Talisman Malaysia successfully applied MPD in a Gulf of Thailand field characterized by narrow pressure margins caused by unstable coals and thereby enhancing reservoir identification and in-situ behaviour. The merits of each technology will be described to aid in the decision-making process.
Overcoming Drilling Challenges in Northwest China Using an Innovative MPD Technique
Scott McMillan, Randy Lovern, Jenny Ospina and Saad Saeed, Halliburton; Wen Hua An, Yao Ming Zhang and Zhi Xiong Xu, Petrochina Tarim Oilfield Company (SPE/IADC 130317)

The execution of the automated MPD program has led to significant drilling improvements in this field after five wells implemented thus far, including the longest horizontal lateral ever drilled in this field (982m). Well control events and formation-damaging fluid losses experienced during conventional drilling operations have been essentially eliminated with the precise design and application of this automated MPD system. Several key lessons and recommendations are discussed that can be applied to future operations in this field.

Deepwater Riserless Mud Return System for Dual Gradient Tophole Drilling
Dave Smith, AGR Subsea; Warren Winters, BP; Brian Tarr and Robert Ziegler, Shell; and Iskandar Riza and Malik Faisal B. Abdullah, PETRONAS (SPE/IADC 130308)

A joint industry group comprising AGR Subsea, Shell, BP, Norway DEMO 2000, and supported by PETRONAS conducted a large scale field trial from a deepwater semi-subsurface drilling vessel offshore Sabah, Malaysia, September 2008. The group set out to advance subsea mud return technology from its established commercial market of shallow water applications to deepwater depths and drilling requirements. Novel equipment and deployment methods were designed, developed and delivered on a demanding schedule, then tested and proven.

Variable Rate UBD Production Data Facilitates Reservoir Characterization
Sunil Lakshminarayanan, Jaime Villatoro, Said Boutalbi and George Stewart, Weatherford International Ltd. (SPE/IADC 130309)

The utilization of underbalanced drilling data to improve field productivity and recovery via real time reservoir characterization is described. Unlike conventional well testing, UBD data makes it possible to identify a permeability distribution for the entire reservoir. The major focus of the presentation is the technique used in the characterization tool to interpret the production associated with the drawdown, and some of the case studies and results.

Managed Pressure Drilling Brings Added Value to Production Casings Cementing Operations Increasing Success Rates and Quality in HPHT Fractured Narrow Window Wells
Fernando Gallo, Julian Bautista and Hermogenes Duno, Schlumberger; Dr. Carlos Perez Téllez, Arturo Flores, PEMEX; and Juan Carlos Beltran, Leiro Medina and Corrado Lupo, Optimal Pressure Drilling (SPE/IADC 130313)

Recommended operational procedures and recommended practices to integrate the MPD technique along with conventional cementing operations are presented. An example is given of nitrified pre-fluxes in cementing jobs for low pressure wells scenarios and a series of typical case histories of HPHT wells where a 5” liner was ran through a 7” liner 38# followed by an open hole of 5 5/8” at 6000 meters MD. The annulus between the 5” liner and the 7” liner 38# is very small, this condition associated with a narrow mud weight window.

“Drill to the Limit” Concepts and Enabling Tools
Don Hannegan, Weatherford International Ltd.

By encouraging drilling decision-makers to consider the totality of the circulating fluids system when designing the fluids and well construction programs, this presentation speaks to an extension of MPD’s pressure vessel mentality. Beyond MPD’s primary focus of maintaining EMW within drilling windows, this method places a balanced emphasis upon simplifying the casing program, achieving TD with a deeper, larger reservoir access, and doing so with a less expensive and/or more readily available drilling fluid.

Selection Guidelines for MPD
Andy Hinton, AGR Petroleum Services (SPE/IADC 130321)

The content and use of the Selection Guidelines are described. The presentation will describe the IADC UBO & MPD Committee’s work and how the guidelines were developed. It will give the target audience and how these people will be attracted to the guidelines.

Managed Pressure Drilling and Underbalanced Operations are significant technologies worldwide and beginning to make an impact in the Asia Pacific region. However, limited knowledge exists about the benefits and drawbacks of this technology. In this panel key operators from the Asia Pacific region will share their experiences - challenges, barriers and opportunities to implementing these potentially enabling technologies.

• Daniel Miessner, Head of Deepwater Drilling, PETRONAS Carigali
• Dale Bradford, Senior Drilling Manager, Murphy Exploration & Production Company
• To be named, ConocoPhillips

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Understanding Multiphase Flow Modeling for N2 Concentric Nitrogen Injection Through Downhole Pressure Sensor Data Measurements While Drilling MPD Wells
Juan Carlos Beltran, Corrado Lupi, Leiro Medina and Jose Tang, Schlumberger-Optimal Pressure Drilling; Hernan Melgares and Oswaldo Donoso, Schlumberger D&M; Efrain Rodriguez, Schlumberger IPM; Jorge Bedoya and Gustavo Puerto, Blade Energy Partners; and Carlos Perez Tellez and Reginaldo Rodriguez, PEMEX (SPE/IADC 130324)

The ECD calculation in an MPD operation is not the sole objective of using a complex modeling system. Today’s downhole drilling tools technology makes available a variety of sensors capable of measuring actual downhole pressure values. Prediction of flow behavior is also an important step that will increase the ability of monitoring and keeping efficient hole cleaning, cutting transport and heat transfer efficiency, which are critical for all multiphase drilling operations. Actual measurement of downhole equivalent circulating density becomes now a critical new calibration value to compare hydraulic models performance and approximation to reality.

Successful Use of Real Time Dynamic Flow Modeling to Control a Very Challenging Managed Pressure Drilling Operation in the North Sea
Knut Steinar Bjørkevoll and Svein Hovland, SINTEF Petroleum Research; Ingvill Barr Aas, Halliburton; and Elin Vollen, StatoilHydro (SPE/IADC 115118)

An advanced real time dynamic flow and temperature model was used to optimize and control challenging MPD operations on Guillfaks C in the North Sea. This paper addresses model specific challenges, analyses differences between model calculations and downhole pressure data, and discusses how to bring modeling further in accordance with future operational needs.

A Simplified and Highly Effective Method to Identify Influx and Losses during Managed Pressure Drilling Without the Use of a Coriolis Flow Meter
Don Reitsma, At Balance Americas LLC (SPE/IADC 112651)

The constant bottomhole pressure (BHP) calculation and control system of the Dynamic Annular Pressure Control (DAPC) system has been modified to provide an effective means of accurately detecting influxes without a flow meter, controlling the unplanned flow from the well, and reducing the influx volume. Recent tests performed at the Louisiana State University PERTT facility and field tests proved the system’s ability to identify unplanned flow events reliably. Test results will be shown and ways in which the system can easily be installed on a rig will be discussed.

UBD Application in Mabrouk Field, Oman
Hamood Al-Habbi, Said Al-Maskery, Salah Al-Bahlany and Said Al-Hougani, Petroleum Development Oman (SPE/IADC 130322)

An introduction of UBD applications in Oman and an explanation of the drivers of drilling underbalanced in Mabrouk are given. The results of this application until today and the challenges encountered while implementing this technology in Mabrouk are presented. The future of this technology in the Mabrouk field will be outlined.

Deep Air Drilling Application to Enhance Rate of Penetration in Extremely Hard, Abrasive and High Temperature Environment
Deepak M. Gala, Weatherford International Ltd.; Steve Nas, Weatherford Solutions; and Paul Cox, Smith International

In late 2007 and early 2008 wells were drilled with air/N2 drilling vertical gas wells in the western East Texas deep Bossier play. The lessons learned in the US are applied to a deep appraisal well drilled in Northern China. The drive to enhance gas drilling to extreme depths and high temperatures previously believed to be off limits proved to be successful in both parts of the world.

Underbalanced Drilling Challenges and Benefits in a Marginal High-Pour-Point Oil Reservoir in Sepanjang Island, Indonesia
Julius Ceazar Sosa, Felbert Palao and Julmar Shaun Toralde, Weatherford Indonesia; Steve Nas, Weatherford Solutions; and Kitos Akbar and Hasan Zaki, Kangean Energy Indonesia (SPE/IADC 130314)

Challenges of drilling in UBD mode in a reservoir with high-pour-point and waxy oil were addressed in the planning stage of the project. This case study explains how the UBD program was implemented in the field.

17.00 ADJOURNMENT

PROGRAMME COMMITTEE

A special thanks to the following committee members for their support in organizing the conference:

- Leo Arsenault, Blade Energy
- Mahmood Amani, Texas A&M University, Qatar
- Ray Bullock, Halliburton
- Kristin Falk, Ocean Riser Systems
- Raj Fernandez, Baker Hughes INTEQ
- Dr. Ken Gray, University of Texas
- Robert Goodwin, National Oilwell Varco
- Johnny Gunderson, Petroleum Safety Authority Norway
- Don Hannegan, Weatherford International Ltd.
- Andy Hinton, AGR Petroleum Services
- Calvin Holt, Keep Drilling Pte. Ltd.
- Joe Kinder, Joe Kinder Consulting
- Bob Knoll, Maurer Technology
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- Steve Nas, Weatherford International Ltd.
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- Dr. Jerome Schubert, Texas A&M University
- Rick Stone, Signa Engineering Corp.
- Elin Vollen, StatoilHydro
- Richard Wade, ConocoPhillips
- Jenny Chong, SPE
- Ken Fischer, IADC
- Mike Killalea, IADC

REGISTRATION

Online registration is available at: www.iadc.org/conferences/MPD_UBO

EXHIBITORS

Be sure to visit the conference exhibitors. These companies will have representatives available to answer questions and provide information.

- At Balance
- Halliburton
- Managed Pressure Operations
- Neotechnology Consultants Ltd. (Neotec)
- Senergy
- Strata Energy Services Inc.
- Weatherford

Exhibition space is still available. Please contact Anouk van de Water for more information: anouk.vandewater@iadc.org or phone: +31-24-6752252.

HOTEL INFORMATION

SHANGRI-LA HOTEL, KUALA LUMPUR
11 Jalan Sultan Ismail, Kuala Lumpur, 50250 Wilayah Persekutuan, Malaysia
Phone: 603 2074 3536 • Fax: 603 2070 8616

Please make your hotel reservations directly with the hotel and make sure to mention IADC to obtain the discounted rate or use the hotel reservation form that can be downloaded from the conference website: www.iadc.org/conferences/MPD_UBO

13.30-15.00 HYDRAULIC MODELING
Moderator: Kristin Falk, Ocean Riser Systems AS

15.00-15.30 NETWORKING BREAK & OPEN EXHIBITION

13.30-17.00 CASE HISTORIES III
Moderator: Andy Hinton, AGR Petroleum Services