

The Guidebook to Membrane Technology for Wastewater Reclamation

Wastewater treatment, Pollutants, Membrane filtration, Membrane bioreactors, Reverse osmosis, Fouling, UV oxidation, Process control, Implementation, Economics, Commercial plants design

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This is the second guidebook on commercial membrane technology written by a team of membrane technology professionals and published by Balaban Desalination Publications. The material included in the first guidebook (published in 2007) covers mainly brackish and seawater desalination technology and applications. This guidebook is dedicated to the membrane technologies applied in wastewater reclamation processes. The reasons for a separate book on wastewater reclamation technology are related to the unique treatment challenges, potential of sufficient availability and affordable economics of utilizing this water source: The water sources, used for wastewater reclamation, are highly contaminated with constituents that embody conditions of environmental and health concern. Therefore, specialized and highly reliable treatment technologies

are required for applications that involve water reuse; Wastewater is available in abundant quantities at locations that allow convenient conveyance to the treatment facilities and distribution of treated effluent to potential users; Energy requirement of the treatment process is low compared to other alternatives of augmentation of water supply; Advances in membrane technology for wastewater reclamation contributed to its increasing recognition as a reliable technology for cost effective production of high quality effluents.

The objective of this book is to describe commercial treatment technologies and explain in simple engineering terms modern membrane applications in wastewater reclamation processes. Examples of design and process calculations and case studies are provided to illustrate methods of system design, calculation of process parameters and evaluation of process economics.

The book content was formulated to serve as a reference for configuration and design processes of membrane systems in wastewater reclamation and reuse applications for project engineers, plant designers, planners, utility directors and operations managers, involved in municipal and industrial reclamation projects. It is also anticipated that the book will provide information on practical approaches of these technologies and processes to scientists and academics interested in commercial wastewater reclamation applications.



