



Principles of Environmental Engineering & Science, 4th edition

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Fourth edition changes

The fourth edition has been thoroughly revised and updated. FE formatted problems have been added to the appropriate chapters. New case studies have been added to many of the chapters as well. The following summarizes the major changes in this edition:

Introduction

- Data on per capita water consumption has been updated

Biology

- Section on harmful algae blooms has been updated – Addition of section on Legionellosis

Ecosystems

- Updated figures and charts

Risk

- Updated tables

Hydrology

- Updated figures and tables
- Addition of discussion of effect of climate change

Sustainability

- Updated discussion of water resources focusing on floods and droughts with examples in the United States and in other countries
- Updated tables and figures on energy and mineral resources
- Expanded discussion of shale gas includes flowback and earthquakes

Water Quality Management

- Updated figures and charts
- Updated section on water source protection

Water Treatment

- Expanded overview of treatment systems
- Updated section on regulations
- Updated figures and charts
- Expansion of section on disinfection to include breakpoint chlorination and UV disinfection

Wastewater Treatment

- Addition of direct potable reuse discussion

Air Pollution

- Updated ambient air pollution standards
- Updated discussion of acidification of lakes
- Addition of mercury control technology for power plants
- Update of federal motor vehicle standards
- New discussion of CAFE standards
- New discussion of the use of coal in power plants
- Update of global warming potential data for selected compounds – Updated graphs of global surface temperature
- New graph of CO₂ concentration

Solid Waste

- Updated figures and charts