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Interpreting Complex Traps From Seismic outcrops

"The present is the key to the past", as stated by Hutton over a century ago. Today the present is focused on technology specifically, the improved image capabilities of seismic data. With the recent developments in Seismic Petrophysics, it is now possible to image lithology, porosity and fluids on seismic data.

The ability to image lithology, porosity and fluids allows us to attack complex traps from a geologic perspective. We can switch gears from amplitudes, impedance, and reflectance to actual geology. That means we are no longer looking at seismic, we are looking at outcrops. This allows us to do a more detailed geologic interpretation. Trap settings become much more apparent in the geologic domain than in the seismic domain. Also, the interpreter can concentrate on the specific trapping mechanism, such as facies, porosity variation, or an unconformity.

Several examples are reviewed illustrating geologic solutions to complex traps. These include porosity variation in a fluvial reservoir, lithologic variation in a nearshore marine sequence, and the identification of gas depleted zones.