

DEEP OVERPRESSURED PLAY: SECOND LIFELINE FOR WEST BARAM DELTA, EAST MALAYSIA**M Hafizan Abdul Wahab¹ & Jennifer Chin Li Yen²**Sarawak Exploration, PETRONAS Carigali Sdn Bhd, Level 10, Tower 2, PETRONAS Twin Towers, 50088 Kuala Lumpur, Malaysia
¹ hafizan_wahab@petronas.com.my; ² jenniferchin@petronas.com.my

Year 2010 marks 100 years of exploration activities in the West Baram Delta offshore Sarawak, one of the most prolific deltas in Southeast Asia. Ever since, a total of more than 50 exploration wells have been drilled targeting the conventional Middle Miocene Topset Clastic Play. The declining trend in both exploration success and production rates in recent years is alarming, hence the increased urgency of testing a new play concept.

The deepest well drilled recently entered an overpressured zone at depth of about 4km, with hydrocarbons still being encountered at the last penetrated reservoir. This success has triggered numerous ideas for the new potential hydrocarbon play type in the much deeper and severe overpressured reservoirs.

At these depths reservoir quality is the main risk associated with this new play. The biggest challenge for the exploration is associated with predicting the onset and magnitude of the overpressures as these have direct impact on in-place gas volumes, well design, and well deliverability.

This paper will discuss the new ideas behind evaluating the trap effectiveness, seal capacity, and reservoir quality of this overpressured play.

With a renewed exploration campaign targeting the deep overpressured play it is believed the West Baram Delta HC province can be rejuvenated.

REFERENCES

- AYOOLA, E.O., 1983. Hydrocarbon Distribution Pattern and Deep Prospects in the Niger Delta, Nigeria. *Journal of African Sciences*, Vol. 1, No. 2, 145-151. Pergamon Press Ltd. Great Britain.
- SWARBRICK, R.E., 2000. Overpressure 2000 Workshop Drilling and Exploiting Overpressured Reservoirs: A Research Workshop for the Millennium, London, 4-6 April 2000. *Marine and Petroleum Geology* 17: 975-977.
- TAN, D.N.K., et al 1999. West Baram Delta. In: Leong, K.M., *The Petroleum Geology and Resources of Malaysia*. Petroliaam Nasional Berhad (PETRONAS). Kuala Lumpur, 293-341.
- TINGAY, M.R.P., et al 2009. Origin of Overpressure and Pore-Pressure Prediction in the Baram Province, Brunei. *AAPG Bull.*, V. 93, No. 1 (January 2009), 51-74.
- WANGEN, M., GUTIERREZ, M. 2005. Modeling of Compaction and Overpressuring in Sedimentary Basins. *Marine and Petroleum Geology* 22: 351-363