

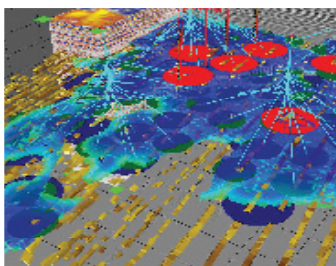


**Early Bird Registration  
Deadline: 1 April 2010**

**Society of Petroleum Engineers**

**27–30 June 2010** | Grand Rotana Resort | Sharm El Sheikh | Egypt

# ***SPE Applied Technology Workshop*** ***Deep Sea Sub-Salt Reserves Potential and Associated Risks***



## **Who Should Attend?**

This workshop caters for geoscientists and petroleum engineers who are interested in learning and contributing to deep sea exploration and development. It focuses on practical applications to the Red Sea sub-salt environments as a theme. The workshop allows for knowledge sharing and networking of professionals working on or interested in Red Sea Exploration and Development.

## **Committee Members**

**Chairperson:**  
**Abdulla Al Naim**  
Saudi Aramco

**Co-chairperson:**  
**Mohammed Badri**  
Schlumberger

**Co-chairperson:**  
**Abdul Nasser Kusheim**  
Saudi Aramco

**Bernard Balusseau**  
Total

**Claudio Bagaini**  
Schlumberger

**Colin Andrew**  
Baker Hughes

**Hans-Christian Freitag**  
Baker Hughes

**Ibrahim Al Ghamdi**  
Saudi Aramco

**Mike Zinger**  
Saudi Aramco

**Mohammed Doghmi**  
Schlumberger

**Moustafa Oraby**  
Halliburton

**Samir Abdelmoaty**  
BP Egypt

## **Workshop Description**

The recent huge discoveries of light oil under thick tabular salt layers in ultra deep waters offshore Brazil has triggered a lot of interest for analogues areas such as ultra deep waters in Angola and elsewhere. The potential for such unconventional reservoirs exist in the Middle East for example in the Eastern Mediterranean Sea and in the Red Sea. Thick tabular salt layers below the sea floor are self healing and can make perfect seals keeping hydrocarbons trapped underneath over geological times. But what is the potential for oil in the Red Sea and the Mediterranean Sea? Were there adequate source rocks in place to create oil accumulations under the salt? What level of understanding do we have of the geology and petrology of deep layers in the Mediterranean basin and in the Red Sea depression? How can new basin modelling and simulation tools help guide exploration campaigns? Will marine seismic technology be able to image with precision the base of salt and detailed structural features under deep salt layers?

Drilling exploration wells to evaluate and test formations located 6 kilometres below the water line is both extremely challenging and costly. What advances are required to reduce drilling costs by half? For example, can casing drilling technology contribute to achieve this goal?

All these questions and more will be discussed during the workshop.

***www.spe.org/events/10asha***

# WORKSHOP

## Deep Sea Sub-Salt Reserves Potential and Associated Risks

### Sponsorship Support

Sponsorship support helps offset the cost of producing workshops and allows SPE to keep the attendance price within reach of operations-level individuals, those who benefit most from these technical workshops.

Sponsors benefit both directly and indirectly by having their names associated with a specific workshop.

While SPE prohibits any type of commercialism within the workshop hall itself, the society recognises that sponsoring companies offer valuable information to attendees outside the technical sessions.

### Sponsorship Categories

Sponsorships are offered on a first come basis. Please contact SPE to verify the availability of a particular sponsorship. Existing sponsors have the opportunity to renew the same level of sponsorship for annual workshops.

- Lanyards
- Speaker Gifts
- Coffee Break - Per Day
- Bronze Sponsorship
- Silver Sponsorship
- Gold Sponsorship

### Sponsorship Benefits

In addition to onsite recognition; SPE will recognise sponsors on the SPE website and in all printed material for the workshop. Based on the sponsorship selected, sponsoring companies also receive logo visibility on promotional workshop items.

### For More Information

For a detailed list of available sponsorships, including benefits and pricing, contact Nancy Ghali, at [nghali@spe.org](mailto:nghali@spe.org).

**SAVE USD 100  
BY REGISTERING  
BEFORE  
1 APRIL 2010**

### Sponsors

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28 and 29 Luncheon Sponsor

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AV and Gala Dinner Sponsor

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### Schedule

**Sunday, 27 June 2010**

1700–1900 hours

**Registration and Badge Collection**

**Monday, 28 June 2010**

#### Session 1: Petroleum Systems Modelling in Deep Water Environments

This session will focus on understanding the big picture; the basin. That includes the configuration, with emphasis on its petroleum systems. Presentations and panel discussions will include: basin modelling and analysis; source rocks, and hydrocarbon generation; maturation and migration; the reservoir, trap and seal; focus and application on salt will be highlighted and emphasised; analogue basins and relevance to the Red Sea and the Mediterranean Sea.

#### Session 2: Pre-Salt and Salt Deposition and Tectonic Evolution

Pre-salt and salt depositional environment and facies are key to reservoir prediction, time to depth conversion. Subsalt trapping of hydrocarbons is generally induced by salt diapirism and tectonic. Deep sea sub-salt prospect evaluation needs to have a good basin evaluation based on seismic and no seismic techniques, outcrop geology, well data assessment etc.

#### Session 3: Subsalt Exploration Methods - Acquisition Technology

Seismic acquisition technology has made significant improvement in sub-surface imaging in sub-salt environments. The success of this technology has been manifested in substantial discoveries in new hydrocarbons around the world. Acquisition geometry, efficiency and real-time quality control have optimised data quality and reduced costs in acquisition meeting exploration challenges. Advances in source and receiver systems using high channel count, have allowed significant improvement in seismic resolution, reduced risks and increasing exploration successes. Streamer and multi-component seismic acquisition systems have made enormous progress in exploring sub-salt deposits.

**Tuesday, 29 June 2010**

#### Session 4: Sub-Salt Seismic Imaging

The seismic image below salt is distorted by complicated ray paths through complex salt layers. This session deals with processing solutions in the form of multiple attenuation, the construction of proper velocity models and the use of modern migration algorithms to reconstruct the undistorted seismic image below salt.

#### Session 5: Surface Exploration Methods - Non-Seismic

Seismic imaging suffers from known limitations in defining the sub-salt geology. Seismic and non-seismic data sets complement each other by the fact that they respond to different physical properties and thus do not share the same problems or limitations. Integrated together they have the potential to provide a better and more unique solution.

#### Session 6: Drilling Technology

The session will highlight technologies and best practices currently used for successful and cost efficient deepwater wellbore construction and placement. Accessing deepwater reservoirs poses significant technical challenges – pressures up to 30,000 psi, over-pressured formations and the geological uncertainty of sub-salt plays pose significant risks. With rig spread rates in excess of USD1MM/day, the cost of failure is high. Detailed pre-drill planning is used to assess and reduce the risks arising from wellbore stability and wellbore pressure management issues, opportunities to optimise drilling parameters to extend the life of downhole equipment as well as real-time measurements to address geological uncertainty.

**Wednesday, 30 June 2010**

#### Session 7: Evaluation

Drilling and evaluating deep sub-salt formations is not only challenging but also critical to success of these projects. Using state-of-the-art technology to get rock mechanical properties, pore pressure as well as geological and petrophysical information in real-time, is highly recommended. Obtaining this data in a timely fashion will ensure better understanding of the depositional environment and proper reservoir characterisation and will lead to informed decisions on the field potential and its future development. This session will bring in experience from world leaders in sub-salt development and will focus on: wireline and LWD technologies; reservoir pressure, sampling and testing; petrophysical interpretation; reservoir modelling/stimulation

#### Session 8: Risks, Economics and Environmental Impact

This session will try to highlight and investigate the methodologies used to quantify economics and risks involved in any deepwater campaign. The aim is to highlight the use of process simulation models to evaluate and quantify the level of uncertainty in terms of time and cost. It is well known that deepwater drilling operations are complex and risky endeavors, with the cost of these drilling operations responsible for a significant cost of the overall field development budget, thus it is critical to understand and identify areas to mitigate any inherent risk. Tools to assess the economics and risks and have been available for many years but, due to the level of complexity involved in setting up and maintaining these models, it has not often been applied to deepwater drilling. It is our aim to draw on lessons from project developments where these proactive methodologies were employed in project planning and evaluating of deepwater developments globally. Therefore, we hope through the sharing of these economic and risk models we can benefit, thus ensuring that we in the oil and gas industry are able to present methodologies that leverage our cause and decrease the time for approval of these difficult projects.

## General Information

### Workshop Venue

P.O. Box 296, Shark's Bay  
Sharm El Sheikh, South Sinai, Egypt  
Tel: +20.69.360.2700  
Fax: +20.69.360.2711  
Email: [grand.resort@rotana.com](mailto:grand.resort@rotana.com)

### Workshop Guidelines

#### Format

Two (2) and half days of informal discussions prompted by selected keynote presentations and discussions. Workshops maximise the exchange of ideas among attendees and presenters through brief technical presentations followed by extended Q&A periods. Focused topics attract an informed audience eager to discuss issues critical to advancing both technology and best practices. The majority of the presentations are in the form of case studies, highlighting engineering achievements and lessons learned. In order to stimulate frank discussion, no proceedings are published and the press is not invited to attend.

#### Documentation

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas, and interesting projects are sought.
- Professionally-prepared visual aids are not required; handwritten view graphs are entirely acceptable.
- Note-taking by participants is encouraged.

#### Poster Session

The Steering Committee encourages registrations from professionals who are able to prepare and present a poster on a relevant project. For further details kindly contact Nancy Ghali, event manager at [nghali@spe.org](mailto:nghali@spe.org).

#### Attendance

Registrations will be accepted on a first-come first-serve basis. The Steering Committee encourages attendance from those who can contribute to the workshop most effectively either in discussions or with posters. A mix of attendees in terms of geographic origin, companies and disciplines will be encouraged.

#### Workshop Deliverables

- The Steering Committee will appoint a "scribe" to record the discussions and to produce the full workshop report for SPE.
- This report will be circulated to all attendees as the workshop deliverable within 4–6 weeks following the workshop. The copyright of the report is with SPE.
- PowerPoint presentation materials will be posted on a specific SPE URL address after the workshop. Provision of the materials by the speakers will signify their permission for SPE to do so.

#### Commercialism

In keeping with ATW objectives and the SPE mission, commercialism in posters or presentations will not be permitted. Company logos must be limited to the title slide and used only to indicate the affiliation of the presenter and others involved in the work.

#### Attendance Certificate

All attendees will receive an attendance certificate attesting to their participation in the workshop. This certificate will be provided in exchange for a completed Workshop Questionnaire.

#### Continuing Education Units

Attendees at this workshop qualify for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the Workshop.

#### Registration Information

This is a nonresidential workshop. The registration fees include all workshop sessions, coffee breaks and luncheons. The registration fees are as follows:

<b>Before 1 April 2010:</b>	<b>USD 1,450 SPE Member</b>	<b>USD 1,550 Nonmember</b>
<b>After 1 April 2010:</b>	<b>USD 1,850 SPE Member</b>	<b>USD 1,950 Nonmember</b>

#### Cancellation and Refund Policy

- A processing fee of USD 100 will be charged for cancellations received before the registration deadline 26 May 2010.
- For cancellations received after the registration deadline, 26 May 2010, 25% refund will be made to the registrant.
- No refund on cancellations received within seven (7) days prior to the workshop date, i.e. on or after 19 June 2010.
- No refund will be issued if a registrant fails to attend the workshop.

#### Registration Policy

- Registration fee MUST be paid in advance for attending the Applied Technology Workshop.
- Full fixed fee is charged regardless of the length of time that the registrant attends the workshop.
- Fixed fee cannot be prorated or reduced for anyone (workshop co-chairpersons, committee members, speakers, discussion leaders, students and registrants).
- Attendees are expected to attend all workshop sessions and are not permitted to attend on a partial basis.

**PLEASE USE INSIDE FORM FOR REGISTRATION**

