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Book Reviews

Groundwater Contamination and Analysis at Hazardous Waste Sites, edited by Suzanne Lesage and Richard E. Jackson, Marcel Dekker, Inc., New York, NY, 1992, 545 pp., US$ 175.00, ISBN 0-8247-8720-X

This book is a collection of targeted chapters addressing the sweep of activities required to successfully characterize contaminated sites. The editors have sought out authors who could develop each element completely in a complementary fashion and illustrate the technologies with a suite of case studies. As a consequence, the reader is presented with a great deal of information on the latest approaches to site characterization and provided examples to assist with the practical aspects of application.

The first five chapters address analytical methods starting with a primer on current terminology and practical considerations. The second chapter considers the tradeoffs in seeking only priority pollutants as analytes and the information that can be gained from a broader set of target compounds. The third chapter constructs a protocol for analyzing the US Environmental Protection Agency's Appendix IX List of Compounds. Chapter 4 reviews the results of an extensive study of sewage-contaminated groundwater and presents useful observations on indicator chemicals and the interpretation of data. This section concludes with a chapter on soil gas sampling in the study of trichloroethylene vapor transport in the unsaturated zone.

The next five chapters focus on site monitoring strategies. Specific topics include field monitoring for polynuclear hydrocarbon contamination, use of volatile organic compounds as a disposal site monitoring parameter, application of new statistical methods for designing monitoring programs and interpreting results, geochemical considerations, and an approach utilized in Germany to evaluate waste site monitoring data. I found the chapter on statistical methods particularly valuable because of the inclusion of the necessary tables to apply the methods to other sites and the use of a number of examples to illustrate application to real sites.

The next three chapters discuss site investigations and provide an illustration of the practical application of technologies and approaches taken in different settings across the US, and in Australia and Canada. The discussion and conclusions in these chapters help explain why specific approaches were successful and provide a better understanding of the earlier chapters' implications.

The final four chapters describe geochemical investigations and touch on current issues such as analyzing unstable constituents, the disolution of immiscible solvents in groundwater, the transport of polychlorinated biphenyls, and the fate of a freon compound in groundwater.

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This book offers something for a broad range of readers including the novice and the experienced field investigator. It blends a solid platform of basic site characterization technology with a discussion of new approaches and current thinking. I recommend the book to anyone who is engaged in the business of site characterization. The subject matter is complete with the exception of a discussion of drilling technologies and their effects on data quality. The use of case studies is very helpful and depth of knowledge of the authors well displayed. Even experienced site investigators will find food for thought in some of the new ideas that are offered.

GAYNOR W. DAWSON

Handbook of Industrial Waste Treatment – Volume I, edited by Lawrence K. Wang and Mu Hao Sung Wang, Marcel Dekker, Inc., New York, NY, 1992, US$ 150.00, 292 pp., ISBN 0-8247-8716-1

The first in a set (to be at least three volumes long), this book uses an industry-by-industry approach to the topic of liquid waste treatment and follows the lead of numerous other authors in the past who wrote waste treatment books, i.e., Gurnham and Nemerow among others. Discussed are the waste treatment problems of the following "major" industries:

- Metal plating and finishing
- Photographic processing
- Soap and detergent manufacture
- Acid pickling waste
- Toxic waste
- Photographic industry waste

In addition to the above-focused chapters, there are two other general chapters: (1) Waste Minimization and (2) Stormwater Management.

The editors claim "extensive bibliographic reference" for each industrial waste treatment or practice and in the main they provide that. An exception is the chapter on "Acid Pickling of Metals" that has only three references, none of which are common – one written in German, one from the UK, and one in Turkish.

In addition to serving as a reference text, the editors claim it could be utilized as a college textbook. I really doubt many faculty members will adopt a three-volume series. And given the book has no problem or review questions, it is further unlikely to be favorably considered as a textbook selection. Finally, most academic courses approach wastewater treatment from a fundamental unit operations perspective rather than an industry-by-industry approach.

My overall assessment is that while interesting and generally well-written and edited, the series does not make a major contribution to the industrial wastewater treatment field.

GARY F. BENNETT