

Pressure Pumping Technology Center

World-class geological
and reservoir characterization

Baker Hughes geological group

We believe the best well completion or stimulation treatment begins with understanding the reservoir through our GaffenyCline Advisory studies.

We pioneered the use of this concept—combining geological and reservoir characterization with simple, economical, and effective stimulation and remediation solutions to maximize well performance. Staff geologists and physicists perform a wide range of laboratory tests and data analyses to help ensure fluid compatibility and effectiveness and optimize well designs, completion practices, and stimulation plans.

Areas of expertise

Geological services

- Geological characterization
- Inorganic sample characterization (scales and other wellbore solids)
- Materials characterization
- Cathodoluminescence
- Employment of various techniques
 - Mineralogical analysis by x-ray diffraction
 - Elemental compositions by x-ray fluorescence
 - Thin-section petrography
 - Scanning electron microscopy
 - Energy dispersive spectroscopy
 - Optical microscopy

Rock mechanics laboratory

Reservoir rock and materials properties

- Failure criteria testing (compression)
- Determination of the state of stress for elastic and plastic transition
- Young's modulus (static and dynamic)
- Poisson's ratio (static and dynamic)
- Formation hardness (Brinell hardness)
- Rock embedment strength testing
- Proppant embedment testing
- API proppant crush testing
- Shale and formation softening from acids and fracturing fluids
- Ultrasonic velocity anisotropy to determine horizontal stress orientation



Special core analysis laboratory

Reservoir rock and materials properties

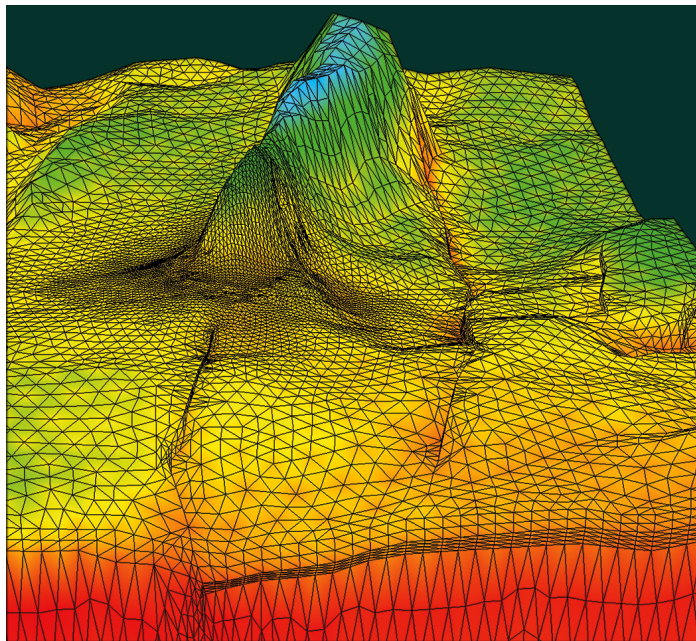
- Helium porosity
- Absolute permeability

Core flow studies

- Gas and liquid permeability at in-situ fluids tests
- Permeability damage and stimuli tests (regain permeabilities)
- Acid response tests
- Fluid loss tests
- Acid-etched fracture conductivity at closure stress

GaffenyCline Advisory Group

- Shale technology group
- Geological and engineering consultation
- Geographic information systems studies
- Data processing
- Log analysis
- Production, well test, and pressure transient analysis
- Reservoir production simulation
- Geomechanical modeling and numerical methods
- Hydraulic fracture simulation and modeling



Baker Hughes 