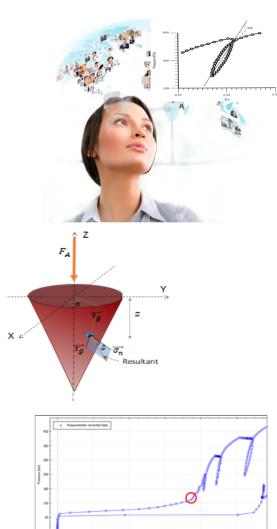
# Gain Insight Unlock the rock!







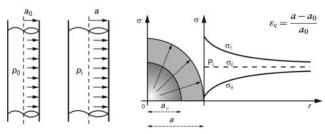
Integrity Insitu

INSITU ROCK STRENGTH DATA
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# Physical acquisition of rock properties and stress magnitudes.

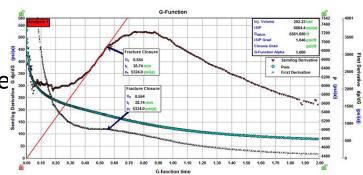
### Intelligent Packer

Instrumented membrane that measures the rock's response to applied force



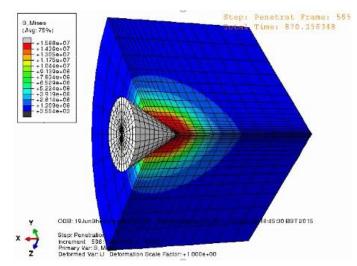
#### Mini-Frac

Low volume, high pressure fluid injection



#### **Shear Head**

Downhole combination of a direct shear box test and a 'scratch test'







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## Universal data that crosses industry borders.

## Physically Measured via the HTHP Insight Tool:

Minimum In Situ Stress
Permeability
Average In Situ Stress
Shear Modulus
Limit Pressure
Residual Strength
Stress Anisotropy Orientation
Cohesion
Friction Angle
UCS
Tensile Strength
Brittleness





## Finite Element Modelling Outputs:

Effective Insitu Horizontal Stress
Undrained Shear Strength
Undrained Shear Modulus
Unloading Shear Strength
Shear Stiffness Coefficient
Shear Exponent of Elasticity
Maximum Shear Modulus
Insitu Pore Pressure
Dilation Angle
Critical State Friction Angle
Dynamic Viscosity of Pore Fluid

#### Readily Derived:

Young's Modulus Poisson's Ratio







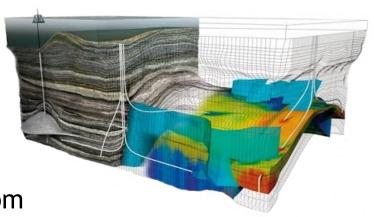
## Mechanical measurements that make all the difference.

### Do you prefer real-time results or painful wait time?

Is in situ data important to you and your models?

We physically measure in situ rock strength and stress properties via mechanical testing of the wellbore wall!

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