

Groundwater Geochemistry and Isotopes

"The book is very clearly written, and each chapter provides students and long-time practitioners with practical examples and essential information needed for understanding and applying isotopic and geochemical principles to their research. *Groundwater Geochemistry and Isotopes* will be an essential resource for all students of isotopes and aqueous geochemistry."

—Dr. Leonard Wassenaar, International Atomic Energy Agency

"The author combines geochemistry and environmental isotopes quite nicely. He uses short and rather simple explanations (not an easy task) with many practical examples. ...I am sure this new book will become a standard reference on groundwater geochemistry and isotopes as a basis for solving problems of groundwater quality and will meet expectations for use by graduate students and scientists on groundwater conditions."

—Dr. Alfonso Rivera, Geological Survey of Canada

The integration of environmental isotopes with geochemical studies is now recognized as a routine approach to solving problems of natural and contaminated groundwater quality. Advanced sampling and analytical methods are readily accessible and affordable, providing abundant geochemical and isotope data for high spatial resolution and high frequency time series. *Groundwater Geochemistry and Isotopes* provides the theoretical understanding and interpretive methods needed by students, researchers, and practitioners to apply isotopes and geochemistry in groundwater studies and contains a useful chapter presenting the basics of sampling and analysis.

This text teaches the thermodynamic basis and principal reactions involving the major ions, gases, and isotopes during groundwater recharge, weathering and redox evolution. Subsequent chapters apply these principles in hands-on training for dating young groundwaters with tritium and helium and ancient systems with radiocarbon, radiohalides and noble gases, and for tracing reactions of the major contaminants of concern in groundwaters.

Groundwater Geochemistry and Isotopes presents the basics of environmental isotopes and geochemistry and provides readers with a full understanding of their use in natural and contaminated groundwater.

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