

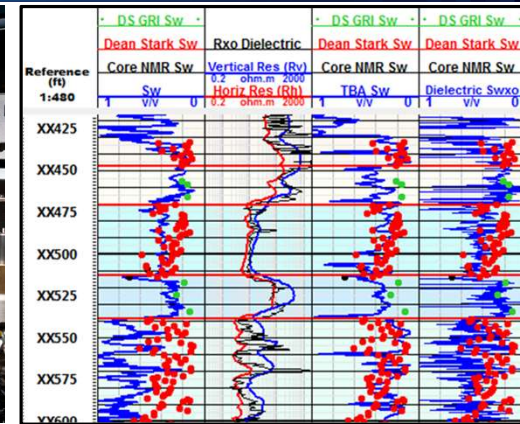
From Real Measurements to Target and Completion Optimization

October 12th, 2017

Midland, TX

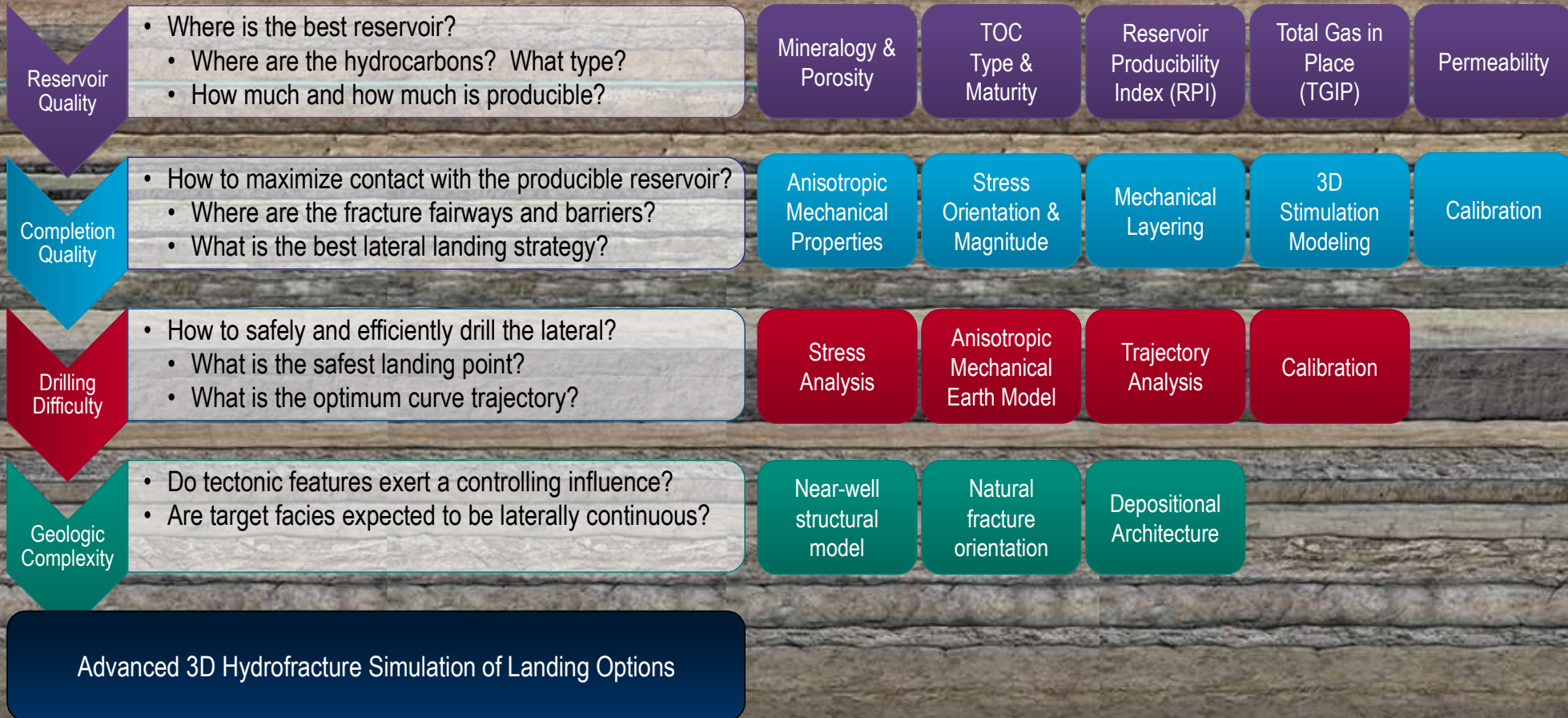
Schlumberger

Schlumberger Reservoir Laboratories | Core – Log Integration Packages



- Tailored core-log integration packages with reduced turnaround times
 - One Chain-of-Custody: Downhole → Lab → Integrated Interpretation
 - Unique expertise across disciplines and data acquisition methods
 - Optimized for XL-Rock 1.5-in rotary sidewall cores
- Schlumberger Reservoir Laboratories Houston grand opening November 9th
 - Massive facilities upgrade—reservoir rocks and fluids and engineering fluids under one roof
 - Leader in pioneering techniques specific to shale cores
 - Leader in core geomechanics

Vertical Appraisal / Pilot Well Considerations



Core – Log Integration | Completion Quality

RSWC Geomechanics Package



- Multi-stress compression testing
- Vertical & horizontal samples
- Capillary suction time tests for 5 fluids

Sample requirement: 1 XL-Rock RSWC (dedicated)
Turnaround Time: 8 Weeks

Dynamic
anisotropic
mechanical
properties

*Condition anisotropic
rock physics model*

Static
anisotropic
mechanical
properties

*Calibrate log static-to-
dynamic correlation*

Fluid
Compatibility

*Constrain fluid selections
for frac design*

Sonic
Scanner
velocities

Dynamic
anisotropic
mechanical
properties

Static
anisotropic
mechanical
properties

Kinetix
Shale

Frac design
& 3D simulation

Schlumberger-Private

Schlumberger