

Type Curves For Production Transient Analysis Of

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Reservoir Engineering - Sylvester Okotie 2018-11-22

This book provides a clear and basic understanding of the concept of reservoir engineering to professionals and students in the oil and gas industry. The content contains detailed explanations of key theoretic and mathematical concepts and provides readers with the logical ability to approach the various challenges encountered in daily reservoir/field operations for effective reservoir management. Chapters are fully illustrated and contain numerous calculations involving the estimation of hydrocarbon volume in-place, current and abandonment reserves, aquifer models and properties for a particular reservoir/field, the type of energy in the system and evaluation of the strength of the aquifer if present. The book is written in oil field units with detailed solved examples and exercises to enhance practical application. It is useful as a professional reference and for students who are taking applied and advanced reservoir engineering courses in reservoir simulation, enhanced oil recovery and well test analysis.

Petroleum Engineering: Principles, Calculations, and Workflows - Moshood Sanni 2018-10-23

A comprehensive and practical guide to methods for solving complex petroleum engineering problems Petroleum engineering is guided by overarching scientific and mathematical principles, but there is sometimes a gap between theoretical knowledge and practical application. *Petroleum Engineering: Principles, Calculations, and Workflows* presents methods for solving a wide range of real-world petroleum engineering problems. Each chapter deals with a specific issue, and includes formulae that help explain primary principles of the problem before providing an easy to follow, practical application. Volume highlights include: A robust, integrated approach to solving inverse problems In-depth exploration of workflows with model and parameter validation Simple approaches to solving complex mathematical problems Complex calculations that can be easily implemented with simple methods Overview of key approaches required for software and application development Formulae and model guidance for diagnosis, initial modeling of parameters, and simulation and regression *Petroleum Engineering: Principles, Calculations, and Workflows* is a valuable and practical resource to a wide community of geoscientists, earth scientists, exploration geologists, and engineers. This accessible guide is also well-suited for graduate and postgraduate students, consultants, software developers, and professionals as an authoritative reference for day-to-day petroleum engineering problem solving. Read an interview with the editors to find out more: <https://eos.org/editors-vox/integrated-workflow-approach-for-petroleum-engineering-problems>

Unconventional Reservoirs: Rate and Pressure Transient Analysis Techniques - Amin Taghavinejad 2021-09-13

This book provides a succinct overview on the application of rate and pressure transient analysis in unconventional petroleum reservoirs. It begins by introducing unconventional reservoirs, including production challenges, and continues to explore the potential benefits of rate and pressure analysis methods. Rate transient analysis (RTA) and pressure transient analysis (PTA) are techniques for evaluating petroleum reservoir properties such as permeability, original hydrocarbon in-place, and hydrocarbon recovery using dynamic data. The brief introduces, describes and classifies both techniques, focusing on the application to shale and tight reservoirs. Authors have used illustrations, schematic views, and mathematical formulations and code programs to clearly explain application of RTA and PTA in complex petroleum systems. This brief is of an interest to academics, reservoir engineers and graduate students.

Pressure Transient Testing - John Lee 2003

Pressure Transient Testing presents the fundamentals of pressure-transient test analysis and design in clear, simple language and explains the theoretical bases of commercial well-test-analysis software. Test-analysis techniques are illustrated with complete and clearly written examples. Additional exercises for classroom or individual practice are provided. With its focus on physical processes and mathematical interpretation, this book appeals to all levels of engineers who want to understand how modern approaches work. Pressure transient test analysis is a mature technology in petroleum engineering; even so, it continues to evolve. Because of the developments in this technology since the last SPE textbook devoted to transient testing was published, we concluded that students could benefit from a textbook approach to the subject that includes a representative sampling of the more important fundamentals and applications. We deliberately distinguish between a textbook approach, which stresses understanding through numerous examples and exercises dealing with selected fundamentals and applications, and a monograph approach, which attempts to summarize the state-of-the-art in the technology. Computational methods that transient test analysts use have gone through a revolution since most existing texts on the subject were written. Most calculations are now done with commercial software or by spreadsheets or proprietary software developed by users to meet personal needs and objectives. These advances in software have greatly increased productivity in this technology, but they also have contributed to a "black box" approach to test analysis. In this text, we attempt to explain what's in the box, and we do not include a number of the modern tools that enhance individual engineer productivity. We hope, instead, to provide understanding so that the student can use the commercial software with greater appreciation and so that the student can read monographs and papers on transient testing with greater appreciation for the context of the subject. Accordingly, this text is but an introduction to the vast field of pressure transient test analysis.

Fossil Energy Update - 1982

Proceedings of the International Field Exploration and Development Conference 2021 - Jia'en Lin 2022

This book focuses on reservoir surveillance and management, reservoir evaluation and dynamic description, reservoir production stimulation and EOR, ultra-tight reservoir, unconventional oil and gas resources technology, oil and gas well production testing, and geomechanics. This book is a compilation of selected papers from the 11th International Field Exploration and Development Conference (IFEDC 2021). The conference not only provides a platform to exchanges experience, but also promotes the development of scientific research in oil & gas exploration and production. The main audience for the work includes reservoir engineer, geological engineer, enterprise managers, senior engineers as well as professional students.

The Practice of Reservoir Engineering (Revised Edition) - L.P. Dake 2001-05-10

This revised edition of the bestselling *Practice of Reservoir Engineering* has been written for those in the oil industry requiring a working knowledge of how the complex subject of hydrocarbon reservoir engineering can be applied in the field in a practical manner. Containing additions and corrections to the first edition, the book is a simple statement of how to do the job and is particularly suitable for reservoir/production engineers as well as those associated with hydrocarbon recovery. This practical book approaches the basic limitations of reservoir engineering with the basic tenet of science: Occam's Razor, which applies to reservoir engineering to a greater extent than for most physical sciences - if there are two ways to account

for a physical phenomenon, it is the simpler that is the more useful. Therefore, simplicity is the theme of this volume. Reservoir and production engineers, geoscientists, petrophysicists, and those involved in the management of oil and gas fields will want this edition.

Hydraulic Fracturing in Unconventional Reservoirs - Hoss Belyadi 2019-06-18

Hydraulic Fracturing in Unconventional Reservoirs: Theories, Operations, and Economic Analysis, Second Edition, presents the latest operations and applications in all facets of fracturing. Enhanced to include today's newest technologies, such as machine learning and the monitoring of field performance using pressure and rate transient analysis, this reference gives engineers the full spectrum of information needed to run unconventional field developments. Covering key aspects, including fracture clean-up, expanded material on refracturing, and a discussion on economic analysis in unconventional reservoirs, this book keeps today's petroleum engineers updated on the critical aspects of unconventional activity. Helps readers understand drilling and production technology and operations in shale gas through real-field examples Covers various topics on fractured wells and the exploitation of unconventional hydrocarbons in one complete reference Presents the latest operations and applications in all facets of fracturing

Well Test Analysis - Dominique Bourdet 2002-08-21

This book on well test analysis, and the use of advanced interpretation models is volume 3 in the series Handbook of Petroleum Exploration and Production. The chapters in the book are: Principles of Transient Testing, Analysis Methods, Wellbore Conditions, Effect of Reservoir Heterogeneities on Well Responses, Effect of Reservoir Boundaries on Well Responses, Multiple Well Testing, Application to Gas Reservoirs, Application to Multiphase Reservoirs, Special Tests, Practical Aspects of Well Test Interpretation.

Unconventional Hydrocarbon Resources - Reza Barati 2020-12-03

A comprehensive textbook presenting techniques for the analysis and characterization of shale plays Significant reserves of hydrocarbons cannot be extracted using conventional methods. Improvements in techniques such as horizontal drilling and hydraulic fracturing have increased access to unconventional hydrocarbon resources, ushering in the "shale boom" and disrupting the energy sector. Unconventional Hydrocarbon Resources: Techniques for Reservoir Engineering Analysis covers the geochemistry, petrophysics, geomechanics, and economics of unconventional shale oil plays. The text uses a step-by-step approach to demonstrate industry-standard workflows for calculating resource volume and optimizing the extraction process. Volume highlights include: Methods for rock and fluid characterization of unconventional shale plays A workflow for analyzing wells with stimulated reservoir volume regions An unconventional approach to understanding of fluid flow through porous media A comprehensive summary of discoveries of massive shale resources worldwide Data from Eagle Ford, Woodford, Wolfcamp, and The Bakken shale plays Examples, homework assignments, projects, and access to supplementary online resources Hands-on teaching materials for use in petroleum engineering software applications The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

Reservoir Engineering Handbook - Tarek Ahmed 2018-11-23

Reservoir Engineering Handbook, Fifth Edition, equips engineers and students with the knowledge they require to continue maximizing reservoir assets, especially as more reservoirs become complex, more multilayered, and unconventional in their extraction method. Building on the solid reputation of the previous edition, this new volume presents critical concepts, such as fluid flow, rock properties, water and gas coning, and relative permeability in a straightforward manner. Water influx calculations, lab tests of reservoir fluids, oil and gas performance calculations, and other essential tools of the trade are also introduced, reflecting on today's operations. New for this edition is an entire new chapter devoted to enhanced oil recovery techniques, including WAG. Critical new advances in areas such as well performance, waterflooding and an analysis of decline and type curves are also addressed, along with more information on the growing extraction from unconventional reservoirs. Practical and critical for new practicing reservoir engineers and petroleum engineering students, this book remains the authoritative handbook on modern reservoir engineering and its theory and practice. Highlights new content on unconventional reservoir activity, hydraulic fracturing, and a new chapter devoted to modern enhanced oil

recovery methods and technologies Provides an everyday reference with 'real world' examples to help engineers grasp derivations and equations Presents the key fundamentals needed, including new information on rock properties, fluid behavior, and relative permeability concepts

Dynamic Description Technology of Fractured Vuggy Carbonate Gas Reservoirs - Hedong Sun 2019-04-15

Thanks to technology, fractured carbonate gas reservoirs are becoming more discoverable, but because these assets are more complex and diverse, there is a high level of difficulty in understanding how to plan design and performance analysis. Dynamic Description Technology of Fractured Vuggy Gas Reservoirs delivers a critical reference to reservoir and production engineers on all the basic characteristics of fractured vuggy gas reservoirs and combines both static and dynamic data to improve the reservoir characterization accuracy and development. Based on the full life cycle of well testing and advanced production decline analysis, this reference also details how to apply reservoir dynamic evaluation, reserve estimation, and performance forecasting. Offering one collective location for the latest research on fractured gas reservoirs, the reference also covers: Physical models, analysis examples, and processes 3D numerical well test analysis technology Deconvolution technology of production decline analysis Packed with many calculation examples and more than 100 case studies, Dynamic Description Technology of Fractured Vuggy Gas Reservoirs gives engineers a strong tool to further exploit these complex assets. Gain advanced knowledge in well test and production decline analysis as well as performance forecasting specific to fractured vuggy carbonate gas reservoirs Understand the characteristics, advantages, disadvantages, and current limitations in technology of fractured vuggy carbonate gas reservoirs Bridge from theory to practice by combining static and dynamic data to form more accurate real-world analysis and modelling

Unconventional Reservoir Rate-Transient Analysis - Clarkson C.R. 2021-06-15

Unconventional Reservoir Rate-Transient Analysis provides petroleum engineers and geoscientists with the first comprehensive review of rate-transient analysis (RTA) methods as applied to unconventional reservoirs. Volume One—Fundamentals, Analysis Methods, and Workflow is comprised of five chapters which address key concepts and analysis methods used in RTA. This volume overviews the fundamentals of RTA, as applied to low-permeability oil and gas reservoirs exhibiting simple reservoir and fluid characteristics. Volume Two—Application to Complex Reservoirs, Exploration and Development is comprised of four chapters that demonstrate how RTA can be applied to coalbed methane reservoirs, shale gas reservoirs, and low-permeability/shale reservoirs exhibiting complex behavior such as multiphase flow. Use of RTA to assist exploration and development programs in unconventional reservoirs is also demonstrated. This book will serve as a critical guide for students, academics, and industry professionals interested in applying RTA methods to unconventional reservoirs. Gain a comprehensive review of key concepts and analysis methods used in modern rate-transient analysis (RTA) as applied to low-permeability ("tight") oil and gas reservoirs Improve your RTA methods by providing reservoir/hydraulic fracture properties and hydrocarbon-in-place estimates for unconventional gas and light oil reservoirs exhibiting complex reservoir behaviors Understand the provision of a workflow for confident application of RTA to unconventional reservoirs

Well Test Analysis for Fractured Reservoir Evaluation - G. Da Prat 1990-11-19

The main purpose of this book is to provide the reader with a basic understanding of the behaviour of fractured reservoirs, using evaluation techniques based on processing pressure and flow-rate data resulting from production testing. It covers the fundamental reservoir engineering principles involved in the analysis of fluid flow through fractured reservoirs, the application of existing models to field cases, and the evaluation and description of reservoirs, based on processed data from pressure and production tests. The author also discusses production decline analysis, the understanding of which is a key factor influencing completion or abandonment of a well or even a field. The theoretical concepts are presented as clearly and simply as possible in order to aid comprehension. The book is thus suitable for training and educational purposes, and will help the reader who is unfamiliar with the subject acquire the necessary skills for successful interpretation and analysis of field data. One of the most important features of the book is that it fills the gap between field operations and research, in regard to proper management of reservoirs. The book also contains a computer program (FORTRAN language) which can be incorporated in existing

software designed for reservoir evaluation; type curves generation, test design and interpretation, can be achieved by using this program. Petroleum engineers, reservoir engineers, petroleum geologists, research engineers and students in these fields, will be interested in this book as a reference source. It can also be used as a text book for training production and reservoir engineering professionals. It should be available in university and oil company libraries.

Fundamentals of Gas Shale Reservoirs - Reza Rezaee 2015-07-27

Provides comprehensive information about the key exploration, development and optimization concepts required for gas shale reservoirs Includes statistics about gas shale resources and countries that have shale gas potential Addresses the challenges that oil and gas industries may confront for gas shale reservoir exploration and development Introduces petrophysical analysis, rock physics, geomechanics and passive seismic methods for gas shale plays Details shale gas environmental issues and challenges, economic consideration for gas shale reservoirs Includes case studies of major producing gas shale formations

Dynamic Description Technology of Fractured Vuggy Carbonate Gas Reservoirs - Hedong Sun 2019-04-12

Dynamic Description Technology of Fractured Vuggy Carbonate Gas Reservoirs delivers a critical reference to reservoir and production engineers on the basic characteristics of fractured vuggy gas reservoirs, combining both static and dynamic data to improve reservoir characterization accuracy and development. Based on the full lifecycle of well testing and advanced production decline analysis, this reference also details how to apply reservoir dynamic evaluation and reserve estimation and performance forecasting. Offering one collective location for the latest research on fractured gas reservoirs, this reference also covers physical models, analysis examples, and processes, 3D numerical well test technology, and deconvolution technology of production decline analysis. Packed with many calculation examples and more than 100 case studies, this book gives engineers a strong tool to further exploit these complex assets. Presents advanced knowledge in well test and production decline analysis, along with performance forecasting that is specific to fractured vuggy carbonate gas reservoirs Helps readers understand the characteristics, advantages, disadvantages and current limitations in technology of fractured vuggy carbonate gas reservoirs Provides a bridge from theory to practice by combining static and dynamic data to form more accurate real-world analysis and modeling

Proceedings, ... Eastern Regional Meeting - Society of Petroleum Engineers (U.S.). Eastern Regional Meeting 1996

Naturally Fractured Reservoirs - Roberto Aguilera 1995

This publication deals exclusively with naturally fractured reservoirs, and includes many subjects usually treated in separate volumes. It is written for students, reservoir geologists, log analysts and petroleum engineers.

Proceedings - 1997

Unconventional Hydrocarbon Resources - Reza Barati 2020-11-05

A comprehensive textbook presenting techniques for the analysis and characterization of shale plays Significant reserves of hydrocarbons cannot be extracted using conventional methods. Improvements in techniques such as horizontal drilling and hydraulic fracturing have increased access to unconventional hydrocarbon resources, ushering in the "shale boom" and disrupting the energy sector. Unconventional Hydrocarbon Resources: Techniques for Reservoir Engineering Analysis covers the geochemistry, petrophysics, geomechanics, and economics of unconventional shale oil plays. The text uses a step-by-step approach to demonstrate industry-standard workflows for calculating resource volume and optimizing the extraction process. Volume highlights include: Methods for rock and fluid characterization of unconventional shale plays A workflow for analyzing wells with stimulated reservoir volume regions An unconventional approach to understanding of fluid flow through porous media A comprehensive summary of discoveries of massive shale resources worldwide Data from Eagle Ford, Woodford, Wolfcamp, and The Bakken shale plays Examples, homework assignments, projects, and access to supplementary online resources Hands-on teaching materials for use in petroleum engineering software applications The

American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

Gas Well Testing Handbook - Amanat Chaudhry 2003-08-07

"Gas Well Testing Handbook deals exclusively with the theory and practice of gas well testing, including pressure transient analysis technique, analytical methods required to interpret well behavior, evaluating reservoir quality, reservoir simulation, and production forecasts. A highly practical volume, this book is written for drilling engineers, well logging engineers, reservoir engineers, engineering students, geologists, and geophysicists."--BOOK JACKET

Unconventional Oil and Gas Resources - Usman Ahmed 2016-04-05

As the shale revolution continues in North America, unconventional resource markets are emerging on every continent. In the next eight to ten years, more than 100,000 wells and one- to two-million hydraulic fracturing stages could be executed, resulting in close to one trillion dollars in industry spending. This growth has prompted professionals experienced in conventional oil and gas exploitation and development to acquire practical knowledge of the unconventional realm. Unconventional Oil and Gas Resources: Exploitation and Development provides a comprehensive understanding of the latest advances in the exploitation and development of unconventional resources. With an emphasis on shale, this book: Addresses all aspects of the exploitation and development process, from data mining and accounting to drilling, completion, stimulation, production, and environmental issues Offers in-depth coverage of sub-surface measurements (geological, geophysical, petrophysical, geochemical, and geomechanical) and their interpretation Discusses the use of microseismic, fiber optic, and tracer reservoir monitoring technologies and JewelSuite™ reservoir modeling software Presents the viewpoints of internationally respected experts and researchers from leading exploration and production (E&P) companies and academic institutions Explores future trends in reservoir technologies for unconventional resources development Unconventional Oil and Gas Resources: Exploitation and Development aids geologists, geophysicists, petrophysicists, geomechanic specialists, and drilling, completion, stimulation, production, and reservoir engineers in the environmentally safe exploitation and development of unconventional resources like shale.

Advanced Production Decline Analysis and Application - Hedong Sun 2015-02-12

In recent years, production decline-curve analysis has become the most widely used tool in the industry for oil and gas reservoir production analysis. However, most curve analysis is done by computer today, promoting a "black-box" approach to engineering and leaving engineers with little background in the fundamentals of decline analysis. Advanced Production Decline Analysis and Application starts from the basic concept of advanced production decline analysis, and thoroughly discusses several decline methods, such as Arps, Fetkovich, Blasingame, Agarwal-Gardner, NPI, transient, long linear flow, and FMB. A practical systematic introduction to each method helps the reservoir engineer understand the physical and mathematical models, solve the type curves and match up analysis, analyze the processes and examples, and reconstruct all the examples by hand, giving way to master the fundamentals behind the software. An appendix explains the nomenclature and major equations, and as an added bonus, online computer programs are available for download. Understand the most comprehensive and current list of decline methods, including Arps, Fetkovich, Blasingame, and Agarwal-Gardner Gain expert knowledge with principles, processes, real-world cases and field examples Includes online downloadable computer programs on Blasingame decline type curves and normalized pseudo-pressure of gas wells

Modern Well Test Analysis - Roland N. Horne 1995

Challenges in Modelling and Simulation of Shale Gas Reservoirs - Jebrael Gholinezhad 2017-12-27

This book addresses the problems involved in the modelling and simulation of shale gas reservoirs, and details recent advances in the field. It discusses various modelling and simulation challenges, such as the complexity of fracture networks, adsorption phenomena, non-Darcy flow, and natural fracture networks, presenting the latest findings in these areas. It also discusses the difficulties of developing shale gas models, and compares analytical modelling and numerical simulations of shale gas reservoirs with those of conventional reservoirs. Offering a comprehensive review of the state-of-the-art in developing shale gas

models and simulators in the upstream oil industry, it allows readers to gain a better understanding of these reservoirs and encourages more systematic research on efficient exploitation of shale gas plays. It is a valuable resource for researchers interested in the modelling of unconventional reservoirs and graduate students studying reservoir engineering. It is also of interest to practising reservoir and production engineers.

Sustainable Natural Gas Reservoir and Production Engineering - David A. Wood 2021-10-30

Sustainable Natural Gas Reservoir and Production Engineering, the latest release in The Fundamentals and Sustainable Advances in Natural Gas Science and Engineering series, delivers many of the scientific fundamentals needed in the natural gas industry, including improving gas recovery, simulation processes for fracturing methods, and methods for optimizing production strategies. Advanced research covered includes machine learning applications, gas fracturing mechanics aimed at reducing environmental impact, and enhanced oil recovery technologies aimed at capturing carbon dioxide. Supported by corporate and academic contributors along with two well-distinguished editors, this book provides today's natural gas engineers the fundamentals and advances in a convenient resource. Helps readers advance from basic equations used in conventional gas reservoirs. Presents structured case studies to illustrate how new principles can be applied in practical situations. Covers advanced topics, including machine learning applications to optimize predictions, controls and improve knowledge-based applications. Helps accelerate emission reductions by teaching gas fracturing mechanics with an aim of reducing environmental impacts and developing enhanced oil recovery technologies that capture carbon dioxide.

SPE Reservoir Evaluation & Engineering - 2010

Proceedings Geothermal Program Review XV - 1997

Advances in Energy Science and Equipment Engineering - Shiquan Zhou 2015-11-05

Advances in Energy Equipment Science and Engineering contains selected papers from the 2015 International Conference on Energy Equipment Science and Engineering (ICEESE 2015, Guangzhou, China, 30-31 May 2015). The topics covered include:- Advanced design technology- Energy and chemical engineering- Energy and environmental engineering- Energy science

Petroleum Production Systems - Michael J. Economides 2013

Written by four leading experts, this edition thoroughly introduces today's modern principles of petroleum production systems development and operation, considering the combined behaviour of reservoirs, surface equipment, pipeline systems, and storage facilities. The authors address key issues including artificial lift, well diagnosis, matrix stimulation, hydraulic fracturing and sand control. They show how to optimise systems for diverse production schedules using queuing theory, as well as linear and dynamic programming. Throughout, they provide both best practices and rationales, fully illuminating the exploitation of unconventional oil and gas reservoirs. Updates include: Extensive new coverage of hydraulic fracturing, including high permeability fracturing. New sand and water management techniques * An all-new chapter on Production Analysis. New coverage of digital reservoirs and self-learning techniques. New skin correlations and HW flow techniques.

Energy Research Abstracts - 1990

Journal of Petroleum Technology - 1998-07

Integrative Understanding of Shale Gas Reservoirs - Kun Sang Lee 2016-02-03

This timely book begins with an overview of shale gas reservoir features such as natural fracture systems, multi-fractured horizontal wells, adsorption/desorption of methane, and non-linear flow within the reservoir. Geomechanical modelling, an aspect of importance in ultra-low permeability reservoirs, is also presented in detail. Taking these complex features of shale reservoirs into account, the authors develop a numerical model, which is verified with field data using the history matching technique. Based on this model, the pressure transient and production characteristics of a fractured horizontal well in a shale gas reservoir are analysed with respect to reservoir and fracture properties. Methods for the estimation of

shale properties are also detailed. Minifrac tests, rate transient tests (RTA), and type curve matching are used to estimate the initial pressure, permeability, and fracture half-length. Lastly, future technologies such as the technique of injecting CO₂ into shale reservoirs are presented. The book will be of interest to industrial practitioners, as well as to academics and graduate students in the field of reservoir engineering.

Geothermal Well Test Analysis - Sadiq J. Zarrouk 2019-04-30

Geothermal Well Test Analysis: Fundamentals, Applications and Advanced Techniques provides a comprehensive review of the geothermal pressure transient analysis methodology and its similarities and differences with petroleum and groundwater well test analysis. Also discussed are the different tests undertaken in geothermal wells during completion testing, output/production testing, and the interpretation of data. In addition, the book focuses on pressure transient analysis by numerical simulation and inverse methods, also covering the familiar pressure derivative plot. Finally, non-standard geothermal pressure transient behaviors are analyzed and interpreted by numerical techniques for cases beyond the limit of existing analytical techniques. Provides a guide on the analysis of well test data in geothermal wells, including pressure transient analysis, completion testing and output testing. Presents practical information on how to avoid common issues with data collection in geothermal wells. Uses SI units, converting existing equations and models found in literature to this unit system instead of oilfield units.

Advanced Reservoir Management and Engineering - Tarek Ahmed 2011-09-28

Chapter 1. Fundamentals of Well Testing -- Chapter 2. Decline and Type-Curves Analysis -- Chapter 3. Water Influx -- Chapter 4. Unconventional Gas Reservoirs -- Chapter 5. Performance of Oil Reservoirs -- Chapter 6. Predicting Oil Reservoir Performance -- Chapter 7. Fundamentals of Enhanced Oil Recovery -- Chapter 8. Economic Analysis -- Chapter 9. Analysis of Fixed Capital Investments -- Chapter 10. Advanced Evaluation Approaches -- Chapter 11. Professionalism and Ethics.

Low-Carbon Technologies for the Petroleum Industry - Kaiqiang Zhang 2021-11-24

Advanced Reservoir Engineering - Tarek Ahmed 2011-03-15

Advanced Reservoir Engineering offers the practicing engineer and engineering student a full description, with worked examples, of all of the kinds of reservoir engineering topics that the engineer will use in day-to-day activities. In an industry where there is often a lack of information, this timely volume gives a comprehensive account of the physics of reservoir engineering, a thorough knowledge of which is essential in the petroleum industry for the efficient recovery of hydrocarbons. Chapter one deals exclusively with the theory and practice of transient flow analysis and offers a brief but thorough hands-on guide to gas and oil well testing. Chapter two documents water influx models and their practical applications in conducting comprehensive field studies, widely used throughout the industry. Later chapters include unconventional gas reservoirs and the classical adaptations of the material balance equation. * An essential tool for the petroleum and reservoir engineer, offering information not available anywhere else * Introduces the reader to cutting-edge new developments in Type-Curve Analysis, unconventional gas reservoirs, and gas hydrates * Written by two of the industry's best-known and respected reservoir engineers

Machine Learning Applications in Subsurface Energy Resource Management - Srikanta Mishra 2022-12-27

The utilization of machine learning (ML) techniques to understand hidden patterns and build data-driven predictive models from complex multivariate datasets is rapidly increasing in many applied science and engineering disciplines, including geo-energy. Motivated by these developments, Machine Learning Applications in Subsurface Energy Resource Management presents a current snapshot of the state of the art and future outlook for ML applications to manage subsurface energy resources (e.g., oil and gas, geologic carbon sequestration, and geothermal energy). Covers ML applications across multiple application domains (reservoir characterization, drilling, production, reservoir modeling, and predictive maintenance). Offers a variety of perspectives from authors representing operating companies, universities, and research organizations. Provides an array of case studies illustrating the latest applications of several ML techniques. Includes a literature review and future outlook for each application domain. This book is targeted at practicing petroleum engineers or geoscientists interested in developing a broad understanding of ML applications across several subsurface domains. It is also aimed as a supplementary reading for graduate-

level courses and will also appeal to professionals and researchers working with hydrogeology and nuclear waste disposal.

Oil Well Testing Handbook - Amanat Chaudhry 2004-01-24

Oil Well Testing Handbook is a valuable addition to any reservoir engineer's library, containing the basics of well testing methods as well as all of the latest developments in the field. Not only are "evergreen" subjects, such as layered reservoirs, naturally fractured reservoirs, and wellbore effects, covered in depth, but newer developments, such as well testing for horizontal wells, are covered in full chapters. Covers real-life examples and cases The most up-to-date information on oil well testing available The perfect reference for the engineer or textbook for the petroleum engineering student

Dynamic Well Testing in Petroleum Exploration and Development - Huinong Zhuang 2020-05-26

Dynamic Well Testing in Petroleum Exploration and Development, Second Edition, describes the process of

obtaining information about a reservoir through examining and analyzing the pressure-transient response caused by a change in production rate. The book provides the reader with modern petroleum exploration and well testing interpretation methods, including their basic theory and graph analysis. It emphasizes their applications to tested wells and reservoirs during the whole process of exploration and development under special geological and development conditions in oil and gas fields, taking reservoir research and performance analysis to a new level. This distinctive approach features extensive analysis and application of many pressure data plots acquired from well testing in China through advanced interpretation software that can be tailored to specific reservoir environments. Presents the latest research results of conventional and unconventional gas field dynamic well testing Focuses on advances in gas field dynamic well testing, including well testing techniques, well test interpretation models and theoretical developments Includes more than 100 case studies and 250 illustrations-many in full color-that aid in the retention of key concepts