United States Environmental Protection Agency	Department of the Army U.S. Army Corps of Engineers	EPA 823-F-98-005 February 1998

Office of Water (4305)

FACT SHEET

INLAND TESTING MANUAL (ITM)

INTRODUCTION

The Inland Testing Manual (ITM) contains up-to-date procedures to implement requirements in the Clean Water Act (CWA) Section 404(b)(1) Guidelines for evaluation of potential contaminant-related impacts associated with the discharge of dredged material in fresh, estuarine, and saline (near-coastal) waters. Formally titled "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual," it was prepared by a joint Environmental Protection Agency/Corps of Engineers (EPA/CE) Workgroup. In 1991, EPA and CE revised an Ocean Testing Manual ("Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual") for evaluation of potential contaminant-related impacts associated with the discharge of dredged material in the ocean, under the Marine Protection Research and Sanctuaries Act (MPRSA). The ITM is patterned after this manual.

The ITM Addresses:

- contaminant-related impacts associated with discharges of dredged material resulting from navigational dredging (or dredging activities of essentially the same character as navigation dredging, such as open water discharges of dredged material excavated from a soft-bottom flood control channel or reservoir) in open water disposal areas.
- contaminant-related impacts to waters of the U.S. associated with dredged material runoff from confined disposal areas.

The ITM Does Not Address:

- impacts associated with the dredging activity itself.
- impacts associated with dredged material discharges resulting from excavation of drainage ditches and landclearing.
- impacts associated with the discharge of fill material. However, where dredged material associated with navigational dredging will be discharged in open water as fill, the procedures of this manual are applicable (e.g., the construction of an underwater berm using dredged material).

THE ITM

- is a new document
- contains up-to-date procedures
- provides a national framework
- allows for regional flexibility

BACKGROUND

Sediments may contain contaminants which, if bioavailable, can cause adverse environmental effects and, in some cases, affect human health. Dredged material disposal activities may release or redistribute these contaminants. The vast majority of disposal activities occur in inland and near coastal waters. The ITM sets forth national technical guidance (which replaces a 1976 guidance manual) for evaluating potential contaminant-related impacts from dredged material discharges in such waters.

In 1994, a draft of the document was distributed for public comment. A Notice was published in the Federal

Register announcing the availability of the draft document for review and copies were sent to Federal and State agencies, port authorities, environmental organizations, and other interested parties. Public meetings were also held in 1994 to discuss the document in Boston, MA, Arlington, VA, Atlanta, GA, San Jose, CA, Seattle, WA, Chicago, IL, St. Louis, MO, and Houston, TX. Altogether, about 2,000 copies of the draft testing manual were distributed. Comments received through the public review process, including those from EPA's Science Advisory Board, were used to shape the final document. Many individuals and groups provided useful and insightful recommendations throughout the ITM development process and their time and effort is greatly appreciated. Modifications were made in the final ITM, where appropriate, based on these comments. A copy of the comments, and EPA's response, is available for review at EPA's Water Docket (202-260-3027).

SCHEDULE

It is the intent of the Corps and EPA that the ITM be phased in over the next 18 months in accordance with the schedule detailed in a CE/EPA "Implementation Memorandum" that will accompany the ITM. As per the Federal Register notice announcing the availability of the ITM, a copy may be obtained by contacting:

Inland Testing Manual Mailing List
c/o Mr. Thomas Patin
U.S. Army Corps of Engineers
Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

The ITM is also available on Worldwide Web at the Corps Dredging Operations Technical Support home page at: http://www.wes.army.mil/el/dots/, or at EPA web site http://www.epa.gov/OST/pubs/ITM.html.

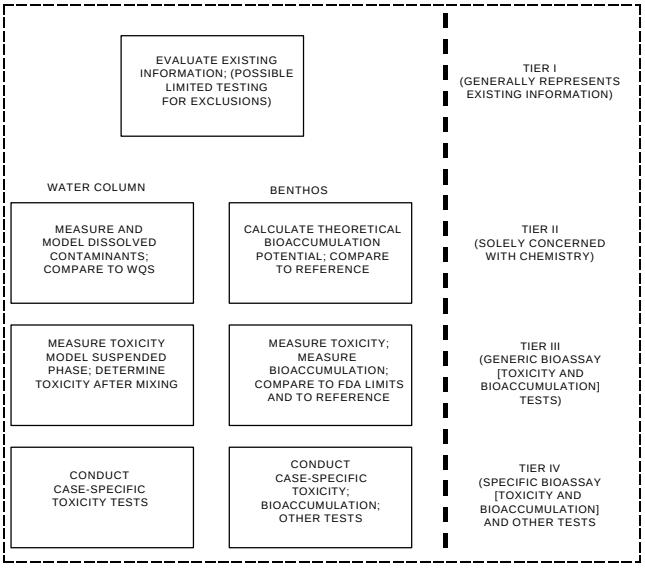
PURPOSE

The ITM provides a national testing framework which comprises one element of an overall decision-making process for determining whether dredged material can be discharged into CWA Section 404 waters. The ITM is intended to provide for consistency between dredged material evaluations under CWA and MPRSA. In recognition of the importance of site- and situation-specific concerns, regional flexibility in implementation and application is allowed within this national framework.

DESCRIPTION

The ITM uses a tiered testing approach as shown in Figure 1 and described below.

Figure 1 Overview of ITM Tiered Testing Approach



Tier I - Involves an examination of existing information to determine (1) whether or not there is "reason to believe" that the material needs to be tested for potential adverse effects, and (2) identification of any contaminants of concern relative to testing in later tiers. Material may be excluded from further testing if there is reasonable assurance that (1) it is not a carrier of contaminants, or (2) it is adjacent and similar to the disposal site material, and dispersal of the discharge can be controlled. Some limited testing may be necessary to confirm such exclusions.

Tier II - Is concerned solely with sediment and water chemistry. Tier II provides useful information through screening tools, but not all possible determinations can be reached at this tier. It presently consists of (1) measuring dissolved contaminants, (2) evaluation of state Water Quality Standard (WQS) compliance using a numerical mixing model, and (3) an evaluation of theoretical bioaccumulation potential for nonpolar organic chemicals.

Tier III - Employs well-defined, nationally accepted bioassays including: (1) water column laboratory toxicity tests, (2) whole sediment laboratory toxicity tests, (3) whole sediment bioaccumulation tests. Appropriately sensitive organisms are recommended, including benchmark species for evaluating the sensitivity of regional species. Summaries of test conditions and test acceptability criteria for all recommended bioassay species are also provided. Toxicity testing emphasizes acute responses, generally survival. Water column toxicity evaluations consider mixing of the dredged material at the discharge site. Benthic bioaccumulation testing provides for the determination of bioavailability through 28-day exposure tests. Tier III testing will usually provide sufficient information for use in the overall decision-making process for compliance with the Guidelines.

Tier IV - Will only be used in special cases, where results from tests in earlier tiers are insufficient to determine the potential adverse effects of the material to be discharged. Tier IV, like Tier III, uses toxicity and bioaccumulation tests, however: (1) toxicity tests may involve field (rather than laboratory) exposures, different end-points (e.g., chronic rather than acute), different species, or longer laboratory exposures; (2) bioaccumulation tests may involve field (rather than laboratory) exposures using transplanted or resident organisms, or longer laboratory exposures. Tier IV can also include benthos studies.

Reference Sediment - Provides the point of comparison for evaluating the potential effects of dredged material. Testing requirements in the Section 404(b)(1) Guidelines regarding the point of comparison for evaluating proposed discharges of dredged material are being updated to provide for comparison to a "reference sediment" as opposed to sediment from the disposal site. Because discharges at a disposal site could impact the point of comparison for future discharges at that site, adoption of a reference sediment that is unimpacted by previous discharges of dredged material will result in a more scientifically sound evaluation of potential individual and cumulative contaminant-related impacts. This change to the Guidelines was proposed in the Federal Register in January 1995, public comments have been received, and a final rule Notice is being prepared. Our agencies expect that the final rule will be published prior to the first phase-in date for ITM implementation, August 1, 1998, and as a result the reference sediment approach will be implemented in the ITM. Revised text for the ITM will be added as necessary to reflect the final rule.

THE ITM INCLUDES:

- Statutory and Regulatory Background
- Scope and Applicability
- Overview of Testing and Evaluation
- Technical Guidance
  - Sampling and Analysis
  - Physical and Chemical Evaluations
  - Bioassays (Toxicity and Bioaccumulation)
  - Quality Assurance/Quality Control
  - Evaluation of Discharges from Confined Disposal Facilities
  - Evaluation of Mixing
  - Statistical Methods
  - Identification of Ammonia Toxicity

SUMMARY

The ITM is intended to provide greater national consistency in the (1) testing process, and (2) level of environmental protection, both among regions of the U.S. and between inland and ocean waters.