Geopressure and Pore Pressure Prediction fundamentals (One day)

Course Description

This one day course is essential for every technical professional involved in exploration, production and drilling for oil and gas.

The success or failure of finding hydrocarbon in a prospective structural closure is the consequence of the subsurface geopressure compartmentalization. Moreover, successful drilling to the targeted formation is a result of accurate prediction of pore – fracture pressure within the drilling tolerance window.

> "The applied geopressure course that you taught to the members of the HGS will provide wide-range of benefits to the future of our industry ".
> *HGS and the Continuing Education Committee,2005*

The basic geological building blocks are used as the foundation for pore pressure predictions. This course covers the essentials of geopressure compartmentalization in relation to pore pressure development with depth. It also emphasizes the differences between the geopressured and hydrodynamic systems. It is an introduction to definitions, models, measurements, predictions, calibrations, and appraisals of subsurface geopressure. Moreover, the course briefly discusses different geopressure case history examples and their implication on exploration and exploitation.

> "Your useful class help me to get a better understanding of such complex topic of the GeoPressure world".
> *Miguel Ascario, Senior Petrophysicist ,Solid Rock Images.,2007*

Who should attend?

Geologists, geophysicists, drilling and reservoir engineers, well log analysts, managers, and support staff involved in exploration, development and drilling.

Learning outcomes

1. Understand the causes, concepts and graphic representations of geopressure
2. Differentiate between geopressure and hydrodynamics
3. Overview of methods to predict pore pressure and data qualifications
4. The geological setting impact on stress and geopressure compartmentalization especially in salt basins
5. The importance of effective seals for hydrocarbon entrapments

Course content

- New approach to definitions, causes and concepts
- Geopressure vs. Hydrodynamics
- Graphical representations (PSI and PPG MWE) including some of their pitfalls
- PP-FP direct and pertinent measurements
- Methods used to predict pore pressure with emphasis on Effective Stress

- ***Data qualifications for PP – FP prediction***

✓ *Before drilling (Modeling)*
✓ *During Drilling (Calibration)*
✓ *Post Drilling (Appraisal)*

- ***Application overview***

✓ Transgression vs. regression
✓ Compartmentalization , seal effectiveness and retention capacity
✓ Supra and sub salt geopressure models
✓ Faults as sealers vs. leakers
✓ Reserve and reservoir management
✓ Drilling casing, and mud programs
✓ Anticipated drilling challenges

A follow-up 5 day course "Geopressure: Prediction, Analysis and Risk Assessment for E&P" is also available. This course focuses on ***know how***, ***in depth exercises and analyses*** (Microsoft Excel is used for the four day course). No pore pressure prediction software is required).