Dredged Material Management: A Regional Perspective

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I would like to focus my talk on problems we are having with the dredged material program in the New York/ New Jersey area, particularly for the marine environment. I will be describing issues related to dredged material disposal at the ocean disposal site (known as the Mud Dump Site) located about 6 miles east of Sandy Hook, NJ. We are devoting considerable attention to this site because of its close proximity to a densely populated coastal area. The annual volume of dredged materials deposited at this site typically ranges from four to six million cubic yards.

Dredged material in our program is classified into three categories for ocean disposal. This regional classification scheme is based on requirements in the testing manual for Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA). This testing manual, which was developed jointly by the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) in 1977, is commonly referred to as the Green Book. We designate dredged material that is suitable for unrestricted ocean disposal as category 1 material. This material does not show acute toxicity or potential bioaccumulation. Category 2 material does not show acute toxicity, but does show some potential for bioaccumulation. This material requires capping with either category 1 material or sand for ocean disposal. Category 3 material shows both acute toxicity and bioaccumulation potential. There can be no disposal of category 3 material in the ocean environment.

In addition to testing for toxicity and bioaccumulation, we analyze bulk sediments to help us determine which chemicals we need to test for bioaccumulation. Based on the 1977 Green Book testing requirements, dredged material in our program was generally classified as about 95 percent category 1 material, 5 percent category 2 material, and less than 1 percent category 3 material. Before 1991, we also had matrix values for mercury, cadmium, PCBs, and DDTs that delineated category 1 and category 2 materials. Material that exceeded the matrix values was classified as category 2 rather than category 1. During this same period, toxicity test results and U.S. Food and Drug Administration (FDA) action levels delineated category 3 material.

The Green Book was revised in 1991. These revisions contained changes in testing, including more specificity for bioaccumulation testing and identification of more sensitive test species for toxicity testing. The new Green Book requirements had a dramatic impact on the dredged material program in our region. Based on the revised testing requirements, the distribution of material in each category changed from 95 percent to 40 percent in category 1, from 5 percent to 30 percent in category 2, and from less than 1 percent to 30 percent in category 3. We are still trying to address difficulties related to these changes, including the substantial increase in the cost of disposing of much larger quantities of category 2 and 3 material and the lack of availability of disposal sites for category 3 material. Today an annual volume of 1.7 million cubic yards of material is not being dredged because disposal sites are not available.

One cost concern is the cost of testing. We have seen the cost go up dramatically in recent years. It is fairly typical for someone that needs to dredge in the New York area to spend $80,000 to $150,000 to determine whether the material would be classified as category 1, 2, or 3. That price range covers the cost of sediment chemistry and conducting bioassays to generate toxicity information. We have tried to minimize the need to do extensive testing, but we still must meet the requirements in the Green Book and the program regulations. As more information becomes available linking sediment chemistry to biological impacts, we hope that application of this information will reduce the cost of testing.

Another cost concern is the cost of disposal. Before 1991, the cost of disposing unrestricted dredged material at the ocean disposal site was $5.00 per cubic yard. The current cost of disposing category 2 dredged material at this site, including capping, ranges from $30.00 to $50.00 per cubic yard. The cost differences span an order of magnitude. Disposal costs are even greater for dredged material at sites that serve as alternatives to ocean disposal. The cost of disposing at these alternative sites currently ranges between $60.00 and $120.00 per cubic yard.

Increasing costs, coupled with the shift in classification of dredged material to categories with more disposal restrictions, could pose a difficult dilemma for maintaining the viability of the ports in the New York/ New Jersey Harbor area and the regional economy tied to those port activities. We are working on a regional level to develop

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contaminant guidance levels that we can use to make decisions on a case-by-case basis. Alex Lechich described our regional process in his earlier presentation at this conference. However rigorous our process is for defining values to categorize dredged material, we can expect to be challenged. There is too much at stake in this area. All the individual aspects of our work will likely be questioned and we need to be prepared to meet that challenge. The work we are doing, including derivation of biota-sediment accumulation factors (BSAFs) and an impact analysis on ecological and human health, must be sound and scientifically defensible.

You can help us meet that challenge. We need sound science to support our process in developing regional guidance levels and the decision-making that will follow from that process. We were very fortunate to have Bob Huggett and several of his senior scientists meet with us about our dredging issues and discuss how to address them. We hope to see national guidance levels developed, but will continue with our regional work in the interim. I have been hearing timelines mentioned like 5 years, 10 years, or even longer. But I appeal to you to make the progress we need in this area sooner, because the challenge is already there for us.

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