# HGS Dinner Meeting Poster Session, November 11

## *Interaction of Salt Tectonics, Slumping and Channeling: Mid-Pliocene Reservoir System, Pompano Field, Gulf of Mexico*

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Newly reprocessed 3-D seismic data, converted to acoustic impedance, shows the detailed stratigraphy of the mid-Pliocene (P38), upper slope reservoir system of the Pompano Field. These improved data allow us to view the internal slumping and channeling in an interval which was previously poorly imaged. Pompano is located in the Gulf of Mexico at the boundary of Mississippi Canyon and Viosca Knoll.

Overall structure of the field is governed by a salt diapir in the footwall of a counter-regional growth fault. Our model is that growth of the salt feature initiated slumping by destabilizing the slope south of the diapir. Turbidites coming from the north were then diverted around the salt and focused into the slump zone to the south. Erosion by these flows created a canyon approximately 3 miles wide and 1,000 feet deep. A second set of slumps are oriented into the canyon and are thus interpreted to be canyon-wall failure.

With a subsequent rise in sea level this canyon was filled with sediments which onlap the basal P38 erosion surface. North of the salt, these sediments are clearly channelized. Individual channels are less than 1/2 mile wide, and can be mapped for up to 3 miles in the dip direction. To the south, where the canyon is deepest, the sediment appears more chaotic on seismic, but there is still evidence of channeling. Once the canyon filled, deposition was no longer constrained, and it expanded to the east and west.

Hydrocarbons are trapped in the sandy channel fills where they are structurally high adjacent to salt. Reservoir quality is good, but the combination of channeling and faulting make reservoir management challenging. Fortunately there is good correlation between hydrocarbon-filled sands in logs and seismically defined channels. We are thus able to drill very successful deviated and horizontal wells based on seismic interpretation of sand position and geometry. ■