Groundwater Contamination in the United States: An Executive Summary of the Technical Report

Importance of the Groundwater Resource

What is Groundwater?

Types of Aquifers

Factors Affecting the Natural Quality of Water

Relationships Among Groundwater Quality and Quantity, Surface Water, and Land Use

Sources of Groundwater Contamination

Types of Groundwater Contamination

Attenuation and Movement of Contaminants in Groundwater

Risks Posed by Different Types of Contaminants

Geographical Extent of the Problem

Severity of the Problem

Monitoring for Groundwater Contamination

Measures for Protecting Groundwater

Aquifer Rehabilitation

EPA 1984 Ground-Water Protection Strategy

Classification of Aquifers

Federal Regulations Applicable to Groundwater

State and Local Groundwater Policies and Management Strategies

Conclusions

The Groundwater Resource

What is Groundwater?

Groundwater Movement

Occurrence and Natural Quality of Groundwater

Use of Groundwater

Profile of an Aquifer

Uses of the Ogallala Groundwater Resources in a Few Selected States

Groundwater Contamination

Movement of Contaminants

Sources of Contamination

Changes in the Composition of Groundwater Due to Natural Processes

Contamination Due to Waste Disposal Practices

Individual Sewage Disposal Systems

Land Disposal of Solid Wastes

Collection, Treatment, and Disposal of Municipal Wastewater
Montana p. 196
Nebraska p. 197
New Jersey p. 200
New Mexico p. 203
North Dakota p. 209
Oregon p. 209
Pennsylvania p. 212
Rhode Island p. 214
South Carolina p. 215
Texas p. 217
Vermont p. 218
Washington p. 220
Conclusions p. 222
Monitoring the Quality of Groundwater p. 229
EPA Ground-Water Monitoring Strategy p. 230
Federal Statutes Requiring Groundwater Monitoring p. 232
Federal, State, and Private Organizations That Carry Out Monitoring Activities p. 233
Federal p. 233
State p. 234
Basic Procedures in Setting Up a Groundwater Monitoring Program p. 235
Initial Site Assessment p. 236
Selecting Parameters p. 237
Types of Wells p. 237
Monitoring Network p. 249
Well Drilling Techniques p. 249
Casing Materials p. 250
Sampling Procedures p. 251
Evaluation of Data p. 251
Monitoring Costs p. 252
Data Management and Information Retrieval p. 252
Possibilities for Improving Monitoring Systems p. 254
Research Needs p. 255
General Practices for Preventing and Controlling Groundwater Contamination p. 260
Disposal of Hazardous Wastes p. 263
Septic Tanks p. 265
Agricultural Practices p. 266
Accidental Leaks and Spills p. 268
Land Spreading and Spraying of Sludges p. 270
Mining p. 270
Highway Deicing Salts p. 272
Infiltration of Surface Water p. 272