Conference Preview

Changing Industry Context – Challenges and Opportunities within Drilling, Reservoir Management and Production

SPE Norway One Day Seminar
18 April 2018 | Hotel Edvard Grieg | Bergen, Norway
The well won’t drill itself. Or will it?

Automated drilling comprises a number of different technologies working together to give safer and more efficient drilling operations. Adapting the right set of technologies is of vital importance. Statoil is at the forefront of automated drilling.
Dear Colleague,

After a couple of really challenging years for the oil and gas industry we now see pessimism turning into optimism as product prices and industry activity is increasing. However, the future is still uncertain, both in the short and long term. Population and economic growth still drives the global need for energy to increase. The focus on energy transition is growing, driven by large positive steps forward in global climate discussions and rapid technology development. At the same time we must remember changing our huge and complex global energy system will inevitably take time and oil and gas will have a very important part in the energy mix for decades to come.

To be competitive in an uncertain future, our industry’s ability to increase efficiency, innovate, develop and make use of new technology is ever important. Rapidly developing digital technologies may become a game changer for our industry. Collaboration between industry players is important to respond actively to challenges and opportunities facing us.

The SPE Norway One Day Seminar will focus on innovation and technology as well as operational challenges and solutions within drilling, reservoir management and production. We truly believe this seminar represents a great opportunity to see the latest technology, update your knowledge and meet companies and industry colleagues to discuss challenges and opportunities in our changing industry context.

We look forward to meeting you in Bergen in April!

Lill Harriet Brusdal
Vice President
Petroleum Technology
Statoil

Petter Sørhaug
Chief Geologist
Aker BP

EVENT

Hosted by Statoil, 2018 marks the event’s relaunch, as the Norway One Day Seminar. The event will embrace its tradition of excellence while incorporating a series of new and exciting changes that will increase its visibility and strengthen its unique position in the marketplace. Whether your goal is to discover new insights, broaden your professional network or showcase your products, the 2018 SPE Norway One Day Seminar offers an unparalleled opportunity.

Who will attend

• Oil and gas professionals, experts, and managers
• Service, supply, and consulting companies
• Universities, research centres, and institutes
• Professional societies and labour unions
• Local, national, and international governmental organisations
• Government regulators
• Non-governmental organisations
• Health, safety, and environment professionals and representatives

Top reasons to attend

• The conference programme encompasses topical panel discussions and technical sessions composed of research-based presentations
• Hear from 50+ industry experts
• Network with 150+ industry peers from across Norway and globally
• Expand your knowledge of the latest technological innovations
• The only dedicated event in Norway to address well, drilling, completion and intervention issues

SPE DISCIPLINES COVERED

- Drilling and Completions
- Management and Information
- Production and Operations
- Health, Safety, Environment and Social Responsibility
- Projects, Facilities and Construction
- Reservoir Description and Dynamics
SCHEDULE OF EVENTS (as of February 2018)

18 April

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TECHNICAL PROGRAMME

Wednesday 18 April 2018

0900-1030

Opening Panel Session: Collaboration for Competitiveness

ROOM: ALEXANDRA
SESSION CHAIRS: LIL HARRIET BRUSDAL, STATOIL AND JAN ERIK NORDVEDT, EPSIS
SESSION MODERATOR: DARCY SPADY, 2018 SPE PRESIDENT

PANELLISTS:

TOM HUUSE, REGIONAL LEADER EUROPE, BAKER HUGHES, A GE COMPANY
ERIK SVERRE JENSSEN, FIELD DEVELOPMENT DIRECTOR, LUNDIN
ARNE KVAMSDAL, DIRECTOR OF BUSINESS DEVELOPMENT, HALLIBURTON AS NORGE
CHARLOTTE TJØLSEN, VP PETROLEUM TECHNOLOGY, STATOIL

Official Opening Session of the Norway One Day Seminar with a special welcome from the Conference Co-Chairs. Hear from our high level industry panellists on what collaboration for competitiveness means for their companies. Why do we need to change for collaboration and what exactly brings about change?

1100-1230

01 Case Studies – Reservoir I

ROOM: ANITRA
SESSION CHAIR: EDEL REISO, STATOIL

The session includes case studies for three North Sea fields: Smørbukk, Grane and Gullfaks Shetland/Lista. The fields represent three quite different types of reservoir, maturity and production strategies. The importance of using cross-disciplinary data is illustrated, in reservoir modelling and history matching, reservoir management and field development. Production data, seismic data and well tests, together with other data, are used in establishing and optimising drainage strategies.

1100 1191313
Value of Cross-disciplinary History Matching in Reservoir Modeling of the Grane Field
M. Moraveji, S. Sinha Roy, A. Ullern, A. Sæbø, R. Elde, Statoil ASA

1130 191312
Developing Gullfaks Shetland/Lista Fractured Carbonate Reservoir – From Hope and Pray to Trial and Error
E.I. Dale, M. Irondelle, S. Jonoud, A. Haugen, S. Aase, O. Eikeberg, Statoil ASA

1200 191348
Reservoir Management of Matured Complex Fields Based on Production Data, Standalone and Reservoir Coupled Modeling: Establishing Optimized Drainage Strategy and Lessons Learned
V. Alipour Tabrizy, M. Siddique, Statoil ASA; A. Mathiassen, Statoil

02 Production Optimisation

ROOM: ALEXANDRA
SESSION CHAIR: ARILD SAASEN, UNIVERSITY OF STAVANGER

Production optimisation is vital in today’s cost management focused operations. This session covers a variety of different production items including proper analysis of sand production and how management of these can be used for optimising a field’s production, as well as looking at statistical methods for improving the oil recovery of the reservoir. To be able to correctly optimise the production, it is also necessary to measure the flow rate of different flow streams. Measurements of phase fractions of hydrocarbon flow will also be discussed.

1100 191302
Innovative Solution to Improve Completion Efficiency and Kick-start Unloading of Low Pressure Formations
R. Gimre, National Oilwell Varco Downhole Tools Division; T. Meyer Valvatne, Statoil ASA

1130 191312
Sand Management – The Key to EOR from Mature Fields. Research into Multiple Production Optimization Applications
G. Malinauskaite, A. Arefjord, FourPhase

1200 00000
Reliably MeasuringPhase Fractions in Hydrocarbon Flows for Effective Production Management
G. Edward, M-Flow

03 Well Integrity

ROOM: BJØRNSON
SESSION CHAIR: JOHN FALLSTROM, HALLIBURTON

During a well’s life cycle, well integrity issues can lead to substantial gaps in production and potential leaks, increasing both cost and risk to an asset’s current and future production. In this session we will focus on various well integrity issues and present material on non-intrusive determination of top of cement and wellbore blockage using Pressure Wave Analysis, a method significantly different from traditional depth determination systems and applications. The session will also look at quantification of barrier system failures in permanently plugged and abandoned wells, a risk-based well-specific approach to assess the quality of a given plug and abandonment design solution and work process and systematisation of the new life Cycle Well Integrity Model (LCWIM). Adding to the safety and reducing NPT, a fully digitalised LCWIM can provide a step change in every activity from planning to final P&A, and it can be a good starting point for an automation process of the drilling process.

1100 1191313
Value of Cross-disciplinary History Matching in Reservoir Modeling of the Grane Field
M. Moraveji, S. Sinha Roy, A. Ullern, A. Sæbø, R. Elde, Statoil ASA

1130 191329
Developing Gullfaks Shetland/Lista Fractured Carbonate Reservoir – From Hope and Pray to Trial and Error
E.I. Dale, M. Irondelle, S. Jonoud, A. Haugen, S. Aase, O. Eikeberg, Statoil ASA

1200 191348
Reservoir Management of Matured Complex Fields Based on Production Data, Standalone and Reservoir Coupled Modeling: Establishing Optimized Drainage Strategy and Lessons Learned
V. Alipour Tabrizy, M. Siddique, Statoil ASA; A. Mathiassen, Statoil
Consequence Quantification of Barrier System Failures in Permanently Plugged and Abandoned Wells
E.P. Ford, Intl Research Inst of Stavanger; F. Moeinikia, University Of Stavanger; O. Arild, H. Lohne, M.M. Majoumerd, Intl Research Inst of Stavanger

Work process and systemation of new Life Cycle Well Integrity Model (LCWIM)
B. Brechan, A. Teigland, NTNU; S. Sangesland, Norwegian University of Science & Technology; S. Dale, NTNU

Non-Intrusive Determination of Top of Cement and Wellbore Blockage Depth Using Pressure Wave Analysis
N. Stewart, G. Jack, S. Hariharan, N. Mackay, Halliburton

An Interactive Decision Support System for Geosteering Operations
S. Alyaev, IRIS; R.B. Bratvold, University of Stavanger; X. Luo, E. Suter, E.H. Vefring, IRIS

Successful Implementation of Real-time Look-ahead Resistivity Measurements in the North Sea
H.K. Hassan, Schlumberger D&M; A.T. Tiku, M.V. Constable, Statoil

Ultra-deep LWD-resistivity is Essential to MapReservoir Structure and Fluid Contacts in a Two-branched Horizontal Producer
F. Antonsen, Statoil

First Time Drilling the Extreme Challenging 5 ¼-inch Section of the Kvitebjørn Field in One Single Run using New Mud Motor Modelling and New Long Life Elastomer
Å. Lauritsen, J. Hodne, Statoil; D. Nobre, H.A. Beeh, S. Ba, Schlumberger

Installation of the Longest High-Performance and Rotating 11-3/4” Solid Expandable Liner on a HPHT Infill Well with Narrow Mud Weight Window
M. ALAHMAD, Total E&P UK Limited; R. Baker, Eventure

Analysis of Asymmetric Tool-joint Wear While Drilling Long Horizontal Sections
E. Cayeux, H. Skadsem, L.A. Carlsen, Intl Research Inst of Stavanger; L. Stokland, S. Cruickshank, Wintershall Norge

Thorough Analysis and Commitment for Improvement Led to a Step Change in the Drilling Performance on Valemon Field, North-sea
H.K. Hassan, Schlumberger D&M; H.A. Beeh, Schlumberger

This session puts theory into practice and will display some great case studies in Drilling. The case studies will give you examples from innovative solutions driving improvement in drilling performance as well as “first time examples”. With a main focus on the North Sea the key words for this session are analysis, step change in performance, expandable liner, HPHT, long horizontal sections, extreme, one single run and off course drilling! A varied and exciting mix!
1330-1530

**06 Reservoir and EOR I**

**ROOM: ALEXANDRA**

**SESSION CHAIR: JAN-ERIK NORDTVEDT, EPSIS**

This session presents novel research into key topics within reservoir studies and Enhanced Oil Recovery of relevance to the Norwegian Continental Shelf and beyond. Topics include studies of efficiency of low salinity injections into seawater-flooded reservoirs, mobilisation of oil in the low permeability zones in reservoirs using temperature switchable polymers, use of silica nanoparticles for improved CO2 foam mobility and use of decades of Norwegian Continental Shelf field data to predict reservoir souring.

1330 Speaker To Be Confirmed

1400 191318 Performance of Silica Nanoparticles in CO2-foam for EOR and CCUS at Tough Reservoir Conditions

1430 191317 Temperature-switchable Polymers for Improved Oil Recovery
R. Reichenbach-klinke, BASF Construction Solutions GmbH; A. Stavland, Intl Research Inst of Stavanger; T. Zimmermann, BASF Construction Solutions GmbH

1500 191334 Low Salinity Eor Effects After Seawater Flooding In A High Temperature And High Salinity Offshore Sandstone Reservoir
Z. Aghaeifar, T. Puntervold, S. Strand, T. Austad, B. Maghsoudi, J. Ferreira, University of Stavanger

1330-1530

**07 Drilling I**

**ROOM: BJØRNSON**

**SESSION CHAIR: JØRN OPSAHL, TOMAX**

In time, depleted reservoirs become a normal consequence in mature fields. With depletion comes new challenges to maintain well safety and field life. It is therefore crucial to develop new technology to ensure safety, efficiency and field prosperity. This session will cover advances within this area including: kick management models, gas influx modelling and well control as well as string measurements and managed pressure cementing techniques.

1330-1530

**08 Completion**

**ROOM: IBSEN**

**SESSION CHAIR: OLAV FLORNES, LUNDIN**

This session covers topics related to all stages of a well’s life cycle from completion through to well monitoring and P&A. Cost efficiency by innovative approaches and standardisation and increased well productivity by optimal choice of completion fluids and downhole instrumentation will be addressed. Operating companies, service companies and the research community will be represented in the lineup of speakers, which will allow a diverse exchange of different viewpoints.

1330 191319 Innovative Test Solutions of Drilling and Completion Fluids to Maximize Well Productivity
Z. Ibragimova, Statoil ASA

1400 191315 Innovative Approaches for Full Subsea P&A Create New Opportunities and Cost Benefits
T. Oia, SINTEF Petroleum Research; M.M. Aarlott, SINTEF Technology & Society; T. Vralstad, SINTEF Petroleum Research

1430 191342 Standardisation Of Well Completions In Statoil On The NCS, History And Current Status
J.R. Drechsler, Statoil ASA
### TECHNICAL PROGRAMME

#### 1500 191304
Real-Time Downhole Measurements During Coiled Tubing Campaign Brings Wells Back to Life  
A.H. Keong, C. Sorensen, Y.A. El Andaloussi, Schlumberger Norge AS

#### 1600-1730

##### 09 Case Studies – Reservoir II

**ROOM**: ANITRA  
**SESSION CHAIR**: SJUR ARNESON, VNG NORGE

An optimised production and optimal business decisions are often not straight forward. This session demonstrates that sometimes thinking beyond the normal paths may result in significant improvements and very profitable solutions. Topics discussed includes production management, field development decisions and well interventions.

#### 1600 191328
Steinper B-1 Straddle Operation and Crossflow Project  
J.N. Vevatne, Statoil ASA

#### 1630 191303
Askeladd Field Development: The Unknown Fairytale Going on in the Barents Sea  
J. Vinje, F. Shoaei Fard Khamseh, Statoil ASA

#### 1700 191330
Increased Production With Automatic Well Control at Heidrun  
E.B. Aske, M. Fredriksen, P. Kittilsen, D. Dudasova, O.T. Gustavsen, Statoil ASA

#### 1600-1730

##### 10 Reservoir and EOR II

**ROOM**: ALEXANDRA  
**SESSION CHAIR**: ALEXANDER OLSEN, WINTERSHALL

This session will include two reservoir simulation studies that illustrate different EOR aspects are presented. One study investigates the effects on wettability caused by surfactant imbibition at core scale in a naturally fractured reservoir. The second study uses a two-factor production model and least-squares Monte-Carlo algorithm to do a fast analysis of optimal IOR start time. The final paper will present an improved PVT data correlation for crude oil systems, developed in a study using NCS data.

#### 1600 191327
Fast Analysis of Optimal IOR Start Time Using a Two-Factor Production Model and Least-Squares Monte Carlo Algorithm  
A. Hong, R.B. Bratvold, The National IOR Centre of Norway / University of Stavanger; L.W. Lake, The University of Texas At Austin

#### 1630 191309
Simulation Study on Surfactant Imbibition Mechanisms in Naturally Fractured Reservoirs  
X. Cheng, J. Kleppe, O. Torsæter, Norwegian University of Science and Technology

#### 1700 191296
An Improved Correlation Approach to Predict Viscosity of Crude Oil Systems on the NCS  
X.J.B. Moller, K.K. Meisingset, Statoil ASA; I.H. Arief, Statoil Norway

#### 1600-1730

##### 11 Drilling II

**ROOM**: BJØRNSON  
**SESSION CHAIR**: KJELL-RUNE HOFF, BAKER HUGHES, A GE COMPANY

This session will cover three different studies. The first session will investigate how the use of aluminium drill pipe could mute drill string vibrations. In the second session we will dig deeper and discover the effects of nanoparticles in water based drilling fluids and the third session will unveil the influence of compass direction and trajectory of MWD Survey Errors and the importance of error modelling.

#### 1600 191332
The Use of Aluminum Drill Pipe for Damping Drill String Vibrations  
M. Dziekonski, C.F. Brown, ALTISS Technologies; A. Saasen, University of Stavanger

#### 1630 191307
Effect of Bn, Fe2o3 and Fe2o4 Nanoparticles on the Performance of Polymer and Kcl Treated Water Based Drilling Fluid  
M. Belayneh, M. Awais Ashfaq Alvi, K. Fjelde, B.S. Aadnoy, University of Stavanger

#### 1700 191341
Influence of compass direction and trajectory on MWD Survey Errors  
B. Brechan, R.H. Kazmi, NTNU; S. Sangesland, Norwegian University of Science & Technology; S. Dale, NTNU
While data driven production optimisation has increasing focus in the industry, physical modelling of the reservoir still forms the basis for reservoir management. This session will focus on improved methods for history matching of reservoir models, both from a methodology point of view and from an application view and supported by case studies and numerical experiments.

**Correlation-Based Adaptive Localization for Ensemble-Based History Matching: Applied to the Norne Field Case Study**
X. Luo, Intl Research Inst of Stavanger; R. Lorentzen, IRIS; R. Valestrand, IRIS

**Use of 4D Seismic to Boost the Profitability of Infill Drilling in an Offshore Sandstone Oil Field**
B. Daramola, Propellio Limited

**A Novel Ensemble-Based Trust-Region Optimization in Combining Conjugate Gradient for Reservoir Management**
Y. Zhang, Universitetet i Stavanger/The National IOR Centre of Norway; A.S. Stordal, Institute of Marine Research; R.J. Lorentzen, Y. Chang, Intl Research Inst of Stavanger
FUTURE LEADERSHIP PROGRAMME

As part of the Future Leadership Programme, the SPE Norway One Day Seminar will host a dedicated Student Evening and a Lunch Session at the event for both students and Young Professionals*.

The Student Evening will take place on 17 April and will be an informal reception including drinks and canapés. Places are limited and pre-registration will be required. The Lunch Session will provide participants with an opportunity to discuss industry and career topics with our two guest speakers who will be sharing their experiences of leadership and offering some thoughts and advice for the audience of Young Professionals and students as they embark on their own career.

*S to qualify as a Young Professional you should be a Professional SPE Member under the age of 36.

SCHEDULE

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<th>Confirmed Speaker(s)</th>
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<td>Tuesday 17 April</td>
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<tr>
<td>Student Evening</td>
<td>1900 - 2100</td>
<td>Magda Restaurant and Bar, Kong Oscars gate 5, Bergen</td>
<td>Darcy Spady, 2018 SPE President</td>
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<td>Wednesday 18 April</td>
<td>1230 – 1330</td>
<td>Hotel Edvard Grieg</td>
<td>Hugo Dijkgraaf, Managing Director, Wintershall Norge, Malin Torsæter, Research Manager, SINTEF Industry, Petroleum</td>
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GENERAL INFORMATION

COFFEE BREAKS/LUNCHEON

All coffee breaks and lunch will take place in the exhibition hall and are available for all attendees.

RECEPTION

The conference reception will be held in the Exhibition area on 18 April from 1730 to 1830 hours.

BADGES

Attendee badges will be available for collection at the registration desk on Wednesday 18 April from 0800 hours, badges are not mailed in advance.

EVENT REGISTRATION FEES

Full delegate registration includes technical sessions, entry to the exhibition, coffee breaks, lunch, reception, and one copy of the Conference Proceedings.

Student registration includes technical sessions, entry to the exhibition, coffee breaks, lunch and the reception. The Conference Proceedings are not included, but can be purchased separately.

CANCELLATION AND REFUND POLICY

Cancellations must be submitted in writing to the SPE Office in London at formslondon@spe.org. Cancellations prior to 21 February 2018 will receive a full refund less a USD 75 handling fee. Cancellations received on or between 21 February 2018 and 21 March 2018 inclusive, will receive a 50% refund. For cancellations after 21 March 2018, no refunds will be paid although substitutions can be made.

This refund Policy applies to all refunds except in the event that the UK Foreign & Commonwealth Office issues or designates an “Advise against all travel” travel advisory for Bergen and/or Norway for the dates of the event (“Travel Advisory”). In the event of a Travel Advisory, (i) SPE may, at its sole option, change the location and/or dates of the event (“Relocated Event”) and, (ii) delegates may, at their sole option, request a full refund without penalty or, in the event of a Relocated Event, have the registration transferred to the Relocated Event.

In the unlikely case of cancellation of an event by SPE, SPE shall not accept liability for any consequential loss and shall have no liability to reimburse any other costs that may have been incurred, including transport costs, accommodation etc. SPE encourages delegates to take out travel insurance when making travel and accommodation arrangements.

ABOUT SPE

The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose members are engaged in energy resources development and production. SPE serves more than 158,000 members in 143 countries worldwide. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its publications, events, training courses, and online resources at www.spe.org.

SUSTAINABILITY STATEMENT

SPE is committed to ensuring that the environmental impact of our events is kept to a minimum. We aim to make progress in the field of sustainability through reducing energy usage, promoting eco-friendly mobility, reducing water consumption and limiting waste, all core values in keeping with those of the oil and gas industry.