

Geotechnical Core Logging

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MC GEE CASON

Tunnel Closure Experiment, 1997 Test Programme: Core Logging and Laboratory Tests on Diamond Drilled Holes at Jerntoppen CRC Press

This book presents the proceedings of the international symposium on geotechnical stability in surface mining in Calgary. The symposium deals with the full gamut of mine equipment development, selection and utilization.

The Evolution of Geotech - 25 Years of Innovation Cambridge University Press

This Second Edition has been brought up-to-date and incorporates modern developments in coring techniques and core handling. All aspects of cores are covered including cutting and recovery; wellsite handling and logging; recognition of coring damage; laboratory analysis; logging and sampling; preservation and storage. Logging and interpretation are dealt with in detail, encompassing structural and engineering investigations in addition to sedimentology. Emphasis is laid throughout on those features most important to the economical development of geological resources. --

Their Use in Reservoir Modeling CSIRO PUBLISHING

This carefully targeted and rigorous new textbook introduces engineering students to the fundamental principles of applied Earth science, highlighting how modern soil and rock mechanics, geomorphology, hydrogeology, seismology and environmental geochemistry affect geotechnical and environmental practice. Key geological topics of engineering relevance including soils and sediments, rocks, groundwater, and geologic hazards are presented in an accessible and engaging way. A broad range of international case studies add real-world context, and demonstrate practical applications in field and laboratory settings to guide site characterization. End-of-chapter problems are included for self-study and evaluation, and supplementary online materials include electronic figures, additional examples, solutions, and guidance on useful software. Featuring a detailed glossary introducing key terminology, this text requires no prior geological training and is essential reading for senior undergraduate or graduate students in civil, geological, geotechnical and geoenvironmental engineering. It is also a useful reference and bridge for Earth science graduates embarking on engineering geology courses.

Guidelines for Open Pit Slope Design Springer Science & Business Media

This new edition has been completely revised to reflect the notable innovations in mining engineering and the remarkable developments in the science of rock mechanics and the practice of rock engineering that have taken place over the last two decades. Although "Rock Mechanics for Underground Mining" addresses many of the rock mechanics issues that arise in underground mining engineering, it is not a text exclusively for mining applications. Based on extensive professional research and teaching experience, this book will provide an authoritative and comprehensive text for final year undergraduates and commencing postgraduate students. For professional practitioners, not only will it be of interests to mining and geological engineers, but also to civil engineers, structural mining geologists and geophysicists as a standard work for professional reference purposes.

Guidelines for Evaluating Water in Pit Slope Stability Springer Science & Business Media

This document presents state-of-the-practice information on the evaluation of soil and rock properties for geotechnical design applications. This document addresses the entire range of materials potentially encountered in highway engineering practice, from soft clay to intact rock and variations of materials that fall between these two extremes. Information is presented on parameters measured, evaluation of data quality, and interpretation of properties for conventional soil and rock laboratory testing, as well as in situ devices such as field vane testing, cone penetration testing, dilatometer, pressuremeter, and borehole jack. This document provides the design engineer with information that can be used to develop a rationale for accepting or rejecting data and for resolving inconsistencies between data provided by different laboratories and field tests. This document also includes information on: (1) the use of Geographical Information Systems (GIS) and Personal Data Assistance devices for the collection and interpretation of subsurface information; (2) quantitative measures for evaluating disturbance of laboratory soil samples; and (3) the use of measurements from geophysical testing techniques to obtain information on the modulus of soil. Also included are chapters on evaluating properties of special soil materials (e.g., loess, cemented sands, peats and organic soils, etc.) and the use of statistical information in evaluating anomalous data and obtaining design values for soil and rock properties. An appendix of three detailed soil and rock property selection examples is provided which illustrate the application of the methods described in the document.

Geomechanics and Geodynamics of Rock Masses, Volume 1 Taylor & Francis US

This publication includes 82 technical papers presented at Rocscience International Conference (RIC) 2021, held online on April 20 and 21, 2021. Rocscience created this event to bring geotechnical academics, researchers and practitioners together to exchange ideas as part of celebrating 25 years of the company's existence. The papers in these proceedings were from keynotes, panel discussions and papers, selected after careful review of over 100 technical submissions delivered at RIC 2021. The technical papers were grouped into sessions based on their subject areas. The conference aimed to stimulate discussions that could help the industry work towards overcoming geotechnical engineering limitations today. It also sought to foster creative thinking that will advance the current states of the art and practice. The keynote addresses, panel discussions and technical presentations tried to examine geotechnical problems and situations from fresh perspectives. RIC 2021 hopes that the proceedings will continue to enrich our thinking and contribute to achieving a critical mass of change in our practices and approaches. We look forward to significant improvements in our industry.

Engineering Geology Field Manual SME

Twenty years of experience is now available in the use of the Rock Quality Designation (RQD) in practice. The RQD is an index of rock quality in which a modified core recovery percentage is obtained by counting only pieces of sound core 4-in. (100 mm) or greater in length of NX size or larger core diameters. Experience now indicates both smaller (NQ) and larger core diameters are appropriate; that slightly and moderately weathered core that can not be hand broken be included; that length measurements be made along the center-line or axis of the core piece; and that the requisite length of 4-in. (100 mm) be retained. Problems with core breakage and loss occur in thin

bedded and schistose rocks, and, particularly, with weak argillaceous rock interbedded with harder sandstone or limestone, a problem that can be ameliorated by large diameter cores, shorter coring runs, and by use of the best drilling equipment and techniques. Correlations of RQD with certain engineering parameters are given, but the more recent classification system of Bieniawski or Barton et al, which include the RQD as a parameter, are preferred for estimating the design and construction parameters. For obtaining the RQD, the best drilling techniques and prompt core logging in the field by a qualified engineering geologist or geotechnical engineer should be used. The RQD is not a design parameter that stands alone, but must be used together with an appreciation of the detailed geology and the geotechnical aspects. (FR).

Advances in Offshore Geotechnics Springer

Logging has come a long way from the simple electrical devices of the early years. Today's tools are considerably more accurate and are used for an increasingly diverse number of tasks. Among these are tools that characterise geological properties of rocks in the borehole. Combined with new technology to drill deviated wells, the geoscientist now has tools which allow him to characterise and develop reservoirs more accurately than ever. This book, written for researchers, graduate students and practising geoscientists, documents these techniques and illustrates their use in a number of typical case studies.

Proceedings of ISOG2019 CRC Press

This practical handbook of properties for soils and rock contains, in a concise tabular format, the key issues relevant to geotechnical investigations, assessments and designs in common practice. In addition, there are brief notes on the application of the tables. These data tables are compiled for experienced geotechnical professionals who require a reference document to access key information. There is an extensive database of correlations for different applications. The book should provide a useful bridge between soil and rock mechanics theory and its application to practical engineering solutions. The initial chapters deal with the planning of the geotechnical investigation, the classification of the soil and rock properties and some of the more used testing is then covered. Later chapters show the reliability and correlations that are used to convert that data in the interpretative and assessment phase of the project. The final chapters apply some of these concepts to geotechnical design. This book is intended primarily for practicing geotechnical engineers working in investigation, assessment and design, but should provide a useful supplement for postgraduate courses.

A Complete Manual for Engineers and Geologists in Mining, Civil, and Petroleum Engineering CSIRO PUBLISHING

This is the first authoritative reference on rock mass classification, consolidating into one handy source information once widely scattered throughout the literature. It includes new, previously unpublished material and case histories, presents the fundamental concepts of classification schemes, and critically appraises their practical application in industrial projects such as tunneling and mining.

Techniques in Mineral Exploration Routledge

For some years I have felt there was a need for a single, comprehensive, reference book on exploration geology. Numerous textbooks are available on subjects such as geophysical prospecting, exploration geochemistry, mining geology, photogeology and general economic geology, but, for the geologist working in mineral exploration, who does not require a specialist's knowledge, a general book on exploration techniques is needed. Many undergraduate university courses tend to neglect economic geology and few deal with the more practical aspects in any detail. Graduate geologists embarking on a career in economic geology or mineral exploration are therefore often poorly equipped and have to learn a considerable amount 'on the job'. By providing a book that includes material which can be found in some of the standard texts together with a number of practical aspects not to be found elsewhere, I hope that both recent graduates and more experienced exploration geologists will find it a useful reference work and manual. In addition, students of economic geology and personnel working in related fields in the mining and mineral extraction industries will find it informative. J. H. REEDMAN v Acknowledgements The author would like to thank Dr K. Fletcher, geochemist with the Department of Geology, University of British Columbia, and Kari Savario, geophysicist with Finnish Technical Aid to Zambia, for reading the original drafts and offering constructive criticism and advice on the chapters on geochemical and geophysical prospecting respectively.

Yucca Mountain, Nevada Geological Society of London

Harmonising Rock Mechanics and the Environment comprises the proceedings (invited and contributed papers) of the 12th ISRM International Congress on Rock Mechanics (Beijing, China, 18-21 October 2011). The contributions cover the entire scope of rock mechanics and rock engineering, with an emphasis on the critical role of both disciplines in sustain

ISRM Symposium, Eurock '92, Chester, UK, 14-17 September 1992 CRC Press

In ground investigation, the description of soils and rocks forms a major input to the field log which records the materials and strata seen in any sample, core or exposure. The log is a basic element of the factual information that underpins the entire understanding and interpretation of the ground conditions on site. Practical guidance is provided for those in the field carrying out engineering geological logging of soil and rock samples and exposures. Information on the current systematic and codified approach and its use are presented in detail to ensure the defined descriptors are used in a consistent format, rendering mistakes less likely and the necessary communication from field to design more successful. Soil and Rock Description in Engineering Practice enables the practitioner to record and present features of the ground from the exposure in such a way as to convey a field presence to subsequent users of the data. This is important as the samples deteriorate quickly and are not usually inspected by any party other than the logger. Field logs therefore provide the only record of the ground that is available to the designer and contractor later in the construction process. The procedures, techniques and tips within this book are not only for young practitioners learning their craft, but are also relevant for their seniors and mentors, including responsible experts who sign off the logs and report on behalf of their company. Although they may have been involved in logging for many years, they need to be aware of current practices in order to avoid costly mistakes. This book will therefore be of immense value to geologists, geotechnical/ground engineers or anyone involved with ground investigations, from commissioning to interpretation. CRC Press LLC

Unconventional Petroleum Geology is the first book of its kind to collectively identify, catalog, and

assess the exploration and recovery potential of the Earth's unconventional hydrocarbons. Advances in hydrocarbon technology and petroleum development systems have recently made the exploration of unconventional hydrocarbons—such as shale gas, tight sandstone oil and gas, heavy oil, tar sand, and coalbed methane—the hottest trend in the petroleum industry. Detailed case studies act as real-world application templates, making the book's concepts immediately practical and useful by exploration geologists. The logical and intuitive three-part approach of systematically identifying an unconventional hydrocarbon, cataloguing its accumulation features, and assessing its exploration and recovery potential can be immediately implemented in the field—anywhere in the world. Provides a detailed assessment of the exploration and recovery potential of the full range of unconventional hydrocarbons More than 300 illustrations—many in full color—capture the detailed intricacies and associated technological advances in unconventional hydrocarbon exploration More than 20 case studies and examples from around the world conclude each chapter and aid in the application of key exploration and recovery techniques

Geological Well Logs CRC Press

This GSL volume focuses on underwater or subaqueous landslides with the overarching goal of understanding how they affect society and the environment. The new research presented here is the result of significant advances made over recent years in directly monitoring submarine landslides, in standardising global datasets for quantitative analysis, constructing a global database, and leading international research projects. This volume demonstrates the breadth of investigation taking place into subaqueous landslides, and shows that while events like the recent ones in the Indonesian archipelago can be devastating they are at the smaller end of what the Earth has experienced in the past. Understanding the spectrum of subaqueous landslide processes, and therefore the potential societal impact, requires research across all spatial and temporal scales. This volume delivers a compilation of state-of-the-art papers covering topics from regional landslide databases to advanced techniques for in situ measurements, to numerical modelling of processes and hazards.

Subaqueous Mass Movements and Their Consequences Engineering Rock Mass ClassificationsA Complete Manual for Engineers and Geologists in Mining, Civil, and Petroleum Engineering

The text broadly covers recent developments in ground control techniques, and their at operating mines, worldwide. Specific topics include: design and analysis of support and re-inforcement in metalliferous mines, mesh, shotcrete and membrane support systems, and strata control in coal mines.

For Underground Mining Thomas Telford

Geomechanics and Geodynamics of Rock Masses contains contributions presented at EUROCK 2018, the 2018 International Symposium of the International Society for Rock Mechanics (ISRM 2018, Saint Petersburg, Russia, 22-26 May 2018). Dedicated to recent advances and achievements in the fields of geomechanics and geotechnology, the main topics of the book include: - Physical and mechanical properties of fractured rock (laboratory testing and rock properties, field measurements and site investigations) - Geophysics in rock mechanics - Rock mass strength and failure - Nonlinear problems in rock mechanics - Effect of joint water on the behavior of rock foundation - Numerical

modeling and back analysis - Mineral resources development: methods and rock mechanics problems - Rock mechanics and underground construction in mining, hydropower industry and civil engineering - Rock mechanics in petroleum engineering - Geodynamics and monitoring of rock mass behavior - Risks and hazards - Geomechanics of technogenic deposits Geomechanics and Geodynamics of Rock Masses will be of interest to researchers and professionals involved in the various branches of rock mechanics and rock engineering. EUROCK 2018, organized by the Saint Petersburg Mining University, is a continuation of the successful series of ISRM symposia in Europe, which began in 1992 in Chester, UK.

IAEG/AEG Annual Meeting Proceedings, San Francisco, California, 2018—Volume 6 Springer

This book is written as a practical field manual to effective. Each geologist has to develop his/her own techniques and will ultimately be judged on results. It is also hoped that it will serve as a text results, not the process by which these results and reference for students in Applied Geology were reached. In mineral exploration, the only courses of universities and colleges. The book 'right' way of doing anything is the way that aims to outline some of the practical skills that locates ore in the quickest and most cost-effective turn the graduate geologist into an explorer. It is preferable, however, for an individual geologist: It is intended as a practical 'how to' manual to develop his/her own method of operation book, rather than as a text on geological or ore after having tried, and become aware of, those deposit theory. procedures which experience has shown to work An explorationist is a professional who search well and which are generally accepted in industry as good exploration practice. es for ore bodies in a scientific and structured way. Although an awkward and artificial term, The chapters of the book approximately follow this is the only available word to describe the low the steps which a typical exploration professional of the skills which are needed to locate a programme would go through. In Chapter 1, the author defines economic mineralization.

Rock Quality Designation (RQD) After Twenty Years CSIRO PUBLISHING

This book is one out of six IAEG XIII Congress and AEG 61st Annual Meeting proceeding volumes, and deals with topics related to the advances made in engineering geology with emphasis on education, soil and rock properties, and modeling. The theme of the IAEG/AEG Meeting, held in San Francisco from September 17-21, 2018, is Engineering Geology for a Sustainable World. The meeting proceedings analyze the dynamic role of engineering geology in our changing world. The meeting topics and subject areas of the six volumes are: Slope Stability: Case Histories, Landslide Mapping, Emerging Technologies; Geotechnical and Environmental Site Characterization; Mining, Aggregates, Karst; Dams, Tunnels, Groundwater Resources, Climate Change; Geologic Hazards: Earthquakes, Land Subsidence, Coastal Hazards, and Emergency Response; and Advances in Engineering Geology: Education, Soil and Rock Properties, Modeling.

Rock Mechanics: Meeting Society's Challenges and Demands, Two Volume Set Springer Science & Business Media

Engineering Rock Mass ClassificationsA Complete Manual for Engineers and Geologists in Mining, Civil, and Petroleum EngineeringJohn Wiley & Sons