well-written (in the main), the occasional "odd phrase" or "statement" slips in, resulting from the author's non-English speaking background.

That minor criticism aside, I highly enjoyed the book and recommend it to all in the design and operational areas associated with both industrial and management of wastewater treatment plants.

Gary F. Bennett

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In Situ Treatment Technology, 2nd Edition

E.K. Nyer, P.L. Palmer, E.P. Carman, G. Boettcher, J.M. Bedessem, F. Lenzo, T.L. Crossman, G.J. Rorech, D.F. Kidd (Eds.), Lewis Publishers, Boca Raton, FL, 2000, 536 pp., US$ 69.95, ISBN: 1-56670-528-2

In reviewing books, the most difficult to review are very bad books and, conversely, very good books. This book by Nyer is one of the latter, but it is not just very good, it is excellent, being written by both an experienced consultant who has taught courses on groundwater cleanup and treatment techniques and who has written a column entitled "Treatment Technology" for *Groundwater Monitoring and Remediation* and authored four books. If memory serves me correctly, the number is now five with two of those being compilations of his column noted above. Nyer writes from experience, being a senior vice-president of a major consulting firm and having himself designed and installed more than 400 groundwater treatment systems. Given the pressure on industries and consulting engineers to "produce for the firm" and the oft-heard comment "I have not time for anything outside of work", it is a pleasure to see a firm such as the one the author works for give him time and support to author a book.

The book has a dozen chapters (as noted below). All but one were written by members of Nyer's firm. Nyer reviewed and rewrote each of the chapters, utilizing his excellent writing skills of which he describes as an "easy style of writing". I describe it as excellent. As noted above there are 12 chapters which are divided into four sections.

1. Untitled
   - Limitations of Pump and Treat Remediation Methods
   - Lifecycle Design
2. Mass removal remediation technologies
   - Vapor Extraction and Bioventing
   - Vacuum-Enhanced Recovery
   - In Situ Air Sparging
   - Air Treatment for In Situ Technologies
3. Diffusion-controlled remediation technologies
   - In Situ Bioremediation
   - Reactive Zone Remediation
   - Phytoremediation

4. Miscellaneous control technologies and treatment technologies

- Fracturing
- Permeable Treatment Barriers
- Continuing Problems in Groundwater MTBE, 1,4-Dioxane, Perchlorate, and NDMA

Interestingly, the book begins with discussions of a failure — well may be not a complete failure, but an incomplete cleanup technology — pump and treat. Initially believed by those in the field to be the most effective method of remediation and not able to reach the required contaminant concentrations in most aquifers. Nyer uses this chapter to discuss the basic component limitations of pump and treat technology.

In the second chapter comes a discussion of "Lifecycle Design", a concept Nyer says "... helps to focus the designer on the main strategies necessary to successfully remediate a site". The idea is that with projects requirements such as contaminant concentration changing with time, one must account for that in one's design. Examples of good lifecycle design are spread throughout the other chapters in the book.

The next several chapters are divided into the three major sections as noted earlier in this review.

As I read through the book, I was impressed by Nyer's (self-described as easy) style of writing. In numerous well-done (credit was given by the author to his employer for assistance) diagrams, charts, tables, design equations are provided along with (much to my liking) numerically worked examples.

Perhaps best of all (at least to the academic reviewer) were numerous real world projects — well-chosen and well-described.

The reader of this review should have discerned by now my admiration for the writer (Nyer) and his superb book. I recommend its purchase.

Gary F. Bennett

PII: S0304-3894(01)00244-8

Handbook of Pollution Prevention Practices

N.P. Cheremisinoff (Ed.), Marcel Dekker, New York, 2001, 429 pp., US$ 165.00, ISBN: 0-8247-0542-4

The current "hottest" topic in the environmental field is pollution prevention. The topic is introduced by Cheremisinoff in the following way.

> Pollution prevention, rather than concentrating on the treatment and disposal of wastes, focuses on the elimination or reduction of undesired by-products within the production process itself. In the long run, pollution prevention through waste minimization and cleaner production is more cost-effective and environmentally sound than traditional pollution control methods. Pollution prevention techniques apply to any manufacturing process and range from relatively easy operational changes and good housekeeping practices to more extensive changes such as making substitutions for toxic substances, the implementation of clean technology, and the installation of state-of-the-art recovery