

SPE/IADC Managed Pressure Drilling & Underbalanced Operations Conference & Exhibition 2024

Rio de Janeiro, Brazil
17 - 18 September 2024

ISBN: 979-8-3313-0537-6

Printed from e-media with permission by:

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

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

Copyright© (2024) by Society of Petroleum Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact Society of Petroleum Engineers
at the address below.

Society of Petroleum Engineers
P. O. Box 833836
Richardson, Texas 75083-3836

Phone: (800) 456-6863
Fax: (972) 952-9435

books@spe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

CASE STUDIES

- MPD Deepwater Drilling: A Case Study of MPD Surface Back Pressure Implementation for a Sidetrack Exploration Well in the Gulf of Mexico 1
R. A. Gonzalez Luis, R. Happoff, E. Meyer, K. Hampshire, A. Taques, N. Scott, L. Duong, I. Barker
- MPD Helped Successfully Drill a Central European Well to TD After Multiple Failures in a Formation Fraught with Wellbore Instability and Formation Pressure Uncertainties..... 22
O. Kaldirim, S. Nauduri, G. Guefack, J. Morris, D. Fisher, M. Spahn, R. Howell, M. Parker, P. French, C. Leggett

HUMAN FACTORS AND TRAINING

- Evolving MPD with Human Factors Approach..... 36
I. M. Sales, V. R. Nazareth
- Human in the Loop: Decoding MPD Incidents Using Practical Human Factors..... 47
M. Kvalo P. E., M. Duarte, E. Laird
- The Importance of Human Factors Between a Drill Crew and an MPD Supervisor – A Human Factors Case Study by Boots on the Ground 69
Z. Allen, N. Digiacomio, C. Vines, R. Howell

NON-CONVENTIONAL MPD OPERATIONS

- Managed Pressure Cementing in Deepwater Environment, Evolving from Saving the Well with Perfectly Executed Challenging Primary Cementing Operations to Bring Back Wells to Productive Life with State-Of-The-Art Remedial Cementing Jobs on Controlled Pressure Manner 74
Pier Alvarado, Sundar Ramasamy, Juan C. Valecillos, Maurizio Arnone, Daniel Booker, Danny Spreafico, Ben Kotara, Clayton Christensen, Jon Thain, Ryan Brinkley
- MPD Well Control During Non-Drilling Operations 88
C. E. Sanguinetti, S. Callerio, D. Atehortua, D. Su

RISER GAS HANDLING

- Handling Gas-In-Riser – Part I: Fundamental Concepts and Calculations Underlying 2023 IADC Riser Gas Guidelines115
P. Sonnemann, M. L. M. Resende Teixeira, G. Humphreys, S. Christman, P. Cavalcanti de Sousa
- Handling Gas-In-Riser – Part II: Numerical Simulation of Riser Equilibrium Point (REP), Riser-Gas Tolerance (RGT) and Riser Unloading, and Validation of the 2023 IADC Deepwater RGH Guidelines Calculation Worksheet..... 131
P. Cavalcanti de Sousa, O. Gabaldon, O. Kaldirim, P. Sonnemann

COMPLETIONS

Analysis of Primary Safety Barrier on Workover Operations Using MCD on Deepwater Scenarios – Design and Execution.....	142
<i>R. S. Roman, A. A. Fernandes, C. N. Cisneiros, E. Schnitzler, I. M. Sales, W. M. Ascano, R. H. Pereira, D. M. Tinoco, E. M. Bezerra</i>	

Case Study: First Deepwater Surface Applied Back-Pressure (ABP) MPD Gravel Pack Operation - Design, Execution and Lessons Learned	154
<i>Juan Valecillos, Patrick Campbell</i>	

DESIGN AND OPTIMIZATION

Simplified Deepwater FMCD Strategy	169
<i>A. A. Fernandes, M. V. B. Malfitani, I. M. Sales, K. S. Vasconcelos, G. C. M Pena</i>	

MPD EQUIPMENT AND CONTROL SYSTEMS

Breakthroughs in Active Rotating RCD Development: A Discussion on Technical Development and Performance Evaluation Through Testing	177
<i>Hunter Haeberle, Katie Kotarek, Calvin Crowdis</i>	

Rig Contractor's Best Practices and Lessons Learned for Contractor Owned MPD Deepwater Systems.....	195
<i>Jon Thain, Ryan Brinkley, Curtis Palm, Linden Duong, Ian Barker, Ebrahim Hal, Maurizio Arnone, Prashant Shah, Essam Sammat</i>	

KEYNOTE PRESENTATION

100+ Deepwater MPD Wells Learnings	203
<i>A. A. Fernandes, G. S. F. Vanni, F. S. Terra</i>	

UBD

An Integrated Workflow for Improved Lateral Placement in Underbalanced Coiled Tubing Drilling Operations	214
<i>H. Al Abdrabalnabi, S. Abu Alsaud, H. Malik</i>	

WELL CONTROL AND WELL INTEGRITY

Influx Detected and Circulated Out Entirely with MPD on the First Deployment of MPD on Deepwater Rig. A Description of the Well Planning and Execution Process	226
<i>T. Smith, I. Poletzky, R. van Noort, N. Tuckwell, M. Arnone, P. Shah, L. Duong</i>	

Management of Cross-Flow Events in High pressure, Deep Disposal Wells Using MPD Techniques	235
<i>Gerald D. Yao-Dablu, Scott Hoekstra</i>	

UNASSIGNED PAPERS OF NOTE

Automating Influx Management Envelope (IME) Generation Through Cloud-Based Solutions..... 246
L. Zhou, Y. Liu, B. Anfinsen, Y. Hashemian, Z. Yuan, A. Gilje

Productivity Comparison of Different Completion & Stimulation Strategies with Underbalanced
Coiled Tubing Drilling in Gas Carbonate Reservoirs 258
Mohammed AlSaad, Imad Brohi

UBO Efficiency: The Art of Building Resilience Through an Operational Buffer While Flow
Drilling 268
Mohamad Almasri, Andy Thi

Author Index