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Bacteria""; ""2.3.1 Campylobacter""; ""2.3.2 ""; ""2.4 Lessons from Disease Outbreaks""; ""2.5 Principles of ""
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""References""""""4 Reverse Osmosis and Other Treatment Technologies""; ""4.1 Introduction""; ""4.2 Water Technology in Application""; ""4.3 Processes""; ""4.3.1 ""; ""4.3.1.1 Recent Experience with New Projects in the USA""; ""4.3.2 ""; ""4.3.3 Electrodialysis""; ""4.3.4 ""; ""4.3.5 Freeze Desalination""; ""4.4 Relative Costs of Technologies""; ""4.4.1 Feed-Water Salinity Level""; ""4.4.2 Energy Requirements""; ""4.4.3 ""; ""4.5 Conclusion""; ""References""; ""5 The Theory of Water and Utility Pricing""; ""5.1 Introduction""; ""5.2 The Dupuit-Hotelling Theory of ""
""5.2.1 The Derivation of the Rule""""""5.3 Private Versus Public Production""; ""5.4 ""; ""5.5 (Ramsey) Pricing""; ""5.5.1 Derivation of Ramsey Prices""; ""5.5.2 Expressed as Covering ""; ""5.5.3 and Equity Issues""; ""5.6 Econometric Estimation of ""; ""5.6.1 Derivation of MC for Two Types of ""; ""5.6.2 Derivation of and Breakeven Prices""; ""5.7 Water Pricing in Developed Countries""; ""5.7.1 Water Pricing Practice in the US""; ""5.7.2 Water Pricing Practice in the ""; ""5.7.2.1 ""; ""5.7.2.2 ""; ""5.7.2.3 ""; ""5.7.3 Water Pricing Practice in ""; ""5.8 Conclusions""; ""References""
""Part III Incorporating Risk in Decision-Making """""6 Risk Assessment for Safe Drinking Water Supplies""; ""6.1 Introduction""; ""6.2 Source Water Protection""; ""6.2.1 Principles of ""; ""6.2.2 Source Water Pollution Control Measures""; ""6.2.2.1 Point Source Pollution""; ""6.2.2.2 Nonpoint Source Pollution""; ""6.2.2.3 ""; ""6.3 Methods for Producing Potable Water Supplies""; ""6.3.1 Hazard Analysis ""; ""6.3.2 ""; ""6.3.3 The ""; ""6.3.4 ""; ""6.3.4.1 Risk Characterization""; ""6.3.4.2 Implementing QMRA""; ""6.3.4.3 ""; ""6.3.5 Application to Water Treatment Plants""
""6.4 Case Studies of ""

Sommario/riassunto

This book discusses different drinking water treatment technologies and what contaminants each treatment method can remove, and at what costs. The production of drinking water requires adequate management. This book attempts to fill the existing knowlegde gap about (a) water treatment technologies and their costs, (b) risk assessment methods, (c) adverse health effects of chemical contaminants, (d) management protocols, and varying regulatory practices in different jurisdictions, and what successes are possible even with small financial outlays. Addressing water consulting engineers, politicians, water managers, ecosystem and environmental activists, and water policy researchers, and being clearly structured through a division in four parts, this book considers theoretical aspects, technologies, chemical contaminants and their possible elimination, and illustrates all aspects in selected international case studies. Source-water protection, water treatment technology, and the water distribution network are critically reviewed and discussed. The book suggests improvements for the management of risks and financial viability of the treatment infrastructure, as well as ways toward an optimal management of the distribution network through the risk-based management of all infrastructure assets.