Irrigation with Treated Sewage Effluent
(Advanced Series in Agricultural Sciences 17)


Irrigation with treated sewage effluent provides water and nutrients for crop production and a convenient means of effluent disposal. Effluent is very valuable where other sources of water are scarce and its use for irrigation frees high quality water for other uses. There is considerable interest in effluent irrigation in parts of southern and western USA, Mexico, Australia, and Israel.

This hardcover book provides the reader with a comprehensive overview of the principles and practices of treated sewage effluent irrigation. It contains six chapters: (i) a brief introduction; considerable detail concerning (ii) sources, (iii) quality, (iv) uses, (v) irrigation and fertilization management; and (vi) irrigation systems for sewage effluent. It includes an appendix listing parameters for hydraulic fracturing, well drilling, ultrasonics, slurry treatment, carbon dioxide and hot brine injections, and cyclic pumping.

The second part of the handbook offers a detailed overview pertinent to Superfund site remedial activities, which have promoted the development of in situ treatment technologies. The third section presents detailed presentation of state-of-the-art treatment technologies, which include process technology descriptions, wastes amenable to treatment, case of application, potential degree of treatment attainable, process reliability, current status of the technology, secondary impacts, process equipment, exogenous reagents, and site information required. The remaining section is dedicated to process delivery and material recovery systems, which include hydraulic fracturing, well drilling, ultrasonics, slurry treatment, carbon dioxide and hot brine injections, and cyclic pumping.

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Inorganic Contaminants of Surface Water: Research and Monitoring Priorities


This book is part of a Springer-Verlag series on pollution control. It is comprised of brief views of Al, As, Ba, Be, B, Cd, Cr, Co, Cu, Hg, Ni, N, Se, Ag, S, Tl, Sn, V, and Zn as well as radionuclides and asbestos. Each individual chapter gives a review of production and sources, aquatic bioaccumulation, toxic effects, drinking water recommendations for current research, and priority setting. Each chapter concludes with a recent, adequate reference section.

The book has no chapter on P despite the importance of P chemistry on the quality of surface water. Au, Pd, Pt, and Te are toxic and relatively accessible, but are not covered. Molybdenum is not included, although it can have an impact on surface water.

The management of surface water quality relies on reliable analytical chemistry techniques. A discussion of sample collection methods and analytical techniques available would be useful.

The book will be of interest to a wide range of environmentalists. It will serve as a valuable desk reference because it combines data from a wide range of literature, particularly in the area of health effects. All figures are presented clearly. RICHARD A. CHURCHILL, Illinois State Geological Survey, 615 East Illinois Ave., Champaign, IL 61801.

Soil Analysis: Physical Methods


There has been a historically close relationship between the development of new soil physical methods and research. Choice of an appropriate technique for a given problem must be predicated upon knowledge of both its potential and limitations.