

SPE Norway One Day Seminar 2019

Bergen, Norway
14 May 2019

ISBN: 978-1-5108-8712-1

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© (2019) by Society of Petroleum Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2019)

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

SESSION 1: DIGITALISATION AND OPTIMISING OPERATIONS EFFICIENCY

PREREQUISITES FOR PERFORMANCE-BASED CONTRACTS: DIGITALIZATION AND DATA SHARING CHANGES BUSINESS MODELS IN E&P SUPPLY CHAIN	1
<i>Francois Laborie ; Marius Biermann ; Audrey Camp ; Morten Sivertsen</i>	
DATA ON WORK – AN UNTAPPED ASSET FOR OPERATIONAL IMPROVEMENTS	8
<i>Alex Clark ; Henrik W. Larsen ; Jan-Erik Nordtvedt ; Bart T. Stafford ; Trond Unneland</i>	
EFFICIENT OPTIMIZATION OF WELL DRILLING SEQUENCE WITH LEARNED HEURISTICS	19
<i>Lingya Wang ; Dean S. Oliver</i>	
A DATA DRIVEN MANAGEMENT STRATEGY TO REDUCE THE ENVIRONMENTAL IMPACT OF UPSTREAM PRODUCTION PLANTS	52
<i>Luca Cadei ; Danilo Loffreno ; Giuseppe Camarda ; Marco Montini ; Gianmarco Rossi ; Piero Fier ; Davide Lupica ; Andrea Corneo ; Lorenzo Lancia ; Diletta Milana ; Marco Carrettoni ; Elisabetta Purlalli ; Francesco Carduccu ; Gustavo Sophia</i>	
DIGITAL WELL PLANNING, WELL CONSTRUCTION AND LIFE CYCLE WELL INTEGRITY: THE ROLE OF DIGITAL EXPERIENCE	64
<i>Bjorn Brechan ; Sigbjorn Sangesland</i>	

SESSION 2: DRILLING I

RESERVOIR STRESS-PATH MEASURED DURING DEPLETION AND RE-PRESSURIZATION IN THE VALHALL FIELD	86
<i>Tron G. Kristiansen ; Andreas Bauer ; Roar Flatebø ; Assia Guida ; Olav-Magnar Nes ; Øyvind Skomedal</i>	
OPENLAB: DESIGN AND APPLICATIONS OF A MODERN DRILLING DIGITALIZATION INFRASTRUCTURE	103
<i>Nejm Saadallah ; Jan E. Gravdal ; Robert Ewald ; Sonja Moi ; Adrian Ambrus ; Benoit Daireaux ; Stian Sivertsen ; Kristian Hellang ; Roman Shor ; Dan Sui ; Stefan I. Sandor ; Marek Chojnacki ; Jacob Odgaard</i>	
RECONSTRUCTION OF PIPE MOVEMENT FROM DOWNHOLE HIGH FREQUENCY MEASUREMENTS	125
<i>Cayeux Eric ; Seim Per ; Solvi L. Jørgen ; Ulvik Håvard ; Solbu Espen</i>	
DRILLING FLUIDS - LOST CIRCULATION TREATMENT	142
<i>Mahmoud Khalifeh ; Karl R. Klungtvedt ; Jan K. Vasshus ; Arild Saasen</i>	
DRILLING FLUID POWER-LAW VISCOSITY MODEL - IMPACT OF MODEL PARAMETERS ON FRICTIONAL PRESSURE LOSS UNCERTAINTY	157
<i>Solveig Riisøen ; Fionn Iversen ; Raoni Brasileiro ; Arild Saasen ; Mahmoud Khalifeh</i>	
PRACTICAL METHOD TO BENEFIT FROM THE IMPROVED ACCURACY OF COMBINING OVERLAPPING WELLBORE SURVEYS	172
<i>Jon Bang ; Tariq Ali ; Adrián Ledroz</i>	

SESSION 3: RESERVOIR I

REAL-TIME FLUID MAPPING ENSURES RESERVE DEVELOPMENT VIA OPTIMIZED HIGH-ANGLE INFILL DRILLING	180
<i>Maria C. Bravo ; Mirza H. Baig ; Nicolas Gueze ; Artur Kotwicki ; Mathias Horstmann ; Yon Blanco ; Carlos Guevara ; Jules El-Khoury ; Paul Scott</i>	
A METHOD FOR ESTIMATION OF MINIMUM EFFECTIVE PORE THROAT RADIUS FROM ROUTINE CORE ANALYSIS DATA IN CHALK AND ITS APPLICATIONS	192
<i>Meysam Nourani ; Niels H. Schovsbo ; Aurelien G. Meyer ; Mirhossein Taheriotaghsara ; Lykourgios Sigalas ; Dan Olsen ; Lars Stemmerik</i>	
EXPERIMENTAL EVALUATION OF OIL RECOVERY MECHANISMS USING A VARIETY OF SURFACE-MODIFIED SILICA NANOPARTICLES IN THE INJECTION WATER	205
<i>Alberto Bila ; Jan Å. Stensen ; Ole Torsæter</i>	
SPARSE REPRESENTATION OF 4D SEISMIC SIGNAL BASED ON DICTIONARY LEARNING	224
<i>Ricardo V. Soares ; Xiaodong Luo ; Geir Evensen</i>	

SESSION 4: PRODUCTION AND WELL OPERATIONS – FIELD CASES

THE IMPACT OF PRODUCTION LOGGING TOOL DATA PLT ON SCALE SQUEEZE LIFETIME AND MANAGEMENT OF SCALE RISK IN NORWEGIAN SUBSEA PRODUCTION WELLS – A CASE STUDY	244
<i>Myles Jordan</i>	
AICD IMPLEMENTATION ON OSEBERG H VESTFLANKEN 2	270
<i>Andreas Lien ; Øyvind Midtveit ; Atle J. Gyllensten ; Martin Halvorsen</i>	
NINE YEARS OPERATIONAL EXPERIENCE OF THE VEGA FIELD – DESIGN, EXPERIENCE, AND LESSONS LEARNED	287
<i>Stephan Hatscher ; Maxim Kiselnikov ; Luis Ugueto ; Bård Norheim ; Viggo Olsen ; Eva Malmanger ; Atle Alvestad</i>	

SESSION 5: DRILLING II

DISRUPTIVE CLAMP-ON TECHNOLOGY TESTED FOR MUD MEASUREMENT	298
<i>Kenneth Olsvik ; Morten H. Jondahl ; Kjell R. Toftevåg ; Remi Kippersund ; Geir Elseth ; Ivar Kjøsnes</i>	
INNOVATIVE AND ESTABLISHED LCM CEMENTING SOLUTIONS COMBINED TO CREATE NOVEL LCM CEMENTING FLUID TRAIN	310
<i>Maximilian Olsen ; Gunnar Lende ; Khahlil Rehman ; Per Haugum ; Jakob Mo ; Geir Smaaskjær ; Randi Næss</i>	
FLOW LOOP TRIAL OF AN AUTONOMOUS DOWNHOLE CHOKE FOR COMPENSATION OF RIG HEAVE-INDUCED SURGE & SWAB	321
<i>Dmitri Gorski ; Martin Kvernland ; Harald Borgen ; John-Morten Godhavn ; Ole M. Aamo ; Sigbjørn Sangesland</i>	

SESSION 6: RESERVOIR II

FAST 4D GEOMECHANICAL MODELING WITH MULTIPLE APPLICATIONS	330
<i>Lasse Renli ; Ole A. Helstrup ; Ganpan Ke ; Nicholas Thompson</i>	
WATER PRESSURE MEASUREMENT INSIDE A HYDROCARBON COLUMN	344
<i>Trond A. Rolfsvåg ; Craig Lindsay ; John Zuta ; Kåre O. Vatne ; Arild Lohne ; Jan E. Iversen ; Ying Guo ; Reza Askarinezhad ; Eirik Undheim ; Tarald Gudmestad ; Arnulf Bye</i>	
ADSORPTION OF CRUDE OIL POLAR COMPONENTS ONTO SILICA-RICH CHALK AND ITS IMPACT ON WETTING	354
<i>Isaac Klewiah ; Iván D. P. Torrijos ; Skule Strand ; Tina Puntervold ; Miltiadis Konstantinopoulos</i>	

SESSION 7: WELL OPERATIONS – INTERVENTION AND INTEGRITY

UNDERSTANDING LOSS MECHANISMS – THE KEY TO SUCCESSFUL DRILLING IN DEPLETED RESERVOIRS?	369
<i>Therese Scheldt ; Jamie S. Andrews ; Alexandre Lavrov</i>	
WELL INTEGRITY – MANAGING THE RISK USING ACCURATE DESIGN FACTORS	386
<i>Bjorn Brechan ; Sigbjorn Sangesland ; Stein Dale</i>	
EFFECT OF MUD ON CEMENT SHEATH INTEGRITY	404
<i>Ragnhild Skorpa ; Benjamin Werner ; Torbjørn Vrålstad</i>	

SESSION 8: DRILLING III

BEST PRACTICES AND RECOMMENDATIONS FOR MAGNETIC DIRECTIONAL SURVEYING IN THE BARENTS SEA	414
<i>Inge Edvardsen ; Erik Nyrrnes ; Magnar G. Johnsen ; Anna N. Willer</i>	
COMPARATIVE STUDY OF SURFACE AND DOWNHOLE DRILLSTRING VIBRATIONS MEASUREMENTS ON A LABORATORY-SCALE DRILLING RIG	429
<i>Ekaterina Wiktorski ; Suranga Geekiyanaage ; Erik Løken ; Dan Sui</i>	
SYSTEMATIC SELECTION OF DRILL-IN AND COMPLETION FLUIDS FOR DEVELOPMENT OF THE DVALIN HT GAS FIELD	445
<i>Oliver Czuprat ; Bjørn O. Dahle ; Ulf Dehmel ; Robert Ritschel ; Jens Storhaug ; Thomas Adrian ; Ian Patey</i>	

SESSION 9: COMPLETION AND WELL INTERVENTION

**WORLD FIRST SIMULTANEOUS JETTING OF 72 LATERALS WITH SOLIDS CONTROL -
TECHNOLOGY DEVELOPMENT AND FIELD TRIAL 471**
*Fabian Bjørnseth ; Tron G. Kristiansen ; Roar Flatebø ; Trond Reinertsen ; Yann Caline ; Ragnhild Østensen ;
Daniel Tomczak ; Kristian Solhaug ; Maximilian Leinenbach ; Thomas Jørgensen*

MULTI-STRING ISOLATION LOGGING - A COST EFFECTIVE SOLUTION FOR P&A 492
Jun Zhang ; Pouya Mahbod ; Randall Shafer ; Dan Mueller ; Callum Anderson

**DISSOLVABLE TECHNOLOGY ENHANCES OPERATIONAL EFFICIENCY OF OFFSHORE
COMPLETION OPERATIONS ON THE NCS 509**
Vijay K. Keerthivasan ; Tom R. Koløy

**STRETCHING LOWER COMPLETION LIMITS: LONGEST ONE SCREEN RUN IN
HORIZONTAL EXTENDED REACH DRILLING / MULTILATERAL WELL ON TROLL FIELD,
NORTH SEA 522**
Mubashir Qamar ; Anders Vold

**PRECISION SURGERY FOR WELL WORKOVER: AN INNOVATION IN WELL
INTERVENTION 538**
M. C. Benguergoura ; J. Bergem

Author Index