

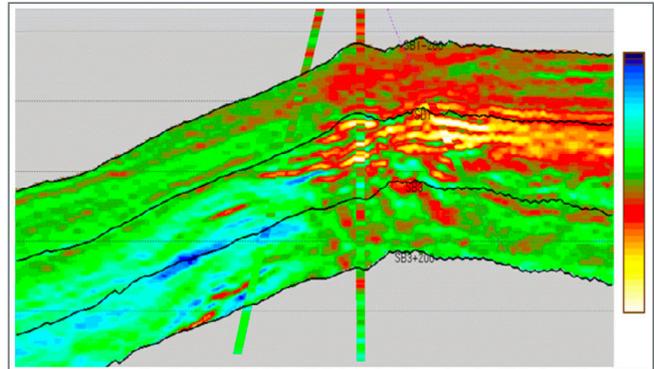
Simultaneous AVO Inversion of Seismic Partial Stacks to Reservoir Properties

RockTrace® determines key reservoir properties, P-impedance, S-impedance, density and Vp/Vs, through the inversion of partial offset or angle stacks. Critical inputs are conditioned seismic partial stacks and their corresponding wavelets, and low-frequency models. In the case of offset stack inputs, a velocity function is needed. From the native outputs, other reservoir properties of interest can be computed. These include porosity, Young's modulus, Poisson's ratio and the LMR properties. The outputs of inversion and their derivatives can be interpreted from a Bayesian analysis perspective using the **FFP** application. This facilitates the making of, for example, probability-based net pay maps.

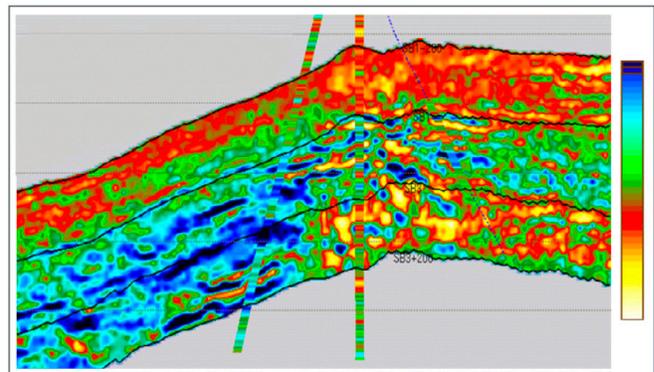
The Jason Advantage

- Consistent, accurate reservoir properties
- Wells are blind in the seismic band and available for QC
- Realistic low-frequency models consistent with geology
- Drill fewer / better wells
- Achieve exploration / production goals
- Optimum development of reservoirs
- Accurate reserves estimates
- Probability-based interpretation via **FFP**

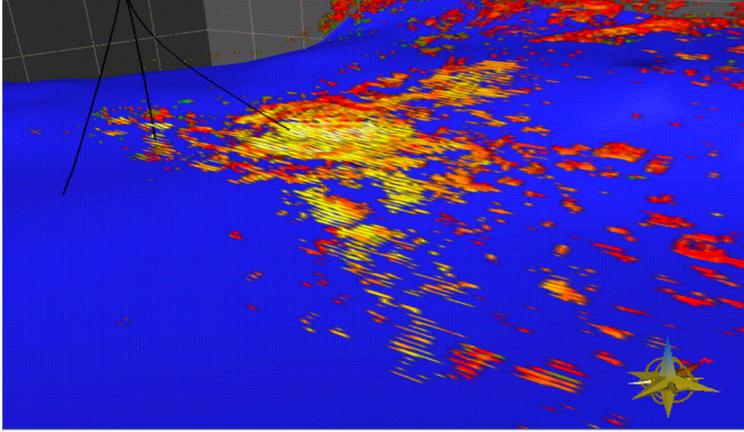
RockTrace AVO inversion integrates sparse spike inversion technology with sophisticated low-frequency modeling techniques to produce the most advanced deterministic estimates of reservoir properties in the industry. The parameterization includes full 3D control of most variables, mixed-mode inputs and a rich set of quality controls.



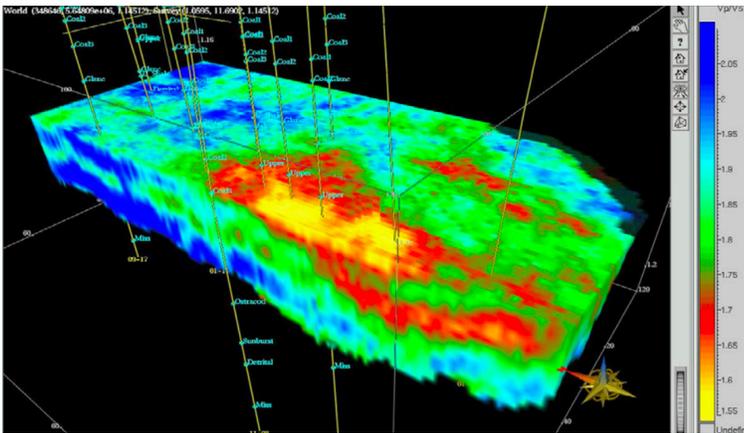
P-impedance from Simultaneous AVO Inversion of Gulf of Mexico data.



S-impedance from AVO inversion.



Rock Physics analysis identified the regions in P-impedance – S-impedance cross-plot space where the sandstones could be found. The prospective sandstone bodies are shown in the figure.



Vp/Vs from simultaneous AVO inversion clearly images the two productive sandstone channels in this Cretaceous play.

Key Features

- Probability-based interpretation via **FFP**
 - Bias corrections
 - Uncertainty estimation and compensation
- Rich QC for QI analysis
- Proprietary, non-model-based inversion engine
- Offset or angle partial-stack inputs
- Full Zoeppritz equations
- Rich parameterization control and spatial constraints
- Detailed low-frequency models
 - Faults and stratigraphy included
 - No constant background trends
 - Driven by geology and seismic

Additional Features

- Mixed modes (PP, PP-PS)
- Depth inputs
- 3D variable wavelets
- VTI compensation for Density