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Titolo	Acid mine drainage, rock drainage, and acid sulfate soils : causes, assessment, prediction, prevention, and remediation // edited by James A. Jacobs, Jay H. Lehr, Stephen M. Testa ; Pamela S. Blicher [and eighteen others], contributors
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Descrizione fisica	1 online resource (502 p.)
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Soggetti	Acid mine drainage
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils; Contents; Preface; Contributors; PART 1 Causes of Acid Mine Drainage, Rock Drainage, and Sulfate Soils; 1 Acid Drainage and Sulfide Oxidation: Introduction; Introduction; Early Earth Atmosphere; Acid Drainage Deposits; Resources from Acid Drainage; Environmental Challenges; Future Opportunities; References and Suggested Reading; 2 Vitriols in Antiquity; Introduction; Vitriol Terminology; Uses for Vitriol; References and Suggested Reading; 3 Biogeochemistry of Acid Drainage; Acid Drainage Overview; Scale of Acid Drainage Microbially Generated Acid Mine Drainage Small-Scale Sulfur Reactions; Geochemistry of Acid Drainage; Redox Reactions and Acid Drainage; Valence Electrons of Metals; Measuring Redox Conditions; Geochemical Environment of Acid Mine Drainage; Origin of Pyrite and Sulfur in Rocks and Soils; Coal Depositional Environment; Acid Sulfate Soils; Geochemical Processing and Sulfur in Rocks, Sediments, and Soils; Sulfide Minerals; Sulfur Associated with Metal Ores; Sulfur Associated with Coal; Microbiological Biogeochemistry of Acid Mine Drainage;

Genetic Sequences; Microbial Genetic Studies  
Phylogenetic Overview of Acid Drainage Bacteria Size of Microbes;  
Groundwater Flow and Microbes; Microbial Growth Conditions;  
Acidophiles; Review of Microbial Processes; Colonization of Pyrite;  
Importance of Microbial Participation in Sulfide Oxidation;  
Biogeochemical Limiting Factors; Microbial Reactions; Acid Drainage  
Biogeochemistry of Some Specific Minerals; Aluminum Reactions;  
Manganese and Iron Oxides; Pyrite Oxidation Rates; Microbial Control;  
Review of Naturally Occurring Acid Drainage; Geochemistry in  
Perspective; Preventing Aerobic Respiration: AMD Control; Summary  
References and Suggested Reading 4 Trace Element Geochemistry and  
Acid Rock Drainage; Introduction; Trace element Geology; Site Studies;  
Sampling; Analysis; Preparation; Decomposition; Determination; Bulk-  
and Single-Source Analyses; Data Analysis; Summary; References and  
Suggested Reading; 5 The Microbiology of Acid Drainage; Role of  
Microorganisms in the Sulfur Cycle; Natural Oxidation in the Sulfur  
Cycle; Natural Reduction in the Sulfur Cycle; Other Microorganism  
Reactions in the Sulfur Cycle; Acknowledgment; References and  
Suggested Reading  
6 Natural Acid Rock Generation, Drainage, and Metal Leaching: Impact  
on Exploration, Mining, and Reclamation Introduction; Acid Rock  
Drainage; Gossan Formation; Supergene Mineralization; Acid Rock  
Generation and Drainage Through Time; Natural Metal Concentrations;  
Geoenvironmental Models; Conclusions; Acknowledgment; References  
and Suggested Reading; 7 The Sulfur Cycle: Acid Drainage and Beyond;  
Some Background And Fundamentals Of Microbial Life; Review of the  
Chemistry of Acid Mine Drainage; The Origin and Evolution of Life on  
Earth; Important Background Details; The Origin of Life  
Conditions on the Early Earth

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Sommario/riassunto

Written to help readers understand the formation of AMD, Acid Mine Drainage addresses the generation of acidic waters usually from both used and abandoned coal or metal mines. Offering the most up-to-date ideas on metals remediation, which makes finding control methods relatively easy, the text provides a section on legal and policy issues and details the causes, control, prediction, prevention, and remediation of AMD formation. Case studies from North America, Europe, Asia, and developing countries highlight various approaches to AMD problems.

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