



Training Course

Course Title

NEW METHOD FOR PRE-DRILL 3D STRESS DETERMINATION AND PETROLEUM INDUSTRY APPLICATIONS

Instructor Name, Organization

Mr. John K. Davidson, CEO for Predrill Stresses International

Course Duration

1 Day

Why You Should Attend

Every well encounters geomechanical issues caused by rocks of differing physical properties and Earth stresses. Some may encounter geological hazards such as overpressure or unstable fault planes whose movement histories may cause loss of seal. Wells are increasingly drilled in challenging environments, at varying inclinations, high pressure, high temperature and may require fracing in rapidly varying stress regimes.

This course will demonstrate that faults can be mapped with good quality seismic data and the same interpretation used to create an accurate quantified 3D stress volume. This knowledge is important for us to understand well placement options within the potential reservoir stress field, to increase safety and reduce costs for little more than the time and cost of interpreting the seismic survey.

Who Should Attend

The course is designed for geologists, geophysicists and drilling and reservoir engineers involved in exploration, drilling and production.



Course Content

This one day course demonstrates the need to understand stress and its application to several geo-mechanical and purely stress related challenges faced by geologists and engineers. Earth stresses can be derived in three dimensions, pre-drill from seismic (PSI Patented) as opposed to post-drill measured points in wells. The quantified 3D stress volume can then be used in a number of applications.

Session 1. Measuring Stresses

- Introduction
- Post-drill Stress Determination
- Pre-drill Stress Determination

Session 2. How Can We Apply Stress Knowledge to Every Well?

- Exploration
 - Stress Consistent Seismic Interpretation (Mapping Check)
 - Prospect Assessment (Fault Seal/Fabric Check)
 - Arbitrary Stress/Stratigraphic Sections
 - Effective Geo-engineer Interaction (Geological Hazards)
- Drilling
 - Drilling Risk Reduction (Wellbore Stability)
 - Well Planning (Pressure-Depth Graphs)
 - Backup Plans
 - Pre Versus Post Drill Costs

Session 3. Further Pre-Drill Stress Applications for Wells in Challenging Environments

- Drilling
 - Extended Reach
 - Overpressure
- Production
 - Initial Field Stress State
 - Fracking
 - Excessive Stress
 - Flow Barriers (Compartmentalization)
 - Secondary Recovery
 - Increased Safety & Decreased Costs

Instructors Bio

Mr. John K. Davidson conducted Exxon's 3-week, field-based, structural geology courses in western North America from 1975-6. Since 1983 he has conducted an annual field-based course in western England and Wales. It was during these courses he noted the relationship of structural geology and seismically recognizable, globally synchronous compressional pulses which predict present stress. From 2000, the courses have evolved into PSI's present patented methodology and a software program for quantified stress applications on fields and remote locations.

Registration

This course is available in-house, for joint ventures or industry wide. For further information please contact info@predrillstress.com

