

1. Record Nr.	UNINA9911007182103321
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Titolo	Sustainable Natural Gas Drilling : Technologies and Case Studies for the Energy Transition
Pubbl/distr/stampa	San Diego : , : Elsevier Science & Technology, , 2024 ©2024
ISBN	9780443134210 0443134219
Edizione	[1st ed.]
Descrizione fisica	1 online resource (629 pages)
Collana	The Fundamentals and Sustainable Advances in Natural Gas Science and Eng Series
Altri autori (Persone)	CaiJianchao
Disciplina	622.3381
Soggetti	Drilling and boring Natural gas
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Front Cover -- Sustainable Natural Gas Drilling -- Copyright Page -- Contents -- List of contributors -- Preface -- About the Fundamentals and Sustainable Advances in Natural Gas Science and Engineering Series -- About this volume: Sustainable Natural Gas Drilling: Technologies and Case Studies for the Energy Transition -- ONE. Drilling techniques tailored to meet the challenges -- 1 Natural gas drilling: an overview of sustainability challenges -- 1.1 Introduction -- 1.2 Fundamentals and theory -- 1.2.1 The complexity of drilling operations and their management -- 1.2.2 Aboveground and belowground drilling-rig components -- 1.2.3 Fuel efficiency -- 1.2.4 Drill cuttings waste treatments and disposal -- 1.2.5 Naturally occurring radioactive materials present in some drilling cuttings -- 1.2.6 Impact of offshore drilling on the marine environment -- 1.2.7 Impact statements and triple-bottom-line aspirations -- 1.3 Advanced concepts -- 1.3.1 Integrated environment simulation training and rig automation -- 1.3.2 Technology advances have reduced environmental impacts of onshore drilling -- 1.3.3 Wellbore suspension and decommissioning impacts on the environment -- 1.3.4 Devasting impacts of some land-based well blowouts -- 1.3.5 Multiple adverse consequences

of well blowouts associated with offshore drilling -- 1.3.6 Future drilling in sensitive, remote, and harsh marine environments -- 1.3.7 Risk/opportunity management and mitigation of drilling sustainability issues -- 1.4 Case studies: European Union gas markets -- 1.4.1 Case study 1: Synthetic polymers additives in drilling fluids -- 1.4.2 Case study 2: Nanoparticle additives in drilling fluids

Sommario/riassunto

This book, 'Sustainable Natural Gas Drilling,' edited by David A. Wood and Jianchao Cai, explores advanced drilling techniques and technologies for natural gas extraction, with a focus on sustainability and energy transition. It discusses various drilling methods, including deep and horizontal drilling, and addresses the challenges of water management and wellbore stability. The book also covers innovations in drilling fluids and the environmental impacts of gas extraction. Case studies from various regions, such as the European Union, Permian Basin, and Appalachian Basin, are included to illustrate practical applications and challenges in the field. Intended for professionals and researchers in the energy industry, it aims to provide insights into optimizing drilling performance and developing sustainable practices.
