

*Cost of Remedial Response Actions at Uncontrolled Hazardous Waste Sites*, by H.L. Rishel, T.M. Boston and C.J. Schmidt, Noyes Data Corporation, Park Ridge, NJ, February 1984, 144 pages, \$32.

This book was originally published as a report submitted to the Remedial Action Technology Program of the Solid and Hazardous Waste Research Division of the U.S. Environmental Protection Agency, by the authors who are members of SCS Engineers', Long Beach, CA.

As the U.S. faces costs exceeding \$10 billion needed to address the problems of cleaning up the nation's uncontrolled waste sites, it is important to have data one can use to estimate remedial action costs. This book is a first attempt at collation of those costs.

In their report, the authors present conceptual design cost estimates for 35 remedial action unit operations at uncontrolled hazardous waste or surface impoundment disposal sites. Examples of cost estimates include: grout curtains, drains, chemical fixation, gas migration control, ponding, etc. The authors give cost ranges for the U.S. (high, low and specific for Newark, NJ) in unit terms — square meters of slurry out off wall, for example. Both capital and operating costs are reported for each unit operation.

The next step to be expected from the USEPA is the compilation of actual costs incurred as the agency collects data from its remedial action contractors as they bid and complete cleanup projects at superfund sites.

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*Genetic Engineering and New Pollution Control Technologies*, by J.B. Johnston and S.G. Robinson, Noyes Data Corporation, Park Ridge, NJ, February 1984, 131 pages, \$32.

In the executive summary to this US Environment Protection Agency sponsored study, the authors write:

"The objectives of this study were to document the basis for developing new pollution controls using genetic technology, to describe the present state of such developments and to recommend a research policy for such an appraisal . . . The study identified a small number of research topics that are currently underscribed and that are likely to contribute substantially to new pollution treatments if research support were made available."

The pollution problems identified as potentially being amenable to genetic engineering include:

- Phosphorous removal
- Ammonia oxidation
- Flocculation
- *In situ* treatment