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**SME Mining Engineering Handbook, Third Edition** *Mining Engineering Analysis* **SME Mining Engineering Handbook** *Project Management for Mining* **SME Mining Reference Handbook** *SME Mining Engineering Handbook* **Tailings Management Handbook** **Introductory Mining Engineering** **Mining Engineering SME Mining Reference Handbook, 2nd Edition** *The Mining Valuation Handbook* **4e** **Seeing Underground Mine Tailings** *Applied Mining Geology* *An Introduction to Cut-off Grade Estimation* **Mining in the Himalayas** *Seeing Underground Study Guide for the Professional Licensure of Mining and Mineral Processing Engineers* *Surface Mining, Second Edition* **Bulletin of the American Institute of Mining Engineers** *Underground Mining Methods* **Bi-monthly Bulletin of the American Institute of Mining Engineers** *How Mining Works* **Selective Guide to Literature on Mining Engineering** *Introductory Mining Engineering, 2Nd Ed* **Optimization Techniques and their Applications to Mine Systems** *Applied Science, Vol. 22* **Mineral Processing and Extractive Metallurgy Index of Mining Engineering Literature** *Risk Management in Evaluating Mineral Deposits* **Management of Mineral Resources Index of Mining Engineering Literature** *Advances in Comminution* *Proceedings of the 11th International Mine Ventilation Congress* **Mine Ventilation Transactions of Society of Mining Engineers, Inc** *Principles of Mineral Processing Surface Subsidence Engineering* *New Developments in Mining Engineering 2015* **Transactions of the Institution of Mining Engineers**

This book provides a detailed overview of the operational principles of modern mining geology, which are presented as a good mix of theory and practice, allowing use by a broad range of specialists, from students to lecturers and experienced geologists. The book includes comprehensive descriptions of mining geology techniques, including conventional methods and new approaches. The attributes presented in the book can be used as a reference and as a guide by mining industry specialists developing mining projects and for optimizing mining geology procedures. Applications of the methods are explained using case studies and are facilitated by the computer scripts added to the book as Electronic Supplementary Material. Re-imagine the Future of Tailings Nearly every recent article on tailings starts by mentioning a large tailings dam failure. The consequences of these failures have been so devastating they have pushed conversations about the risks inherent in these structures beyond the mining community into the general population. We are left to question how we address the risks associated with tailings disposal, and in so doing, transform the image of the mining industry and perhaps the industry itself. With this as a backdrop, the Society for Mining, Metallurgy & Exploration (SME) challenged tailings and mining professionals to re-imagine the future of tailings. The Mine Tailings: Perspectives for a Changing World symposium, held at the SME 2020 annual conference, started that conversation. Over three days, tailings professionals from around the world gathered to discuss tailings storage practices and the changes both the industry and the world want and need. The discussions squarely focused on how we, as an industry, can collectively make changes that will eliminate catastrophic tailings dam failures and lead to better outcomes for the industry and society. Through sharing and conversation, the symposium participants recognized risks associated with our approach to tailings management and existing structures and discussed the gaps that need to be addressed, including how the behavior of tailings and mining professionals must change. The human element of risk must be recognized so it can be talked about openly, given the attention it deserves, and adequately addressed. We need to own this problem and the impact of our actions. We have the power to change this; when we own our actions, we can act differently for a different outcome. DESCRIPTION The mining industry's strategy for coping with low profitability has focused primarily on controlling production costs. Despite mechanization, automation, and other technical improvements, the aggregate profitability of mining still falls far short of that realized by most other industries. Author Juan Camus contends that what is required is not additional technical knowledge, but rather sound management practices that utilize the existing knowledge base more productively. Management of Mineral Resources: Creating Value in the Mining Business explores mining management--the process of generating plans and supervising their implementation. This book is concerned with the analysis of some of the internal, controllable factors that influence mining production effectiveness. It combines the best thinking in mining and management so that practitioners can devise a concrete strategy for generating maximum shareholder value. Prepare for your Professional Engineering exam with this new edition of SME's Study Guide for the Professional Licensure of Mining and Mineral Processing Engineers. This handy workbook lets you know what to expect and provides an opportunity to practice your test-taking skills. The text covers the history of professional licensure and the Mining and Minerals Processing exam, explains what licensing can do for you, outlines the engineering licensure process, highlights the six steps to licensure, covers the application process, includes the National Council of Examiners for Engineering and Surveying Model Rules of Professional Conduct and NEEES publications, and describes the testing process. Perhaps the most useful element is a sample test, complete with questions and answers, that is similar in content and format to an actual principles and practice (PE) licensure exam. Vol. 3- includes v. 190- of the Transactions. This textbook sets the standard for university-level instruction of mining engineering principles. With a thoughtful balance of theory and application, it gives students a practical working knowledge of the various concepts presented. Its utility extends beyond the classroom as a valuable field reference for practicing engineers and those preparing for the Professional Engineers Exam in Mining Engineering. This practical guidebook covers virtually all aspects of successful mine design and operations. It is an excellent reference for engineering students who are studying mine design or who require guidance in assembling a mine-design project, and industry professionals who require a comprehensive mine-design reference book. Topics include everything from mine preplanning to ventilation to pumping, power, and hauling systems. The text presents widely accepted principles that promote safe, efficient, and profitable mining operations. The book is an excellent text and self-study guide. Each chapter is organized to demonstrate how to apply various equations to solve day-to-day operational challenges. In addition, each chapter offers a series of practice problems with solutions. An introductory text and reference on mining engineering highlighting the latest in mining technology Introductory Mining Engineering outlines the role of the mining engineer throughout the life of a mine, including prospecting for the deposit, determining the site's value, developing the mine, extracting the mineral values, and reclaiming the land afterward. This Second Edition is written with a focus on sustainability-managing land to meet the economic and environmental needs of the present while enhancing its ability to also meet the needs of future generations. Coverage includes aboveground and underground methods of mining for a wide range of substances, including metals, nonmetals, and fuels. Completely up to date, this book presents the latest information on such technologies as remote sensing, GPS, geophysical surveying, and mineral deposit evaluation, as well as continuous integrated mining operations and autonomous trucks. Also included is new information on landscape restoration, regional planning, wetlands protection, subsidence mitigation, and much more. New chapters include coverage of: \* Environmental responsibilities \* Regulations \* Health and safety issues Generously supplemented with more than 200 photographs, drawings, and tables. Introductory Mining Engineering, Second Edition is an indispensable book for mining engineering students and a comprehensive reference for professionals. An essential, in-depth guide to mining investment analysis Written by a mining investment expert, The Mining Valuation Handbook: Mining and Energy Valuation for Investors and Management is a useful resource. It's designed to be utilized by executives, investors, and financial and mining analysts. The book guides those who need to assess the value and investment potential of mining opportunities. The fourth edition text has been fully updated in its coverage of a broad scope of topics, such as feasibility studies, commodity values, indicative capital and operating costs, valuation and pricing techniques, and exploration and expansion effects. Himalaya, the world's most prominent mountain system of the world is a source of sustenance for the social, cultural and economic development of population across different countries. Unscientific, small-scale mining for harnessing resources including minerals has caused ecosystem damage. Therefore, an integrated and holistic approach to deal with the resource management is required. This book makes a focussed effort to explain how mining in the Himalaya is practiced with discussions pertaining to critiques and lacunas of mining and environmental practices. Status of mining practices in Himalaya is included along with the legal/environmental repercussions of mining. A practical field reference for mining and mineral engineers that is small enough to carry into the field. With its comprehensive store of charts, graphs, tables, equations, and rules of thumb, this handbook is the essential technical reference for mobile mining professionals. Annotation Comprehensive reference examines all aspects of mineral processing from the handling of raw materials to separation strategies to the remediation of waste products. Shows how developments in engrg., chemistry, computer science, and environmental science contribute to the ultimate goal of producing minerals and metals economically from ores. This volume contains the proceedings of the 18th North American Mine Ventilation Symposium held, on a virtual platform, June 12-17, 2021. This symposium was organized by South Dakota Mines, Rapid City, South Dakota, in collaboration with the Underground Ventilation Committee (UVC) of the Society for Mining, Metallurgy & Exploration (SME). The Mine Ventilation Symposium series has always been a premier forum for ventilation experts, practitioners, educators, students, regulators, and manufacturers from around the world to exchange knowledge, ideas, and opinions. This volume features fifty-seven selected technical papers in a wide range of topics including: auxiliary ventilation, case studies of mine ventilation, computational fluid dynamics applications in mine ventilation, diesel particulate control, electric machinery in mine ventilation, mine cooling and refrigeration, mine dust monitoring and control, mine fans, mine fires and explosion prevention, mine gases, mine heat, mine management and organization of ventilation, mine ventilation and automation, occupational health and safety in mine ventilation, renewable/alternative energy in mine ventilation, ventilation monitoring and measurement, ventilation network analysis and optimization, and ventilation planning and design. This third edition of the SME Mining Engineering Handbook reaffirms its international reputation as "the handbook of choice" for today's practicing mining engineer. It distills the body of knowledge that characterizes mining engineering as a disciplinary field and has subsequently helped to inspire and inform generations of mining professionals. Virtually all of the information is original content, representing the latest information from more than 250 internationally recognized mining industry experts. Within the handbook's 115 thought-provoking chapters are current topics relevant to today's mining professional: Analyzing how the mining and minerals industry will develop over the medium and long term--why such changes are inevitable, what this will mean in terms of challenges, and how they could be managed Explaining the mechanics associated with the multifaceted world of mine and mineral economics, from the decisions associated with how best to finance a single piece of high-value equipment to the long-term cash-flow issues associated with mine planning at a mature operation Describing the recent and ongoing technical initiatives and engineering developments in relation to robotics, automation, acid rock drainage, block caving optimization, or process dewatering methods Examining in detail the methods and equipment available to achieve efficient, predictable, and safe rock breaking, whether employing a tunnel boring machine for development work, mineral extraction using a mobile miner, or cast blasting at a surface coal operation Identifying the salient points that dictate which is the safest, most efficient, and most versatile extraction method to employ, as well as describing in detail how each alternative is engineered Discussing the impacts that social and environmental issues have on mining from the pre-exploration phase to end-of-mine issues and beyond, and how to manage these two increasingly important factors to the benefit of both the mining companies and other stakeholders Excerpt from Applied Science, Vol. 22: Incorporated With Transactions of the University of Toronto Engineering Society; November, '08 to April, '09 The profession of mining engineering embodies very much more than any one man's mind could possibly encompass. And there is a limitless number of subdivisions or combinations of subdivisions for the specialist in which to bury himself. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at [www.forgottenbooks.com](http://www.forgottenbooks.com) This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works. This book covers both above ground and underground methods for a wide variety of mineral substances, including metals, non-metals, and fuels. Completely revised, this book includes updated material on remote sensing, GPS, seismic surveying, ground-penetrating radar, continuous integrated mining operations, and autonomous trucks. It also includes a new chapter on environmental responsibilities, regulations, and health and safety issues. The book covers new information on landscape, regional planning, wetlands protections, and subsidence mitigation. · Introduction to Mining- Mining and Its Consequences- Stages of Mining: Prospecting and Exploration- Stages of Mining: Development and Exploitation- Unit Operations of Mining- Surface Mine Development- Surface Mining: Mechanical Extraction Methods- Surface Mining: Aqueous Extraction Methods- Underground Mine Development- Underground Mining: Unsupported Methods- Underground Mining: Supported Methods- Underground Mining: Caving Methods- Novel Methods and Technology- Summary of Mining Methods and Their Selection This book describes the fundamental and theoretical concepts of optimization algorithms in a systematic manner, along with their potential applications and implementation strategies in mining engineering. It explains basics of systems engineering, linear programming, and integer linear programming, transportation and assignment algorithms, network analysis, dynamic programming, queuing theory and their applications to mine systems. Reliability analysis of mine systems, inventory management in mines, and applications of non-linear optimization in mines are discussed as well. All the optimization algorithms are explained with suitable examples and numerical problems in each of the chapters. Features include: • Integrates operations research, reliability, and novel computerized technologies in single volume, with a modern vision of continuous improvement of mining systems. • Systematically reviews optimization methods and algorithms applied to mining systems including reliability analysis. • Gives out software-based solutions such as MATLAB®, AMPL, LINDO for the optimization problems. • All discussed algorithms are supported by examples in each chapter. • Includes case studies for performance improvement of the mine systems. This book is aimed primarily at professionals, graduate students, and researchers in mining engineering. The proceedings of the 11th International Mine Ventilation Congress (11th IMVC), is focused on mine ventilation, health and safety and Earth science. The IMVC has become the most influential international mine ventilation event in the world, and has long been a popular forum for ventilation researchers, practitioners, academics, equipment manufacturers and suppliers, consultants and government officials around the globe to explore research results, exchange best practices, and to launch new products for a better and safer industry. It also serves as a useful platform to attract and train future ventilation professionals and mine planning engineers, as well as for mining companies to discover better ventilation planning. How developing a visual culture changed the industry of mining "The 36 chapters are based on the 2006 SME symposium"--Page 4 de la couverture. This annual series of books includes scientific papers on mining profiles. This volume presents multiple aspects of mining technology implementation in several aspects: extraction of coal, iron, manganese, uranium and other ores. Capturing and utilization of coalbed methane by various methods including alternative ones, safety measures in mining, ecological aspects, etc. Specific attention is paid to intensification of mineral resources extraction processes by way of modernizing opening methods, development and mining methods depending on mining-geological conditions. Experimental results of stress-strain state rock massif forecast by means of computational experiments using recursive methods are also discussed. Any mining operations should finally result in adequate recovery of land surface and utilization of mining wastes using various environmentally friendly methods, thus, sufficient attention is paid to this scientific trend. Non-traditional methods of minerals mining are becoming more topical and of higher demand in the modern society. Hence, several papers/chapters are devoted to underground coal gasification and its subsequent processes. In addition, extraction technologies of gas hydrate, as a source of an abundant amount of natural gas, are thoroughly examined in this book, including implementation of gas hydrate technologies for mine methane utilizations with its following transportation in a solid state. Furthermore, attention is given to evaluation of economic efficiency of minerals mining by the proposed methods, their ways of enrichment, ecological aspects and the influence of mining production on the environment, innovational logistic solutions at mining enterprises, and also to perspectives of Ukraine's mining industry integration to the European standards. "The Transactions [comprise] the papers read at general meetings of the Federated institutes [Manchester Geological and Mining Society. Midland Counties Institution of Engineers. Midland Institute of Mining, Civil, and Mechanical Engineers. Mining Institute of Scotland. North of England Institute of Mining and Mechanical Engineers. North Staffordshire Institute of Mining and Mechanical Engineers. South Staffordshire and Warwickshire Institute of Mining Engineers] and of the Institution of Mining Engineers; together with "Notes of papers on the working of mines, metallurgy, etc., from the Transactions of colonial and foreign societies etc." Digging mineral wealth from the ground dates to prehistoric times, and Europeans pursued mining in the Americas from the earliest colonial days. Prior to the Civil War, little mining was deep enough to require maps. However, the major finds of the mid-nineteenth century, such as the Comstock Lode, were vastly larger than any before in America. In Seeing Underground, Nystrom argues that, as industrial mining came of age in the United States, the development of maps and models gave power to a new visual culture and allowed mining engineers to advance their profession, gaining authority over mining operations from the miners themselves. Starting in the late nineteenth century, mining engineers developed a new set of practices, artifacts, and discourses to visualize complex, pitch-dark three-dimensional spaces. These maps and models became necessary tools in creating and controlling those spaces. They made mining more understandable, predictable, and profitable. Nystrom shows that this new visual culture was crucial to specific developments in American mining, such as implementing new safety regulations after the Avondale, Pennsylvania fire of 1869 killed 110 men and boys; understanding complex geology, as in the rich ores of Butte, Montana; and settling high-stakes litigation, such as the Tonopah, Nevada, Jim Butler v. West End lawsuit, which reached the US Supreme Court. Nystrom demonstrates that these neglected artifacts of the nineteenth and early twentieth centuries have much to teach us today. The development of a visual culture helped create a new professional class of mining engineers and changed how mining was done. Seeing Underground is the winner of the 2015 Mining History Association's Clark Spence Award for the best book on mining history. Don't invest in a mining project until you've read Risk Management in Evaluating Mineral Deposits. Mining is not for the fainthearted. Yes, the rewards are enormous. But so are the risks--and consequences--of failure. Risk Management in Evaluating Mineral Deposits walks you through the many-faceted risk evaluation you need to conduct before you invest your hard-earned dollars. Written by a mining professional with a strong background in technical and financial studies, risk assessment, and statistics, this book provides a detailed suite of tools so you can determine whether investing in a mining project makes sense for you. Looking at a host of issues--the composition of the ore deposit, the management's previous record, the quality of the information at hand, and your own risk-tolerance comfort level, to name a few--author Jean-Michel Rendu provides a comprehensive guide to determine when to invest with high confidence, when to demand a plan that reduces the risks and increases the chances of a positive outcome, and when to just walk away. This book will have relevance for many years. Unlike others, Rendu factors in not just financial but environmental and social aspects to evaluate the triple bottom line. He shows you why your project needs a different evaluator for each of these three legs and how to combine their evaluations to make one decision. As more and more government agencies and communities insist on these types of metrics, this focus will help keep you up-to-date in a rapidly changing world and increase the possibility that your investment will generate profits even in this complex, uncertain, and time-constrained industry. Underground Mining Methods: Engineering Fundamentals and International Case Studies presents the latest principles and techniques in use today. Reflecting the international and diverse nature of the industry, a series of mining case studies is presented covering the commodity range from iron ore to diamonds extracted by operations located in all corners of the world. Industry experts have contributed sections on General Mine Design Considerations; Room-and-Pillar Mining of Hard Rock/Soft Rock; Longwall Mining of Hard Rock; Shrinkage Stopping; Sublevel Stopping; Cut-and-Fill Mining; Sublevel Caving; Panel Caving; Foundations for Design; and Underground Mining Looks to the Future. Does the material being mined have enough value to be worth processing? Should it be processed immediately or stockpiled? And if multiple processes are available, like heap leaching and milling, which one should be used? A cut-off grade can provide the answers. An Introduction to Cut-off Grade Estimation examines one of the most important calculations in the mining industry. Cut-off grades are essential to determining the economic feasibility and mine life of a project. Increased cut-off grades can reduce political risks by ensuring higher financial returns over a shorter period of time. Conversely, lower cut-off grades may increase project life with longer economic benefits to shareowners, employees, and local communities. Cut-off grades also impact reported reserves, which are closely monitored by stock exchanges and regulatory agencies. Author Dr. Jean-Michel Rendu, an internationally recognized expert in the management, estimation, audit, and public reporting of mineral resources, provides practical insights into this critical variable. You'll learn about minimum cut-off grades, as well as those for deposits containing multiple valuable minerals. Dr. Rendu explains which costs should be included in cut-off grade calculations and considerations when planning open pit, underground, and block and panel caving operations. He shows how to optimize a copper mining project by changing grind size, and demonstrates the relationship between deposit modeling, ore control, and cut-off grades. An Introduction to Cut-off Grade Estimation includes dozens of charts, graphs, and mathematical formulas to explain basic concepts in a simple, step-by-step fashion. It is a "must read" for mine managers, analysts, geologists, mining engineers, and public policymakers who want to stay on the leading edge of their profession. Before You Ever Put the First Shovel in the Ground—This Book Could Be the Difference Between a Successful Mining Operation and a Money Pit Opening a successful new mine is a vastly complex undertaking entailing several years and millions to billions of dollars. In today's world, when environmental and labor policies, regulatory compliance, and impact on the community must be factored in, you cannot afford to make a mistake. So the Society for Mining, Metallurgy & Exploration has created this road map for you. Written by two hands-on, in-the-trenches mining project managers with decades of experience who bring some of the world's most successful, profitable mines into operation on time, within budget, and ethically, Project Management for Mining gives you step-by-step instructions in every process you are likely to encounter. Beginning with a discussion of mining ethics and governance, this clearly written handbook walks you through all the project management steps—defining the scope, performing prefeasibility and feasibility studies, gaining societal acceptance, minimizing the impact and risks, creating workable schedules and budgets, setting in place the project execution plan, assembling the human resources, hiring the contractors, and establishing project controls—and then on into the delivery of the engineering and design, construction, progress reviews, pre-launch commissioning, and ramping up for operation. Each chapter includes several useful aids such as figures, checklists, and flowcharts to guide you through every step, from conception through successful opening. This SME classic is both a reference book for the working engineer and a textbook for the mining student. This hardcover edition gives a brief history of surface mining and a general overview of the state of surface mining today--topics range from production and productivity to technological developments and trends in equipment. This extremely useful text takes the approach that exploration and mining geologists must be expert in a number of fields, including basic finance and economics, logistics, and

pragmatic prospecting. Readers will find material on all these topics and more. The book's nine chapters include: Introduction, Exploration and Geology Techniques, Ore Reserve Estimation, Feasibility Studies and Project Financing, Planning and Design of Surface Mines, Mine Operations, Mine Capital and Operating Costs, Management and Organization, and Case Studies. The book is fully indexed. The go-to resource for professionals in the mining industry. The SME Mining Reference Handbook was the first concise reference published in the mining field and it quickly became the industry standard. It sits on almost every mining engineer's desk or bookshelf with worn pages, tabs to find most used equations, and personal notes. It has been the unequaled single reference and the first source of information for countless engineers. This second edition of the SME Mining Reference Handbook builds on that success. With an enhanced presentation, new and updated information is represented in a concise, well-organized guide of important data for everyday use by engineers and other professionals engaged in mining, exploration, mineral processing, and environmental compliance and reclamation. With its exhaustive trove of charts, graphs, tables, equations, and guidelines, the handbook is the essential technical reference for mobile mining professionals. With its exhaustive trove of charts, graphs, tables, equations, and guidelines, the handbook is the essential technical reference for mobile mining professionals. Finally - Mining in Clear and Understandable Language How Mining Works explains complex mining concepts in a way simple enough for those who are not familiar with the industry, yet thorough enough to be useful to long-time professionals. This colorful book presents a logical and sensible sequence for acquiring a strong working knowledge of the world of mining. Chapter 1 provides a quick geology review, explaining how the earth is structured ... how, why, and where mineral ores are created ... and how technological advances help us make educated guesses about where to locate new mines. The next three chapters present mining and refining operations. Chapter 2 offers in-depth explanations about the different types of mining, the equipment and procedures needed for both surface and deep mining, and Chapter 3 follows with six methods for processing the ore into usable refined metal. And, since not all mines produce metals, Chapter 4 covers nonmetallic operations that produce coal, diamonds, and aggregates such as clays and feldspars. The second half of the book puts mining in the context of the wider world. Chapter 5 examines four types of mining waste (including several subcategories) and how to deal with each. Chapter 6 looks at labor practices, environmental sustainability, and worker and community health and safety--all critical in today's highly regulated environment. Chapter 7 highlights mining economics, with detailed information on how mine products are priced, monetary arrangements between mines and smelters, and even the impact of reserves on mining's future. Chapter 8 takes a visionary yet practical look at the future of mining, covering not only advances in expected areas (like robotics) but also in biotechnology, with a fascinating look at how plants, insects, and various microbes could be used to extract metals. Appendix A provides a crash course in the chemistry sometimes needed to understand why rock goes in and metal comes out. Underground coal mining disturbs both the overburden strata and the immediate floor strata. The subject of surface subsidence deals with the issues associated with the movement of overburden strata, which are the layers from the seam to the surface, where structures and water resources important to human activities are located. Surface Subsidence Engineering provides comprehensive coverage of the major issues associated with surface subsidence. The chapters are written by experts on surface subsidence in the three leading coal producing and consuming countries in the world: Australia, China and the United States. They discuss general features and terminologies, subsidence prediction, subsidence measurement techniques, subsidence impact on water bodies, subsidence damage, mitigation and control, and subsidence on abandoned coal mines. In addition, the final chapter addresses some of the unique features of surface subsidence found in Australian coal mines. The book provides information on coal seams ranging from flat to gently inclined to steep to ultra-steep seams. Written for mining engineers, geotechnical engineers and students of mining engineering, this book covers both theories and practices of surface subsidence. Unlike previous publications, it also deals with the subsidence impact on surface and groundwater bodies, crucial resources that are often neglected by subsidence researchers. As long as we have mining and mineral processing, tailings and the responsible management thereof will remain at the forefront, with a company's environmental, social, and governance (ESG) performance in part a reflection of how well tailings risks are being managed. The Global Industry Standard on Tailings Management (GISTM) was published in August 2020, aiming to prevent catastrophic failure of tailings facilities by providing operators with specified measures and approaches throughout the mine life cycle, taking into account multiple stakeholder perspectives. In 2021, the International Council on Mining & Metals (ICMM) published the Tailings Management: Good Practice Guide intended to support safe, responsible management of tailings across the global mining industry, providing guidance on good governance and engineering practices to support continual improvement in tailings storage facility (TSF) management and help foster and strengthen the safety culture of mining companies. The Tailings Management Handbook is important and timely because there is no other comprehensive resource rooted in these new fundamentals and global principles for tailings management. Tailings management requires interdisciplinary and cross-functional understanding and support, which is apparent throughout this handbook. Dive into the wealth of information contributed by more than 100 world-renowned experts, beautifully crafted into a full-color handbook that focuses on the basics, life-cycle planning, site and tailings characterization, TSF design and construction, as well as systems and operations of TSFs. The inclusion of 42 case studies is an added plus with real-world successes and lessons learned. Here is the information you need to face the ever-increasing technological, economic, environmental, and geopolitical challenges of this industry and ensure long-term productivity and growth for your organization. Mineral Processing and Extractive Metallurgy presents more than a century of innovation drivers that have advanced the mineral processing industry. Trends, developments, and improvements are discussed in depth, and likely areas for future innovations are explored. This proceedings from the successful 2013 symposium features more than 75 subject-matter experts. These authors share their knowledge, experience, and passion for the metallurgical industry. Topics include: Comminution equipment, modeling, and instrumentation Magnetic, electrostatic, density-based, dense medium, and liquid/solid separations Nickel and cobalt, zinc and lead, copper and rare earth hydrometallurgy, and gold and silver extraction Innovations in pyrometallurgy, copper smelting, and the iron and steel industry, and refining of platinum group metals Process mineralogy and laboratory automation, analytical chemistry, and measurement of mineral structure and surface chemistry Environmental breakthroughs in acid rock drainage, tailings management, water and brine treatment, chemical and bacterial water treatment, and air pollution control The papers are accompanied by abundant full-color photographs, figures, illustrations, charts, and author biographies.

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