumulation database that should be on the Internet in the next few months. EPA is contributing to that database. And finally, EPA has worked jointly with the Corps of Engineers to develop a manual for making better decisions on bioaccumulation. This manual will define a framework

for decision-making focusing on a much more formalized risk assessment and risk management approach for dredged material containing bioaccumulative contaminants. EPA and the Corps of Engineers are also collaborating on development of a chronic test using an amphipod with survival, growth, and reproduction as endpoints.

In summary, we do need more information. I think this conference will help in pulling together important information.

