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Disciplina	551.49
Soggetti	Engineering geology Engineering—Geology Foundations Hydraulics Hydrology Geotechnical engineering Hydrogeology Geoengineering, Foundations, Hydraulics Hydrology/Water Resources Geotechnical Engineering & Applied Earth Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Basic Concepts -- Theoretical foundations of the groundwater flow equation -- Analytical solutions of the groundwater flow equation in a polar coordinate system -- Aquifer characterization -- Specific capacity and well efficiency -- Optimization of the productive capacity of a water supply system -- Aquifer vulnerability and contamination risk -- Definition of protection areas of drinking water sources -- Groundwater contaminants -- Mechanisms of contaminant propagation in aquifers -- Theoretical foundations of the differential equations of mass transport -- Analytical solutions to the differential equation of mass transport for conservative solutes -- Analytical solutions of the differential equation of mass transport for reactive solutes -- Transport of immiscible substances -- Characterization of a

contamination event -- Human health risk assessment -- Remediation of contaminated groundwater -- Appendices.

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Sommario/riassunto

This textbook employs a technical and quantitative approach to explain subsurface hydrology and hydrogeology, and to offer a comprehensive overview of groundwater-related topics such as flow in porous media, aquifer characterization, contaminant description and transport, risk assessment, and groundwater remediation. It describes the characterization of subsurface flow of pristine and polluted water and provides readers with easily applicable tools for the design of water supply systems, drinking-water source protection, and remediation interventions. Specific applications range from groundwater exploitation as a drinking water supply to the remediation of contaminated aquifers, from the definition and safeguarding of drinking-water sources to the assessment of human health risks in connection with groundwater contamination events. The book represents an ideal learning resource for upper-undergraduate and graduate students of civil engineering, environmental engineering, and geology, as well as practitioners in the fields of water resource management and environmental protection who are interested in groundwater engineering and technical hydrogeology.

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