

9. How do I know if the system is operating effectively and efficiently?
10. When can I stop operating the system?
11. The system is not operating/performing as intended. What's wrong?
12. What should I include in a Statement of Work for my contractor?

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Gary F. Bennett

Handbook of Chemical and Environmental Engineering Calculations

Joseph P. Reynolds, John S. Jeris and Louis Theodore (Eds.), Wiley, New York, NY, 2002, 961 pp., US\$150.00, ISBN 0-47140228-1

The *Handbook of Chemical and Environmental Engineering Calculations* is a very different book from ones I normally review. Rather than being a standard textbook, it contains problems only, more than 600 in total, which are divided into eight chapters (which, in turn, are subdivided into 55 sections) as follows.

1. Chemical Engineering Fundamentals
2. Chemical Engineering Principles
3. Air Pollution Control Equipment
4. Solid Waste
5. Water Quality and Wastewater Treatment
6. Pollution Prevention
7. Health, Safety, and Accident Management
8. Other Topics

The goal of the authors was to produce a non-traditional book, one dealing with calculations only. The book is designed to be used as a self-teaching aid. One of the key features of this text is the presentation of problem statements and solutions in a stand-alone manner. Each presented problem contains a title, problem statement, data, and solution with the progression of problem difficulty increasing in the section.

The final section (entitled "Other Topics") contains much interesting material. Of special interest to me were the separate sections on "Ethics" and "ISO 14000".

The book is without references to the literature, but this omission is not a detriment to its utility. I commend the book to faculty use. As far as students are concerned, I am certain they will find the book useful as a supplement to their regular text.

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Gary F. Bennett

Remediation and Beneficial Reuse of Contaminated Sediments

Robert E. Hinchee, Augusto Porta, Marco Pellei (Eds.), Battelle Press, Columbus, OH, 2002, 473 pp., US\$ 75.00, ISBN 1-57477-129-9

This book is the third and final volume of papers from the First International Conference of Contaminated Sediments held in Venice, Italy, in October 2001.

“The papers in this volume . . . are concerned with approaches for treating and detoxifying sediments and for isolating and stabilizing contaminated sediments by capping or by placement in confined disposal facilities. The authors describe their experiences with monitored natural attenuation of sediments and with a wide variety of treatment technologies (e.g. physical, chemical, thermal, electrokinetic, enhanced biodegradation, and phytoremediation) to remediate sediments and in wetlands. Several papers focus on options for beneficial reuse of sediments and on containment/immobilization approaches.”

The topic of contaminated sites, the problems they present and the remediation approaches thereto were highlighted by the first paper in this book that was written by Michael R. Palermo of the US Army Corps of Engineers R&D Center. Palermo writes:

“Remediation of contaminated sediment has received growing attention in the United States in recent years. Contaminated sediments may be viewed as a ‘fourth environmental medium’, with concerns over sediment impacts equal to those for water, air, and land-disposed waste. Options for managing contaminated sediments include monitoring natural processes which may gradually improve conditions, restricted use of a contaminated area, treatment or isolation of the contaminated sediments in-place, and dredging or excavation followed by treatment or disposal of the sediments at another location. Technical guidance for evaluating each of these options and criteria for selecting among the options is available, but the selection of a final remedy for many sites may be complex, expensive and contentious.”

The 54 papers in addition to the foreword by Palermo in this volume are found under the following categories:

- Beneficial reuse (7 papers);
- Bioremediation (13 papers);
- Phytoremediation (3 papers);
- Electrokinetic remediation (3 papers);
- Physical–chemical remediation (14 papers);
- Dewatering (4 papers);
- Capping and confined disposal (3 papers);
- Monitored natural recovery (4 papers);
- Environmental dredging (3 papers).

As with all other volumes in this series, a keyword index, an author index encompassing the papers in all three volumes is provided.

The conference on remediation of contaminated sediments was a groundbreaking one. The organizers and editors are to be congratulated on both the concept of the conference and the timeliness of publication. My only suggestion for improvement would be to provide the addresses of the paper contributors to allow interested scientists to contact them easily.

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Gary F. Bennett

Management of Contaminated Sediments

Augusto Porta, Robert E. Hinchee, Marco Pellei (Eds.), Battelle Press, Columbus, OH, 2002, 317 pp., US\$ 75.00, ISBN: 1-57477-128-0