



## Technical Sessions

### Monday, 20 September: Morning

1030–1200

Auditorium

Opening General Session

#### GAS MARKET VARIABLES IN THE GLOBAL ENERGY EQUATION

After four decades of nearly uninterrupted growth, worldwide demand for natural gas is expected to continue increasing at an average rate of 1.5% over the period from 2007 to 2030. It is nearly double the average rate increase in oil demand over the same period. The increasing role of gas is driven not only by cost, but also significantly, by its lower environmental impact and reduced greenhouse gas emissions compared to all other fossil fuels.

Join a panel of E&P industry experts as they discuss what will be required to satisfy future demand as well as the requirements for implementation of successful solutions to enable the globalization of gas.

Moderator

**Andrew Gould**, CEO, Schlumberger



Andrew Gould is chairman and CEO of Schlumberger Limited, a position he has held since February 2003.

Prior to this, Gould was president and chief operating officer, Schlumberger Limited; executive vice president, oilfield services; president of Schlumberger Wireline and Testing; and president of Sedco Forex. He previously held a series of financial and management in Asia, Europe, and the United States.

Gould is a member of the boards of directors of Schlumberger Limited and of Rio Tinto plc. He serves on the commercialization advisory board of Imperial College, London. He is a member of the Advisory Board of the King Fahd University for Petroleum and Minerals, Dhahran, Saudi Arabia and of the Board of Trustees of The King Abdullah University of Science and Technology in Jeddah, Saudi Arabia.

Gould joined Schlumberger in 1975 in Paris, after working for Ernst & Young. He received his degree in economic history from the University of Wales. He holds an honorary Doctorate in engineering from the Colorado School of Mines and is an honorary Fellow of Cardiff University.

## Panelists

**Gregg Hill**, Executive Vice President and President, Worldwide Exploration and Production, Hess



Greg Hill is executive vice president and president of Exploration and Production for Hess Corporation, a global, integrated energy company based in New York City. He is also a member of the company's Board of Directors.

Hill joined Hess in January 2009 after spending 25 years in a range of operations, engineering, technical, and business leadership roles at Shell.

From 2006 to 2008, he was executive vice president – Exploration and Production of Singapore-based Shell Asia Pacific. He also served as chairman of the company's Global Production Leadership Team.

From 2003 to 2006, Hill was based in Aberdeen, Scotland as Vice President of Production for Shell E&P Europe -- Shell's largest producing region. In 2002, he led the integration of Enterprise Oil into Royal Dutch Shell (RDS) as its Director. From 1997 to 2002, Hill served as Senior Vice President of Aera energy, a joint-venture of Shell and Mobil in California. He began his career in a variety of roles at Shell in the U.S. and Europe.

Hill holds a bachelor's degree in Mechanical Engineering from the University of Wyoming.

**Yan Cunzhang**, President, PetroChina Company Ltd.



Yan Cunzhang has been serving in CNPC since 1984. Since 2005, he has been the president of CCAD and responsible in Petro-China for management and coordination of foreign-involved projects within the country.

Cunzhang held positions as chief geologist and deputy GM of CNPC Development Bureau and later an assistant GM of Petro-China E&P Co.—all for oil/gas-field development technical management. Before 1996, he was engaged in oil/gas field development evaluations, in the positions of deputy head and head for the development section of RIPED.

As well as being an SPE member, Cunzhang is now the president of Petro-China Foreign Corporation Administration Department (CCAD) and is an assistant director for the Petroleum Engineering Committee of Chinese Petroleum Society.

Cunzhang studied at the China University of Petroleum and Petro-China Research Institute of Petroleum Exploration and Development (RIPED) and obtained a PhD in oil/gas development engineering.

**Sara Ortwein**, President, ExxonMobil Upstream Research Company



Sara N. Ortwein is the president of ExxonMobil Upstream Research Company. Over her career, Ortwein has had numerous technical, operations, and planning assignments within the Upstream. She held a variety of positions within US Production operations working in New Orleans, Midland, and Houston.

From 2004–2006, she was production manager with US Production and was responsible for all ExxonMobil-operated production operations in the US. In 2003, she transferred to Houston as deputy production manager for US Production. From 2001 to 2003, she worked as advisor to the upstream director

at the corporate headquarters.

Following the ExxonMobil merger in 1999, Ortwein went to Production Central Technology as the reservoir engineering manager, responsible for production reservoir engineering worldwide. From 1997–1999, she was the reservoir evaluation and planning manager for Exxon Ventures, CIS, where she worked on new venture capture in Russia, Azerbaijan, and Kazakhstan.

Ortwein graduated from the University of Texas in 1980 with a bachelor's degree in civil engineering and joined Exxon out of college as a drilling engineer.

**Michael Stoppard**, Managing Director, IHS CERA



Michael Stoppard, IHS CERA managing director, is a member of IHS CERA's Energy Research Council.

In 2009–10, Stoppard led the development of the IHS CERA Energy Scenarios. He is a specialist in the international gas business and is responsible for the development and coordination of IHS CERA's global and interregional analysis of liquefied natural gas (LNG).

Before joining IHS CERA, Stoppard was a research fellow at the Oxford Institute for Energy Studies. He also served as a Parliamentary Special Advisor on energy regulation for the House of Commons Trade and Industry Committee in the UK.

He is the author of numerous IHS CERA reports, including analyses of business models, gas and power convergence in Europe, and LNG shipping. He was coauthor with Daniel Yergin of *The Next Prize*, published in *Foreign Affairs*.

Stoppard holds an honors degree from the University of York.



## Technical Sessions

### Monday, 20 September: Afternoon

1400–1745

Room 1

#### SEISMIC AND GEOLOGICAL MODELING

Session Chairpersons: **Behnam Jafarpour**, Texas A&M University  
**Calvin Kessler**, Halliburton

This session offers insight into new advances and techniques being applied to solve complex problems in a variety of geologic settings—from unconventional shale to carbonate reservoirs.

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|------|--------|--|
| 1400 | 134466 | <b>Enhanced Seismic Velocity Processing To Improve 3D Geopressure Evaluation</b><br>P. Cibir, M. Della Martera, C. Andreoletti, Eni; N. Bellucci, International Egyptian Oil Company   |
| 1425 | 134582 | <b>3D Visualization and Classification of Pore Structure and Pore Filling in Gas Shales</b><br>C. Sisk, E. Diaz, J. Walls, A Grader, M. Suhrer, , Ingrain  |
| 1450 | 134222 | <b>Coil Shooting on Tulip Discovery: Seismic Processing Challenges, Opportunities, and Results</b><br>M. Buia, R. Vercesi, Eni; M. Tham, WesternGeco   |
| 1515 | 135007 | <b>4D Monitoring and Characterizing of Marimba Field, Offshore Brazil</b><br>K.T. Lima, V.M. Reis, S.R. Malagutti, Petrobras   |
| 1605 | 135135 | <b>The Impact of Hierarchical Fracture Networks on Flow Partitioning in Carbonate Reservoirs: Examples Based on a Jurassic Carbonate Ramp Analog From the High Atlas, Morocco</b><br>S.M. Agar, ExxonMobil; S. Geiger, Heriot-Watt University; S.K. Matthai, Montan Universitat Leoben; R. Alway, ExxonMobil; S. Tomas, Universitat Potsdam; A. Immenhauser, Ruhr Universitat Bochum; R. Shekhar, ExxonMobil; J. Paul, Imperial College; G. Benson, Z. Karcz, ExxonMobil; L. Kabiri, Errachicha University |

- 1630 134683 **Volumetric Fracture Modeling Approach (VFMA): Incorporating Microseismic Data in the Simulation of Shale Gas Reservoirs**  
A. Harikesavanallur, F. Deimbacher, M.V. Crick, P.G. Forster, X. Zhang, Schlumberger
- 1655 133301 **Upgridding Method for Tight Gas Reservoirs**  
M.G. Kelkar, M. Atiq, University of Tulsa
- 1720 134978 **Solid Earth Modeling and Geometric Uncertainties**  
J. Mallet, A. Tertois, Paradigm
- ePoster 134092 **Integration of 3D Seismic and Reservoir Simulation for Remaining Oil Exploitation in a Heavy Oil Field: A Case Study**  
Y. Ling, China National Petroleum; X. Huang, SunRise PetroSolutions Technology; X. Guo, Y. Cai, China National Petroleum
- ePoster 130257 **Classification of Oil and Gas Reservoirs Based on Recovery Factor: A Data-Mining Approach**  
A. Sharma, Schlumberger; S. Srinivasan, L.W. Lake, University of Texas at Austin

## Room 2

### WELL AND INFLOW PERFORMANCE

Session Chairperson: **Philippe Legrand**, Baker Hughes

This session addresses horizontal and vertical well performance, inflow profiling and control, and distributed pressure and temperature modeling.

- 1400 135073 **Rate Allocation: Combining Transient Well Flow Modeling and Data Assimilation**  
R.J. Lorentzen, O. Saevareid, G. Naevdal, International Research Institute of Stavanger
- 1425 133570 **Production Logging Case Studies: What Can We Say About the Well, in Addition to the Downhole Flow Profile?**  
M.M. Eisa, S. Joshi, F. Altajar, M. Sobeih, O. Alhussini, Schlumberger; G. Alsafadi, Gulf Sand Petroleum
- 1450 135321 **Enhanced Production Profiling of Gas Wells Using a New Method To Model the Geothermal Temperature Gradient**  
M.D. Johnson, ProTechnics; M.G. Briceno, Occidental; A.C. Hutchings, D.R. George, ProTechnics

- 1515**      **133452**      **Well Productivity Index Degradation: Applied Modeling Workflow**  
L.A. Saputelli, J. Perez, Hess; A.J. Chacon, C. Lopez, J. Patino, Halliburton; M. Eggenschwiler, Statoil
- 1605**      **133336**      **Horizontal Well Optimization With Inflow Control Devices (ICDs) Application in Heterogeneous and Dipping Gas-Capped Oil Reservoirs**  
R.A. Karim, M. Nuriyadi, Petronas; K.F. GordonGoh, Schlumberger; N.A. Ahmad, E. Leung, Schlumberger; J.A. Murison, Reslink
- 1630**      **135156**      **Optimization of Production With ICV by Using Temperature Data Feedback in Horizontal Wells**  
Z. Li, D. Zhu, Texas A&M University
- 1655**      **133869**      **Multidimensional Reservoir Description and Data Integration Using Time-Space Wavelet Analysis**  
A.A. Awotunde, R.N. Horne, Stanford University
- 1720**      **135223**      **Estimating Near-Wellbore Permeability in Horizontal Wells From Distributed Pressure Measurements Using an Adjoint-Based Minimization Algorithm**  
F.F.Zinati, J.D. Jansen, S.M. Luthi, Delft University of Technology
- ePoster**      **135182**      **A Modified Genetic Algorithm for Horizontal Well Placement Optimization in Gas Condensate Reservoirs**  
A.N. Morales, H. Nasrabadi, D. Zhu, Texas A&M University
- ePoster**      **135249**      **Meeting the Challenges in the Down-hole Scale Control for High-Water-Production Horizontal Wells and Environmental Sensitive Part of the Norwegian North Sea**  
P. Chen, H. Montgomerie, T.H. Hagen, O. Vikane, B. Juliussen, T. Haaland, T. Chen, Champion Technologies
- ePoster**      **133479**      **Production Logging in Highly Deviated and Horizontal Wells: Moving From Qualitative to Quantitative Answers**  
A. Gysen, M. Gysen, ISP; A. Zett, M.J. Webster, G.H. Yusti, , BP

### Room 3

## REMEDIAL OPERATIONS

Session Chairpersons:      **Juan Mantecon**, SPT Group  
   **Benny Troelsen**, Maersk Oil

Well complexity has increased significantly over the last two decades introducing multizone completions, long horizontal wells, multilateral completion amongst others and moving towards more advanced enhanced oil

recovery systems. This together with an increased focus on well integrity has significantly impacted the challenges when conducting remedial operations. In this session, we will learn more about these challenges and how they have been addressed around the world.

- 1400**    **135101**    **[Successful High-Temperature, Water-Control Case Histories in Highly Naturally Fractured Carbonate Reservoirs](#)**  
M. Mercado, J.C. Acuna, R. Hernandez, Pemex; J.E. Vasquez, E. Soriano, C. Caballero, Halliburton
- 1425**    **134423**    **[Resolving a Water Short Cut Between Old Wells With Multiple Completion Zones: Example in the Dan Field](#)**  
K. Eriksen, O.E. Hansen, N. Van der Post, Maersk Oil
- 1450**    **134257**    **[The Recommended Practice for Surface Casing Vent Flow and Gas Migration Intervention](#)**  
H.J. Slater, PennWest Energy
- 1515**    **133056**    **[Well Integrity Assessment and Assurance: The Operational Approach for Three CO2 Storage Fields in Italy](#)**  
P. D'Alesio, ProEnergy; R. Poloni, P. Valente, P.A. Magarini, Eni
- 1605**    **134473**    **[CO2-Induced Changes in Oilwell Cements Under Downhole Conditions: First Experimental Results](#)**  
A. Garnier, J. Laudet, Total; N. Neuville, Y. Guen, Oxand; D. Fourmaintraux, DFi Ingenierie; N. Rafai, Lerm; J. Shao, LML
- 1630**    **134500**    **[A Case History: The Installation of a Damaged Controlline Replacement Safety Valve System in a North Sea Well](#)**  
T. Barratt, B. Goldsworthy, S. Hamilton, Shell; R.D. Lacy, M. Taylor, A. Ross, S. Mackie, E. Calzoncinth, S. Dennistoun, J. Jacob, Weatherford
- 1655**    **131917**    **[Stimulating Khuff Gas Wells with Smart Fluid Placement](#)**  
F.O. Garzon, R. Amorocho, M. Al-Harbi, N.S. Al-Shammari, A. Al-Ruwaished, M. Ayuh, Saudi Aramco; W. Kharrat, V. Burarov, J.G. Jacobsen, G. Brown, J.V. Noya, Schlumberger
- 1720**    **134389**    **[New Real-Time Data Communication System Enhances Coiled Tubing Operations](#)**  
M.J. Taggart, N.A. Murray, T. Sturgeon, BJ Services; W. McNeil, Talisman Energy

- ePoster 134843 [Cost-Effective Field Applications Utilizing Coiled-Tubing Inflatable Packer System in South Mexico](#)  
F. Cazares-Robles, J. Rodriguez, A. Moreno, M. Noguez Lugo, G. Tellez, Pemex; R. Aviles, S.D. Cesin, E.G. Lian, Schlumberger
- ePoster 135300 [Innovative Well-Intervention Solutions Using Spoolable Connector](#)  
R.G. Howard, J.I. Hriscu, M.A. Ehtesham, Halliburton
- ePoster 134950 [Breaking the Boundaries for Wireline Sand Removal](#)  
O.E. Karlsen, Welltec; E. Mathiassen, Statoil

#### Room 4

### HOW WE BOOK RESERVES AND WHAT INFLUENCES OUR ANALYSIS

Session Chairpersons: **Fazrie Wahid**, Schlumberger  
**Scott Shipley**, DeGolyer and MacNaughton

This session covers several topics related to booking reserves, as well as presentations on resource plays mature assets.

- 1400 134014 [Reserves Overbooking: The Problem We're Finally Going to Talk About](#)  
W. Lee, G.T. Olsen, T.A. Blasingame, Texas A&M University
- 1425 134057 [Building on PRMS to Quantify Risk and Uncertainty in Resource Reconciliations](#)  
J.R. Etherington, PRA International; C.B. Stabell, GeoKnowledge
- 1450 134237 [Qualifying Seismic as a "Reliable Technology": An Example of Downdip Water-Contact Location](#)  
R.E. Sidle, Consultant; W.J. Lee, Texas A&M University
- 1515 134852 [Development of Marcellus Shale in Pennsylvania](#)  
R.A. Belvalkar, S. Oyewole, Pennsylvania State University
- 1605 133458 [Integrated Use of Natural Gas in Rural China](#)  
M.J. Economides, University of Houston; X. Wang, Xgas
- 1630 135453 [Rethinking World Oil-Shale Resource Estimates](#)  
K. Biglarbigi, P. Crawford, M. Carolus, C.S. Dean, Intek
- 1655 135239 [E&P: Mature-Asset Expertise](#)  
M.T. Garcia-Blanco, R.N. Seltzer, A. Chernacovs, G. Laria, Repsol YPF

1720 133787 **Solving Future Challenges: Understanding Factors That Influence Innovation**  
A. Singh, Smith International

## Room 5

### FORMATION EVALUATION CHALLENGES — SHALE/TIGHT GAS RESERVOIRS

Session Chairpersons: **Annie Audibert-Hayet**, Total  
**Leon Beugelsdijk**, Shell

This session highlights the formation evaluation challenges and advancements made to date in identifying and evaluating shale gas and tight gas reservoirs. Previously referred to as “unconventional” reservoirs, petrophysics techniques are now being applied more routinely to characterize and identify these productive reservoirs.

1400 133128 **Quantifying Source Rock Maturity From Logs: How To Get More Than TOC From Delta Log R**

B. Lecompte, G. Hursan, Baker Hughes

1425 134292 **Gas-Shale Reservoir Characterization: A North Africa Case**

V. Chelini, A. Muttoni, M. Mele, E. Rossi, R.F. Galimberti, A. Ortenzi, Eni

1450 134559 **Integrating Core Data and Wireline Geochemical Data for Formation Evaluation and Characterization of Shale-Gas Reservoirs**

J. Quirein, J. Witkowsky, J.A. Truax, J.E. Galford, Halliburton; D. Spain, T. Odumosu, BP

1515 132990 **Petrophysical Evaluation for Enhancing Hydraulic Stimulation in Horizontal Shale Gas Wells**

D. Buller, S.N. Hughes, J. Market, J.E. Petre, Halliburton; D.R. Spain, BP

1605 135569 **The Maturity of Organic-Rich Shales Using Microimpedance Analysis**

K.C. Mba, M. Prasad, M.L. Batzle, Colorado School of Mines

1630 135615 **Petrophysical Integration to Approach Tight Gas Sand Reservoir Characterization Problems in Cuervito Surfield, Mexico**

L.R. Munoz, A. Ochoa, Petrobras; M. Acosta, Pemex; F.J. Brito, Fugro-Jason

1655 134539 **Petrophysical Characterization of Barnett Shale**

S.V. Kale, C.S. Rai, C.H. Sondergeld, University of Oklahoma

1720 133685 **Logging-While-Drilling in Unconventional Shales**

J. Market, J. Quirein, Halliburton; J. Pitcher, D. Hinz, D. Buller, C. Al-Dammad, D. Spain, T. Odumosu, BP

**ePoster 134494 Study of Unusual Responses from Multiple Resistivity Tools in the Bossier Formation of the Haynesville Shale Play**

B. Corley, A. Garcia, H. Maurer, M.B. Rabinovich, Z. Zhou, Baker Hughes; P. DuBois, N. Shaw Jr., J-W Operating

**Room 6**

**ADVANCES IN SAND CONTROL TECHNOLOGY**

Session Chairpersons: **Mike Barry**, ExxonMobil  
**Martin Coronado**, Baker Hughes

This session covers advances in open and casedhole gravel-packing techniques, hardware development, and methods to assess gravel-pack placement and completion effectiveness.

**1400 135294 Comparison of Inflow Performance and Reliability of Openhole Gravel Packs and Openhole Standalone Screen Completions**

R.C. Burton, R.M. Hodge, ConocoPhillips

**1425 134319 Openhole Gravel-Pack Case Histories in Wells Drilled With a Synthetic Mud: Successful Implementation of an Alternative Method in Oyo Field, Nigeria**

G. Ripa, Eni; M. Rossi, D. Staltari, Nigerian Agip Exploration; M. Ilobi, T. Lawal, Allied Energy; M. Beldongar, T. Douglas, P. Wassouf, Schlumberger; A. Jones, M-I SWACO; M. Parlar, Schlumberger

**1450 135102 Extending Openhole Gravel-Packing Capability: Initial Field Installation of Internal Shunt Alternate Path Technology**

M.T. Hecker, M.D. Barry, C.M. Sweeney, S.P. Arnold, C.S. Yeh, ExxonMobil

**1515 135060 Gravel Pack Imager Tool (GPI): Precise and Accurate Knowledge of Gravel Pack Integrity**

R.C. Hertzog, Applied Physics and Measurements; J.E. Smaardyck, Wood Group Logging Services; D.K. Steinman, Applied Physics and Measurements

**1605 135441 Improving Well Productivity Through Openhole Frac-Pack Completion Design**

E.J. Kamps, J.M. Chando, ExxonMobil; R.C. Ellis, Mullen Energy

**1630 134347 A Pragmatic Approach to Frac-Pack Tool Erosion Qualification Testing**

N.J. Clem, A.C. Hammer, M.M. O'Connel, A. da S. Amaral, Baker Hughes

- 1655**    **132959**    **Years of Success With Premium Expandable Screens System Through Managed Applications and Installation**  
G. Ripa, Eni; E.G. Bowen, A. Conte, Baker Hughes
- 1720**    **135114**    **A Gravel Pack System That Allows Continuous Chemical Treatment to the Pay Zone Without Interrupting Production**  
N.D. Surveyor, A.D. Amaral, G. Kaiser, N.E. Faria, K. Gault, Baker Hughes; M.F. da Silva, H. Moura, J. Nuno, Petrobras; K. Woodford, i-Quip Technology
- ePoster**    **134386**    **Friction Pressure Performance of Commonly Used Viscous Gravel-Packing Fluids**  
S. Jain, B.R. Gadiyar, B.P. Stamm, C. Abad, M. Parlar, Schlumberger; S.N. Shah, University of Oklahoma
- ePoster**    **134492**    **Enhancing Sand Screen Reliability: An Innovative, Adaptive Approach**  
C.S. Yeh, T. Moffett, M.D. Barry, M.T. Hecker, D.A. Howell, ExxonMobil; A. Green, G. Gillespie, C.A. Hall, S. McNamee, Weatherford

## Room 7

### HYDRAULIC FRACTURING

Session Chairpersons:    **Rick Gdanski**, Halliburton  
   **Javad Paktinat**, Trican Well Service

Demonstrates methods to model, match, and understand the complex fracture structures that are now known to be created as revealed with microseismic fracture mapping in shales and other hard-rock formations. Discusses optimization methods based on historical experience, pressure matching, conductivity generation, and other techniques.

- 1400**    **133456**    **Thirty Years of Gas Shale Fracturing: What Have We Learned?**  
G.E. King, Apache
- 1425**    **133877**    **Hydraulic Fracture Monitoring to Reservoir Simulation: Maximizing Value**  
C.L. Cipolla, M.J. Williams, X. Weng, M.G. Mack, S.C. Maxwell, Schlumberger
- 1450**    **133380**    **Methods for Enhancing Far-Field Complexity in Fracturing Operations**  
L.E. East, M.Y. Soliman, J.R. Augustine, Halliburton
- 1515**    **134491**    **Role of Stress Reorientation in the Success of Refracture Treatments in Tight Gas Sands**  
N.P. Roussel, M.M. Sharma, University of Texas At Austin

- 1605**    **134490**    **[A Comparison of Hydraulic Fracture Modeling With Downhole and Surface Microseismic Data in a Stacked Fluvial Pay System](#)**  
N. Mohammad, J.L. Miskimins, Colorado School of Mines
- 1630**    **135034**    **[A New Approach to Generating Fracture Conductivity](#)**  
M.R. Gillard, O.O. Medvedev, A. Pena, A. Medvedev, Schlumberger; F. Penacorada, E. D'Huteau, YPF
- 1655**    **135502**    **[Proppant Selection and Its Effect on the Results of Fracturing Treatments Performed in Shale Formations](#)**  
J.M. Terracina, J.M. Turner, D.H. Collins, S.E. Spillars, Hexion
- 1720**    **134595**    **[Improved Production and Profitability Achieved With Superior Completions in Horizontal Wells: A Bakken/Three Forks Case History](#)**  
R.R. Rankin, M. Thibodeau, Brigham Exploration; M.C. Vincent, Consultant; T.T. Palisch, CARBO Ceramics
- ePoster**    **132932**    **[The Fracturing Deep Non-Conventional Volcanic Reservoir: A Case Histories Raageshwari Gas Field, Onshore India](#)**  
S. Vermani, A. Gupta, N. Purusharthy, Cairn Energy; S.M. Stolyarov, G. Arora, G.D. Dean, BJ Services

## Room 8

### LOW SALINITY AND CHEMICAL EOR

Session Chairpersons:    **Torsten Clemens**, OMV Exploration/Production  
   **Pacelli Zitha**, Delft University of Technology

This session discusses various aspects of low salinity waterflooding and chemical EOR processes, including the chemical and physical mechanisms. Presentations in this session discuss many current EOR topics from laboratory, theory, modeling, and field application perspectives.

- 1400**    **135599**    **[Effect of Dispersant on Asphaltene Suspension Dynamic: Aggregation and Sidimentation](#)**  
S.M. Hashmi, A. Firoozabadi, Yale University
- 1425**    **132154**    **[Oil Recovery Increases by Low-Salinity Flooding: Minnelusa and Green River Formations](#)**  
E.P. Robertson, Idaho National Laboratory
- 1450**    **135265**    **[ASP Flooding of Viscous Oils](#)**  
R. Kumar, K.K. Mohanty, University of Texas at Austin

- 1515    135543    **Scaleup Methodology for Chemical Flooding**  
F. Veedu, M. Delshad, G.A. Pope, University of Texas at Austin
- 1605    134459    **A Discussion of the Low Salinity EOR Potential for a North Sea Sandstone Field**  
A. Rezaeidoust, T. Puntervold, T. Austad, University of Stavanger
- 1630    134042    **Low Salinity Waterflooding and Mineral Dissolution**  
H. Pu, X. Xie, P. Yin, N.R. Morrow, University of Wyoming
- 1655    133808    **Study on Remaining Oil Distribution After Polymer Injection**  
J. Cheng, J. Wei, Daqing Oilfield Company; K. Song, Northeast Petroleum University;  
H. Peihi, Daqing Oilfield Company
- 1720    134203    **Foam Assisted Gas Oil Gravity Drainage in Naturally Fractured Reservoirs**  
R. Farajzadeh, L.M. Wassing, P.M. Boerrigter, Shell
- ePoster    135357    **The Effect of Live Crude on Alkaline-Surfactant-Polymer Formulations:  
Implications for Final Formulation Design**  
J. Southwick, Y. Svec, G. Chilek, G.T. Shahin, Shell
- ePoster    134895    **Development and Usage of an Etched Transparent Flow Cell for Visualisation  
of Biofilm-Induced Heterogeneities in Porous Media Using Particle-Image  
Velocimetry**  
G.M. Van Der Kraan, F. Buijzen, M. De Ridder, B. Thuss, M. Laros, C. Poelma, Delft  
University of Technology; B. Lomans, Shell; G. Muyzer, M. Van Loosdrecht, H. Bruining,  
Delft University of Technology



## Technical Sessions

### Tuesday, 21 September: Morning

0900–1200

Room 1

#### EVALUATIONS AND MODELING

Session Chairpersons: **Evan Graybill**, Chevron  
**David Aron**, Petroleum Development Consultants

This session covers evaluations of unconventional production, facility expansion, subsea processing, and sour-field development. Modeling subjects include water hammer in off loading systems and offshore inline separation technology.

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| 0900 | 134140 | <b>Water Hammer in Offloading Systems: Contribution of Detailed Modelling to Design and Safety</b><br>B. Pierre, J.S. Gudmundsson, Norwegian University of Science and Technology          |
| 0925 | 135329 | <b>Unconventional Well Profitability vs Asset Profitability</b><br>L. Sedillos, R. Roundtree, Global Geophysical; J.D. Wright, Wright Consulting; J.L. Miskimins, Colorado School of Mines |
| 0950 | 135492 | <b>Revolutionizing Offshore Production by Inline Separation Technology</b><br>R. Fantoft, R. Akdim, R. Mikkelsen, T. Abdalla, R. Westra, E. de Haas, FMC Technologies                      |
| 1045 | 134678 | <b>Modeling Facility Expansion Options Under Uncertainty</b><br>C.J. Jablonowski, H. Ramachandran, L. Lasdon, University of Texas at Austin  |
| 1110 | 135723 | <b>Multiphase Flow Splitting in Parallel/Looped Pipelines</b><br>L. Alvarez, R.S. Mohan, O. Shoham, University of Tulsa; C. Avila, Chevron   |

## Room 2

### DIGITAL ENERGY: TECHNOLOGY AND STANDARDS

Session Chairperson: **Roger Murray**, BP  
**Mike Konopczynski**, WellDynamics

The session provides both the experience and challenges that major operators have faced when deploying digital oilfield technologies to their assets. It also explores in more depth the technology and standards that underpin the digital oil field.

Presentations focus on whether as an industry we will be able to extract the value that is promised by the digital oil field. It provides in-depth consideration on developing new digital standards, understanding and validating our data, and considering new technical solutions in reservoir management, geosteering, and petrophysics.

- 0900 134107 Accelerating Progress Toward Achieving Digital-Oilfield Workflow Efficiencies**  
M.L. Crawford, ExxonMobil; R. Morneau, Chevron
- 0925 125178 Improving Allocation and Hydrocarbon Accounting Accuracy and Automating Associated KPI's**  
R. Cramer, D. Schotanus, Shell; N. Colbeck, Shell
- 0950 133728 Integrated Operation User Experience Starts with Data Flagging**  
P. Flichy, IO-hub
- 1045 135280 Reservoir Modeling: From RESCUE To RESQML**  
M.J. King, Texas A&M University; P.R. Ballin, BP; C. Bennis, Institut Français du Pétrole; D.E. Heath, Transform Software; A.D. Hiebert, Computer Modelling Group; W. McKenzie, Chevron; J. Rainaud, Institut Français du Pétrole; J. Schey, Energistics
- 1110 135416 A Decision Analytic Framework for Autonomous Geosteering**  
M. Rajaieyamchee, R.B. Bratvold, University of Stavanger
- 1135 134205 Optimizing Petrophysics Practices Through Intelligent-Tools Integration**  
W.A. Al-Harbi, G. Zahdan, M.M. Labban, S. Rihabe, K. Husain, O.M. Mushrifi, Saudi Aramco

## Room 3

### PRODUCTION DATA ANALYSIS AND EMERGING RESERVOIR MONITORING TECHNOLOGIES

Session Chairpersons: **Marise Mikulis**, Baker Hughes  
**Martin Wolff**, Hess

Discusses the use of production data to improve the understanding of reservoir performance by estimating drainage areas, analyzing unconventional reservoirs, and using real-time data. Also discusses the use of satellite

data, microseismic monitoring, and continuous measurement of spontaneous potential as emerging technologies that may lead to the next level of reservoir monitoring techniques.

- 0900 135475 Evaluation of Time to Flow Stabilization and Effective Drainage Area of Slow-Stabilizing Wells Using Production Decline Analyses**  
B.D. Poe, S.W. Poston, Schlumberger
- 0925 135616 Hybrid Rate-Decline Models for the Analysis of Production Performance in Unconventional Reservoirs**  
D. Ilk, S.M. Currie, Texas A&M University; D. Symmons, Consultant; J.A. Rushing, Anadarko Petroleum; T.A. Blasingame, Texas A&M University
- 0950 132967 Reservoir Management With Real-Time and Periodic Surveillance Data**  
C.S. Kabir, D. Ismadi, S.R. Fountain, Hess
- 1045 135018 Use of Satellite Radar Data for Surface Deformation Monitoring: A Wrap-Up After 10 Years of Experimentation**  
A. Bagliani, A. Mosconi, Eni; D. Marzorati, A. Cremonesi, Stogit; A. Ferretti, D. Colombo, F. Novali, A. Tamburini, Tele-Rilevamento Europa
- 1110 133860 Why Monitoring With a Single Downhole Microseismic Array May Not Be Enough: A Case For Multiwell Monitoring of Cyclic Steam in Diatomite**  
A.S. Murer, G.R. McNeish, Aera Energy; T.I. Urbancic, M. Prince, A. Baig, D.C. Bleakly, Engineering Seismology Group
- 1135 135146 Real-Time Measurements of Spontaneous Potential for Inflow Monitoring in Intelligent Wells**  
M.D. Jackson, M. Gulamali, E. Leinov, J.H. Saunders, J. Vinogradov, Imperial College
- ePoster 134881 Observations of Thermal and Pressure Transients in Carbon Dioxide Wells**  
L. Paterson, J.P. Ennis-King, CSIRO Petroleum; S. Sharma, Schlumberger
- ePoster 134976 Monitoring Reservoir Performance in Highly Prolific Deepwater Gulf of Mexico Gas Wells**  
W. Chu, W.M. Gray, Pioneer Natural Resources

## Room 6

### APPLIED COMPLETION TECHNOLOGY

Session Chairpersons: **Raymond Doyle**, Bopco  
**Robert McGinnis**, Bear Creek Services

This session presents a variety of applications of completion technology. Topics include new completion fluids, continuous downhole strain monitoring, completion design workflow modeling, and sand screen numerical simulation.

- 0900 134555 Real-Time Monitoring of Sand Control Completions**  
D.M. Earles, C.W. Stoesz, A.D. Amaral, Baker Hughes; J.G. Pearce, H.A. DeJongh, F.H.K. Rambow, Shell
- 0925 134326 Numerical Simulations of Screen Performance in Standalone Screen Applications for Sand Control**  
S. Mondal, M.M. Sharma, University of Texas at Austin; R.A. Chanpura, M. Parlar, J.A. Ayoub, Schlumberger
- 0950 135119 Innovative Technologies Enable Fast, Accurate, and Detailed Completion Evaluation and Well Performance Analysis**  
H. Huang, D. Burch, W.P. Brown, J. Yin, T. Long, ExxonMobil
- 1045 133679 Customized Insulating Packer Fluid Improves Steam-Injection-Well Integrity**  
J.K. Turner, R. Ezell, B. MacMillan, D. Ezzat, Halliburton
- 1110 135537 Innovative Capillary Deliquification Safety System Resolves Liquid Loading Problems With a Cost-Effective Solution That Maximizes Production While Maintaining Well-Safety Requirements**  
P. Imbo, D. Magnani, Eni; M. Di Iorio, C. Russotto, G. Tuckness, Halliburton
- 1135 134385 Development of a New Completion Fluid Using Polyglycol Acid Powder**  
T. Nakai, M. Daitoh, N. Morita, Waseda University
- ePoster 135217 Carbon Dioxide Corrosion When Least Expected: Importance of Carbonate Chemistry in Stress Corrosion Cracking on the External Surfaces of Martensitic Stainless-Steel Production Tubing and Low-Carbon Steel Pipeline**  
J.S. McKennis, N. Bae, E.J. Termine, Tetra Technologies
- ePoster 135035 Application of a Coupled Wellbore/Reservoir Simulator to Well-Performance Optimization**  
S. Livescu, W.P. Brown, R. Jain, M. Grubert, S.S. Ghai, L.W. Lee, T. Long, ExxonMobil

## Room 4

### CASE STUDIES AND INTEGRATION

Session Chairpersons: **Keith Boyle**, Santos  
**Tonya Brami**, ExxonMobil

This session presents case studies and the positive impact that integrating multiple datasets brings in developing enhanced models of complex petroleum systems.

- 0900 130927 Investigation of Oil-Trapping Mechanisms in Deepwater Gulf of Mexico**  
X. Li, J. Lach, K. McMillen, Knowledge Reservoir
- 0925 133903 Integrated Workflow for Modeling Basin-Scale Petroleum Systems: Applications to the Kupe Area, Taranaki, New Zealand**  
L. Roncaglia, M. Arnot, J. Baur, M. Fohrmann, P. King, K.F. Kroeger, B. Ilg, D. Strogon, H. Zhu, GNS Science; M. Milner, OMV
- 0950 135319 Does the Presence of Natural Fractures Have an Impact on Production? A Case Study from the Middle Bakken Dolomite, North Dakota**  
M. Mullen, J.L. Pitcher, D. Hinz, Halliburton; M.L. Everts, D. Dunbar, RTA; G.M. Carlstrom, G.R. Brenize, Anschutz Exploration
- 1045 134181 Combining Seismic Models with Real Time LWD Measurements to Reduce Geologic Uncertainty: A Case Study of the Mars A-8 Extended Reach Well**  
J. Weiland, M. Cuttitta, G. Soto, Shell; M.J. Wandstrat, B.A. Donadieu, S.O. Jebutu, Baker Hughes
- 1110 134919 Improved Reservoir Characterization Integrating Seismic Inversion, Rock Physics Model, and Petroelastic Log Facies Classification: A Real Case Application**  
F. Roncarolo, D. Grana, Eni
- 1135 134455 The Hydrocarbon Systems of the Vienna Basin and Their Characterization**  
K. Potsch, C. Zach, OMV Exploration and Production
- ePoster 134912 Flexible Simulation of Faults**  
P. Roe, P. Abrahamsen, F. Georgsen, A.R. Syversveen, Norwegian Computing Center; O. Lia, Statoil

## Room 5

### FORMATION EVALUATION: CASE STUDIES/FIELD STUDIES

Session Chairpersons: **Jerome Truax**, Halliburton  
**Badarinadh Vissapragada**, Schlumberger

This session discusses geosteering, HA/HZ wells, permeability prediction, and field studies from Kuwait, the US, Indonesia, and Brazil.

- 0900 133431 Real-Time Reservoir Characterization and Geosteering Using Advanced High-Resolution LWD Resistivity Imaging**  
N.M. Al-Musharfi, R. Bansal, M.S. Ahmed, M.Y. Kanj, Saudi Aramco; M. Morys, C. Conrad, R.E. Chemali, A.A. Lotfy, M.A. Bayrakdar, T. Parker, Halliburton
- 0925 134011 Predicting Effective Permeability to Oil in Sandstones and Carbonates Reservoirs from Well Logging Data**  
V. Anand, R. Freedman, S.F. Crary, C.C. Minh, Schlumberger; R.L. Terry, Maersk Oil
- 0950 135160 Combining Resistivity and Capture Sigma Logs for Formation Evaluation in Unknown Water Salinity: A Case Study in a Mature Carbonate Field**  
C. Minh, P. Saldungaray, Schlumberger; A.R. Belowi, L.W. Ong, M.A. Al-Mudhhi, Saudi Aramco
- 1045 134076 Integrated Formation Evaluation in an Anisotropic Reservoir Offshore Deep Water Indonesia Using a Combination of Image Logs, WFTs and Mini-DSTs for Pay and Hydrocarbon Definition**  
G. Capone, A. Malossi, M. Mele, C. Damronsak, A. Valdisturlo, E. Beretta, A. Clementi, B. Al-Shamma, Eni
- ePoster 135347 Integrating Nuclear Magnetic Resonance, Production Logging, and Well DST Data: A Case Study in Carbonates From Brazil**  
P. Netto, F.L. Tinoco, A.M. Souza, R. Beer, M. Araujo, Petrobras
- ePoster 132599 Using High-Resolution LWD Resistivity Images For Carbonate Facies Identification and Steering**  
R.M. Bacon, S. Morris, W. Fernandes, S. Mahiout, Baker Hughes

## Room 7

### STIMULATION CASE STUDIES

Session Chairpersons: **Bart Thomeer**, Schlumberger  
**Brian Ward**, Hess

Hydraulic fracturing and matrix stimulation have been successfully applied as a technology to improve and optimize well performance in every reservoir and well environment. This session reviews case studies which highlight various applications and successful implementation of these technical solutions.

- 0900 134330 Refracs: Why Do They Work, And Why Do They Fail In 100 Published Field Studies?**  
M.C. Vincent, Consultant
- 0925 134165 Improving Stimulation Effectiveness: Field Results in the Haynesville Shale**  
C.D. Pope, Complete Shale; T.T. Palisch, E.P. Lolon, CARBO Ceramics; B.A. Ozubin, StrataGen Engineering; M.A. Chapman, CARBO Ceramics
- 0950 134855 Effectiveness of Water Jet Fracturing on a Horizontal Openhole Completion: Case Study**  
S.J. Rosales, Chevron; R.A. Hernandez, C. Lynch, E. Bustamante, Halliburton
- 1045 130062 Valhall - Pushing the Limits for Openhole Zonal Isolation: Qualification and Field Trial of 10,000-psi Oil-Swelling Packers**  
J. Nijhof, BP; T. Koloy, K. Andersen, Halliburton
- 1110 134414 A 5-Year Survey of Applications and Results of Placing Solid Chemical Inhibitors in the Formation via Hydraulic Fracturing**  
D.V. Gupta, J.M. Brown, S. Szymczak, BJ Services
- 1135 134495 Understanding Diversion with a Novel Fiber-Laden Acid System for Matrix Acidizing of Carbonate Formations**  
C. Cohen, P.M. Tardy, T.M. Lesko, B.H. Lecerf, S. Pavlova, S.V. Voropaev, A. Mchaweh, Schlumberger
- ePoster 135188 Field Data Validation of a General Model for High-Performance Fractures in Deviated High-Rate Wells**  
M. Marongiu-Porcu, Texas A&M University; S. Naha, D. Norman, Chevron; C. A. Ehlig-Economides, Texas A&M University

ePoster 134935 [Coiled Tubing: A Key Enabler for Successful Multifractured, Horizontal Wells in Recent Low-Permeability Gas Developments Offshore UK](#)

B. Holland, W.W. Cruickshank, G.P. Coghlan, Centrica Energy

ePoster 133985 [Quantifying the Effects of Well Type and Hydraulic Fracture Selection on Recovery for Various Reservoir Permeabilities Using a Numerical Reservoir Simulator](#)

R.F. Shelley, E. Lolon, B.A. Dzubin, StrataGen Engineering; M.R. Vennes, El Paso

## Room 8

### CO<sub>2</sub> INJECTION PROCESSES

Session Chairpersons: **Willem Schulte**, Shell  
**Connie Smith**, ExxonMobil

This session offers various aspects of CO<sub>2</sub> EOR and CO<sub>2</sub> sequestration. Discusses many current topics in the areas of CO<sub>2</sub> injection and storage in various reservoir lithologies.

0900 134028 [Drainage and Imbibition CO<sub>2</sub>/Brine Relative Permeability Curves at Reservoir Conditions for Carbonate Formations](#)

D.B. Bennion, Weatherford; S. Bachu, Alberta Innovates-Technology Futures

0925 135563 [Experimental Coreflooding and Numerical Modeling of CO<sub>2</sub> Injection with Gravity and Diffusion Effects](#)

J. Moortgat, A. Firoozabadi, Z. Li, Reservoir Engineering Research Institute; R. Esposito, Petrobras

0950 134625 [Enumerating Permeability, Surface Areas, and Residual Capillary Trapping of CO<sub>2</sub> in 3D: Digital Analysis of CO<sub>2</sub>CRC Otway Project Core](#)

M.A. Knackstedt, Australia National University; T. Dance, Cooperative Research Centre for Greenhouse Gas Technologies; M. Kumar, Digitalcore; H. Avesdunk, Australian National University; L. Paterson, Cooperative Research Centre for Greenhouse Gas Technologies

1045 134762 [Analytical Models to Select an Effective Saline Reservoir for CO<sub>2</sub> Storage](#)

A.K. Gupta, S. Bryant, University of Texas at Austin

1110 135339 [Modeling CO<sub>2</sub> Injection Including Diffusion in a Fractured-Chalk Experiment](#)

S. Alavian, C.H. Whitson, Norwegian University of Science and Technology

## Room 9

### DRILLING OPERATIONS

Session Chairpersons: **Keith Lynch**, ConocoPhillips  
**Rustom Mody**, Baker Hughes

This session discusses managing well integrity and drilling performance in deep water and under critical geological pressure regimes.

- 0900 133129 An Innovative Approach to Heat Heavy Oil Formations by Means of Two Horizontally Interconnected Wells**  
R. Poloni, G. Sassi, P. Valente, Eni; A. Di Campli, D. Bianchella, Baker Hughes
- 0925 133032 Dual Casing Running for Deepwater Spud-In**  
C. Molaschi, E. Sormani, Eni; S. Dallera, T. Fraser, GE Oil and Gas Drilling and Production
- 0950 134949 HZ 25-4 ERD Challenging Drilling Project - New Strategy and New Technology Implementation Are the Keys to Improved Drilling Performance**  
L. Hong, P.G. Scaruffi, T.W. Brewster, CACT; S.M. Balka, Schlumberger
- 1045 134234 Running Casing Drilling Bit in Extreme-Lean-Profile Wells: A Possibility that Becomes Reality**  
C. Brancato, AGIP Oil Ecuador; Z. Etorki, E. Monaci, Eni; E. Aliko, J. Fabre, Baker Hughes
- 1110 133027 Key Factors Sensitivity Analysis on Blowout Probability in Dangerous Drilling Conditions Applying Different Technical Solutions**  
S. Masi, C. Molaschi, F. Zausa, Eni; N. Rossi, J. Michelez, Altran Italia
- 1135 135316 Lessons Learned Implementing Step-Change Technology on the Latest Generation Deepwater Drillship**  
M.A. Ruths, Chevron
- ePoster 134586 Casing Drilling Application with Rotary Steerable and Triple Combo in New Deviated Wells in Cira Infantas Field**  
E.A. Lopez Herrea, P.A. Bonilla, Occidental; J.A. Castilla, Halliburton; J.A. Rincon, Tesco

## Room 10

### UNCONVENTIONAL RESERVOIRS

Session Chairpersons: **Raymond Ambrose**, Devon Energy  
**Randal Brush**, William M. Cobb & Associates

This session covers many aspects of evaluating, producing, and booking unconventional oil and gas reserves. Unconventional reservoirs have turned the energy markets of countries and continents upside down.

- 0900 133511** [Development of the Belridge Field's Diatomite Reservoirs With Hydraulically Fractured Horizontal Wells: From First Attempts to Current Ultra-Tight Spacing](#)  
M.E. Allan, D.K. Gold, D.W. Reese, Aera Energy
- 0925 134231** [A Better Way To Forecast Production From Unconventional Gas Wells](#)  
P.P. Valko, W.J. Lee, Texas A&M University
- 0950 135520** [Successful Thermal Recovery of Heavy Oil from an Ultra-Tight Reservoir Renews Development of the 100-Year-Old Orcutt Oil Field](#)  
R. Elias, M. Wilson, Santa Maria Pacific; G.D. Vassilellis, V. Bust, Gaffney, Cline & Associates
- 1045 134602** [A Process To Evaluate Unconventional Resources](#)  
P.B. Chan, AJM Petroleum Consultants; J.R. Etherington, PRA International; R. Aguilera, University of Calgary
- 1110 135555** [Shale Gas Production Decline Trend Comparison Over Time and Basins](#)  
J.D. Baihly, R.M. Altman, R. Malpani, F. Luo, Schlumberger
- 1135 134249** [Infill Drilling Potential in Tight Gas Reservoirs](#)  
S. Luo, M.G. Kelkar, University of Tulsa
- ePoster 133568** [Energy Gain Efficiency in Steam-Assisted Gravity Drainage \(SAGD\)](#)  
N.S. Alharthy, H. Kazemi, R.M. Graves, J. Akinboyewa, Colorado School of Mines
- ePoster 134293** [A New Cost Effective Well Testing Methodology of Tight Gas Reservoirs](#)  
A. Jacques, Total; B. Brouard, Brouard Consulting; P. Berest, École Polytechnique; J.L. Boutaud de la Combe, Total



## Technical Sessions

### Tuesday, 21 September: Afternoon

1400–1745

Room 1

#### PROJECTS AND INNOVATION

Session Chairpersons: **Anton Sluijterman**, Shell  
**Wael Ellaithy**, Arabian Oil

This session discusses aspects of projects in the Gulf of Mexico, Congo, Nigeria, Thailand, Saudi Arabia, and UK. Covers new technology for LNG and CNG as well as new methods for heavy-oil production.

- |      |        |  |
|------|--------|--|
| 1400 | 134505 | <b>Treating Produced Water on Deepwater Platforms: Developing Effective Practices Based Upon Lessons Learned</b><br>J.M. Walsh, Shell; T.C. Frankiewicz, SPEC Engineering Services         |
| 1425 | 133722 | <b>LNG for Petroleum Engineers</b><br>M.S. Choi, ConocoPhillips  |
| 1450 | 135571 | <b>Seawater Injection Mobile System (SWIMS) for Waterflooding Marginal Offshore Oil Reservoirs: A Case Study from Tantawan Field, Gulf of Thailand</b><br>J.P. Rexilius, A. Sahni, Chevron |
| 1515 | 133522 | <b>The Multi-Circulation Steam Generator Concept</b><br>E. Corriger, G. Abry, Technip  |
| 1605 | 134314 | <b>Chestnut: A Successful, Innovative Development of a Small, Marginal North Sea Oil Field</b><br>P. Wood, G. Coghlan, Centrica Energy   |
| 1630 | 133512 | <b>Modern Marine Transport of Compressed Natural Gas in 2010</b><br>X. Wang, Xgas; M.J. Economides, University of Houston  |

1655 134090 **Three-Phase Flow Simulation for Improving Design of Gravity Separation Vessels**

R.D. Vilagines, A. Akhras, Saudi Aramco

ePoster 133522 **The Multi-Circulation Steam Generator Concept**

E. Corriger, G. Abry, Technip

## Room 2

### CHEMICAL TREATMENTS, PRODUCED FLUIDS, AND SAND MANAGEMENT

Session Chairpersons: **Stephen Baumgartner**, Marathon Oil

**Murtaza Ziauddin**, Schlumberger

This session offers methods for sand management and presents chemical treatments used for flow assurance, enhanced oil recovery, and stimulation.

1400 132707 **A Multifaceted Approach for Controlling Complex Deposits in Oil and Gas Production**

W.W. Frenier, Frenier Chemistry Consultants; M. Ziauddin, Schlumberger

1425 135735 **First Polymer Injection In Deep Offshore Field Angola: Recent Advances on Dalia/Camelia Field Case**

D.C. Morel, M. Vert, S. Jouenne, R. Gauchet, Y. Bouger, Total

1450 135076 **Novel Emulsified Acid Boosts Production in a Major Oil Field with Asphaltene Problems**

D. Appicciutoli, R. Maier, Halliburton; P. Strippoli, A. Tiani, L. Mauri, Eni

1515 132346 **Technical Evaluations to Support the Decision to Reinject Produced Water**

E. Zuluaga, P.J. Evans, P.R. Nesom, P.A. Spratt, Nalco; E.J. Daniels, Chevron

1605 135402 **Solid-Particle Erosion in Slug Flow**

J.M. Throneberry, New Dominion; Y. Zhang, B. McLaury, S.A. Shirazi, E.F. Rybicki, University of Tulsa

1630 134464 **Sand Prediction: A Practical Finite-Element 3D Approach for Real Field Applications**

G. Volonte, F. Scarfato, M. Brignoli, Eni

1655 135088 **Field Case Study on Formation Fines Control with Nanoparticles in Offshore Wells**

T. Huang, B.A. Evans, J.B. Crews, C.K. Belcher, Baker Hughes

- 1720 134493 [Sand on Demand for Horizontal Wells: Tracking Behaviour with the CT Scanner](#)  
B. Meza Diaz, R.P. Sawatzky, Alberta Innovates; E. Kuru, University of Alberta
- ePoster 132697 [Reservoir Souring in a Field with Sulphate Removal: A Case Study](#)  
K. Robinson, Oil Plus; W.R. Ginty, E. Samuelsen, Hess; T. Lundgaard, T.L. Skovhus, Danish Technological Institute
- ePoster 134961 [Estimation of the Potential of an Oil-Viscosity-Reducing Bacterium \*Petroroga sp.\* Isolated from an Oil Field for MEOR](#)  
I.A. Purwwasena, Y. Sugai, K. Sasaki, Kyushu University
- ePoster 135001 [Assesment of Asphaltene Deposition Risk in an EOR Intervention Through CO2 Injection](#)  
S. Correra, M. De Simoni, M. Bartosek, G. Colombani, P. Diatto, G. Maddinelli, V. Parasiliti, Eni
- ePoster 135513 [An Analytical Model To Determine the Rheological Properties of Well Fluids Using a Novel Downhole Sensor](#)  
N.J. Rondon, M.A. Barrufet, G. Falcone, Texas A&M University

### Room 3

## DOWNHOLE MEASUREMENTS FOR CONTINUOUS RESERVOIR MONITORING

Session Chairpersons: **Daniel Gunderson**, BJ Services  
**Neal Skinner**, Halliburton

This session contains a series of technical papers describing the application of various downhole measurements for continuous reservoir monitoring—from pressure transient analysis to permanent downhole gauges to distributed temperature sensing to tracers.

- 1400 134315 [A New Pressure-Rate Deconvolution Technique Based on Pressure Derivatives for Pressure Transient Test Interpretation](#)  
M. Onur, Istanbul Technical University; F.J. Kuchuk, Schlumberger
- 1425 134671 [Pressure Buildup Test Analysis of a Gas Condensate Well in the Middle East](#)  
M. Al Ismail, R.N. Horne, Stanford University
- 1450 134261 [Deconvolution of Pressure and Rate Data From Gas Reservoirs With Significant Pressure Depletion](#)  
M.M. Levitan, BP; M.R. Wilson, Well-Test Solutions

- 1515    134761    **Diagnosis and Analysis of Nonlinear Transient Pressure From Permanent Downhole Gauges (PDGs)**  
S. Zheng, Heriot-Watt University
- 1605    135603    **Numerical Model for Interpretation of Distributed-Temperature-Sensor Data During Hydraulic Fracturing**  
G. Seth, A.C. Reynolds, J. Mahadevan, University of Tulsa
- 1630    135607    **A Comprehensive Workflow for Early Analysis and Interpretation of Flowback Data from Wells in Tight Gas/Shale Reservoir Systems**  
D. Ilk, D. Currie, Texas A&M University; D. Symmons, Consultant; J.A. Rushing, Anadarko Petroleum; N. Broussard, El Paso Corporation; T.A. Blasingame, Texas A&M University
- 1655    135130    **Using DTS Flow Measurements Below Electrical Submersible Pumps to Optimize Production From Depleted Reservoirs by Changing Injection Support Around the Well**  
G.A. Brown, P. Tiwari, Schlumberger
- 1720    135070    **Permanent Tracers Embedded in Downhole Polymers Prove Their Monitoring Capabilities in a Hot Offshore Well**  
F. Nyhavn, A.D. Dyrli, ResMan

#### Room 4

### **RISK: CAN'T LIVE WITH IT, CAN'T LIVE WITHOUT IT**

Session Chairpersons:    **Al Denson**, White Stone Energy  
                                      **David Yaw**, EnCana Oil & Gas (USA)

This session focuses on analyzing risk in resources, costs, and revenues.

- 1400    135208    **Pitfalls in the Evaluation of Unconventional Resources**  
W.J. Haskett, Decision Strategies; P.J. Brown, ExplAnalysis
- 1425    133299    **Prediction of Uncertainty in Exploration of Unconventional Gas Reservoirs**  
M.G. Kelkar, K.E. Bonney, P. Bonney, , University of Tulsa
- 1450    133297    **Risk Tolerance and Risk Neutrality (You Can Live With More Risk Than You Think)**  
P.E. Leach, Decision Strategies

- 1515 135515 **Petroleum Producer Risk Profile Analysis: Does Risk-Taking Pay?**  
L. Virine, P. Simon, Ziff Energy
- 1605 134811 **Stochastic Analysis of Resource Plays: Maximizing Portfolio Value and Mitigating Risks**  
P.D. Allan, Portfolio Decisions
- 1630 135538 **Don't Let It Weigh You Down: How To Benefit From Anchoring**  
M.B. Welsh, S.H. Begg, University of Adelaide
- 1655 134294 **Dealing With Risk Analysis for Integrated Asset Modelling**  
A. Binda, S. Giliberti, A. Preti, R. Rossi, Eni
- 1720 135105 **Hitting Bull's-Eye with Time and Cost Estimates by Combining Statistics and Engineering**  
K.U. Hollund, H. Rosenlund, S. Akcora, Statoil; R. Hauge, Norwegian Computing Center
- ePoster 134339 **Portfolio Management for Strategic Planning and Operational Optimization**  
M. Back, C. Guercio, Schlumberger

## Room 5

### ADVANCES IN WELL TESTING AND PRODUCTION ANALYSIS

Session Chairpersons: **Saadoun Banoori**, Eni  
**Raymond Ambrose**, Devon Energy

This session highlights novel techniques and field case applications in the interpretation and analysis of well-test and production data.

- 1400 132478 **New Method to Deconvolve Well-Test Data Under Changing Well Conditions**  
O.P. Houze, E. Tauzin, O.F. Allain, Kappa
- 1425 134534 **Practical Use of Well-Test Deconvolution**  
A.C. Gringarten, Imperial College
- 1450 135606 **A New Look at Nonlinear Regression in Well Test Interpretation**  
A. Dastan, R.N. Horne, Stanford University
- 1515 135085 **Advanced Fluid Characterization of Pauto Complex, Colombia**  
S.O. Martinsen, Petroleum Engineering Reservoir Analysts; I. Castiblanco, BP; R. Osorio, Ecopetrol; C.H. Whitson, Norwegian University of Science and Technology

- 1605    134391    [Estimating Permeability Distributions from Pressure Pulse Testing](#)  
S. Ahn, R.N. Horne, Stanford University
- 1630    135804    [Direct Method of Estimating Average Reservoir Pressure for Flowing Oil and Gas Wells](#)  
R.G. Agarwal, PetroTel
- 1655    134290    [Joint Inversion of Temperature and Pressure Measurements for Estimation of Permeability and Porosity Fields](#)  
O.O. Duru, R.N. Horne, Stanford University

## Room 6

### COMPLETION TECHNOLOGY: CASE HISTORIES

Session Chairpersons:    **Terrence Palisch**, Carbo Ceramics  
                                  **Chip Claiborne**, Chevron

This session showcases several new completion technologies that have been developed and implemented around the world.

- 1400    133409    [Saving 70% Rig Completion Time on 13 Multizone Wells With Single-Trip Multizone System in Mahakam Delta Offshore Indonesia](#)  
S. Suryadana, F. Wahyudhi, E. Garcia, Total; J.M. Landry, C. Li, C. Hansen, D.J. Daulton, BJ Services
- 1425    132692    [Expandable Completion Liners: A Comparison of Performance With Other Completion Types in the Reg and Teguentour Fields, Algeria](#)  
D.L. Mason, BP; F. Benaichaoui, Sonatrach; H. John, M. Okwelegbe, BP; T.K. Moum, T. Harneshaug, Statoil; Q.P. Morgan, C. Jones, J. Neumann, Weatherford
- 1450    134934    [Improved Reservoir Management From Application of Intelligent Reservoir Completion Technology in an Extended-Reach Well in the Giant Al Shaheen Field, Offshore Qatar](#)  
D.I. Brink, S.D. Ernst, S.N. Banerjee, W. Ekwue, B. Ritchie, F. Maurer, N. Jensen, Maersk Oil; M.R. Jaafar, Qatar Petroleum
- 1515    135712    [Design and Evaluation of Perforation Performance using Dynamic Under Balance: North Sea Case Histories](#)  
J.J. Tovar, Innovative Engineering Systems; R. Appleby, G. Cooper, B.J. Hamilton, Talisman Energy

- 1605**    **135413**    **[Abrasive Jet Perforating and Fiber-Enhanced Proppant Plug Isolation Improve Efficiencies in Multistage Horizontal Completions](#)**  
T. Itibrout, Schlumberger; J.B. Blevins, Bopco; M.E. Yates, J.T. Pablo, S.A. Trummer, Schlumberger
- 1630**    **134084**    **[Case History: First of Its Kind: Installation of the Multizone Single Trip \(MST\) Technology in Deep Water, India](#)**  
K.P. Joseph, BJ Services
- 1655**    **134576**    **[New Inflow Control Device Provides Solid-Liner Functionality Throughout Installation and Fluid Loss Control During Completion](#)**  
M. Infra, Saudi Aramco; M.P. Coronado, R. Woudwijk, Baker Hughes; A.A. Al-Mumen, Z.A. Al-Baggal, Saudi Aramco
- 1720**    **135604**    **[Global Application of Coiled-Tubing Acid Tunneling Yields Effective Carbonate Stimulation](#)**  
R. Stanley, L. Portman, J. Diaz, R. Darmawan, J. Strasburg, J. Clark, M. Navarro, BJ Services
- ePoster**    **135687**    **[Unique Combination Openhole/Cased-Hole Solid Expandable Liner Facilitates Cost-Effective Conversion of Producer to Gas-Storage Well](#)**  
C. Salute, Edison; A. Sardo, B. Marr, P. York, Weatherford

## Room 7

### STIMULATION CHEMISTRY

Session Chairpersons:    **Hisham Nasr-El-Din**, Texas A&M University  
**David Sobernheim**, Schlumberger

This session demonstrate innovative stimulation-fluid formulations for hydraulic fracturing, matrix acidizing, and other applications to improve well productivity and economics. Presents associated topics such as treatment fluid cleanup and recycling treatment water.

- 1400**    **134266**    **[Performance of Borate-Crosslinked Fracturing Fluid Compromised by Shear-Induced Phase Separation](#)**  
R.M. Hodge, ConocoPhillips; K.E. Cawiezel, BJ Services
- 1425**    **133057**    **[Impact of Fracture Conductivity and Matrix Relative Permeability on Load Recovery](#)**  
R.D. Gdanski, H.G. Walters, Halliburton

- 1450 133379 **Well Treatment Fluids Prepared with Oilfield Produced Water: Part II**  
L. Li, C.I. Ezeokonkwo, L. Lin, K. Eliseeva, W. Kallio, C.L. Boney, P. Howard, M.M. Samuel, Schlumberger
- 1515 133886 **Successful Case Histories of the Conformance-While-Fracturing Technique in Egyptian Western-Desert Reservoirs**  
A.A. Abdel Meguid, R. Yassine, M.M. Tawakol, Halliburton; E.M. Abdel Aal, T. Abdel Khalek, A. Hamdy Awaad, Qarun Petroleum
- 1605 134265 **A Comprehensive Model of High-Rate Matrix Acid Stimulation for Long Horizontal Wells in Carbonate Reservoirs**  
K. Furui, R.C. Burton, D.W. Burkhead, N.A. Abdelmalek, ConocoPhillips; A.D. Hill, D. Zhu, M. Nozaki, Texas A&M University
- 1630 133497 **Optimum Injection Rate of a New Chelate That Can Be Used To Stimulate Carbonate Reservoirs**  
M.A. Mahmoud, H.A. Nasr El-Din, Texas A&M University; C.A. DeWolf, J.N. LePage, AkzoNobel
- 1655 134982 **Field Experience Leads to Effective Bypass of Formation Damage Caused by Asphaltenes Deposition and Improves Production from a Naturally Fractured Carbonate Oil Reservoir**  
P. Strippoli, A. Tiani, L. Mauri, Eni; D. Appicciutoli, R. Maier, Halliburton
- 1720 133858 **Solid-Free Viscoelastic Fluid-Loss Pills and Dynamic Underbalance Improve Production From Newly Perforated Wells**  
R. Arangath, Y. Babalatirov, M. Griffith, A. Umirbayev, Schlumberger
- ePoster 135469 **Making High-Quality Frac Water Out of Oilfield Waste**  
N.R. Hutchings, E.W. Appleton, R.A. McGinnis, Bear Creek Services
- ePoster 135199 **New Remediation Technology Enables Removal of Residual Polymer in Hydraulic Fractures**  
J.B. Crews, T. Huang, Baker Hughes
- ePoster 134403 **Kashagan Field: Defining Stimulation Methodology, Implementation, and Results Evaluation To Provide a Program Redesigning Criterion**  
G. Foglio, S.M. Wtorek, Agip

## Room 8

### PORE-SCALE MECHANISMS AND FLOW MODELING

Session Chairperson: **Klaus Potsch**, OMV Exploration and Production

**Gregory King**, Chevron

This session discusses the flow and accumulation of fluids in porous media at the pore scale. Also discusses the experimental, modeling, and imaging of pore-scale phenomena for several displacement processes.

- 1400 133798 Capillary Trapping in Water-Wet Sandstones: Coreflooding Experiments and Pore-Network Modeling**  
C.H. Pentland, Y. Tanino, S. Iglauer, M.J. Blunt, Imperial College
- 1425 135506 Pore Scale Simulation of Flow in Porous Media Using Lattice-Boltzmann Computer Simulations**  
E.S. Boek, Imperial College
- 1450 134525 Pore-Scale Simulation of Hysteresis Effects During Repressurisation of Gas-Oil Systems**  
I. Bondino, Total; S.R. McDougall, C.C. Ezeuko, Heriot-Watt University; G. Hamon, Total
- 1515 135194 3D In-Situ Fluid Distribution Imaging at the Pore Scale as a New Tool For Multiphase Flow Studies**  
S. Youssef, D. Bauer, S. Bekri, E. Rosenberg, O. Vizika-Kavvadias, Institut Français du Pétrole
- 1605 134501 A New Technique for Accurately Measuring Two-Phase Relative Permeability Under Non-Darcy Flow Conditions**  
B. Lai, J.L. Miskimins, Colorado School of Mines
- 1630 133180 Characterization and Modelling of Asphaltene Precipitation and Deposition in a Compositional Reservoir**  
L. Figuera, M. Marin, L.R. Lopez, E. Mann, A. Gammiero, PDVSA; C. Granada, Computer Modelling Group
- 1655 135429 Optimum Operating Conditions for Steady-State Two-Phase Flow in Pore Networks: Conceptual Justification Based on Statistical Thermodynamics**  
M.P. Valavanides, TEI– Athens
- 1720 135261 Simulation of Flow and Dispersion on Pore-Space Images**  
P. Mostaghimi, B. Bijeljic, M.J. Blunt, Imperial College

ePoster 135125 [Quantifying the Impact of Permeability Heterogeneity on Secondary Recovery Performance](#)

B. Rashid, Imperial College; A. Bal, G. Williams, BP; A. Muggeridge, Imperial College

ePoster 134879 [Theoretical and Experimental Investigation of the Motion of Multiphase Fluids Containing Paramagnetic Nanoparticles in Porous Media](#)

S. Ryoo, A. Rahmani, K.Y. Yoon, M. Prodanovic, C. Kotsmar, T.E. Milner, K.P. Johnston, S.L. Bryant, C. Huh, University of Texas at Austin

## Room 9

### DRILLING FLUIDS AND CEMENT

Session Chairpersons: **Frederick Beck**, Gastar Exploration

**James Friedheim**, M-I SWACO

This session covers a broad range of new technologies and experience related to hole cleaning, drill-in fluids, mud systems, and cement mixtures.

1400 134514 [A Comparison of High-Viscosity and High-Density Sweeps as Hole-Cleaning Tools: Separating Fact from Fiction](#)

T. Hemphill, Halliburton

1425 135166 [Protecting Reservoir with Surfactant Micellar Drill-in Fluids in Carbonate-Contained Formations](#)

T. Huang, J.B. Crews, D.E. Clark, Baker Hughes

1450 128119 [New Filtration Control Polymer for Improved Brine-Based Reservoir Drilling Fluids Performance at Temperatures in Excess of 400oF and High Pressure](#)

R.G. Ezell, D.A.M. Ezzat, J.K. Turner, Halliburton; J.J. Wu, Champion Technologies

1515 134485 [Drilling Highly Fractured Limestone Reservoirs: Is It a Particle Bridge Too Far?](#)

S.R. Vickers A.P. Hutton, R. Main, Baker Hughes; A. Twynam, G. Jackson, BP

1605 130413 [Vital Role of Nanopolymers in Drilling and Stimulation Fluid Applications](#)

S.K. Singh, R.M. Ahmed, University of Oklahoma

1630 135587 [The Effect of Drillstring Rotation on Equivalent Circulation Density: Modeling and Analysis of Field Measurements](#)

R.M. Ahmed, M.S. Enfis, H. Miftah-EI-Kheir, University of Oklahoma; M. Laget, AGR Petroleum Services; A.S. Saasen, Det Norske Oljeselskap

- 1655      133033      **Nanoemulsions as Cement Spacer Improve the Cleaning of Casing Bore During Cementing Operations**  
G. Maserati, E. Daturi, A. Belloni, L. Del Gaudio, S. Bolzoni, W. Lazzari, G. Leo, Eni
- 1720      134169      **Designing and Testing Cement System for SAGD Application**  
R. Patil, A. Garnier, G. Galdiolo, Total; S.P. Patil, K. Ravi, L. Ferreira Halliburton
- ePoster    132464      **An Investigation of Heavy-Foam Properties for Offshore Drilling**  
C. Liu, N. Zhang, B. Guo, A. Ghalambor, University of Louisiana at Lafayette

## Room 10

### PUSHING THE RECOVERY FACTOR UP: ENHANCEMENTS IN IOR/EOR

Session Chairpersons:      **Mahmoud Asadi**, ProTechnics  
   **P. O'Dell**, Occidental Oil & Gas Corporation

This session explains a variety of EOR techniques including topics on unlocking the potential of oil shale, improving the performance of steam-assisted gravity drainage, and modeling polymer floods, residual oil zones, and CO2 sequestration.

- 1400      132774      **Improved Polymer-Flood Management Using Streamlines**  
T. Clemens, J. Abdev, OMV Exploration/Production; M.R. Thiele, Streamsim Technologies
- 1425      132418      **A Reservoir Simulation Model for Ground Freezing Process**  
C. Shen, B. McKinzie, S. Arbabi, Shell
- 1450      134297      **A Coreflood Investigation of Low-Salinity Enhanced Oil Recovery**  
S. Rivet, L.W. Lake, G.A. Pope, University of Texas at Austin
- 1515      134891      **Reservoir Modeling of CO2 Plume Behavior Calibrated Against Monitoring Data From Sleipner, Norway**  
V.P. Singh, Statoil; A. Cavanagh, Permedia Research Group; H. Hansen, B. Nazarian, M. Iding, P.S. Ringrose, Statoil
- 1605      135039      **Analytic Tools Aid Understanding of History-Matching Effort in a Fractured Reservoir**  
C. Kabir, F. Boundy, Hess
- 1630      133277      **Experimental Investigation of Solvent Co-Injection in Vapor and Liquid Phase to Enhance SAGD Performance**  
W. Li, D.D. Mamora, Texas A&M University

- 1655    135641    [Role of Vapor Phase in Oxidation/Combustion Kinetics of High-Pressure Air Injection \(HPAI\)](#)  
Y. Barzin, R.G. Moore, S.A. Mehta, D. Mallory, M.G. Ursenbach, F. Tabasinejad,  
University of Calgary
- 1720    133089    [Rock-Fluid Characterization for Miscible CO<sub>2</sub> Injection: Residual Oil Zone, Seminole Field, Permian Basin](#)  
M. Honarpour, N.R. Nagarajan, A. Grijalba Cuenca, M. Valle, K. Adesoye, Hess
- ePoster    133813    [Integrating Flow Simulation With Multi-Component Time-Lapse Seismic: Application to Postle Field CO<sub>2</sub> EOR Project](#)  
A.E. Heris, H. Kazemi, T.L. Davis, Colorado School of Mines; S.C. Wehner, Whiting  
Petroleum
- ePoster    133087    [Rock-Fluid Characterization Using OBM Contaminated Samples Issues, Challenges, and Solutions](#)  
N.R. Nagarajan, M. Honarpour, A.J. Purpich, F. Arasteh, Hess



## Technical Sessions

### Wednesday, 22 September: Morning

0900–1200

Room 1

#### KNOWLEDGE TRANSFER AND MOTIVATION DRIVEN LEARNING

Presents case studies to understand what is working and what is not working in knowledge transfer

Session Chairpersons: **George Woo**, Oxy  
**Frank Platt**, Texas A&M University

- |      |        |  |
|------|--------|--|
| 0900 | 134440 | <b>Real-Time Long-Distance Teaching: The DL Experience</b><br>C. Teodoriu, Clausthal Technology University; M.A. Barrufet, M.L. Epps, G. Falcone, Texas A&M University; K.M. Reinicke, Clausthal Technology University |
| 0925 | 135063 | <b>Employee Engagement Initiatives To Enhance National Engineering Staff Development</b><br>M.P. Kane, R. Stanley, R.G. Seymour, BJ Services   |
| 0950 | 135681 | <b>Case Study of Iraq: Education and Training Partnerships Among International Universities, IOCs, and NOCs</b><br>C.W. Van Kirk, G. Baughman, Colorado School of Mines  |
| 1045 | 134124 | <b>Benefits of Freshman Engineering Projects for Petroleum Engineering Students</b><br>J. Bryant, G. Salama, M.M. Fahes, Texas A&M University  |
| 1110 | 135361 | <b>Building Effective Training Models for Today's Global Challenges</b><br>W. Fiffick, C.W. Kenner, D. Susko, BJ Services  |
| 1135 | 135276 | <b>Preparing for the Crew Change: Gearing Up Women to Spud In</b><br>J.M. Williams, L.J. Lau, R.A. Lau, The Petroleum Institute  |

ePoster 134436 **Enhanced Technology Transfer for Geothermal Exploitation Through a New Research Concept: The Geothermal Energy and High-Performance Drilling Research Program: Gebo**

K.M. Reinicke, Clausthal Technology University; J. Oppelt, Baker Hughes; G. Ostermeyer, Technische University Braunschweig; L. Overmeyer, University of Hannover; C. Teodoriu, Clausthal Technology University; R. Thomas, Leibniz-Institut for Angewandte Geophysik

**Room 2**

**THE CHALLENGE OF DEPLOYING THE DIGITAL OILFIELD TO DIFFERENT CULTURES**

Session Chairpersons: **Philippe Flichy**, IO-hub  
**Keith Killian**, ExxonMobil

We will explore the successes and challenges the industry has experienced with deploying and operating digital oilfield technologies and associated processes across our diverse asset base and very diverse geographies and cultures. The session considers how to deliver the changes required in the processes and organisation within different cultures and different stages of field development—from greenfield to very mature.

The session opens with short, challenging statements from operating, supply, and technology representatives. Following is an open forum where attendees will be able to ask questions and challenge the panelists.

Panelists: Meyer Bengio, Schlumberger  
Egil Birkemore, ABB Global Oil and Gas  
Pieter Kapteijn, Maersk Oil  
Philippe Malzac, Total  
David Newman, Emerson Process Management  
Muhammad Saggaf, Saudi Aramco

**Room 3**

**PRODUCING HEAVY OIL AND OTHER DIFFICULT FLUIDS**

Session Chairpersons: **Francisco Alhanati**, C-FER Technologies  
**Tom Gee**, Weatherford International

Producing heavy viscous oil (many times with significant amounts of sand) or fluids with a tendency to form scale or organic deposits (such as paraffin and asphaltenes) always presents challenges. In this session, we will learn how some of these challenges are being tackled around the world.

**0900 134994 Inflow-Control-Device Completion in a Scaling Environment: Findings and Experiences Obtained During Production Logging in the Heidrun Field**

O.T. Gustavsen, O. Selle, F.H. Fadnes, P.E. Svela, E. Gudding, K. Stene, Statoil

- 0925**     **133172**     **Critical Oil Rate and Well Productivity in Cold Production From Heavy-Oil Reservoirs**  
B. Guo, University of Louisiana at Lafayette; C. Ai, J. Qu, China Northeastern Petroleum University
- 0950**     **134068**     **Application of Composite Jet-Rod Pumping System in a Deep Heavy-Oil Field in Tarim China**  
J. Shen, X. Wu, J. Wang, China University of Petroleum
- 1045**     **134528**     **Getting Smarter and Hotter with ESPs for SAGD**  
S.G. Noonan, ConocoPhillips; M.A. Dowling, L.L. D'Ambrosio, Schlumberger; W. Klaczek, C-FER Technologies
- 1110**     **135234**     **Hydraulic Submersible Pumps: 10 Years Experience on a Heavy-Oil Field in the North Sea**  
G.A. Mali, A. Morrison, A. Green, Chevron; R.D. Graham, W.G. Harden, ClydeUnion Pumps
- 1135**     **132615**     **Waxy Crude Production Management in a Deepwater Subsea Environment**  
S. Suppiah, A. Ahmad, C.J. Alderson, Murphy Oil; K. Akbarzadeh, J. Gao, J.M. Shorthouse, I.A. Khan, C. Forde, A.K. Jamaluddin, Schlumberger
- ePoster**     **135285**     **Experimental Research of Work of Different ESP Stages on Viscous Fluids**  
M. Mokhov, A. Tsunevskiy, Gubkin University
- ePoster**     **135136**     **Paraffin-Plug Remediation in Deep Water Wells via Capillary Tubing: A Cost Effective Alternative**  
M.R. Embrey, J. Larke, BJ Services

#### Room 4

### GREENHOUSE GAS MITIGATION

Session Chairpersons:     **Linda Battalora**, Colorado School of Mines  
   **Richard Haut**, Houston Advanced Research Center

This session features CO<sub>2</sub> trapping and modeling studies in various areas including Italy. Greenhouse gas mitigation is an environmental hot topic that continues to be in the forefront.

- 0900**     **133941**     **Assessing the Underground CO<sub>2</sub> Storage Potential in a Highly Populated and Industrialized Area: The Case of Lombardia Region (Italy)**  
P. Macini, E.N. Mesini, University of Bologna; F. Moia, R. Guandalini, ERSE; D. Savoca,

Regione Lombardia

- 0925**    **135507**    **Discrete Modeling and Simulation on Potential Leakage through Fractures Wells in CO2 Sequestration**  
D. Huo, B. Gong, Peking University
- 0950**    **135483**    **Model to Predict CO2 Leakage Rates Along a Wellbore**  
Q. Tao, D. Checkai, N.J. Huerta, S.L. Bryant, University of Texas at Austin
- ePoster**    **133463**    **Comparison of Chemical and Hysteresis CO2 Trapping in the Nugget Formation 2**  
S. Behzadi, University of Wyoming
- ePoster**    **135629**    **CO2 Leakage from Heterogeneous Storage Formations**  
E. Saadatpoor, S.L. Bryant, K. Sepehrnoori, University of Texas at Austin
- ePoster**    **134083**    **The Italian Contribution to the European Initiative for the Capture, Transport, and Storage of CO2**  
G. Cau, University of Cagliari; G. Girardi, Italian National Agency for New Technologies, Energy and Sustainable Economic Development; P. Macini, E.N. Mesini, University of Bologna; S. Persoglia, National Institute of Oceanography and Experimental Geophysics

#### Room 4

### **WATER: PRECIOUS RESOURCE**

Moderator:    **Ana Djuric**, Halliburton

Open forum discussion on how water impacts and is impacted by the petroleum industry. This discussion will hopefully touch on all aspects for health, safety, environment, and social responsibility. Flowback treatments, groundwater protection, portability and effective consumption are some topics we hope to touch upon in this panel as it pertains to operations and the value we place on water in our industry.

Panelist:    David Burnett, Texas A&M University

#### Room 5

### **MODELING: INVERSION AND NEW TECHNOLOGY FOR FORMATION EVALUATION**

Session Chairpersons:    **Luiz Amado**, Petrobras  
   **Paul Boonen**, PathFinder Energy

This session highlights inversion techniques, microgravity logging, crosswell electromagnetic, and resistivity modeling. Posters include topics on acoustic measurements in open and casedhole environments, low resistivity

low contrast pay, and a case study on variable  $R_w$ /salinity from China.

- 0900**    **133802**    **Effect of Fracture Orientation on Induction Logs: A Modeling Study**  
G. Hu, I.M. Geldmacher, Weatherford; R.C. Liu, University of Houston
- 0925**    **134844**    **Optimum Parameterization for Saturation Modeling in Heterogeneous Hydrocarbon Reservoirs Using Well-Log Inversion**  
T. Friedel, J. Moreno, A. Carrillat, A. Carnegie, Schlumberger
- 0950**    **135307**    **Joint Inversion of Crosswell Electromagnetic and Seismic Data for Reservoir Petrophysical Parameters**  
G. Gao, A. Abubakar, T. Habashy, Schlumberger
- 1045**    **135036**    **Deep Diagnostics via Differential Microgravity Logging**  
T.J. Meyer, Lockheed Martin
- 1110**    **135069**    **Crosswell Electromagnetic Inversion Constrained by the Fluid-Flow Simulator**  
L. Liang, A. Abubakar, T.M. Habashy, Schlumberger
- 1135**    **135442**    **Efficient Hierarchical Processing and Interpretation of Triaxial Induction Data in Formations With Changing Dip**  
P.T. Wu, G. Wang, T.D. Barber, Schlumberger
- ePoster**    **133487**    **Sourceless Porosity Estimation in Gas Reservoirs Using Integrated Acoustic and NMR Logs**  
C. Lan, S. Chen, F. Mendez, R. Sy, Baker Hughes
- ePoster**    **135551**    **Advances in Cased-Hole Compressional and Shear Sonic Acquisition and Processing**  
D.R. Murray, T. Endo, S. Sunaga, Y. Li, A. Voskamp, O. Desport, Schlumberger
- ePoster**    **134402**    **A New Look at Low-Resistivity and Low-Contrast (LRLC) Pay in Clastic Reservoirs**  
M. Claverie, D.F. Allen, N.J. Heaton, G. Bordakov, Schlumberger

## Room 6

### DEEPWATER COMPLETIONS

Session Chairpersons:    **Samyak Jain**, Schlumberger  
   **Karen Olson**, BP Exploration and Production

This session includes case histories from several deepwater projects summarizing their completions, workovers,

and intelligent wells completions. Other topics include a discussion of new technology for the lower Tertiary.

- 0900**      **134254**      **Planning and Execution of Highly Overbalanced Completions from a Floating Rig: The Ursa-Princess Waterflood Project**  
C.D. Stair, C. Hinnant, N.O. Hines, J.M. Schober, C.L. Davis, K.F. Lizak, B.A. Pugh, Shell
- 0925**      **134597**      **Safety Valve for Ultradeepwater Lower Tertiary Applications**  
J. Sloan, D. Bane, Baker Hughes
- 0950**      **133080**      **Benefits Evaluation of Deepwater Intelligent Completion on Three Isolated Productive Zones Offshore Nigeria**  
M. Arena, Schlumberger; S. Di Vincenzo, M. Rossi, Eni
- 1045**      **134378**      **Deepwater Workover Experience with Extreme Hydrostatic Overbalance, 2002—2009**  
G.A. Myers, D.A. Cahill, P. Clay, B.E. Esquinance, B. Smith, R. Zeringue, C.L. Davis, Shell; T. Kenney, Crown Consulting
- 1110**      **134681**      **Multizone Single Trip (MST): Deepwater and Downward Recompletion Case Histories**  
J. R. Sanford, E.J. Flanagan, J. Bruton, J. Woome, J.C. Prince, Eni; J.M. Landry, C. Hansen, BJ Services
- 1135**      **135190**      **Smart Well Re-Entry and Intervention in Offshore Angola**  
B. McNerlin, D.N. Shirmboh, J.W. Spearman, C.J. Price-Smith, BP
- ePoster**      **134087**      **Case History: Overcoming the Challenges of Deepwater Gravel Packing by Using Viscoelastic Fluids in Wells With Concentric-Annulus Completions**  
K.P. Joseph, K.E. Cawiezel, N. Wood, BJ Services
- ePoster**      **135066**      **Application of Multizone Expandable Sand Screen Completions in Deepwater West Africa: Cased-Hole Functionality With Openhole Performance**  
M.J. Nicol, M.W. Geddes, Weatherford
- ePoster**      **134550**      **An Innovative Approach to Optimizing Design of HP/HT Well Tubular Strings**  
G. Deng, G. Shyu, Baker Hughes

## Room 7

### STIMULATION TECHNOLOGIES

Session Chairpersons: **Christopher Stephenson**, BJ Services  
**Mauro Tambini**, Eni

This session discusses innovative technologies that maximize well-stimulation effectiveness. Includes case histories that highlight the implementation of these technical solutions.

- 0900 134905** [Application of Different Stimulation Techniques, Multistage Proppant and Acid Fracturing Operations Offshore Congo](#)  
M. Rotondi, G. Pace, H. Malonga, F. Pounga, Eni; T. Batmaz, E. Ndoassal, E. Asibor, D.W. Sobernheim, Schlumberger; P. Amare, Packer Plus
- 0925 134379** [Understanding Wormholes in Carbonates Unprecedented Experimental Scale and 3-D Visualization](#)  
D.R. McDuff, C.E. Shuchart, S.K. Jackson, D. Postl, J.S. Brown, ExxonMobil
- 0950 134307** [Stimulation of Carbonates Combining Acid Fracturing with Proppant \(CAPF\): A Revolutionary Approach for Enhancement of Sustained Fracture Conductivity and Effective Fracture Half-Length](#)  
A. Bale, Statoil; M.B. Smith, NSI Technologies; H.H. Klein, HK Technologies
- 1045 135360** [Changing the Shape of Fracturing: New Proppant Improves Fracture Conductivity](#)  
G.A. McDaniel, Apache; J. Abbott, F.A. Mueller, A. Mokhtar, S. Pavlora, O. Neuvonen, Schlumberger; T. Parias, J. Alary, Imerys Oilfield Minerals
- 1110 135683** [Analysis of Nitrogen Stimulation Technique in Shallow CBM Formations](#)  
A. Settari, R.C. Bachman, Taurus Reservoir Solutions; P.D. Bothwell, Energy Resources Conservation Board of Alberta
- 1135 132746** [A Successful Application of Permanently Installed Distributed Temperature Sensing \(DTS\) for Optimization of Acid Treatment in Power Water Injector With Advanced Well Completion: Case Study](#)  
H.K. Sharma, A. Al-Zain, N. Al-Salman, M. Al-Hari, R. Said, Saudi Aramco
- ePoster 133085** [Quantum Effects Imparted by Radio Frequencies as a Stimulation Method of Oil Production: Part II](#)

J.M. Brown, H.L. Becker, G. Darby, BJ Services

**ePoster 135200** [Stimulation With Innovative Fluid-Placement Methodology and World First Production Logging With Fiber-Optic-Enabled Coiled Tubing \(CT\)](#)

M. AlDhufairi, K. AlOmairan, S. AlGhamdi, Saudi Aramco; V. Noya, J. Jacobsen, S. AlSarakbi, A. Ghani, A. Azrak, Schlumberger

**Room 8**

**FLOW IN LOW-PERMEABILITY FORMATIONS**

Session Chairpersons: **Gregory King**, Chevron  
**Gary Teletzke**, ExxonMobil

This session discusses the flow and accumulation of gases, liquids, and hydrates through low permeability porous media. Also discusses the unique rock/fluid interactions associated with flow through organic rich shales and coal seams. Offers many current topics in the area of flow through low permeability formations from the laboratory, theory, modeling, and field application perspectives.

**0900 134583** [CO2 Storage Capacity of Organic-Rich Shales](#)

S. Kang, E. Fathi, R.J. Ambrose, I. Akkutlu, R.F. Sigal, University of Oklahoma

**0925 134830** [Modeling of Fluid Transfer From Shale Matrix to Fracture Network](#)

E. Ozkan, Colorado School of Mines; R.S. Raghavan, ConocoPhillips; O. Apaydin, EOG Resources

**0950 135427** [Core Tests for Relative Permeability of Unconventional Gas Reservoirs](#)

J.M. Dacy, Core Laboratories

**1045 134178** [Kinetic Simulation of CO2 Flooding of Methane Hydrates](#)

J. Phirani, University of Houston; K.K. Mohanty, University of Texas at Austin

**1110 135087** [Intrinsic Shale Permeability Determined by Pressure-Pulse Measurements Using a Multiple-Mechanism Apparent-Gas-Permeability Non-Darcy Model](#)

F. Civan, C.S. Rai, C.H. Sondergeld, University of Oklahoma

**1135 135627** [Experimental Investigation of Oil Recovery From Siliceous Shale by Miscible CO2 Injection](#)

B. Vega, Stanford University; W.J. O'Brien Occidental Petroleum; A.R. Kovscek, Stanford University

**ePoster 135564** [Accurate Simulation of Shale-Gas Reservoirs](#)

**Room 9**

**DOWNHOLE TOOLS AND DRILL BITS**

Session Chairpersons: **John McCormick**, Weatherford  
**Robello Samuel**, Halliburton

This session features the latest-technology equipment and systems to drill challenging trajectories under complex environment conditions, including drill bits, rotary steerables, and percussion drilling.

- 0900 135178 Multiple-Opening Diverter Tool Reduces Formation Surge Pressure and Increases Running Speeds for Casing and Liners**  
T. Scott, M. LoGiudice, G. Gaspard, Weatherford; D. Vidal, Nexen Petroleum
- 0925 135602 Continuous Wellbore Surveying While Drilling Utilizing MEMS Gyroscopes Based on Kalman Filtering**  
M. Elgizawy, Schlumberger; A.M. Noureldin, Royal Military College; N. El-Sheimy, University of Calgary
- 0950 134269 Experimental Studies on the Effect of Mechanical Cleaning Devices on Annular Cuttings Concentration and Applications for Optimizing ERD Systems**  
R.M. Ahmed, M. Sagheer, N.E. Takach, R. Majidi, M. Yu, S.Z. Miska, University of Tulsa; C. Rohart, J.G. Boulet, VAM Drilling
- 1045 135471 First Rotary Steerable System Drilling with Dry Air Is Used to Further Improve Low Cost Development of an Unconventional Gas Reservoir**  
S. Wilhide, D. Doebereiner, J. Smith, EQT Production; B. Raymond, D.H. Weisbeck, Weatherford; B. Ziemke, Halliburton
- 1110 135308 Application of Air Percussion Drilling Improves Drilling Efficiency in Horizontal Sandstone Wells**  
J. Pletcher, A. Scarr, J. Smith, EQT Production; S.N. Swadi, C. Rogers, Smith Technologies
- 1135 134504 Amplifier/Booster Joint Positioning Framework Design for a High-Speed Wired Telemetry System in MWD/LWD Downhole Tool Environment**  
S. Rath, S. Mandadi, V. Thamizhmani, University of Houston; R. Samuel, Halliburton

## Room 10

### LATEST ADVANCES IN RESERVOIR SIMULATION

Session Chairpersons: **Luis Ayala**, Pennsylvania State University  
**Omar Varela**, ExxonMobil

This session presents cutting-edge techniques and integrated solutions to advance numerical reservoir-modeling capabilities. Topics include implicit dynamic gridding to track flood fronts, next-generation wellbore models to simulate well performance, reduction in computation time for multiphase-flow modeling, optimized work flows to improve history matching and well placement, and field case studies.

- |         |        |  |
|---------|--------|--|
| 0900    | 135264 | <b>Application of Particle Swarms for History Matching in the Brugge Reservoir</b><br>L. Mohamed, M.A. Christie, V. Demyanov, Heriot-Watt University; E. Robert, D. Kachuma, Total   |
| 0925    | 134928 | <b>A Unified Wellbore Model for Reservoir Simulation</b><br>J.A. Holmes, Schlumberger; T.J. Byer, Saudi Aramco; D.A. Edwards, T.W. Stone, I. Pallister, G.J. Shaw, D. Walsh, Schlumberger                                  |
| 0950    | 135304 | <b>A Two-Stage Well-Placement Optimization Method Based on Adjoint Gradient</b><br>F. Forouzanfar, G. Li, A.C. Reynolds, University of Tulsa   |
| 1045    | 135116 | <b>Joint History Matching of Production and 4D-Seismic Related Data for a North Sea Field Case</b><br>V. Gervais-Couplet, F. Roggero, M.D. Feraille, M. Le Ravalec-Dupin, Institut Français du Pétrole; A. Seiler, Statoil |
| 1110    | 133866 | <b>An Improved Adjoint Sensitivity Computation for Multiphase Flow Using Wavelets</b><br>A.A. Awotunde, R.N. Horne, Stanford University  |
| 1135    | 134832 | <b>Transient Well Indices: A Link Between Analytical-Solution Accuracy and Coarse-Grid Efficiency</b><br>R.A. Archer, University of Auckland   |
| ePoster | 133654 | <b>History Matching With Learned Sparse Dictionaries</b><br>M. Khaninezhad, B. Jafarpour, L. Li, Texas A&M University  |





## Technical Sessions

### Wednesday, 22 September: Afternoon

1400–1745

Room 1

#### BUILDING INITIATIVES FOR GLOBAL TRAINING PROGRAMS

Session Chairpersons: **Santinder Purewal**, Shell  
**Lee Dillenbeck**, Chevron

Offers what's new and what the industry will see in the near future in training methods

- |      |        |  |
|------|--------|--|
| 1400 | 134438 | <b>Hands-On Teaching as Part of Petroleum Engineers, Education: An International Experience</b><br>C. Teodoriu, Clausthal University of Technology   |
| 1425 | 135083 | <b>Capstone Engineering Design Experience: Opportunities To Develop and Implement Skills That Work for Real People Doing Real Jobs</b><br>T. Ertekin, Pennsylvania State University; R.P. Harris, National Fuel Gas Supply; P.J. Dudenas, East Resources |
| 1450 | 134453 | <b>Innovative Field Camp for Education and Industry-Academic Collaboration in Geology-Based Reservoir Model Building for Carbonate Reservoirs in the Middle East</b><br>A. Gupta, Texas A&M University; M. Poppelreiter, Shell                           |
| 1515 | 134503 | <b>Developing, Implementing, and Sustaining a Business-Driven Competency and Employee Development Program</b><br>D.B. Demski, J. Leuro, Halliburton  |
| 1605 | 134850 | <b>Knowledge Transfer via Education and Training Partnerships Among Global Universities, IOCs, and NOCs</b><br>G. Baughman, C.W. Van Kirk, Colorado School of Mines  |

- 1630 135437 [Petroleum Engineer or Energy Engineer: Should We Be Both?](#)  
L.A. Battalora, R.M. Graves, J.A. McNeil, Colorado School of Mines
- 1655 132977 [Incorporating Motivation and Inspiration Into Learning](#)  
M.R. Smith, J.T. Edwards, G.T. Woo, BJ Services
- 1720 135588 [The Pearl Initiative: Producing, Sharing, and Managing, Blended Online Mobil and Instructor Led Learning Content Within the Oil Industry](#)  
F. Cardinali, Giunti Labs
- ePoster 133740 [Demonstrating CO2 Sequestration as Part of a First-Year Engineering Course](#)  
P.R. Neal, M. Ho, G. Fimbres-Weihs, F. Hussain, Y. Cinar, University of New South Wales
- ePoster 135077 [Design Considerations of Information Systems to Support Employee Development](#)  
M.P. Kane, R. Stanley, R.G. Seymour, BJ Services
- ePoster 132409 [Alternative Training Tactics Provide Deeper Understanding of PDM Principles for Field Operators](#)  
S. Wakefield, S. Matta, Smith International

## Room 2

### MULTIPHASE FLOW, METERING, AND PRODUCTION PERFORMANCE

Session Chairpersons: **Thomas Bruni**, Eni  
**Dan Hill**, Texas A&M University

This session covers multiphase flow, metering systems, and production performance analysis.

- 1400 134341 [Development of a High Boost, High Power, Ultra-deep Twin Screw Multiphase Pump System](#)  
A.P. Williams, Shell; B. Urban, J. Margalis, Flowserve
- 1425 133895 [Virtual Metering System for Oil and Gas Field Monitoring Based on a Differential Pressure Flowmeter](#)  
E.F. Paz, J.L. Balino, Universidade de Sao Paulo; I. Slobodcicov, D.F. Filho, Petrobras
- 1450 135099 [Modeling High-Viscosity Oil Water Flows in Horizontal and Vertical Pipes](#)  
H. Zhang, D.H. Vuong, C. Sarica, University of Tulsa

- 1515 134308 **The Use of Model Predictive Control for Asset Production Optimization: Application to a Thin-Rim Oil Field Case**  
R.V. Linden, A.P. Leemhuis, TNO Science & Industry
- 1605 134329 **Casing Integrity Study for Heavy-Oil Production in Cold Lake**  
S. Hsu, K.H. Searles, Y. Liang, L. Wang, B.A. Dale, E.R. Grueschow, A. Spuskanyuk, E.L. Templeton, ExxonMobil; R.J. Smith, D.R. Lemoing, Imperial Oil Resources
- 1630 134948 **Use of Wellbore-Reservoir Coupled Dynamic Simulation to Evaluate the Cycling Capability of Liquid-Loaded Gas Wells**  
B. Hu, SPT Group; K. Veeken, Shell; R. Yusuf, H. Holmas, SPT Group
- 1655 134765 **Liquid Entrainment in Annular Gas/Liquid Flow in Inclined Pipes**  
K.L. Magrini, Southwestern Energy; C. Sarica, University of Tulsa; A. Al-Sarkhi, King Fahd University of Petroleum & Minerals; H. Zhang, University of Tulsa
- 1720 133236 **Less Footprints in the Snow for Salym Field in Western Siberia**  
R. Cramer, Shell; A.F. Mabian, Salym Petroleum Development; R. Tulalian, Shell
- ePoster 136024 **Polymer Compositions for Sand Consolidation in Oil Wells**  
S.M. Lahalih, E.F. Ghloum, Kuwait Institute for Scientific Research

### Room 3

#### ARTIFICIAL LIFT

Session Chairpersons: **Albert Ollre**, Schlumberger  
**Steve Lipari**, Newfield Exploration

As fields mature, reservoir pressure decline and water cut increases resulting on lower oil production rates. Artificial lift is required to keep wells flowing and meeting our ongoing demand for oil production. This session will present papers on everything from subsea application of ESPs to possible new technologies.

- 1400 134393 **The Development of Subsea Boosting Capabilities for Deepwater Perdido and BC-10 Assets**  
D.T. Gilyard, Shell; E.B. Brookbank, Baker Hughes
- 1425 134198 **Stand Investigations of ESP's and Gas Separator's Characteristics on Gas-Liquid Mixtures with Different Values of Free-Gas Volume, Intake Pressure, Foaminess and Viscosity of Liquid**  
A.N. Drozdov, Gubkin Russian State University of Oil & Gas

- 1450 134483 [New Perspective on Gas-Well Liquid Loading and Unloading](#)**  
C.A. Veeken, NAM Offshore; S. Belfroid, TNO Science & Industry
- 1515 134907 [Continuous Pig Lift: A New Artificial Lift System and Its Field Pilot Test](#)**  
H. Zhong, S.Y. Li, X. Yu, Z. Wang, Southwest Petroleum University
- 1605 134975 [Sucker-Rod Pumping Failures Diagnostic System](#)**  
G.V. Moises, S.F. Andrade, Petrobras; A.C. Garcia, Universidade Federal Fluminense
- 1630 134139 [Artificial Lift Using Impulse Pumping](#)**  
B. Pierre, J.S. Gudmundsson, Norwegian University of Science & Technology
- 1655 134774 [Approach to Selection of the Optimal Lift Technique in the Vankor Field](#)**  
M.M. Khasanov, R.A. Khabibullin, A.A. Pashali, Rosneft; A.A. Semenov, Vankoroil
- 1720 135994 [A Saskatchewan Field Trial to Better Understand Downhole Dynamics of PCP Systems](#)**  
S.G. Noonan, D. Studer, ConocoPhillips; P. Skoczylas, C-FER Technologies
- ePoster 131758 [ESP Performances for Gas-Lifted High Water Cut Wells](#)**  
A.S. Bagci, M.M. Kece, J.D. Nava Rivero, Eclipse Petroleum Technology
- ePoster 134702 [How 24/7 Real-Time Surveillance Increases ESP Run Life and Uptime](#)**  
L.A. Camilleri, J. Macdonald, Schlumberger
- ePoster 134233 [An ESP Lift-Reliability Process: Making the Most of Limited Manpower and Field Experience to Promote Field Optimization - Cast Study](#)**  
M.G. Gagner, C B. Wolfe, Baker Hughes

#### Room 4

### SYSTEMIC SAFETY MANAGEMENT

Session Chairpersons: **Richard Haut**, Houston Advanced Research Center  
**Scott Robinson**, Weatherford

This session explores some effective analytical tools to control and promote mitigate safety practices around the globe.

- 1400 135004 [Achieving Sustainable Incident-Free Operations through Managing the Human Factor: A Success Story of Applying E-Colors](#)**  
E.R. Barakat, J.C. Barber, J.S. Wood, Chevron

- 1425      134612      **Statistical Analysis of Safety Incidents and the Implications of Imperfect Reporting**  
C.J. Jablonowski, University of Texas at Austin
- 1450      135504      **Landslide Hazard Assessment, Monitoring, and Stabilization: Villano Oil Pipeline System, Ecuador**  
F. Vasconez, M. Estrella, A. Velastegui, J. Nunez, H. Ponce, P. Riofrio, Agip
- 1515      135734      **Difference Between Traditional and Risk Based Auditing**  
D. Spadaccini, Weatherford
- ePoster    126445      **A Structured Approach to Process Safety Management**  
A. Petrone, L. Scataglini, F. Fabio, Eni

#### Room 4

### ENVIRONMENTALLY SENSITIVE OPERATIONS

Session Chairpersons:      **Linda Battalora**, Colorado School of Mines  
   **Ana Djuric**, Halliburton

This session offers studies and solutions in environmentally- or socially-sensitive areas and offers some specialized subject matter pertaining to the environment.

- 1605      133037      **Optimized Anchor-Handling Operations in Environmentally Sensitive Areas**  
K.J. Tjom, Abyssus Marine Services; K.O. Steinhovden, S. Ekrem, Viking Moorings;  
A. Saasen, Det Norske Oljeselskap
- 1630      135517      **Quantitative Rankings Measure Oil-Field Chemicals Environmental Impacts**  
A.K. Jordan, D.J. Daulton, J. Cobb, BJ Services; T.G. Grumbles, ENTRIX
- 1655      133652      **Living in Harmony: Gas Production and the Attwater's Prairie Chicken**  
R.C. Haut, Houston Advanced Research Center; J. Bergan, J. Judy, The Nature  
Conservancy; L. Price, Houston Advanced Research Center
- 1720      134253      **Public Perception of the Oil and Gas Industry: The Good, the Bad, and the Ugly**  
G.L. Theodori, Sam Houston State University; D. Jackson-Smith, Utah State  
University

ePoster 135725 **Installation of a Produced-Water Treatment System on Raml Field (Western Desert), Egypt**

D. Surace, P. Broccia, Y. Salemi, M. Lovane, Eni

## Room 5

### ROCK/FLUID CHARACTERIZATION FOR FORMATION EVALUATION

Session Chairpersons: **Riley Bates**, Plains E&P  
**Nigel Radcliffe**, ExxonMobil

This session includes discussions on fluid density and viscosity measurements, wettability reversal, asphaltene grading methods, and reservoir connectivity techniques. Also includes topics on resistivity index modeling and saturation estimates using NMR.

- 1400 133656 **DFA Profiling of Oil Columns Using Asphaltene Gradients**  
J.Y. Zuo, D. Freed, O.C. Mullins, D. Zhang, Schlumberger
- 1425 133405 **Sensitivity of a High-Resolution Fluid-Density Sensor in Multiphase Flow**  
L. Gao, A.H. Van Zuilekom, M.T. Pelletier, M.A. Proett, S. Eyuboglu, R. Engelman, Halliburton; H. Elshahawi, M.P. Hows, Shell
- 1450 133523 **Inducing Spherical Flow Conditions With Formation Testers**  
S.S. Betancourt, E.B. Dussan V., L. Lake, University of Texas at Austin
- 1515 133937 **Probing Wettability Reversal in Carbonatic Rocks by Spatially-Resolved and Non-Resolved 1H-NMR Relaxation Analysis**  
V. Bortolotti, P. Macini, E.N. Mesini, F. Srisuriyachai, P. Fantazzini, M. Gombia, University of Bologna
- 1605 135341 **Assessing Reservoir Connectivity through Biomarker and Bulk Compositional Gradient Analysis**  
A.E. Pomerantz, J.A. Canas, K.E. Peters, O.C. Mullins, Schlumberger; K.R. Koerner, J. Auman, D.J. Curry, Devon
- 1630 132985 **Accurate Estimates of In-Situ Porosity and Permeability Data Using Cloned Parametric Stressed Models: A Hybrid Approach**  
S.O. Williams, S.I. Batarseh, M. Solanki, Aera Energy
- 1655 131593 **Integrated Permeability Analysis in Tight and Brecciated Carbonate Reservoir**  
M.H. Mohammadlou, M.B. Mork, H. Langeland, Norwegian University of Science & Technology

- 1720 134849 **In-Situ Heavy-Oil Fluid Density and Viscosity Determination Using Wireline Formation Testers in Carbonates Drilled With Water-Based Mud**  
R. Akkurt, D. Seifert, P. Neumann, Saudi Aramco; M. Zeybek, H. Ayyad, Schlumberger
- ePoster 135367 **Dynamic Network Modeling of Resistivity Index in a Steady-State Procedure**  
G. Tora, A. Hansen, Norwegian University of Science & Technology; P.E. Oren, Numerical Rocks
- ePoster 134841 **Restricted Diffusion Effects in Saturation Estimates From 2D Diffusion-Relaxation NMR Maps**  
L. Zielinski, R. Ramamoorthy, C.C. Minh, K.A. Al Dagher, R.H. Sayed, A.F. Abdelaal, Schlumberger

## Room 6

### SHALE/TIGHT GAS SAND HORIZONTAL WELL COMPLETIONS

Session Chairpersons: **Maximiliano Medina**, Statoil  
**Daniel Wood**, Devon

This session focuses on emerging and varying technologies related to shale and tight gas sand horizontal-well completions. Particular emphasis will be placed on hydraulic fracturing/isolation technology, as well as Bakken shale completions.

- 1400 135396 **A Technical and Economic Study of Completion Techniques in Five Emerging US Gas Shales**  
A. Agrawal, Chevron; Y. Wei, C.C. Reservoirs; K. Cheng, S.A. Holditch, Texas A&M University
- 1425 135015 **Rigless Abrasive Perforating and Fracturing in Horizontal Tight Gas Wells**  
G.A. Schnaidler, M. Naegel, Total; D. Marozzini, F. Liberatore, M. Valdivia, BJ Services
- 1450 135584 **Next Generation Multistage Completion Technology and Risk Sharing Accelerates the Development of the Bakken Play**  
M.C. Houston, M.A. McCallister, Slawson Exploration; J.D. Jany, J. Audet, Packers Plus
- 1515 135195 **Horizontal Drilling and Well Completion Optimization in a North Dakota Bakken Oilfield**  
D.M. Zander, M.P. Czehura, Fidelity E&P; D. Snyder, R. Seale, Packers Plus
- 1605 135454 **Shale Gas Well Completion Logistics**  
D.W. Tymko, Penn West Petroleum

- 1630**    **135268**    **Advances in Openhole Packer/Sleeve Completions Coupled With Multilaterals Provide Cost-Effective Solutions**  
C.C. Johnson, D.W. Gurrege, Baker Hughes
- 1655**    **134533**    **Using Burst Collars in a Liner String for Multizone Completions in Horizontal Wellbores: Case Study**  
J. Schoenfeld, WestFire Energy; N.H. Kostenuk, M. Jorgensen, S. Sherman, Trican Well Service
- 1720**    **135386**    **Comparative Study of Cemented versus Uncemented Multistage Fractured Wells in the Barnett Shale**  
D.S. Lohoefer, Eagle Oil & Gas; D. Snyder, R. Seale, D. Themig, Packers Plus

## Room 7

### FRACTURE MONITORING AND EVALUATION

Session Chairpersons:    **John Blevins**, Bopco  
   **George King**, Apache

This session focuses on more accurate description of the stimulated reservoir volume from fracturing with a goal of increasing the effective and economic recovery of reserves in both conventional and unconventional reservoirs.

- 1400**    **135254**    **Source-Mechanism Studies on Microseismicity Induced by Hydraulic Fracturing**  
N.R. Warpinski, J. Du, Pinnacle
- 1425**    **134772**    **Using Microseismic Source Parameters To Evaluate the Influence of Faults on Fracture Treatments: A Geophysical Approach to Interpretation**  
R. Downie, Schlumberger; E. Kronenberger, Carrizo Oil & Gas; S.C. Maxwell, Schlumberger
- 1450**    **135290**    **Using Maps of Microseismic Events To Define Reservoir Discontinuities**  
D.P. Craig, Halliburton; R. Burkhart, TGS-NOPEC
- 1515**    **134424**    **How to Decide Between Horizontal Transverse, Horizontal Longitudinal and Vertical Fractured Completions**  
M.J. Economides, University of Houston; A.N. Martin, BJ Services

- 1605**    **135262**    **Technology Integration: A Methodology To Enhance Production and Maximize Economics in Horizontal Marcellus Shale Wells**  
R.H. Jacot, Atlas Energy; L.W. Bazan, Bazan Consulting; B.R. Meyer, Meyer & Associates
- 1630**    **134142**    **Evidence of Strong Fracture Height Containment Based on Complex Shear Failure and Formation Anisotropy**  
R.D. Barree, Barree & Associates; M.W. Conway, Stim-Lab; J.V. Gilbert, Barree & Associates; R.A. Woodroof, ProTechnics
- 1655**    **133063**    **Evaluating Hydraulic Fracture Effectiveness in a Coal Seam Gas Reservoir From Surface Tiltmeter and Microseismic Monitoring**  
R.L. Johnson, M.P. Scott, Queensland Gas; R.G. Jeffrey, Z. Chen, CSIRO Petroleum; L. Bennett, C.B. Vandeborn, Schlumberger; S. Tcherkashnev, ASTOGeophysical Consulting
- 1720**    **135523**    **Tight Gas Well-Performance Evaluation With Neural Network Analysis for Hydraulic Propped Fracture Treatment Optimization**  
P.T. Huckabee, M. Jin, R.J. Lund, J D.B. Nasse, K. Williams, Shell
- ePoster**    **134669**    **New Method To Diagnose and Improve Shale Gas Completions**  
I.D. Palmer, Higgs-Palmer Technologies; Z.A. Moschovidis, PCM Technical
- ePoster**    **134695**    **Key Criteria for a Successful Microseismic Project**  
S.C. Maxwell, W.B. Underhill, L. Bennett, C. Woerpel, A. Martinez, Schlumberger
- ePoster**    **135484**    **Fracture Network Development and Proppant Placement During Slickwater Fracturing Treatment of Barnett Shale Laterals**  
W. Xu, M.J. Thiercelin, J. Calvez, R. Zhao, U. Ganguly, X. Weng, H. Gu, Schlumberger; J. Stokes, Mid-Continent Geological; H. Moros, EagleRidge Energy

## Room 8

### HEAVY OIL AND THERMAL RECOVERY

Session Chairpersons:    **Yucel Akkutlu**, University of Oklahoma  
   **Kam Seung**, Louisiana State University

This session discusses production of heavy, viscous oil, including current topics in the areas of steam flooding, CO<sub>2</sub> injection, in-situ combustion, and the use of stabilized emulsions for heavy oil recovery.

- 1400 135284 **Viscous Oil Recovery Using Solids-Stabilized Emulsions**  
R.D. Kaminsky, R.C. Wattenbarger, J.P. Lederhos, S.A. Leonardi, ExxonMobil
- 1425 133494 **30 Years of Successful High-Pressure Air Injection: Performance Evaluation of Buffalo Field, South Dakota**  
V. Kumar, Hilcorp Energy; D. Gutierrez, Computer Modelling Group; B.P. Thies, C. Cantrell, Continental Resources
- 1450 135186 **In-Situ Combustion Dynamics Visualized With X-Ray Computed Tomography**  
B. Hascakir, L.M. Castanier, A.R. Kavscek, Stanford University
- 1515 134313 **Large-Scale Laboratory Testing of Petroleum Reservoir Processes**  
D.P. Yale, S.W. Meier, S.A. Leonardi, G.M. Joyce, A.P. Kushnick, ExxonMobil
- 1605 135091 **Using a Fully-Coupled Flow and Geomechanical Simulator To Model Injection Into Heavy-Oil Reservoirs**  
H. Huang, R.C. Wattenbarger, X. Gai, W.P. Brown, O.J. Hehmeyer, J. Wang, T.A. Long, ExxonMobil
- 1630 134324 **A Nonconventional EOR Technology Using RF/MW Heating Coupled With a New Patented Well/Reservoir Interface**  
F.D. Okassa, A. Godi, M. De Simoni, M. Matteo, M. Misenta, G. Maddinelli, Eni
- 1655 133465 **Development of a Steam-Additive Technology To Enhance Thermal Recovery of Heavy Oil**  
P. Srivastava, V. Sadetsky, J. Debord, B.J. Stefan, Baker Hughes; B.W. Orr, Nexen
- 1720 134655 **In-Situ Oil Combustion: Processes Perpendicular to the Main Gas Flow Direction**  
N.K. Gargar, N. Achterbergh, S.E. Rudolph-Floter, J. Bruining, Delft University of Technology
- ePoster 134670 **Complete Solution for Transient Heat Transport in Porous Media Following Lauwerier's Concept**  
F. Barends, Deltares

## Room 9

### EXPANDABLES/TUBULARS

Session Chairpersons: **Robello Samuel**, Halliburton  
**Guillaume Plessis**, NOV Grant Prideco

This session focuses on providing the latest experience with respect to materials and other tube performance under expansion and other loading.

- 1400**    **133382**    **Evaluation of Mechanical Performance and Stress-Corrosion-Cracking Resistance of Post Expanded Carbon Steel and CRA Casomg Grades**  
A. Bufalini, R. Morana, Centro Sviluppo Materiali; P.I. Nice, H. Nasvik, H. Kjørholt, Statoil; B.M. Bailey, M.K. Adam, D.G. Jiral, R.C. Ross, R.C. Smith, Baker Hughes; M. Ueda, T. Ohe, Sumitomo Metals Industries
- 1425**    **135462**    **A Major Advancement in Expandable Connection Performance, Enabling Reliable Gastight Expandable Connections**  
R.W. Delange, R.A. Gandikota, S. Osburn, Weatherford
- 1450**    **133412**    **Testing Methodology for the Preliminary Assessment of Mechanical Performance of Materials for Expandable Applications**  
A. Bufalini, R. Morana, Centro Sviluppo Materiali; P.I. Nice, H. Nasvik, H. Kjørholt, Statoil; B. Bailey, M.K. Adam, D.G. Jiral, R.C. Ross, B. Smith, Baker Hughes
- 1515**    **135389**    **Kinematic Hardening Characterization: Applications to Solid Expandable Tubulars**  
J. Durivault, J. Bernard, E. Desdoit, A.S. Bureau-Bayart, Vallourec Mannesmann; A. Villani, Ecole des Mines of Douai
- ePoster**    **134563**    **Continuing Application of Torque-Position Assembly Technology for API Connections**  
J.P. Powers, M.S. Chelf, ExxonMobil

## Room 9

### DRILLING OPTIMIZATION

Session Chairpersons: **Giovanni Botto**, Eni  
**Fred Florence**, National Oilwell Varco

This session centers around optimizing the drilling process in terms of drilling efficiency as well as the integrity of the borehole and the drilling assembly. Both the wellbore and the drilling systems must be designed for optimum reliability.

- 1605 134580 **Borehole Quality Design and Practices To Maximize Drill Rate Performance**  
F.E. Dupriest, W. Elks, S. Ottesen, P. Pastusek, J Zook, C. Aphale, ExxonMobil
- 1630 133127 **The “Extreme Lean Profile” Concept as a Crucial Technology for Multilateral, Long Extended-Reach Wells: The Case History of Cerro Falcone 4 OR**  
A. Burini, R. Poloni, P. Valente, G. Cavallaro, L. Mattioli, Eni
- 1655 135110 **Real-Time Whirl Detector Aids Drilling Optimization**  
D.J. Minett-Smith, D.R. Stroud, J. Pagett, Weatherford
- 1720 132665 **Integrated PoF and CBM Strategies for Improving Electronics Reliability Performance of Downhole MWD and LWD Tools**  
S. Zhan, I. Ahmad, L.E. Heuermann-Kuehn, J. Baumann, Baker Hughes
- ePoster 135439 **Design Tools and Workflows to Mitigate Drilling Vibrations**  
J.R. Bailey, L. Wang, M.J. Tenny, N. Armstrong, J.R. Zook, W.C. Elks, ExxonMobil

#### Room 10

### RESERVOIR CASE STUDIES: RESERVOIR MANAGEMENT, HISTORY MATCHING, AND OTHER NOVEL ANALYSES

Session Chairpersons: **Norio Arihara** , Waseda University  
**Douglas Peck**, BHP Billiton

This session discusses field case studies from reservoirs around the world. Themes range from reservoir management in mature reservoirs to simulation studies, reservoir monitoring, and marginal fields development. Posters presented in this session include EOR/IOR studies and well testing in condensate reservoirs.

- 1400 134953 **Post-Plateau Reservoir Management in the Magnus Field**  
T.P. Moulds, P. Trussell, D. Erbas, D. Cox, E. Laws, C. Davies, BP; N.G. Strachan, SPEC
- 1425 135142 **Mature Field Revitalization: The Agbara Field Case History, Offshore Nigeria**  
B. Wane, L. Angelucci, L. Tealdi, J. Ogujawa, E.O. Fasaanu, I. Adekanye, B. Afolabi, L. Stanisci, Agip
- 1450 134383 **Managing the Blackstone Swanhills Sour Gas Reservoir Pool, Western Canada**  
A. Chen, D. Lamb, N. Deyell, C. Higgins, BP
- 1515 134457 **Inversion of Surface Subsidence Data to Quantify Reservoir Compartmentalization: A Field Study**  
P.A. Fokker, K. Visser, L. Peters, G. Kunakbayeva, A. Muntendam-Bos, TNO Built Environment and Geosciences

- 1605**    **134980**    **[Iwafune-Oki Gas-Flood: The First Commercially Successful Gas-Based IOR in Japan](#)**  
T. Yamada, Japan Petroleum Exploration
- 1630**    **135490**    **[Modeling CHOPS Using a Coupled Flow-Geomechanics Simulator With Nonequilibrium Foamy-Oil Reactions: A Multiwell History Matching Study](#)**  
J.A. Rivero, Schlumberger; G. Coskuner, K. Asghari, Husky Energy; D.H. Law, A. Pearce, R. Newman, B. Birchwood, J. Zhao, J.P. Ingham, Schlumberger
- 1655**    **133086**    **[Recovery Mechanisms and Oil Recovery from a Tight, Fractured Basement Reservoir, Yemen](#)**  
N. Legrand, J.H. De Kok, P. Neff, T. Clemens, OMV
- 1720**    **135721**    **[Developing an Invisible Field in the North Sea](#)**  
B.A. Berntsen, E. Hagen, R. Sorlie, Det Norske Djeselskap; M. Gowers, ZapTeam; C. Jones, Ipex
- ePoster**    **134980**    **[Iwafune-Oki Gas-Flood: The First Commercially Successful Gas-Based IOR in Japan](#)**  
T. Yamada, Japan Petroleum Exploration
- ePoster**    **134452**    **[Comparative Well-Test Behaviors in Low-Permeability Lean, Medium-Rich, and Rich Gas-Condensate Reservoirs](#)**  
T.C. Kgogo, P A. Gringarten, Imperial College