

The book's content is not technical; rather, it is economic. Two of the three editors are economists. Not surprising then is the book's focus on financing the water and wastewater infrastructure. The editors have utilized a worldwide group of specialists and published papers under the following major titles:

- Introduction
- The regulatory framework
- Financing the water and wastewater infrastructure
- Reinventing public sector operations
- Restructuring operations in selected US cities
- A view of the past and future

There are 25 chapters contributed by both engineers and economists for organizations such as the World Bank, Stone and Webster Consultants, Standard & Poors, Washington Suburban Sanitary Commission, etc. "Coverage by these experts includes exploring regulatory frameworks, financing the water and wastewater infrastructure, reinventing public sector operations, analyzing the past and future of the global water industry, and examining the restructuring operations in selected US cities."

Personally, I was most interested in the private sector contributions. George Day, Head of Water Resource Economics of the United Kingdom's Office of Water Services, discusses the development of competition in the water and sewerage industries in England and Wales. He discusses the benefits of privatization which he notes are increased efficiency, improvements in customer service and focus, and increased flexibility.

Other authors discuss public sector operations in Mexico (Federal District Water Reform), Manila (the largest water system privatization), and Holland (government-owned public limited companies). The US experience in restructuring operations is discussed for the cities of Seattle, Wilmington, Houston, West Haven, and Phoenix among others.

Although vigorously opposed by public service unions, privatizing municipal water and wastewater plants is slowly on the increase in the United States. This book will undoubtedly increase interest in that process.

Gary F. Bennett

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Site Assessment and Remediation Handbook, 2nd ed.

Martin N. Saram, Lewis Publishers' Boca Raton, FL, 2003, US\$ 159.95, 1153 pp., 8.5 × 11 inch format, ISBN 1-56670-577-0

This book was published as a resource for engineers, geologists, and hydrologists who conduct site investigations. The author states, "This book is the result of many years of trying to evaluate the physical reality of ground-water flow in geologic materials. This text concentrates on practical aspects of hydrogeology and was designed as a working tool to

be used to evaluate the heterogeneities of subsurface units.” The author admonishes that one should not substitute excessive drilling to evaluate a property. Rather, one should use a knowledgeable, targeted, cost-effective evaluation.

Inherent in the foregoing task is the selection of appropriate locations for ground-water monitoring, since this task determines the overall effectiveness of any facility remediation program whose ultimate purpose is to protect the environment. Thus, the author’s cited purpose in authoring this manual was to assist in the foregoing evaluation by describing where to locate ground-water monitoring points so that the investigator can fully evaluate the true risk of a facility to human health and the environment.

A cost-effective site remediation can be produced in seven basic ways, according to Saram:

1. Integrating the remedial investigation/risk assessment and feasibility study process
2. Conducting a feasibility study (RI/FS), which is designed to support risk management decisions within the Superfund program
3. Focusing early on the remedy
4. Developing interim remedial measures
5. Developing innovative, workable technologies that have a lower cost than standard government remedies
6. Providing a conclusive answer to the question of “How clean is clean?”
7. Using the edge that comes with regulatory expertise

These principles are developed in the 13 chapters of the book:

1. Introduction
2. Phase I investigation
3. Phase II surficial field investigations
4. Phase II subsurface investigations
5. Phase II environmental testing
6. Fractured-rock assessments
7. Phase II data analysis and interpretation
8. The conceptual model
9. Monitoring system design
10. Assessment monitoring design
11. Organization and analysis of water quality data
12. Reporting
13. Monitored natural attenuation

The author describes (albeit briefly) the book’s contents: “A full discussion of the field collection of data for ‘typical’ site assessments is presented in Chapter 3 of this handbook with fractured rock covered in Chapter 6. Interpretation and analysis guidelines for this information are given in Chapter 5. Chapter 6 describes the process of developing conceptual models and flownets. Chapter 7 defines the use of water collected data to make decisions on design of both detection and assessment monitoring systems. Chapter 8 reviews a presentation of water quality data for both detection and assessment monitoring programs. Chapter 9 looks at assessment programs that comply with technical aspects of both RCRA and CERCLA assessments. Each of the presentation techniques covered in these

chapters provides a system approach toward the overall understanding of the final results of the performance of monitoring and assessment programs.”

The remaining chapters are devoted to:

- Assessment monitoring design (Chapter 10); landfill gas and DNAPLs are discussed (among other topics)
- Organization and analysis of water quality data (Chapter 11); topics range from a complete list of water quality parameters to a discussion of statistical treatment of data
- Monitoring natural attenuation (Chapter 13)

The sheer physical size of the book is impressive. There are more than 1150 pages, 8.5in. × 11 in. in size. It contains over 700 (in my opinion, well done) charts, tables and diagrams. All of the foregoing inclusions are listed in a very detailed Introduction that also contains a completely developed Table of Contents.

Gary F. Bennett

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