Society of Petroleum Engineers

SPE/IADC Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition 2008

January 28-29, 2008 Abu Dhabi, UAE

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 www.proceedings.com

ISBN: 978-1-60560-078-9

Some format issues inherent in the e-media version may also appear in this print version.

Copyright and Use Restrictions

Copyright 2008, SPE/IADC Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition

Material included in this *Proceedings* is copyright protected. Electronic reproduction, distribution, or storage of any part of an SPE/IADC-copyrighted paper for commercial purposes without the written consent of the Society of Petroleum Engineers and the International Association of Drilling Contractors is prohibited. Permission to reproduce in print is restricted to an abstract of not more than 300 words; illustrations may not be copied. The abstract must contain conspicuous acknowledgment of where and by whom the paper was presented. For photocopying beyond the above permissions, libraries and other users dealing with the Copyright Clearance Center (CCC) Transactional Reporting Service must pay a base fee of \$3 per copyrighted article plus \$0.25 per page to CCC, 222 Rosewood Drive, Danvers, Massachusetts 01923 U.S.A. For other permissions, contact Librarian, SPE, 222 Palisades Creek Drive, Richardson, Texas 75080-2040 U.S.A.

Use of SPE/IADC member or author contact information included on this CD for commercial purposes or reproduction of that information in whole or in part, in any form or medium, is strictly prohibited and subject to legal action. Contact SPE to inquire about rental of mailing lists.

This CD of the 2008 SPE/IADC Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition was produced by SPE. Permission to print and distribute content from this product must be obtained from SPE. Duplication of replication products is absolutely prohibited without written permission from SPE and Adobe. Adobe, the Adobe logo, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Material on the CD was reproduced from original papers and/or electronic files provided by the authors. Some discrepancies are inevitable. Please advise SPE of errors so corrections can be made to the electronic versions of the article. Send corrections by e-mail to pdf@spe.org or mail to the SPE Americas Office, attention Technical Paper Administrator.





Society of Petroleum Engineers

SPE/IADC Managed Pressure Drilling and Underbalanced Operations Conference and Exhibition 2008

TABLE OF CONTENTS

SPE/IADC 113672 Managed Pressure Drilling Resolves Pressure Depletion Related Problems in the Development of the HPHT Kristin Field	. 1
SPE/IADC 113673 Successful Use of Underbalanced-Drilling in a Cluster of Fields, North Oman Mariano Carrera, Hamed Al Hadhrami, Hamed Al Jabri	10
SPE/IADC 113679 Constant Bottomhole Pressure: Managed-Pressure Drilling Technique Applied in an Exploratory Well in Saudi Arabia P. Vieira, M. Arnone, B. Russel, I. Cook, K. Moyse, F. Torres, Hani Qutob, Chen Yuesheng, Chen Qing	17
SPE/IADC 113680 Combined Underbalanced/Coiled-Tubing Drilling Technologies Have Improved Oil Recovery and Activated Abandoned Wells in Hassi Messaoud Field, Algeria Bachir Ben Amor, Ali Ferhat, Rafik Messas, Sonatrach, Maurizio Arnone, Fritz Schoch, Paco Vieira, James Chopty, Hani Qutob	31
SPE/IADC 113682 MPD Planning: How Much Is Enough?	45
SPE/IADC 113684 Mature-Field Rejuvenation of a Tight Gas Carbonate Utilizing Coiled-Tubing Underbalanced-Drilling Techniques C. Mykytiw, D. Killip, R. Brewin, J. Capps	53
SPE/IADC 113685 Applying the Underbalanced-for-Life Philosophy to Well Construction J. Bowling, M. Riyami, E. Somat, P. Vieira	71
SPE/IADC 113686 Predesigned Bottomhole Pressure (BHP) in Aerated Drilling Matches in the Field and Improves Drilling Performance in Carbonate Reservoir Farid Shirkavand, Geir Hareland, S.M. Haeri Behbahani, Vahid Mostafavi	79
SPE/IADC 113688 Underbalanced Drilling Operation for Reservoir Characterization in Jebel Aswad Field, Oman - A Case History Karthik Nellayappan, Zaher Azzam, Paco Vieira, Dean Rambo, Keith Moyse, Iain Cook, Jim Kelly, Bas Hengveld	88
SPE/IADC 113689 Simplifying MPD: Lessons Learned	98
SPE/IADC 113690 First Multilateral Well Drilled With Underbalanced Drilling Technology in Sabria Field—Tunisia	04

SPE/IADC 113693 Performing the Dynamic Shut-In Procedure Because of a Kick Incident When Using Automatic Coordinated Control of Pump Rates and Choke-	
Valve Opening	116
SPE/IADC 113844 Systematic Evaluation of Kuwaiti Reservoirs to Determine Optimum Candidates for Underbalanced Drilling Bader Al-Matar, Kamal Al-Atroshi, Hom Chetri, Sabry Abd El-Aziz, Mir Md Rezaul Kabir, Sara Shayegi, Emad Bakri Ibrahim	129
SPE/IADC 114050 Modeling of an Underbalanced Drilling Operation Utilizing Supercritical Carbon Dioxide	140
SPE/IADC 114051 Enhancement of Well Productivity: Investigation of the Feasibility of UBD for Minimizing Formation Damage	151
SPE/IADC 114052 Applying Underbalanced Drilling Technology Improves Productivity and Enhances Recovery in Libya	172
SPE/IADC 114258 Underbalanced Drilling of Oil Wells in Saudi Arabia: Case History and Lessons Learned Muhammad A. Muqeem, Clark M. Jarrett, Hassan J. Abdul	180
SPE/IADC 114484 Highly Advanced Multitechnical MPD Concept Extends Achievable HPHT Targets in the North Sea	193
SPE/IADC 114667 Sometimes Neglected Hydraulic Parameters of Underbalanced and Managed Pressure Drilling	204
SPE/IADC 114703 Managed-Pressure Drilling and Downhole Isolation Technologies Deliver High Rate Gas Wells	211

Author Index