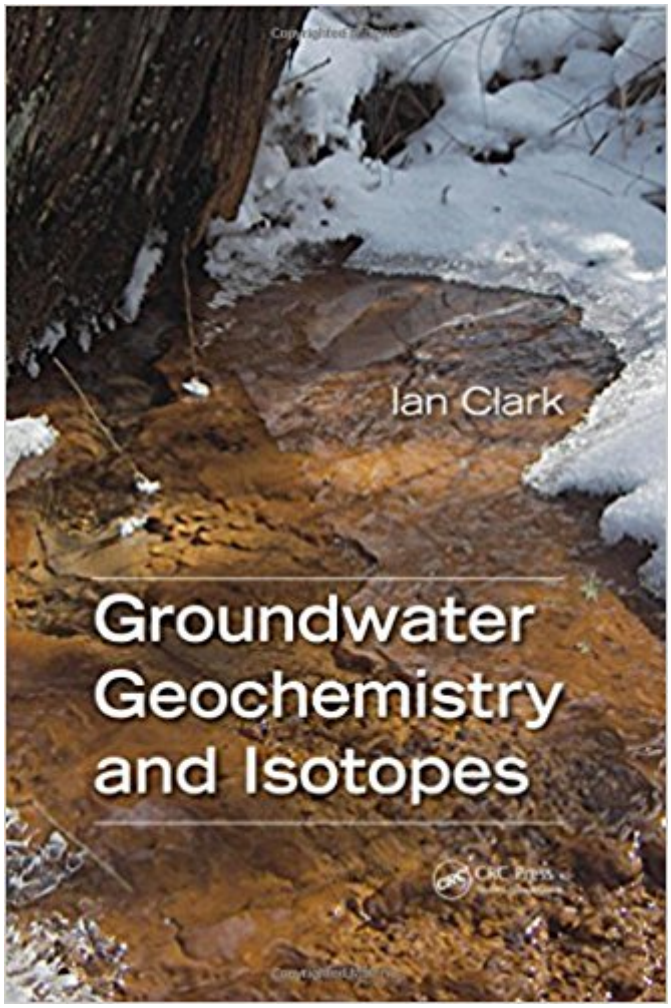
Groundwater Geochemistry And Isotopes



Synopsis

Understand the Environmental Processes That Control Groundwater Quality 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 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. Covers the basics of solutes, gases and isotopes in water, and concentration-activity relationships and reactions Describes tracing the water cycle, weathering, and the geochemical evolution of water quality Explores dating groundwater as young as a few years to over hundreds of millions of years Uses case studies to demonstrate the application of geochemistry and isotopes for contaminated groundwaters Accessible to consultants and practitioners as well as undergraduates, Groundwater Geochemistry and Isotopes presents the basics of environmental isotopes and geochemistry, and providesÃ Â you with a full understanding of their use in natural and contaminated groundwater.

Book Information

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Customer Reviews

"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."Ã¢â ¬â œDr. 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. Ã¢â ¬Â¦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."Ã¢â ¬â ¢Alfonso Rivera, Geological Survey of Canada "Throughout the text Clark provides many problems and examples. I especially found the real-world examples interesting and illuminating. If you have any interest in geochemical applications of isotopes, this is the book for you." Ã¢â ¬â ¢ Groundwater, December 2015

Ian Clark is a professor in the Department of Earth and Environmental Sciences at the University of Ottawa. He completed a bachelor of science in earth sciences and a master of science in hydrogeology at the University of Waterloo followed by his doctoral degree at the UniversitÃƒÂ© de Paris-Sud (Orsay) in isotope hydrogeology and paleoclimatology. Since his earliest work on geothermal systems in western Canada, Dr. ClarkÃ¢â ¬â„¢s research has focused on the integration of geochemistry and isotopes to address questions on the origin, age, and geochemical history of groundwater and solutes in natural and contaminated settings. He and his colleagues recently established the Advanced Research Complex for geosciences at the University of Ottawa hosting labs for accelerator mass spectrometry, stable isotopes, noble gases and geochemistry.

as advertisedupdated 7/18/2017 I made a mistake the first time and gave a one star, when I meant to give it five.

Excellent text, well written, and a great overview of the subject.

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