Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils: Causes, Assessment, Prediction, Prevention, and Remediation
James A. Jacobs, Jay H. Lehr, Stephen M. Testa


DESCRIPTION

Provides the tools needed to analyze and solve acid drainage problems

Featuring contributions from leading experts in science and engineering, this book explores the complex biogeochemistry of acid mine drainage, rock drainage, and acid sulfate soils. It describes how to predict, prevent, and remediate the environmental impact of acid drainage and the oxidation of sulfides, offering the latest sampling and analytical methods. Moreover, readers will discover new approaches for recovering valuable resources from acid mine drainage, including bioleaching.

Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils reviews the most current findings in the field, offering new insights into the underlying causes as well as new tools to minimize the harm of acid drainage:

• Part I: Causes of Acid Mine Drainage, Rock Drainage and Sulfate Soils focuses on the biogeochemistry of acid drainage in different environments.

• Part II: Assessment of Acid Mine Drainage, Rock Drainage and Sulfate Soils covers stream characterization, aquatic and biological sampling, evaluation of aquatic resources, and some unusual aspects of sulfide oxidation.

• Part III: Prediction and Prevention of Acid Drainage discusses acid-base accounting, kinetic testing, block modeling, petrology, and mineralogy studies. It also explains relevant policy and regulations.
Part IV: *Remediation of Acid Drainage, Rock Drainage and Sulfate Soils* examines both passive and active cleanup methods to remediate acid drainage.

Case studies from a variety of geologic settings highlight various approaches to analyzing and solving acid drainage problems. Replete with helpful appendices and an extensive list of web resources, *Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils* is recommended for mining engineers and scientists, regulatory officials, environmental scientists, land developers, and students.

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### ABOUT THE AUTHOR

**JAMES A. JACOBS** is Chief Hydrogeologist of Clearwater Group in Point Richmond, California. He is a Fulbright Senior Scholar, having won four awards between 2003 and 2012. He is coauthor of three other environmental books and has served as an expert witness in a variety of resource and environmental contamination cases. He is an instructor for the University of California, Berkeley Extension Program, teaching a class on sustainable remediation methods for soil and water.

**JAY H. LEHR** received a degree in geological engineering from Princeton and a PhD in groundwater hydrology from the University of Arizona. He is the coauthor of 30 books relating to environmental science and water supply. He edited the journal *Groundwater* for 25 years. He is currently the Science Director of the Heartland Institute, a free market think tank in Chicago, Illinois.

**STEPHEN M. TESTA** is currently the Executive Officer of the California State Mining and Geology Board and past president of the American Geosciences Institute, American Institute of Professional Geologists, American Association of Petroleum Geologists (Energy Minerals Division), and Los Angeles Basin Geological Society. Mr. Testa was a consultant for over 30 years and served as an instructor at the University of Southern California and California State University, Fullerton.

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