hydrologic and biological components. A significant portion of this chapter deals with the formation and weathering of primary and secondary minerals, particularly silicate-containing minerals. Processes especially important to soil environments are examined and evaluated with respect to pollution controls. Surface and groundwater contamination issues are discussed with accompanying case studies. Chapter 4, “The Oceans,” examines processes involved in estuarine systems, chemistry of major and minor components of seawater, and the distribution of materials in ocean bodies. Because oceans comprise a large percentage of our earth’s surface, it was enlightening that this chapter examined select environments as well as examining oceans on a global scale. The final chapter, “Global Change,” is an attempt to integrate the information presented in the previous chapters. Although the jury is still out with regard to global change impacts, there is much knowledge that is presented in this chapter. Both the carbon and sulfur cycles are discussed in detail, outlining changes and effects due to indigenous and anthropogenic contributions. Finally, impacts of chlorofluorocarbons on ozone chemistry are described, which clearly illustrate problems associated with the introduction of human-produced chemicals.

I particularly liked the inclusion of the information boxes throughout the book. The emphasis of these boxes is to illustrate basic chemical principles, theories, and methods, as well as provide examples of human impacts on the environment. The numerous figures, tables, and equations provide examples and clarity to the material discussed throughout the book. Each chapter also contains a section on additional sources for further reading.

The authors point out that they have not attempted to be exhaustive in subjects covered in the book, but rather chose themes that underscore important fundamental chemical principles involved in environmental science. A major focus of the authors was to stress “the importance of understanding how natural geochemical processes operate and have operated over a variety of timescales.” While the book is suggested for use as a first-year, environmental chemistry text, students should have a basic understanding of chemistry to more fully comprehend the material presented in some sections. The low cost of the book will undoubtedly be of interest to students.

The numerous figures, tables, and equations provide examples and clarity to the material discussed throughout the book. Each chapter also contains a section on additional sources for further reading.

The book is divided into six chapters. Chapter 1 looks at the causes of contamination, and discusses the mobility and fate of contaminants, the consequences of dealing with contaminated sediments, and the information from researchers; federal, state, and local government agencies; port authorities; industry; and nongovernmental organizations working in the field of contaminated sediments. In addition, it discusses the need to balance risk when dealing with contaminated sediments. Chapter 4 looks at site-specific considerations, control and site assessment. Chapter 5 focuses on interim and long-term controls and technologies of maturity, applicability, effectiveness, and cost. It also presents the need for pollution prevention, research, and development. Chapter 6 presents conclusions and recommendations. Appendices included with the book provide a review of the regulatory framework for contaminated sites, including the Clean Water Act(s); studies of the history and development of remediation sites; examples of the potential benefits of bioremediation; and decision analysis in management of contaminated sediments.

This book is a good source of information for researchers, project managers, and policymakers, including those working with state and local government agencies, involved with the cleanup of contaminated sediments.—H.M. KEENER, Food, Agricultural, and Biological Engineering, The Ohio State University, 1680 Madison Avenue, Wooster, OH 44691-05493-1.

Contaminated Sediments in Ports and Waterways: Cleanup Strategies and Technologies


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Perspectives in Bioremediation: Technologies for Environmental Improvement


This volume contains the proceedings of an Advanced Research Workshop on Biotechnology of Contaminated Sites that was held in the U.S. in 1996. The scope of the publication is to serve as an introduction to the nature and potential of bioremediation.

Organized into nine chapters and a short introduction, this book is a short book that covers most of the topics in the field. The main topics are molecular microbial ecology and biotechnology of xenobiotic compounds and mechanisms of biotransformations, and molecular and cellular resistance and catabolic genes. Each chapter is a review article and they vary considerably in length.

Some chapters are superficial, some are at the level of only few references and minimal discussion. However, the narrative text without any figures or tables and typographical errors, there are factual mistakes and chemical equations, and illustrations that are not...