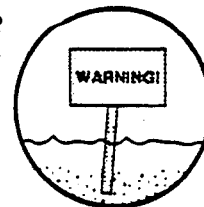




Number 2
April 1990



Contaminated Sediments News

Contaminated Sediment Task Force Formed

An EPA Task Force on sediment and fish contamination has recently been formed to develop an agency-wide management strategy for contaminated sediments, and to initiate a plan to provide states with necessary information and/or guidance on fish contamination assessment procedures. The Task Force will serve as a central point of contact for inquiries from Congress, other federal agencies, and the states regarding the Agency's sediment management policies and fish contamination issues.

The sediment strategy will establish national priorities for source

controls, remediation efforts and dredged material disposal options; it will be developed from the input of four workgroups (Assessment and Identification of Risk, Prevention, Remediation, and Management of Dredged Material). A final strategy is expected to be published in the Federal Register by July 1991.

With respect to fish contamination, the Task Force is preparing an issue paper explaining why and how fish risk assessments differ among federal agencies. For more information on the EPA Task Force, contact Tom Wall, OWRS, at (202) 382-7037.

EPA Scientists Travel to Soviet Union to Investigate Radioactivity

Two scientists from EPA's Office of Radiation Programs (ORP) will travel to the Soviet Union this summer to study the evidence of nuclear fallout from the Chernobyl Nuclear Plant in the sediments of the northern Black Sea. This summer study is part of a larger investigation to collect water column, biota, and sediment samples over a 3-yr period in the Black Sea to determine levels of radioactivity. Scientists from the Woodhole Oceanographic Institute will be joining the EPA scientists in this cooperative effort. For more information contact Bill Curtis, ORP, at (202) 475-9630.

CS News is produced by EPA-OWRS to exchange relevant information on contaminated sediments and to increase communication among interested parties. To obtain copies of this report or to contribute information, contact Mike Kravitz, EPA-HQ at (202)475-8085.

Sediment Activities Around the Country

EPA Headquarters

OFFICE OF FEDERAL ACTIVITIES

EPA has initiated discussions with the U.S. Army Corps of Engineers to develop a Memorandum of Agreement (MOA) between the two agencies. The MOA would have three objectives:

- Facilitating the dredging and disposal of polluted sediments from the nation's waters,
- Increasing cooperation between the agencies, and
- Assisting in mutual research and development efforts.

The MOA could lead to legislative changes which would enable the
(continued on p. 2)

Contaminated Sediment Activities Timeline

March 12-30, 1990. Analysis of Biological Effects Techniques. International Council for Exploration of the Seas. Bremerhaven, West Germany.

April 10-13, 1990. Midwest Pollution Control Biologists Meeting. U.S. EPA, Region V. Chicago, IL.

April 22-24, 1990. 14th Annual American Society of Testing Materials Symposium on Aquatic Toxicology and Risk Assessment. San Francisco, CA.

April 30- May 4, 1990. International Conference on Metals in Soils, Water, Plants, and Animals. Orlando, FL.

May 13-17, 1990. 33rd Annual Conference on Great Lakes Research. Windsor, Ontario.

May 22-25, 1990. 38th Annual Meeting of the North American Benthological Society. Virginia Polytechnic Institute and State University, Blacksburg, VA. Includes Symposium on Sediment - Biota Interactions in Water Quality and Toxicity Assessments.

June 13-14, 1990. Workshop on Innovative Technologies for Contaminated Sediments. U.S. EPA, Cincinnati, OH.

Nov 5-7, 1990. 17th Annual Aquatic Toxicity Workshop. Vancouver, Canada.

Nov 10-11, 1990. American Society of Testing Materials Sediment Toxicology Subcommittee Meeting. Arlington, VA.

Nov 11-15, 1990. 11th Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC). Arlington, VA.

Corps to dredge beyond federal project limits as well as broaden its authority to dredge areas to protect environmental quality while maintaining navigational channels.

The Office of Federal Activities is currently soliciting comments on a draft MOA within the Agency. For more information contact Shannon Cunniff, OFA, at (202) 382-5067.

OFFICE OF WATER REGULATIONS AND STANDARDS/CRITERIA AND STANDARDS DIVISION (OWRS/CSD)

In an effort to further the development of sediment criteria and sediment assessment methods, annual technical planning meetings are held. In 1990, the contaminated sediment planning meeting will be held in the fall at or near the ERL-Narragansett Lab. Yearly planning meetings provide opportunities for EPA OWRS/CSD to acquire technical guidance on a variety of topics affecting the development of sediment criteria and sediment assessment methods. OWRS/CSD relies heavily on the findings and recommendations that are formulated at these meetings.

Technical planning meetings also provide an opportunity for technical persons with a wide range of interests to influence, participate in, and become more familiar with ongoing and planned contaminated sediment activities. The meeting is open to anyone wishing to attend. For more information contact Warren Banks, CSD, at (202) 382-7893.

Development of Sediment Criteria for Metals

Recent findings in the effort to develop sediment criteria for metals have identified acid volatile sulfides (AVS) as a major influence on the bioavailability of metals in sediments. At this time, Superfund and other sites with elevated levels of metal contaminants are being used to verify and quantify the role AVS plays in determining bioavailability. A report

on AVS findings has been published and can be obtained from Chris Zarba, CSD, at (202) 475-7326.

Development of Sediment Criteria for Human Health Protection

OWRS/CSD is initiating efforts to work more closely with the EPA laboratory in Cincinnati to develop sediment criteria protective of human health. For more information contact Warren Banks at (202) 382-7893.

Sediment Criteria Documents and Guidance

Sediment criteria documents are under development. Initial efforts are focusing on developing a single document for 5 to 7 chemicals. Opportunities for agency and public comment are planned followed by announcement of their availability in the Federal Register.

The first draft of an equilibrium partitioning-based sediment criteria guidance document has been developed and is going through a limited review. The draft document includes a section with examples of different contaminated sediment sites. In these examples, the reader is walked through the calculation of site-specific sediment criteria values. This section also includes information on how criteria may best be used to interpret various risks posed by contaminants at these sites.

OFFICE OF MARINE AND ESTUARINE PROTECTION/OFFICE OF WETLANDS PROTECTION

The Office of Marine and Estuarine Protection (OMEP) and the Office of Wetlands Protection (OWP) are working with the U.S. Army Corps of Engineers to develop guidance documents that will help provide nationally consistent testing and decision making with respect to dredged material disposal in MPRSA Section 103 and CWA Section 404 waters. These documents are listed below.

Draft-Ecological Evaluation of Proposed Discharge of Dredged Material Into Ocean Waters

● A revised testing manual for ocean dumping, developed jointly by EPA (OMEP) and the Corps of Engineers; it updates the 1977 Implementation Manual for Section 103 of the MPRSA (the Green Book) and determines the suitability of dredged material for ocean disposal using a tiered approach. The tiers consist of 1) use of existing information 2) use of models and chemistry data 3) use of bioaccumulation and acute toxicity tests, and 4) use of long-term and chronic tests. Training sessions are planned around the country to inform interested persons of the procedures (continued on p. 3)

SAB Completes Review of Equilibrium Partitioning (EqP) Approach

The Science Advisory Board (SAB) has completed its review and issued a very favorable report on the EqP approach for assessing sediment quality. The Subcommittee found the EqP "to have major strengths in its foundation in chemical theory, its ease of calculation, and its ability to make use of existing data... The conceptual basis of the approach is supported by the Subcommittee, however, its application at this time is limited. This is because a better understanding of the uncertainty around the

assumptions inherent in the approach, including assumptions of equilibrium, bioavailability, and kinetics, all critical to the application of the EqP, is needed." For more information or to receive a copy of the findings document "Report of the Sediment Criteria Subcommittee of the Ecological Processes and Effects Committee - Evaluation of the Equilibrium Partitioning (EqP) Approach for Assessing Sediment Quality", contact Chris Zarba, CSD, at (202) 475-7326.

and techniques used in the draft manual and to discuss technical issues. A final manual is expected by September 1990. For more information contact Dave Redford, OMEP, at (202) 475-7179.

- Testing Manual for Section 404 Program under development by OWP and the Corps; will contain appropriate testing requirements for freshwater systems, using the same framework developed for ocean disposal.

Dredged Material Disposal Strategy Document

- Applicable to both Section 404/CWA and Section 103/MPRSA waters; will evaluate various disposal options and provide a decision-making framework for reaching a decision for upland or aquatic disposal. Disposal alternatives include *upland* (containment, land spreading/filling), *wetland disposal*, *open water* (including ocean, estuarine, lake and riverine), and *confined aquatic* (capping, islands and borrow pits). A draft is currently available for review and a final document is expected to be available at the end of the year.

Revised Site Designation, Monitoring, and Management Document

- Revision of existing OMEP document for ocean disposal to include criteria on site designation/selection, appropriate monitoring techniques to evaluate adverse impacts, and management procedures to lessen impacts for both 103 and 404 programs. When a draft is developed - probably this year - OWP will evaluate its potential applicability to the Section 404 program.

For more information on these documents, contact Barry Burgan, OMEP, at (202) 475-7134 or Menchu Martinez, OWP, at (202) 382-5299.

SUPERFUND

The Superfund Program has compiled a "Draft Master List of National Priorities List (NPL) Sites with

Potentially Contaminated Sediments". The Master List represents the nature and extent of sediment contamination at CERCLA sites nationally, and will be used as a benchmark from which a more extensive search and analysis may be conducted. This list, containing 281 or 24 percent of the total 1175 NPL sites, was drawn from five databases:

- *The Battelle Automated Search Information System (BASIS)* was used to retrieve the site names of all NPL sites with associated Records of Decision (RODs). A ROD is a document which reflects extensive site investigation data and preliminary decisions on the type and extent of response action planned.

- *The ROD Information Directory (RID)* which contains site-specific information relating to NPL sites' remediation plans.

- *The National Priorities List Technical Data Base (NPL)* contains preliminary site hazard ranking system data.

- "An Overview of Sediment Quality in the United States", June 1987, EPA-905/9-88-002, contains quantitative descriptions on the nature and extent of sediment contamination.

- *A 1988 Marine Sediment Report*, based on NPL technical data base searches and NOAA data, provided information concerning site proximity to marine environments.

For more information contact Carole Bass, OERR, at (202) 475-9752.

ORD Activities

ERL-NEWPORT (OR)

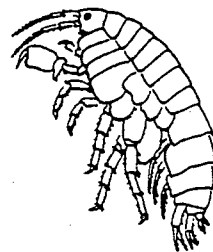
On March 12, 1990, the International Council for Exploration of the Seas sponsored a conference in Bremerhaven, West Germany on the Analysis of Biological Effects Techniques. Rick Swartz from ERL-Newport conducted a sediment toxicity workgroup at the conference. Seventeen stations in western Europe were sampled and analyzed using the sediment quality triad approach. Chemical and biological analyses, as well as bioassays, were performed.

The biological analyses include meiobenthos, macrobenthos, and fish pathology. For more information contact Rick Swartz, ERL-Newport, at (503) 867-4031.

ERL-DULUTH

Activities at ERL-Duluth include the following:

- Development of standard test methods for bulk sediments using three freshwater benthic species: the amphipod *Hyalella azteca*, the insect



Hyalella azteca

Chironomus tentans, and the oligochaete *Lumbriculus variegatus*. These tests will determine both acute and chronic toxicity. The oligochaete *L. variegatus* also has sufficient biomass to enable the development of a protocol to assess bioaccumulative non-polar organics. The lab is using sediment from various regions in the country. If you are interested in providing sediment for toxicity testing, contact Gary Ankley, ERL-Duluth, at (218) 720-5603.

- Use of Toxicity Identification Evaluation (TIE) methods, originally developed for complex effluents, to determine specific compounds responsible for toxicity in acutely toxic sediments. These toxicity-based approaches separate the toxicants from nontoxic components in the samples prior to performing analyses. This step saves time and enables correct analytical techniques to be used. The toxicants are isolated using sample fractionation techniques with toxicity tests. TIEs were used successfully in the Lower Fox River (continued on p. 4)

and Green Bay Wisconsin to identify ammonia as a major sediment toxicant. TIEs also are being applied with sediments from several other freshwater sites. For more information contact Gary Ankley at (218) 720-5603.

- Conducting, in the near future, a field validation study using the EqP approach for sediment quality criteria (in conjunction with ERL-Narragansett and ERL-Newport). They are currently looking for an appropriate test site. The requirements include a site which is contaminated with one or two non-polar organics, shows a gradient of contamination, and has benthic impacts.

- Development of methods to test the toxicity of suspended sediments. Using the medaka, a system has been developed which simulates a realistic worst-case exposure to the sediments. The fish are exposed for a period of 30 to 45 days and then analyzed for biological endpoints such as survival, growth, tissue pathology, and reproduction, as well as the presence of bioaccumulative compounds. For more information contact Rod Johnson at (218) 720-5731.

ERL-NARRAGANSETT

The EPA laboratory at Narragansett, RI, recently completed a cooperative project with EPA Region I and the New England Division of the Corps of Engineers to monitor the effects of a pilot dredging operation at the New Bedford Harbor (NBH) Superfund Site. The pilot project was designed to examine and compare the efficiency and effects of three hydraulic dredges and two disposal methods for use in a possible large scale remediation at this site.

Because federal and state water quality standards for PCBs and certain heavy metals were exceeded in NBH under pre-operational baseline conditions, it was necessary to develop a unique site-specific monitoring/management strategy for NBH. The strategy included developing a set of site-specific

numerical chemical and biological decision values (Decision Criteria), establishing a panel of environmental managers (Decision Criteria Committee) to use the decision criteria and monitoring data in a timely manner to limit environmental damage, and designing and implementing a monitoring program that would provide the necessary environmental data to the Decision Criteria Committee prior to the next day's dredging operations.

The results of the NBH Pilot Dredging Project demonstrated the utility of biological and chemical monitoring techniques to evaluate and manage, on a "real-time" basis, the environmental risks of a dredging operation. For more information contact David Hansen or William Nelson at (401) 782-3000.

Great Lakes National Program Office

In 1987, the amendments to the Clean Water Act (CWA) authorized the Great Lakes National Program Office (GLNPO) to conduct a 5-year study and demonstration project on the control and removal of toxic pollutants in the Great Lakes sediments. Five sites were specified requiring priority consideration for the demonstration projects: Saginaw Bay, Michigan; Sheboygan Harbor, Wisconsin; Grand Calumet River, Indiana; Ashtabula River, Ohio; and Buffalo River, New York. In response to this mandate from Congress, GLNPO established the Assessment and Remediation of Contaminated Sediments (ARCS)

Program. ARCS is an integrated program for the development and testing of assessment and remedial action alternatives for contaminated sediments.

A Management Advisory Committee has been set up to provide general oversight to the project while four workgroups were formed to focus on specific project activities. The four workgroups and their responsibilities are listed below:

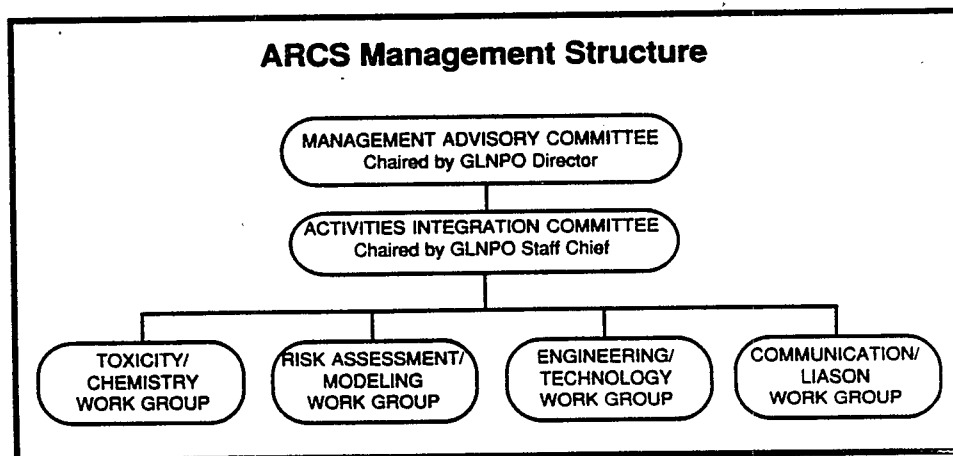
Engineering/Technology - Responsible for evaluating and testing available removal and remedial technologies for contaminated sediments, selecting promising new technologies for further testing, and demonstrating remedial alternatives at the priority sites.

Toxicity/Chemistry - Responsible for application of sediment assessment methods and producing contaminant maps.

Risk Assessment/Modeling - Responsible for evaluating environmental and human health impacts resulting from contaminated sediments, and developing techniques to assess the environmental impacts resulting from alternative remedial actions.

Communication/Liason - Responsible for facilitating the flow of information from the technical workgroups and the overall ARCS Program to the public.

A major output at the end of the program in 1992 will be guidance documents on methods to assess and *(continued on p. 5)*



remediate contaminated sediments in all Great Lakes areas of concern. For more information on the ARCS Program contact Dave Cowgill, GLNPO, at (312) 353-3576.

Bench Scale Tests To Be Conducted

The Engineering/Technology workgroup from the ARCS Program will conduct bench-scale tests of several remedial technologies in FY 90 to determine their effectiveness. These laboratory tests will include solidification, Alkali-metal polyethyleneglycol dehalogenation (KPEG), Basic Extraction Sludge Technology (BEST), critical fluid extraction (CF Systems), incineration, low temperature thermal stripping, wet air oxidation, low energy extraction, and the Eco-logic destruction process. Testing of physical separation and metals recovery processes will also be conducted for the ARCS Program by the Bureau of Mines. For more information on these tests contact Steve Garbaciak, of the Corp's Chicago District, at (312) 353-0789.

Regional Programs

EPA REGION I

The U.S. Army Corps of Engineers has formed an interagency task force to address the problem of PCB-contaminated sediments in the Millers River in Massachusetts. In 1987 and 1988, studies conducted by the Massachusetts Department of Environmental Quality Engineering (MDEQE), the U.S. Fish and Wildlife Service (USFWS), and the Corps found fish contaminated with PCBs in the Millers River, and sediment samples containing PCBs with concentrations up to 250 ppm. Originally the Corps recommended no action as they believed that attempting to remove the contaminated sediments would cause more harm to the adjacent wetlands than leaving them in place. In response to EPA's suggestions for further assessment and growing public concern, the Corps has taken responsibility for the project and has agreed with the state to conduct a Preliminary Assessment

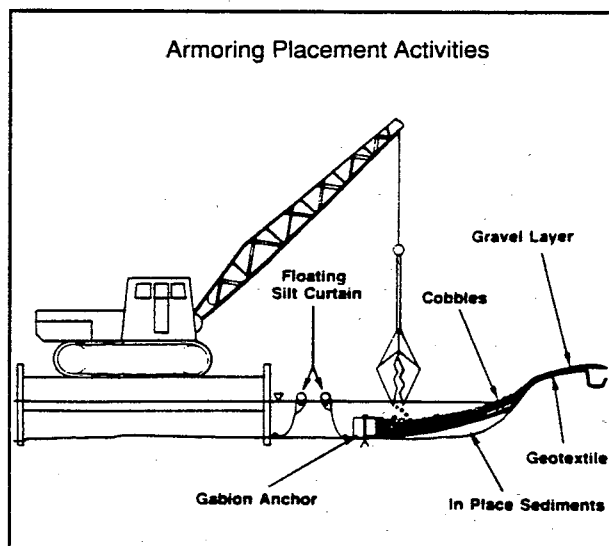
and Phase I Limited Site Investigation and to take corrective action if deemed necessary. Members on the task force include representatives from the Corps, several state environmental offices, USFWS, and EPA Region I.

EPA REGION V

Region V is currently conducting a Pilot Study to evaluate bioremediation and other innovative technologies for the treatment of PCB-contaminated sediments at the Sheboygan River and Harbor Superfund site located in Sheboygan, Wisconsin. The site was finalized on the National Priority List in 1986. The principal contaminants include PCBs as high as 4500 ppm and various heavy metals in the river and harbor sediments. Tecumseh Products Company is conducting this voluntary effort under the supervision of EPA and the Wisconsin Department of Natural Resources as part of the overall Remedial Investigation and Feasibility Study (RI/FS) they have been performing since 1985. The goal of this study is to determine the appropriate course of remedial action at the Sheboygan site.

The multi-faceted study includes:

- A Pilot Confined Treatment Facility (CTF) to study enhanced natural biodegradation for the treatment of PCB-contaminated sediments removed from the river.



- Bench-scale studies on removed sediments performed under laboratory

conditions, including various PCB extraction technologies, chemical fixation, armoring, dewatering, and bioremediation.

- Evaluation of sediment removal technologies.
- Armoring of sediments in place.

The results of the Pilot Study are expected in the summer of 1991. For more information contact Bonnie Eleder, Region V, at (312) 886-4885.

* * *

In 1980, EPA Region V issued a consent decree requiring the U.S. Steel Plant in Lorraine, Ohio, to remediate a PAH-contaminated site adjacent to the Black River. U.S. Steel did not complete the remediation projects and, consequently, owed EPA over \$1.5 million dollars in fines.

In a 1985 amended consent decree, U.S. Steel agreed to dredge 50,000 cubic yards of contaminated sediment downstream from the steel plant and dispose of it in a RCRA-approved landfill with a leachate collection and treatment system. Dredging began in November 1989 and will continue in the spring of 1990. Monitoring activities will be conducted before, during, and after the dredging operations to minimize any adverse impacts from the dredging. In addition, a 30-year monitoring program will be implemented to

monitor the leachate from the landfill which is regulated by an NPDES permit. For more information contact Ron Kovach, Region V, at (312) 886-1441.

EPA REGION IX

In August 1989, the Bay Protection and Toxic Cleanup Program was signed into law in the State of California. This 5-year program requires the State Water Resources Control Board (State Board) to develop a Water Quality

Control Plan for the State's bays and (continued on p. 6)

estuaries, develop a workplan for the development of sediment quality objectives, and create a consolidated data base of known or suspected toxic hotspots throughout the State's bays and estuaries. The budget for the first two years of the program is an estimated \$2.5 million dollars per year.

A draft Water Quality Control Plan has been completed and is listed in the section on available literature. The workplan on sediment quality objectives is due July 1, 1991. This workplan will review appropriate methods such as the Apparent Effects Threshold approach and the Equilibrium Partitioning approach and outline the approach which will be used to develop the sediment objectives. The State is also mandated to link these objectives with human health and this will be addressed in the workplan.

The data base on toxic hotspots is due January 1, 1992. Once identified, the hotspots will be ranked on a statewide basis. The Regional Boards, in conjunction with the State Board, will then devise plans to clean up these sites. Finally, a statewide cleanup plan will be developed for remediation of these toxic hotspots.

In addition to the Bay Protection and Toxic Cleanup Program, the State Board is developing a regional monitoring program for San Francisco Bay. This program will include the analysis of water column, sediment, and biological samples. The State Board hopes to coordinate as much as possible with existing monitoring efforts in the Bay. For more information contact Brian Melzian, Region IX, at (401) 782-3163.

REGION X

The State of Washington has developed draft sediment management standards which will be incorporated into the state administrative code. In addition to the sediment standards themselves, the document contains general information on the uses of the standards and a discussion on sediment dilution zones. These

standards will eventually be included in NPDES permits. The draft standards are currently being circulated for public comment and it is anticipated that the proposed standards will be issued in July of this year.

National Oceanic and Atmospheric Administration (NOAA)

As a part of its National Status and Trends (NS&T) Program, NOAA has several projects underway that involve the determination of sediment quality. Chemical analyses of sediments collected throughout the marine and estuarine regimes of the nation are

routinely performed as a part of the program. In order to evaluate the potential biological significance of the data from the chemical analyses, effects-based guidelines were developed for the NS&T Program. A unique approach was undertaken in the development of these guidelines. In this approach, a preponderance of evidence gathered from many different studies and methods was established for many of the NS&T Program analytes. Data from the EqP approach, the spiked sediment bioassay approach and from the various approaches to evaluating field-collected data were pooled for each analyte. Then, the data were sorted in ascending order. The concentrations equivalent to the lower 10 percentile (continued on p. 7)

ASTM MEETING

The Sediment Toxicology Subcommittee E47.03 of the American Society of Testing Materials (ASTM) will meet on April 25 and 26 in San Francisco following the 14th Annual ASTM meeting. The goal of the Sediment Toxicology Subcommittee is to develop guides for assessing bioavailability of contaminants associated with sediments. These guides will help in evaluating the toxicological hazard associated with contaminated sediment, soil, sludge, drilling fluids, and other similar materials.

The following draft standards for assessing contaminated sediments will be discussed. It is anticipated that documents 1 and 2 will become approved standards this summer.

1. New Standard Guide for Conducting Sediment Toxicity Tests with Freshwater Invertebrates.
2. New Standard Guide for Conducting Solid Phase 10-d Static Sediment Toxicity Tests with Estuarine and Marine Amphipods.
3. New Standard Guide for Collection, Storage, Characterization, and Manipulation of Sediment for Toxicity Testing.
4. New Standard Guide for Designing Sediment Toxicity Tests.
5. New Standard Guide for Conducting Solid Phase Sediment Bioaccumulation Tests with Freshwater and Marine Invertebrates.
6. New Standard Guide for Conducting Solid Phase Sediment Bioaccumulation Tests with Freshwater and Marine Fish.

Several additional draft documents will also be discussed at the Subcommittee meeting including 1) Design of sediment toxicity tests, 2) Sediment bioaccumulation testing methods, 3) Use of oysters, echinoderms, and polychaetes in sediment testing, 4) Toxicity Identification and Evaluation (TIE) for sediment water extracts, and 5) Sediment resuspension testing methods.

Please contact Chris Ingersoll at (314) 875-5399 for more information or to be put on the mailing list.

and the 50 percentile of the data that indicated a biological effect associated with the particular analyte were identified (the data were also examined visually to determine if there were overall thresholds above which biological effects always or usually occurred). The 10 percentile value was assumed to indicate the chemical concentration in sediments at which effects may be first expected. The 50 percentile value was assumed to indicate the chemical concentration at or above which effects were very likely to occur.

Agreement among the data from different studies and areas for many of the analytes were surprisingly good. For example, numerous data points from field studies and spiked sediment bioassays indicate that 5 ppm dry wt. Cd in sediments or more is often associated with measures of toxicity or other effects. Concentrations equivalent to or exceeding 1 ppm Pb, 1.7 ppm Ag, 300 ppm Cu, 370 ppb PCB, 300 ppb anthracene are usually associated with effects.

The informal guidelines were used to rank the NS&T Program sediment sampling sites. One site each located in the Hudson/Raritan estuary, in western Long Island Sound, in Boston Harbor and in the Oakland Estuary of San Francisco Bay were ranked highest. The results of this evaluation are reported in NOAA Technical Memorandum NOS OMA 52 "The potential for biological effects of sediment-sorbed contaminants tested in the National Status and Trends Program", by E.R. Long and L.G. Morgan, NOAA, N/OMA32x2, 7600 Sand Pt. Way NE., Seattle, WA. 98115.

Surveys of sediment toxicity in some of the regions in which chemical concentrations have been relatively high and exceeded these guidelines are being conducted by the NS&T Program. These surveys include San Francisco Bay and the Hudson/Raritan estuary. In both surveys the objective is to determine the degree and extent of sediment toxicity as an indicator of adverse biological effects associated with the presence of toxic chemicals.

Selected Available Literature

Geotechnical, Geological, and Selected Radionuclide Retention Characteristics of the Radioactive Waste Disposal Site near the Farallone Islands. J. Booth, W. Winters, L. Poppe, J. Neiheisel, and R. Dyer. 1989. Marine Geotechnology, Volume 8. Pgs 111-132. Contact James Neiheisel at (202) 475-9644.

Sorption of Organic Acid Compounds to Sediment: Initial Model Development. Chad Jafvert. In Press. Environmental Toxicology and Chemistry.

Toxicity of Cadmium in Sediments: The Role of Acid Volatile Sulfide. August 1989. Contact Chris Zarba at (202) 475-7326.

Integrated Assessment of Contaminated Sediments in the Lower Fox River and Green Bay Wisconsin. Draft 1989. Contact Gary Ankley at (218) 720-5603.

Identification of Ammonia as an Important Sediment-associated Toxicant in the Lower Fox River/Green Bay Wisconsin. G.T. Ankley, A. Katko, and J. Arthur. 1990. Environmental Toxicology and Chemistry, Volume 9. Contact Gary Ankley at (218) 720-5603.

A Review and Synthesis of Bioassessment Methodologies for Freshwater Contaminated Sediments. 1990. Contact Dave Cowgill at (312) 353-3576.

Functional Equivalent Document: Development of the Water Quality Control Plans for the Inland Surface Waters of California and Enclosed Bays and Estuaries of California. Draft January 1990. Contact Craig Wilson at (916) 322-4506.

Functional Equivalent Document: Amendment of the Water Quality Control Plan for the Oceans of California. Contact Craig Wilson at (916) 322-4506.

Standards for Confined Disposal of Contaminated Sediments. Development Documentation, January 1990. Contact John Malek at (206) 442-1286.

Draft-Ecological Evaluation of Proposed Discharge of Dredged Material Into Ocean Waters. Contact Ms. Billie Skinner at (601) 634-3701.

Second National Symposium on Water Quality Assessment: EPA Meeting Summary. 1990. (Includes a session on Assessing Sediment and Tissue Contamination). Contact Herman Baucom at (202) 382-7056.

Potential Applications of Sediment Quality Measures to Management Decisions. M. Kravitz and K. Devonald. In Press (1990). In Ports and Harbors: Our Link to the Water. Proceedings of the 11th International Conference, Coastal Society. Coastal Society, Bethesda, MD. Contact Mike Kravitz at (202) 475-8085.

LEGISLATION HIGHLIGHTS

Recent Legislative Proposals Highlighting Sediment Activities:

Comprehensive Ocean Assessment and Strategy Act of 1989 (S. 1179, Sen. Lautenberg et al.) Marine areas are to be designated as high priorities requiring accelerated point and nonpoint source controls if they have sediment contamination problems. * EPA must develop criteria for marine water quality, sediment quality, and biological quality. * Coastal states must establish numerical standards based on these criteria within two years of EPA developing the marine criteria. * EPA must promulgate standards in areas of the marine environment outside of State control. * EPA must promulgate protocols for monitoring water, sediments, and living resources in the marine environment.

Marine Protection Act of 1989 (S. 1178, Sen. Mitchell et al.) Estuaries and coastal waters are to be designated as high priorities requiring accelerated point and nonpoint source controls if they have sediment contamination problems. * EPA must promulgate numerical standards for coastal water quality and sediment quality. * If material to be dredged contains pollutant concentrations in excess of sediment quality standards, dumping of this material must be restricted to certain times and sites and must employ best management practices.

National Sediment Contamination Survey Act of 1989 (S. 1210, Sen. Moynihan et al.) EPA must conduct a comprehensive national survey of sediment contamination in all lakes, rivers, harbors, estuaries, and streams of the United States. * Survey compiles all existing information on the quantity, chemical and physical make-up, location, and source of contaminated sediments.

Coastal Defense Initiative of 1989 (H.R. 2647, Rep. Studds et al.) The National Coastal Monitoring Task Force shall develop protocols for collecting and analyzing sediment samples.

Great Lakes Critical Programs Act (S. 1646, Sen. Levin et al.) Within one year, promulgate numeric standards for Great Lakes sediments that classify whether the sediments can support aquatic life, wildlife, and recreational uses. Promulgate regulations on how to use these standards to authorize dredging

operations, to issue NPDES permits, and in U.S.-Canada GLWQA remedial action plans. No deadline specified. * ARCS program must complete assessment of sediments at project sites by June 30, 1990 and select demonstration technologies by September 30, 1990. * ARCS program must complete full-scale demonstration projects at each location by December 31, 1991 and issue a final report by December 31, 1992. * Funding for Great Lakes (Section 118) activities is extended through FY 93 and increased to \$25 million for FY 91-93.

Draft Contaminated Underwater Sediments Legislation (Draft Proposal to Rep. Nowak) EPA shall do the following: Complete a comprehensive survey identifying those locations with contaminated sediments within two years. * Develop sediment criteria for all priority pollutants and any other pollutants of concern within one year. * Develop a Toxics Source Reduction Strategy encompassing pollution prevention, industrial pretreatment and urban and agricultural runoff. * Administer \$25 million per year in grants to states for adopting sediment standards. * Make all environmental decisions regarding contaminated sites and direct the Corps' activities at these sites; remediate contaminated sites to bring them into compliance with sediment criteria. * Apply sediment quality standards to the

disposal of dredged material. * Reduce by 5 percent annually the dumping of materials that contain pollutants in excess of the concentrations established in sediment standards. * Issue NPDES permits for dredging operations and confined disposal facilities. * Identify, designate and justify remediation and removal techniques in Reports to Congress every other year. * Prepare Annual Program Summary Reports to Congress.

Great Lakes Fish and Wildlife Restoration Act of 1990 (H.R. 4299, Rep. Nowak et al.) Perform comprehensive study of the status, assessment, management, and restoration needs of the Great Lakes fishery resources. * Describe component drainage systems * analyze historic fishery data. * Develop recommendations for action plans to analyze effects of contaminant levels on fishery resources. * Prepare annual reports to Congress.

Great Lakes Water Quality Improvement Act of 1990 (H.R. 4323, Rep. Nowak). The Federal Water Pollution Control Act is to be amended to accelerate contaminated sediment cleanup in the Great Lakes, and promote a better understanding of the effects of toxic pollutants on the Great Lakes ecosystem and the implications of such effects on human health.

REQUEST FOR DATA

The Criteria and Standards Division (CSD) of OWRS contemplates setting sediment quality criteria for substances whose risks are associated with food chain bioaccumulation by using bioenergetic-based food chain models that require specific data to predict and field validate sediment quality criteria concentrations. Specifically, CSD needs paired data from the same location of lipid-normalized concentrations of non-ionic organic chemicals in benthic and water column organisms, and organic carbon-normalized concentrations of non-ionic organic chemicals in sediments. CSD also needs bioenergetics data on the uptake of dissolved oxygen and chemicals from water and sediments to aquatic organisms; consumption, respiration and excretion rates; and growth rates for fishes and especially for benthic invertebrates.

Data comparability between diverse sources is important. To maximize utility of data, CSD will provide standard procedures for lipid, organic carbon and other methodologies or must know specific methods used.

Contact Chris Zarba at (202)475-7326 if you can help.