

*Industrial Wastewater Management Handbook* edited by Hardam S. Azad, McGraw—Hill, New York, 1976, 546 pages, \$ 27.50.

In the United States, the far reaching consequences of PL-92-500, the Water Quality Act Amendments of 1972 have caused industry to undertake extensive and expensive abatement programs. This book is one of the first to directly deal with that law and water pollution control action needed by industry to merit it.

Approximately one-quarter of the book is devoted to legislation, including a brief description of 92-500 and the terms it generates: BPTCA (best practical treatment currently available), BATEA (best available technology economically achievable), and zero discharge. Besides discussion of limitation of discharges to the waters of the nation, the important topic of sewer discharges is also introduced. Very useful tables include a 6 page table on numerical criteria for water quality, for discharges of specific chemicals i.e. inorganic mercury is limited to 1.0 microgram per cubic meter for live stock. Additionally, the last full chapter of 63 pages lists effluent guidelines for industry needed to meet BPTCA, BATEA, as well as performance data required for new sources.

Approximately one half of the book is devoted to specific industries: food, paper, chemical, petroleum, metals and power generation. Each chapter was written by a well-known expert in the field. Most contain descriptions of sources, flow and concentrations. The definition of the problems are then followed by suggested solutions, including tables of performance, graphs of efficiency and diagrams of equipment to give the reader an excellent overview of the potential solution. The references, though not exhaustive, do cover a wide variety of sources, especially important EPA publications. As a chemical engineer, it is indeed gratifying to see chemical engineering publications appear in the reference list.

The book does have some drawbacks. The most obvious one to the reviewer is its small print, making it less easy to read. The book is "dated" by inclusion of a list of "Who's Who in Environmental Administration in April 1975" interesting for archival purposes but for this reason only. To the reviewer's knowledge, at least two of the EPA regional administrators are now different than listed as EPA makes frequent changes in top staff. With the change in government that occurred in early 1977, the top listed staff will also be changed.

There are well written chapters on technology and equipment. Both are good, and contain some excellent design data, e.g. Clarifier Design Data and Comparison of Mechanical Aerators. However, both chapters, by limitation of space, are not as comprehensive as they could be: i.e. activated carbon has 4 pages only and no table devoted to it and wet oxidation is given only 6 lines and one diagram. Additionally, both chapters seem to overlap; indeed they almost had to because of their complimentary nature. Perhaps they should have been combined under one author.