

Insights from 2014 AAPG GTW Stratigraphic Traps of the Middle East: Current Status and the Road Ahead

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ABSTRACT

The Middle East countries are endowed with huge oil and gas reserves entrapped in traditional supergiant and giant four-way closures. In an attempt to investigate the potential for stratigraphically trapped hydrocarbons in the region, the first AAPG Geoscience Technology Workshop on the Stratigraphic Traps of the Middle East was convened in Muscat, Oman, in October 2014. Thirty oral presentations and posters addressed the subject of this workshop.

The workshop shed light on the nature, characteristics and genesis of stratigraphic traps in the region. The sessions covered the regional stratigraphic framework and the Middle East petroleum systems, case studies of carbonate and clastic stratigraphic traps, and examples from the region and also global stratigraphic traps that could be used as analogues. Challenges facing exploring for stratigraphic traps and technology solutions to overcome those challenges were presented.

The majority of the case studies, carbonates and clastics demonstrated how dominant stratigraphic trapping in the Middle East is due to changes in lateral facies or association with unconformities (truncation) and depositional facies pinching-out. Paleo structural configuration at the time of charge played an important role in stratigraphically trapping hydrocarbons. The latter often resulted in placing the tighter facies (seal) up-dip to the porous reservoirs.

The workshop highlighted the great potential for stratigraphically trapped hydrocarbons in the Middle East. The lessons learned from the workshop clearly prove that the potential for stratigraphic traps in the Middle East exist. To realize this potential, companies working in the region need to deliberately search for these hydrocarbons. Sharing knowledge among companies working in the region and harnessing technologies, especially seismic, are critical factors for success. The workshop recommended future effort focused on addressing stratigraphic trap configuration definitions and seals, and continuing to bring analogues for successful stratigraphic traps. Other aspects such the role of integrated teams, efficient workflows, and the importance of demonstrating the value of exploring for stratigraphic traps were also discussed.