

## Introduction To Hydrogeology Third Edition Unesco Ihe Delft Lecture Note Series Unesco Ihe Lecture Note Series

Groundwater Science, Second Edition - winner of a 2014 Textbook Excellence Award (Texty) from The Text and Academic Authors Association - covers groundwater's role in the hydrologic cycle and in water supply, contamination, and construction issues. It is a valuable resource for students and instructors in the geosciences (with focuses in hydrology, hydrogeology, and environmental science), and as a reference work for professional researchers. This interdisciplinary text weaves important methods and applications from the disciplines of physics, chemistry, mathematics, geology, biology, and environmental science, introducing you to the mathematical modeling and contaminant flow of groundwater. New to the Second Edition: New chapter on subsurface heat flow and geothermal systems Expanded content on well construction and design, surface water hydrology, groundwater/surface water interaction, slug tests, pumping tests, and mounding analysis. Updated discussions of groundwater modeling, calibration, parameter estimation, and uncertainty Free software tools for slug test analysis, pumping test analysis, and aquifer modeling Lists of key terms and chapter contents at the start of each chapter Expanded end-of-chapter problems, including more conceptual questions Winner of a 2014 Texty Award from the Text and Academic Authors Association Features two-color figures Includes homework problems at the end of each chapter and worked examples throughout Provides a companion website with videos of field exploration and contaminant migration experiments, PDF files of USGS reports, and data files for homework problems Offers PowerPoint slides and solution manual for adopting faculty

The third edition of Fundamentals of Hydrology provides an absorbing and comprehensive introduction to the understanding of how fresh water moves on and around the planet and how humans affect and manage the freshwater resources available to them. The book consists of three parts, each of fundamental importance in the understanding of hydrology: The first section deals with processes within the hydrological cycle, our understanding of them, and how to measure and estimate the amount of water within each process. This also includes an analysis of how each process impacts upon water quality issues. The second section is concerned with the measurement and analytical assessment of important hydrological parameters such as streamflow and water quality. It describes analytical and modelling techniques used by practising hydrologists in the assessment of water resources. The final section of the book draws together the first two parts to discuss the management of freshwater with respect to both water quality and quantity in a changing world. Fundamentals of Hydrology is a lively and accessible introduction to the study of hydrology at university level. It gives undergraduates a thorough understanding of hydrological processes, knowledge of the techniques used to assess water resources, and an up-to-date overview of water resource management. Throughout the text, examples and case studies from all around the world are used to clearly explain ideas and techniques. Essay questions, guides to further reading, and website links are also included.

Tremendous improvements in ground-water sampling methodologies and analytical technologies have made it possible to collect and analyze truly representative samples to detect increasingly lower levels of contaminants-now in the sub-parts-per-billion range. Though these new methods produce more accurate and precise data and are less expensive, many Hydrometry presents a thorough introduction to the science of hydrometry: the measurement of flow in open channels. Dealing with both traditional techniques and innovative new methods and instruments, in line with the latest ISO standards, this book deals with the main themes of hydrometry: the measurement of water levels and bed levels, of discharge, and of sediment transport; it considers the use of flow measuring structures, hydrological networks, and the organization of surveys. Dr Boiten has extensive experience of teaching students from many countries and backgrounds, and has distilled this experience into a clear and comprehensive account of hydrology and water resource management. Hydrometry will appeal to graduate students and to professionals engaged in hydrology and the management of water resources.

Groundwater Science  
Field Hydrogeology  
Practical and Applied Hydrogeology  
Groundwater in Geologic Processes  
Unesco-IHE Lecture Note Series

This text combines the science and engineering of hydrogeology in an accessible, innovative style. As well as providing physical descriptions and characterisations of hydrogeological processes, it also sets out the corresponding mathematical equations for groundwater flow and solute/heat transport calculations. And, within this, the methodological and conceptual aspects for flow and contaminant transport modelling are discussed in detail. This comprehensive analysis forms the ideal textbook for graduate and undergraduate students interested in groundwater resources and engineering, and indeed its analyses can apply to researchers and professionals involved in the area.

Vadose Zone Hydrology describes the elements of the physical processes most often encountered by hydrogeologists and ground-water engineers in their vadose zone projects. It illustrates the application of soil physics to practical problems relevant to the characterization and monitoring of the vadose zone. It includes an introduction to physical processes, including basic flow theory, and provides examples of important field-scale processes that must be recognizable by hydrogeologists. Considerable attention is given to the concepts of recharge, including how it is most accurately evaluated in the vadose zone. Field and laboratory methods for characterizing hydraulic properties in the vadose zone are also covered, and case studies illustrating these methods are provided. New and emerging technologies for monitoring the vadose zone, particularly for the purpose of detecting contaminants, are highlighted. In the last section of the book, additional case studies are presented, demonstrating applications related to seepage detection, landfill monitoring, and soil gas investigations. This book is written from the perspective of hydrogeologists and is designed to be directly applicable and to maintain continuity and consistency between chapters. It will be an invaluable primer for environmental or geotechnical consultants, regulators, or students who have no prior formal academic training in unsaturated flow concepts. Because the text contains some of the latest advances in this field, it will be an excellent reference for geologists and engineers currently working on problems of vadose zone hydrology. Applications in Hydrology for Geoscientists presents the most recent scientific developments in the field that are accessible yet rigorous enough for industry professionals and academic researchers alike. A multi-contributed reference that features the knowledge and experience of the field's experts, the book's chapters span the full scope of hydrogeology, introducing new approaches and progress in conceptualization, simulation of groundwater flow and transport, and progressive hydro-geophysical methods. Each chapter includes examples of recent developments in hydrogeology, groundwater, and hydrology that are underscored with perspectives regarding the challenges that are facing industry professionals, researchers, and academia. Several sub-themes—including theoretical advances in conceptualization and modeling of hydro-geologic challenges—connect the chapters and weave the topics together holistically. Advances in research are aided by insights arising from observations from both field and laboratory work. Introduces new approaches and progress in hydrogeology, including conceptualization, simulated groundwater flow and transport, and cutting edge hydro-geophysical methods Features more than 100 figures, diagrams, and illustrations to highlight major themes and aid in the retention of key concepts Presents a holistic approach to advances in hydrogeology, from the most recent developments in reservoirs and hydraulics to analytic modeling of transient multi-layer flow and aquifer flow theory Integrates real life data, examples and processes, making the content practical and immediately implementable

The third edition of Introduction to Environmental Forensics is a state-of-the-art reference for the practicing environmental forensics consultant, regulator, student, academic, and scientist, with topics including compound-specific isotope analysis (CSIA), advanced multivariate statistical techniques, surrogate approaches for contaminant source identification and age dating, dendroecology, hydrofracking, releases from underground storage tanks and piping, and contaminant-transport modeling for forensic applications. Recognized international forensic scientists were selected to author chapters in their specific areas of expertise and case studies are included to illustrate the application of these methods in actual environmental forensic investigations. This edition provides updates on advances in various techniques and introduces several new topics. Provides a comprehensive review of all aspects of environmental forensics Coverage ranges from emerging statistical methods to state-of-the-art analytical techniques, such as gas chromatography-combustion-isotope ratio mass spectrometry and polytopic vector analysis Numerous examples and case studies are provided to illustrate the application of these forensic techniques in environmental investigations

Engineering Hydrology  
Groundwater Science and Engineering  
Hydrogeology  
Introduction to Geostatistics  
IHE Delft Lecture Note Series

*This is a continued demand for well-trained and competent hydrogeologists, especially in the environmental sector. For decades, Fetter's Applied Hydrogeology has helped prepare students to excel in careers in hydrogeology or other areas of environmental science and engineering where a strong background in hydrogeology is needed. The text's long-standing tradition as a vital resource is further enhanced in the fifth edition by Kreamer's added expertise. Stressing the application of mathematics to problem-solving, example problems throughout the book provide students the opportunity to gain a much deeper understanding of the material. Some important topics include the properties of aquifers, the principles of groundwater flow, water chemistry, water quality and contamination, and groundwater development and management. The addition of new case studies and end-of-chapter problems will strengthen understanding of the occurrence and movement of ground water in a variety of geological settings.*

*An extensively revised 2006 second edition of the well received and widely adopted textbook on groundwater.*

*The world increasingly relies on groundwater resources for drinking water and the provision of food for a growing population. The utilization of aquifer systems also extends beyond freshwater supply to include other resources such as heat extraction and the storage and disposal of substances. Unlike other books about conflict resolution and negotiations over water resources, this volume is unique in focusing exclusively on conflicts over groundwater and aquifers. The author explores the specific challenges presented by these "hidden" resources, which are shown to be very different from those posed by surface water resources. Whereas surface watersheds are static, groundwater boundaries are value-laden and constantly changing during development. The book describes the various issues surrounding the governance and management of these resources and the various parties involved in conflicts and negotiations over them. Through first-hand accounts from a pracademic skilled in both process and substance as a groundwater professional and professional mediator, the book offers options for addressing the challenges and issues through a transdisciplinary approach.*

*The fourth edition of this bestselling textbook has been fully revised in order to present the most up-to-date and comprehensive guide to completing a hydrogeological study. Beautifully presented with full colour photos and diagrams throughout, Field Hydrogeology retains its practical pocket size for easy use in the field. This new edition includes all the recent developments in the environmental regulations, with particular focus on the use of innovative technology. New topics include geothermal energy, soakaways, marrying manual water level readings with logger records, prediction of long-term drawdown and lateral extent of impacts, and flow measurement in locations with small head gradients. With case studies and text boxes to aid comprehension, and a particular emphasis on practical application, this is an essential tool for students taking Hydrogeology and/or field course modules in Geology, Earth Sciences, Hydrogeology and Engineering courses.*

Hydrometry  
Third Edition

Hydrology and Hydraulic Systems

Contesting Hidden Waters

Introduction to Urban Water Distribution

The Clean Water Act, with its emphasis on storm water and sediment control in urban areas, has created a compelling need for information in small-catchment hydrology. Design Hydrology and Sedimentology for Small Catchments provides the basic information and techniques required for understanding and implementing design systems to control runoff, erosion, and sedimentation. It will be especially useful to those involved in urban and industrial planning anddevelopment, surface mining activities, storm water management, sediment control, and environmental management. This class-tested text, which presents many solved problems throughout as well as solutions at the end of each chapter, is suitable for undergraduate, graduate, and continuing education courses. In addition, practicing professionals will find it a valuable reference. Anderson/Woessner: APPLIED GROUNDWATER MODELING (1992) Shuirman/Slosson: FORENSIC ENGINEERING (1992) de Marsily: QUANTITATIVE HYDROGEOLOGY (1986) Selley: APPLIED SEDIMENTOLOGY, THIRD EDITION (1988) Huaykorn: COMPUTATIONAL METHODS IN SUBSURFACE FLOW (1986) Pinder: FINITE ELEMENT MODELING IN SURFACE AND SUBSURFACE HYDROLOGY (1977) Key Features \* Covers major new improvements and state-of-the-art technologies in sediment control technology \* Provides in-depth information on estimating the impact of land-use changes on runoff and flood flows, as well as on estimating erosion and sediment yield from small catchments \* Presents superior coverage on design of flood and sediment detention ponds and design of runoff and sediment control measures

Groundwater is integral to many human and environmental systems but there are significant challenges in dealing with the impact of anthropogenic activities on groundwater systems. These challenges need innovative solutions. This book contains a wide range of content, from a discussion of the Australian regulatory framework for unconventional hydroc andbottled waters industry has become a vital and vigorous sector of the beverage world. In developed and developing countriesworldwide. Since publication of the first edition in 1998, theindustry has undergone a remarkable expansion, and this has servedto underline the need for an accessible source of technicalguidance. This book is unique in providing an overview of the science andtechnology of the bottled waters industry. The second edition hasbeen strengthened by bringing in a US co-Editor, and the coveragehas been thoroughly revised and considerably extended. A newchapter is included on cleaning and disinfection. The book provides a definitive source of reference for beveragetechnologists, packaging technologists, analytical chemists,microbiologists and health and safety personnel.

Hydrogeology: Principles and Practice provides comprehensive introduction to the study of hydrogeology to enablethe reader to appreciate the significance of groundwater in meetingcurrent and future water resource challenges. This new edition hasbeen thoroughly updated to reflect advances in the field since2004. The book presents a systematic approach to understandinggroundwater. Earlier chapters explain the fundamental physical andchemical principles of hydrogeology, and later chapters featuregroundwater investigation techniques in the context of catchmentprocesses, as well as chapters on groundwater quality andcontaminant hydrogeology. Unique features of the book are chapters on the applications of environmental isotopes and noble gases into the interpretation of aquifer evolution, and on regionalcharacteristics such as topography, compaction and variable fluiddensity in the explanation of geological processes affecting past,present and future groundwater flow regimes. The last chapterdiscusses groundwater resources and environmental management, andexamines the role of groundwater in integrated river basinmanagement, including an assessment of possible adaptationresponses to the impacts of climate change. Throughout the text, boxes and a set of colour plates drawn fromthe authors' teaching and research experience are used toexplain special topics and to illustrate international case studiesranging from transboundary aquifers and submarine groundwaterdischarge to the over-pressuring of groundwater in sedimentarybasins. The appendices provide conversion tables and usefulreference material, and include review questions and exercises, with answers, to help develop the reader's knowledge andproblem-solving skills in hydrogeology. This accessible textbook is essential reading for undergraduate students primarily in earth sciences, environmentalsciences and physical geography with an interest in hydrogeology orgroundwater science. The book will also find use amongpractitioners in hydrogeology, soil science, civil engineering andplanning who are involved in environmental and resource protectionissues requiring an understanding of groundwater. Additional resources can be found at:

Applications in Hydrogeology  
Contaminant Hydrogeology  
Practical Hydrogeology: Principles and Field Applications, Third Edition  
Unesco-IHE Delft Lecture Note Series  
Vadose Zone Hydrology

This new edition adds several new chapters and is thoroughly updated to include data on new topics such as hydraulic fracturing, CO2 sequestration, sustainable groundwater management, and more. Providing a complete treatment of the theory and practice of groundwater engineering, this new handbook also presents a current and detailed review of how to model the flow of water and the transport of contaminants both in the unsaturated and saturated zones, covers the protection of groundwater, and the remediation of contaminated groundwater.

Since the 1990s, significant advances have been made in the research on nonlinear dynamics in China. Many papers were published in Chinese in the Journal of Vibration Engineering, Journal of Nonlinear Dynamics, and Vibration and Shock. This work offers translations of selected articles.

Providing an introduction to the crucially important topic of groundwater, this text covers all major fields of hydrogeology and includes outlines of the occurrence of groundwater in various rock types, the movement and storage of groundwater, the formulation of groundwater balances, the development of groundwater chemistry, as well as the practical application of hydrogeology for groundwater development. Following a unique systems approach to describe and connect its various elements, the text also explores a large selection of examples of groundwater cases from various parts of the world. In addition, theoretical sections and examples are illustrated with a number of drawings, photos and computer printouts. Suitable for education in hydrogeology at postgraduate and graduate level, the text is also a useful reference tool for professionals and decision-makers involved in water or water-related activities. In the revised paperback edition of Introduction to Hydrogeology (February 2006), suggestions of reviewers, students and colleagues have been taken into account. This means that more attention is paid to the processes in the unsaturated zone, especially those relating to groundwater recharge. Also, in the revised edition, the investigation methods are highlighted in the sections where the related theory is dealt with, and they are not presented in the last chapter on groundwater management. Chapter titles are re-named and some definitions are adjusted. The References and Bibliography section is also extended, some figures are improved, and the inevitable 'typing errors' are corrected as well.

A global exploration of coal geology, from production and use to chemical properties and coal petrology Coal Geology, 3rd Edition, offers a revised and updated edition of this popular book which provides a comprehensive overview of the field of coal geology including coal geophysics, hydrogeology and mining. Also covered in this volume are fully revised coverage of resource and reserve definitions, equipment and recording techniques together with the use of coal as an alternative energy source as well as environmental implications. This third edition provides a textbook ideally suited to anyone studying, researching or working in the field of coal geology, geotechnical engineering and environmental science. Fills the gap between academic aspects of coal geology and the practical role of the coal industry Examines sedimentological and stratigraphical geology, together with mining, geophysics, hydrogeology, environmental issues and coal marketing Defines global coal resource classifications and methods of calculation Addresses the alternative uses of coal as a source of energy Covers a global approach to coal producers and consumers

Principles and Practice  
Technology of Bottled Water  
Coal Geology  
Fundamentals of Hydrology  
Environmental Hydrology, Second Edition

**Due to its height, density, and thickness of crown canopy; fluffy forest floor; large root system; and horizontal distribution; forest is the most distinguished type of vegetation on the earth. In the U.S., forests occupy about 30 percent of the total territory. Yet this 30 percent of land area produces about 60 percent of total surface runoff, the**

**This valuable reference delineates the ground water quality concerns associated with the planning and usage of septic tank systems. Septic tank systems represent a significant source of ground water pollution in the United States. Since many existing systems are exceeding their design life by several-fold, the usage of synthetic organic chemicals in the household and for system cleaning is increasing, and larger-scale systems are being designed and used.**

**The principle of transferable groundwater rights is that by making water rights capable of being traded in the market, water resources can be used more sustainably and efficiently. Groundwater would achieve its economic value, by switching from the high volume-low value irrigation, which is prevalent with many farmers, particularly in South Asia, to low volume-high value urban supply or the growing of intensive horticultural or cash crops. This book discusses transferable groundwater rights in their broader context. It starts with a detailed description of the physical aspects of groundwater, which non-technical readers should find useful, followed by a discussion of legal and economic aspects. Water transfers and the international experiences in transferable groundwater rights are dealt with in detail in two subsequent chapters. A model is presented to guide those involved in water resources management and planning in their decision process to introduce transferable groundwater rights and water rights trading. The author concludes that transferable groundwater rights potentially offer a better alternative to land-based water rights systems. However, he casts serious doubt on whether groundwater rights trading on its own can achieve water resources sustainability, environmental protection and social equity. Government intervention seems to be almost always needed to assist the water rights market and take responsibility for any of its adverse consequences.**

**This textbook provides a complete introduction to Hydrogeology. It is a comprehensive reference for earth science professionals involved in groundwater exploitation as well as for geotechnical engineers. This English translation of the German textbook "Hydrogeologie" by Hötting & Coldevey, which has been published in its 8th edition, provides insights into the sources and reservoirs of groundwater, the dynamics of fluid flow, and the physical and chemical composition of groundwater. It also gives an overview about the economic value of groundwater and its exploitation and use. A consistent use of the internationally accepted SI units as well as the formula symbols in the text contributes to the understandability.**

Environmental Hydrogeology

Fifth Edition

Solving the Groundwater Challenges of the 21st Century

The Essential Handbook of Ground-Water Sampling

An Introduction to Water and Forests, Third Edition

Providing an introduction to the crucially important topic of groundwater, this text covers all major fields of hydrogeology and includes outlines of the occurrence of groundwater in various rock types, the movement and storage of groundwater, the formulation of groundwater balances, the development of groundwater chemistry, as well as the practical application of hydrogeology for groundwater development. Following a unique systems approach to describe and connect its various elements, the text also explores a large selection of examples of groundwater cases from various parts of the world. In addition, theoretical sections and examples are illustrated with a number of drawings, photos and computer printouts. Suitable for education in hydrogeology at postgraduate and graduate level, the text is also a useful reference tool for professionals and decision-makers involved in water or water-related activities. In the revised paperback edition more attention is paid to the processes in the unsaturated zone, especially those relating to groundwater recharge. Also, the investigation methods are highlighted in the sections where the related theory is dealt with, and they are not presented in the last chapter on groundwater management. The References and Bibliography section is also extended, some figures are improved, and the inevitable 'typing errors' are corrected as well. In the third edition, a more formal basis for the hydro-chemical processes described in the chapter on groundwater chemistry has been added. Mass balances and the principles of dispersion and retardation are introduced. Additional illustrations are provided, also explaining the processes occurring along streamlines. Looming global threats such as overpopulation, pollution, ozone depletion, and other major risks to the planet have created an increasing need for well-trained, experienced geoscientists who understand environmental hydrology and can apply its precepts to tackle these intimidating planetary problems. Written by the senior staff of a respected environmental consulting firm, Environmental Hydrogeology is a complete introduction to this fast-growing field. Geared to both practicing geoscientists and students, it provides a thorough examination of the role of environmental hydrogeology in solving today's challenging environmental problems, from local issues to global perils. Topics covered include the geological aspects of disposal sites, surface water hydrology, groundwater hydrology and wells, environmental impacts and the hydrological system, and more. This text/reference also includes types, sources, and properties of waste products, and proposes waste management programs for groundwater protection. The accompanying TPASCAL modeling software includes a solved problem to demonstrate the use of this powerful program.

Focusing primarily on understanding the steady-state hydraulics that form the basis of hydraulic design and computer modelling applied in water distribution, Introduction to Urban Water Distribution elaborates the general principles and practices of water distribution in a straightforward way. The workshop problems and design exercise develop a tem

Principles of Hydrogeology, Third Edition presents important concepts of groundwater hydrology with a strong emphasis on problem-solving and field applications of hydrogeology. With newly added and revised content, this volume maintains a broad and current scope of topics, from the history of hydrogeology to the latest trends in managing groundwater contamination, arranged in the most compact and easy-to-use format available. Topics of interest include the role of groundwater in the hydrologic cycle; the nature of water-bearing formations; drilling boreholes and constructing monitoring wells; aquifers, well hydraulics, and aquifer tests; groundwater chemistry and flow; groundwater pollution, contaminant transport, remediation, and management. The author also provides the most current sources of hydrogeologic information, including professional societies, groundwater organizations, government agencies, industry publications, and Internet sites that provide data, software, techniques, protocols, standards, and training opportunities. Concise and informative, environmental regulators as well as groundwater and hydrology professionals will find Principles of Hydrogeology, Third Edition a handy and irreplaceable source for looking up definitions, tools, and equations while working on groundwater problems.

Introduction to Hydrogeology Third Edition

Septic Tank System Effects on Ground Water Quality

Groundwater Hydrology

An Introduction to Water and Forests, Second Edition

Design Hydrology and Sedimentology for Small Catchments

Although a few texts on forest hydrology are available, they cover very little, if any, background on water resources. On the other hand, books dealing with water resources do not cover topics on forest-water relations. The one exception to this is Forest Hydrology: An Introduction to Water and Forests. Now with the publication of a revised edition, this volume adds information from recent studies to go even further in providing an introduction to forest hydrology that brings water resources and forest-water relations into a single practical and comprehensive volume Focusing on processes and general principles, the first six chapters provide an introduction and basic background in water and water resources, while the last seven chapters look at the impact of forests on water. Between these two groupings is a chapter that serves as an entry to the study of forest impacts on water resources, describing forests and forest characteristics important to water circulation, sediment movement, and stream habitat. This second edition also features new information on forests and flooding, forest and stream habitat, snow vaporization processes, and GIS methods in hydrology research, examples on evaporation estimates, and a new appendix on forest interception measurements. Employing examples and case studies, the book provides tools to help natural resource managers play an active role in policymaking and land-use planning, and in developing partnerships with stakeholders. It also offers unique perspectives for addressing urban sprawl.

Investigating Groundwater provides an integrated approach to the challenges associated with locating groundwater. Uniquely, the book provides a review of the wide range of techniques that can be deployed to investigate this important resource. Many of the practical examples given are based upon Australian experience but the methods have worldwide applicability. The book is published in colour and includes many original diagrams and photographs. Particular effort has been made to provide consistent terminology and SI units are used throughout the text Investigating Groundwater starts with an introduction to the historical significance of groundwater and gives an account of climate change. A description of the occurrence of groundwater in different rock types is then provided. A detailed account of surface water techniques is then followed by an account of the interconnections between surface water and groundwater. Four chapters describing groundwater hydraulics are then followed by four chapters describing the latest geophysical techniques. Once the best location of a borehole is determined using these techniques, chapters then describe appropriate drilling methods to use; provide a wide ranging review of geophysical logging, hydrochemical and isotopic techniques, before concluding with a detailed description of groundwater flow to a well. Written for a worldwide audience of degree level geology/engineering practitioners, academics and students involved in groundwater resource investigation methods, Investigating Groundwater is essential reading for those involved in groundwater research. Key Features: Presents the theoretical background and a detailed description of the techniques used in the investigation of groundwater. Describes the general occurrence of groundwater in different rock types; surface water hydrology and interconnected surface and groundwater systems. Provides detailed descriptions of geophysical techniques (seismic, electrical, gravity and heat) and an account of available geophysical logging methods. Reviews hydrochemical and isotope methods, followed by an account of drilling techniques. Gives a detailed account of radial flow to a well, including appropriate modelling and pump-testing techniques and a consideration of non-linear flow. Of interest to anyone involved in the development of groundwater resources, either for domestic supply, for agriculture or for mining.

Master the latest advances in hydrogeology using this fully updated resource This thoroughly revised guide clearly explains cutting-edge hydrogeology techniques that can be applied in the field. Featuring contributions from leading experts, Practical Hydrogeology: Principles and Field Applications, Third Edition, shows how to plan and conduct site investigations, avoid pitfalls in the field, interpret a wide array of data types gathered, and prepare water-quality reports. You will get complete coverage of key procedures, including aquifer testing, groundwater sampling, water-quality assessment, aquifer characterization, and tracer tests. This third edition has been reorganized and expanded with up-to-date information, a new chapter, review questions, and real-world examples. Coverage includes: The geology of hydrogeology•Aquifer properties•Groundwater flow•Pumping tests•Slug tests•Aquifer hydraulics•Water chemistry sampling•Groundwater/surface-water interaction•Vadose-zone analysis•Kans hydrogeology and tracer tests•Drilling and well completion

Tremendous progress has been made in the field of remediation technologies since the second edition of Contaminant Hydrogeology was published two decades ago, and its content is more important than ever. Recognizing the extensive advancement and research taking place around the world, the authors have embraced and worked from a larger global perspective. Boying and Kreamer incorporate environmental innovation in studying and treating groundwater/soil contamination and the transport of those contaminants while building on Fetter's original foundational work. Thoroughly updated, expanded, and reorganized, the new edition presents a wealth of new material, including new discussions of emerging and potential contaminant sources and their characteristics like deep well injection, fracking fluids, and in situ leach mining. New sections cover BET and Polanyi adsorption potential theory, vapor transport theory, the introduction of the Capillary and Bond Numbers, the partitioning interwell tracer testing technique for investigating NAPL sites, aerial photographic interpretation, geophysics, immunological surveys, high resolution vertical sampling, flexible liner systems, groundwater tracers, and much more. Contaminant Hydrogeology is intended as a textbook in upper level courses in mass transport and contaminant hydrogeology, and remains a valuable resource for professionals in both the public and private sectors.

Investigating Groundwater  
Applied Hydrogeology  
Conflict Resolution for Groundwater and Aquifers  
Forest Hydrology

Principles of Hydrogeology, Third Edition

This presents practical techniques for interpolation and estimation problems when analysing data from field observations.

The technological advances of recent years include the emergence of new remote sensing and geographic information systems that are invaluable for the study of wetlands, agricultural land, and land use change. Students, hydrologists, and environmental engineers are searching for a comprehensive hydrogeologic overview that supplements information on hydrologic processes with data on these new information technology tools. Environmental Hydrology, Second Edition builds upon the foundation of the bestselling first edition by providing a qualitative understanding of hydrologic processes while introducing new methods for quantifying hydrologic parameters and processes. Written by authors with extensive multidisciplinary experience, the text first discusses the components of the hydrologic cycle, then follows with chapters on precipitation, stream processes, human impacts, new information system applications, and numerous other methods and strategies. By updating this thorough text with the newest analytical tools and measurement methodologies in the field, the authors provide an ideal reference for students and professionals in environmental science, hydrology, soil science, geology, ecological engineering, and countless other environmental fields.

Introduction to Hydrogeology  
Transferable Groundwater Rights  
The Handbook of Groundwater Engineering, Third Edition  
Advances in Nonlinear Mechanics in China  
Introduction to Environmental Forensics