

Contaminated Sediments

Evaluation and Remediation Techniques

STP 1482

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Contaminated Sediments: Evaluation and Remediation Techniques

M. Fukue, K. Kita, M. Ohtsubo,
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Foreword

This publication, *Contaminated Sediments: Evaluation and Remediation Techniques* is the proceedings of the Third International Symposium on Contaminated Sediments, held in Shizuoka, Japan from May 23 to 25, 2006. This symposium was sponsored by the D18 Committee on Soil and Rock, ASTM International.

The symposium chairman was Dr. Masaharu Fukue, Tokai University, the symposium co-chairmen were Dr. Ronald C. Chaney, Humbolt State University and Dr. Masami Ohtsubo, Kyushu University, and the symposium secretary was Dr. Katsutoshi Kita, Tokai University.

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Overview

This Special Technical Publication is a compilation of technical papers which were reviewed for the On-line *Journal of ASTM International* and used as the proceedings of the 3rd International Symposium on Contaminated Sediments held in Shizuoka, Japan from May 23 to 25, 2006. Papers and presentations were targeted to deliver information on current knowledge in scientific and engineering topics. Emphasis on remediation technology is a key feature of the symposium. This volume is also part of the overall technical program of ASTM Committee D18 on Soil and Rock.

Since the Industrial Revolution, surface water including sediments and benthos has been exposed to a wide variety of contaminants, such as organic compounds and metals. Recent research has shown that sediments play an important role in the preservation of surface water quality and thus the sediments must be protected to ensure a safe environment for life through the food-chain and to avoid the biological concentration of contaminants. Eutrophication in enclosed and semi-enclosed lakes, estuaries and bays due to the leaching of nutrients from the beds is another subject relating to sediments. Thus, the objective of the symposium is to acquaint the attendees with the latest advances in the fields of environmental science and underwater engineering related to sediments, and to determine the various courses of future research.

The symposium covers the areas of characterization, evaluation, mitigation, restoration and management of contaminated sediments in the fields of oceanography, limnology, sedimentology, geochemistry, marine geotechnology, environmental science and civil engineering, etc. The subjects also include physical, chemical and biological aspects of sediments. There are many advances presented in the papers which are separated into four sections; (1) monitoring and field investigation in relation to the quality of sediments and water, (2) physical properties of sediments, which also affect the fate and transport of contamination, (3) specific topics and issues concerning heavy metals and (4) different, potentially more sustainable, approaches for remediation technology including capping of contaminated sediments and cement stabilization of dredged contaminated materials.

The subjects vary from physico-chemical interactions between substances and sediments or suspended particles to global environmental problems, which are often difficult to solve. However, it is emphasized that future courses are indicated through the presentations by authors and the discussion by panelists in the special discussion session.

Finally, the editors would like to thank all authors for their contribution. We also would like to thank the members of the Organizing Committee, International Advising Committee, ASTM International (Committee D-18), Tokai University and Marine Geoenvironmental Research Association, for their strong cooperation and support. The editors are very grateful to Mrs. Crystal Kemp for her dedication towards ensuring the completion of this Special Technical Publication.

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