- Aqueous cleaning equipment and chemicals are produced by a number of suppliers with extensive experience in installing and servicing their equipment
- Survey results indicate that it is technologically feasible to employ aqueous cleaning in approximately 80 to 90% of all metal degreasing applications and 90% of all non-surface mount electronics assembly, cleaning, applications.

G.F. BENNETT

Granular Activated Carbon: Design, Operation and Cost, by R.M. Clark and B.W. Lykins Jr, Lewis Publishers, Chelsea, MI, 1989, ISBN 0-8731-114-9, 342 pp., $ 59.95.

The authors of this text have impeccable credentials for the task. Both are members of the Drinking Water Research Division of the Risk Reduction Engineering Laboratory of the U.S. Environmental Protection Agency (U.S. EPA) in Cincinatti, Ohio. Indeed the author is director of the Division.

In the book, the authors present a summary of design, cost and performance information on the application of granular activated carbon (GAC) to drinking water treatment. Much of the data is based on U.S. EPA studies, the results of which are reported in Chapter 3 — which follows an introductory chapter on GAC treatment for drinking water and a second chapter on design consideration, carbon selection, breakthrough, systems design, reactivation system, materials of construction, and carbon storage and transfer.

The Safe Drinking Water Act Amendment passed by the U.S. Congress in 1986 required regulations that limit the concentration of organic contaminants in drinking water. These limits known as Maximum Contamination Goals (MCGLs) apply to numerous organics (i.e. trichloroethylene, benzene and carbon tetrachloride). One of the applicable ways of removing them (and any trihalomethanes formed in the water treatment process) is through the use of granular activated carbon. Other chapter titles are as follows:

- Comparative analysis of field-scale projects
- Performance of virgin GAC
- Reactivation systems
- Reactivation performance
- Microbiology of GAC filtration and biological activated carbon
- Adsorption modeling
- Control of trihalomethanes synthetic organics
- Cost analysis for GAC

As the authors noted, the book is a synopsis of a cornucopia of information available in the literature, but they have done a relatively good job synopsizing the data. The reference sections are adequate though not exhaustive, and the treatment of the industrial uses of carbon though briefly mentioned was not a