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SPE Applied Technology Workshop

9–11 June 2008
Holiday Inn, Lesnaya
Moscow, Russia

Carbonates: New Frontiers

>> Registration deadline:
25 May 2008

Register inside or online
at www.spe.org/atws

Workshop Description

Carbonate oil and gas reservoirs in the Russian Federation are present at all stages of field development. Shallow carbonate oil fields were discovered in the Timan-Pechora basin in the 1920s, the giant oil, gas-condensate and gas fields of the Volga Urals region were discovered in the 1940s to 1950s and discoveries continue to be made particularly in the remote regions of Eastern Siberia and the Northern seas.

The focus on much of the field development activity in the Volga Urals basin is on maintaining production and improving ultimate recovery. Nevertheless new concepts in field development of reservoirs with complex pore systems (fractures, karst and mega-karst) are rejuvenating exploration interest in the region.

In contrast to the situation in South Western Russia, production from deep carbonate reservoirs in the Timan Pechora basin is relatively recent, and the development of carbonate reservoirs in the Pechora Sea and Eastern Siberia largely in the planning stage. These areas in the North and East of Russia are new frontiers for carbonate field development.

The reservoirs in all of these regions contain a variety of fluid types ranging from heavy oils, to gas-condensate and gas. The majority of oils are medium to light, gas can be sour. Pore types are similarly variable and understanding the role of fractures and karst critical to successful field development.

The workshop is organized in three sessions focusing on Carbonate Reservoir Characterization, Carbonate Reservoir Management, and Carbonate Reservoir Stimulation and Enhanced Recovery.

Workshop Objectives and Deliverables

- To facilitate the interchange of ideas on carbonate reservoir classification, description and field development
- To present case studies of carbonate fields, identify best practices and areas where new ideas and technology are required.
- To identify and record optimal recovery strategies from carbonate fields with differing fluid types, pore types and pressure maintenance schemes
- To determine the limitations of existing technologies and to identify potential breakthrough technologies to improve recovery from carbonate fields.

Who Should Attend

Meeting attendance will be limited to 70 people in order to facilitate discussion. The attendees will consist of experts in carbonate reservoir characterization, development and management and is particularly suitable for professionals from the following disciplines:

- Geologists and Geophysicists
- Petrophysicists
- Production Engineers
- Reservoir Development Engineers
- Well Construction and Completion Engineers

Carbonates: New Frontiers

Workshop Timetable

Monday

0900–0930 hours	SPE Registration
0930–1100 hours	Session One
1100–1130 hours	Coffee Break
1130–1230 hours	Session One
1230–1330 hours	Lunch
1330–1500 hours	Session One
1500–1530 hours	Coffee Break
1530–1700 hours	Session One
1730	Evening Reception
1830	Welcome Dinner

Tuesday

0900–1030 hours	Session Two
1030–1100 hours	Coffee Break
1100–1200 hours	Session Two
1200–1300 hours	Lunch
1300–1430 hours	Session Two
1430–1500 hours	Coffee Break
1500–1600 hours	Session Two

Wednesday

0900–1030 hours	Session Three
1030–1100 hours	Coffee Break
1100–1200 hours	Session Three
1200 hours	Workshop Closes

Monday, 9 June 2008

Session One: 0930–1700

Carbonate Reservoir Characterization

Session Managers: **Chris Einchcomb**
Victor A. Efimov
Rustam Tukhtaev

Carbonate reservoirs display a large variability in their characteristics which affects their performance and economic viability. Primary facies distribution (i.e. reef, platform, shallow or deepwater), rock properties (primary and secondary), diagenesis, and fracturing are among the key controls on reservoir performance.

The integration of subsurface disciplines can contribute to the understanding and prediction of reservoir performance and depletion strategies. Seismic data integrated with well data are capable of differentiating between reef and platform facies, and, identifying fracture density.

In this session we will explore the role of data integration in characterizing carbonate reservoirs through the discussion of a number of case studies. Key topics to be discussed include:

- General controls on reservoir distribution and diagenesis in Russian basins
- The role of seismic data in identifying carbonate reservoir facies and fractures
- The application of wireline log analysis and core analysis to predict and quantify reservoir porosity, permeability and both large and micro-scale fracturing
- Petrophysical analysis (using log data and borehole imagery) to identify large and micro scale heterogeneities and to predict reservoir properties away from well control

Tuesday, 10 June 2008

Session Two: 0900–1600

Carbonate Reservoir Management

Session Managers: **Vladimir A Pavlov**
Dmitry A. Antonenko
Felix R Yahshibekov

In common with the rest of the world a significant part of Russia's hydrocarbon resources are in carbonate reservoirs. The complexity of tectonic structure (faults, fractures etc.) and carbonate deposition characteristics (different wetting conditions, diagenetic processes, etc.) lead to a wide range of development strategies. In general, recovery processes in carbonates are more complex than in clastic reservoirs. Choosing the optimal development and management strategy has to take into account the specific characteristics of the reservoir.

To illustrate the range of possibilities we will present case-studies of carbonate field development from Russia and elsewhere in the world.

Issues to be discussed during the session include:

- Field Development Optimization (type of well (vertical, deviated or horizontal), well completion, drainage pattern, target bottom hole pressure)
- Pressure maintenance strategies (agent (water, gas, type of gas...), drive mechanism, production and injection rates)

Carbonates: New Frontiers

Wednesday, 11 June 2008

Session Three: 0900–1200

Carbonate Reservoir Stimulation and Recovery Optimization

Session Managers: **Murray Pike**

Krešo K. Butula

Stimulation of carbonate reservoirs is a daily occurrence around the world. Russia has reservoirs ranging from developed reservoirs to newly explored reservoirs to potentially yet to be discovered reservoirs. No matter what the stage of development most reservoirs will undergo stimulation and enhanced recovery operations at some stage of their life. Many of the newly explored reservoirs have unique characteristics and pose new challenges to the industry. The workshop will explore some of the technologies used in previous regions through case studies and how we can apply these to the new frontiers. Some of the key topics to be discussed in the session include:

- Requirements for reservoir characterization
- Formation damage and candidate selection principles
- Treatment fluid selection including quality assurance and quality control considerations
- Selecting the correct stimulation technique
- Stimulation evaluation—feedback for improvement
- Optimization of hydrocarbon recovery

General Information

Format

The workshop will consist of 2½ days of informal sessions, with a number of short presentations and discussions per session. There will also be an evening welcome reception and dinner on Monday 9 June.

Attendance

Attendance will be limited to a maximum of 70 delegates with proven experience and/or knowledge of the subject areas being covered.

Scribe's Report

The steering committee will appoint a scribe to make a full report of the workshop, summarising all presentations and discussion. This report will be circulated to all attendees. The copyright of the scribe's report will belong to SPE.

Attendance Certificate

All attendees will receive a certificate from SPE attesting to their participation.

Continuing Education Units

The workshop qualifies for SPE Continuing Education Units (CEUs), at the rate of 0.1 CEU per hour of attendance at the workshop.

Cost and Residency Information

Attendance at the workshop is non-residential. The attendance fee is GBP 510 for SPE members and GBP 535 for non-members and includes a welcome reception and dinner on the evening of Monday 9 June, two lunches; coffee breaks; all workshop sessions and the scribe's report.

Cancellation Policy

Written notice received 30 days before the starting date of the workshop entitles registrants to a 50% refund. There will be no refund for cancellations received after this time.

