

## **SHORT COURSE**

**Tuesday, May 18, 8:30 – 5:00, Embassy Suites Hotel**

**Fee: \$15 (covers lunch) – limit 50 attendees**

**Understanding heterogeneity in shale plays across the US and enhancing resource exploitation through the use of multi-disciplinary data from seismic, core and logs.**

**Instructors: Richard Salter (Schlumberger, Houston, TX), Rick Lewis (Schlumberger, Oklahoma City, OK)**

### **Who should attend?**

Reservoir geologists, geophysicists, petrophysicists and reservoir engineers interested in an overview of various shale plays across the US that emphasizes the integration of multi-disciplinary data.

### **Objectives and Content**

Although a number of shale plays have now been in production for several years there are still many unknowns in the understanding of reservoir heterogeneity and the establishment of best practices for exploiting each individual play. This course will cover an overview of our current understanding of a number of key shale plays and take the attendee through the process of examining and upscaling different data types including core, logs and seismic. The integration of these different measurements will then be utilized to demonstrate planning a successful horizontal well and taking single well success to optimized full field development.

Course components will include:

- 1) Current status of the key shale plays to be discussed. Includes summary reviews of Haynesville, Marcellus, EagleFord, Barnett, Woodford, Fayetteville, Bakken and what makes each a unique challenge.
- 2) Core analysis from the various shale plays
- 3) Value of petrophysical evaluation for shale plays—what are the critical parameters and how can we measure them
- 4) Use of mechanical property calculations to predict fracture containment and to pick the optimal zone to land a lateral
- 5) Integration of core analysis and wireline logs – weighing the relative strengths of each
- 6) The role of surface seismic in pre-well planning, hazard avoidance and well placement
- 7) Surface seismic reservoir characterization – quantitative assessment of reservoir potential, stress orientation and fracture networks.
- 8) Bringing it all together – planning the optimum location and orientation for the borehole
- 9) Measurements along the lateral – how important are they for a successful horizontal well?
- 10) Designing the stimulation procedure
- 11) Microseismic monitoring during stimulation
- 12) Production logging – understanding hydrocarbon contribution from the lateral and the correlation with stress profiles and lateral heterogeneity
- 13) Production forecasting from reservoir simulation - the importance of understanding the way in which the fracture network influences production.
- 14) From single well success to full field development – what should we consider next?