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Appraisal Update and Review, Jack and St. Malo Projects, Deepwater Gulf of Mexico

The Jack and St. Malo projects are part of an emerging Wilcox-equivalent Eocene/Paleocene Deepwater Gulf of Mexico play. Located in Walker Ridge 758, 759 and 678, approximately 250 miles southwest of New Orleans, the discoveries are four-way closures near the edge of the advancing Sigsbee Salt Canopy. The subsalt projects, each with two wells to date, are in ~7,000 feet of water and are separated by approximately 25 miles.

Jack and St. Malo reservoirs have several characteristics in common, including gross pay sections greater than 1000 feet, low-permeability reservoirs, large closures and significant volumes of oil in place. They also share common uncertainties, the most critical being reservoir quality and distribution. To

address reservoir uncertainty an extended well test was performed on the Wilcox 1 Reservoir in the Jack #2 well during the summer of 2006. The first flow test of the Deepwater Wilcox play to date, it flowed at a maximum rate of 6,000 BOPD with ~40% of the total pay section contributing.

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Although the well test at Jack showed economic production rates can be attained from these reservoirs, the variability in permeability between wells is poorly understood. Permeability distribution across the structure remains the primary uncertainty for both projects, as well as the trend. The team is

assessing the relative effect on permeability variation that resulted

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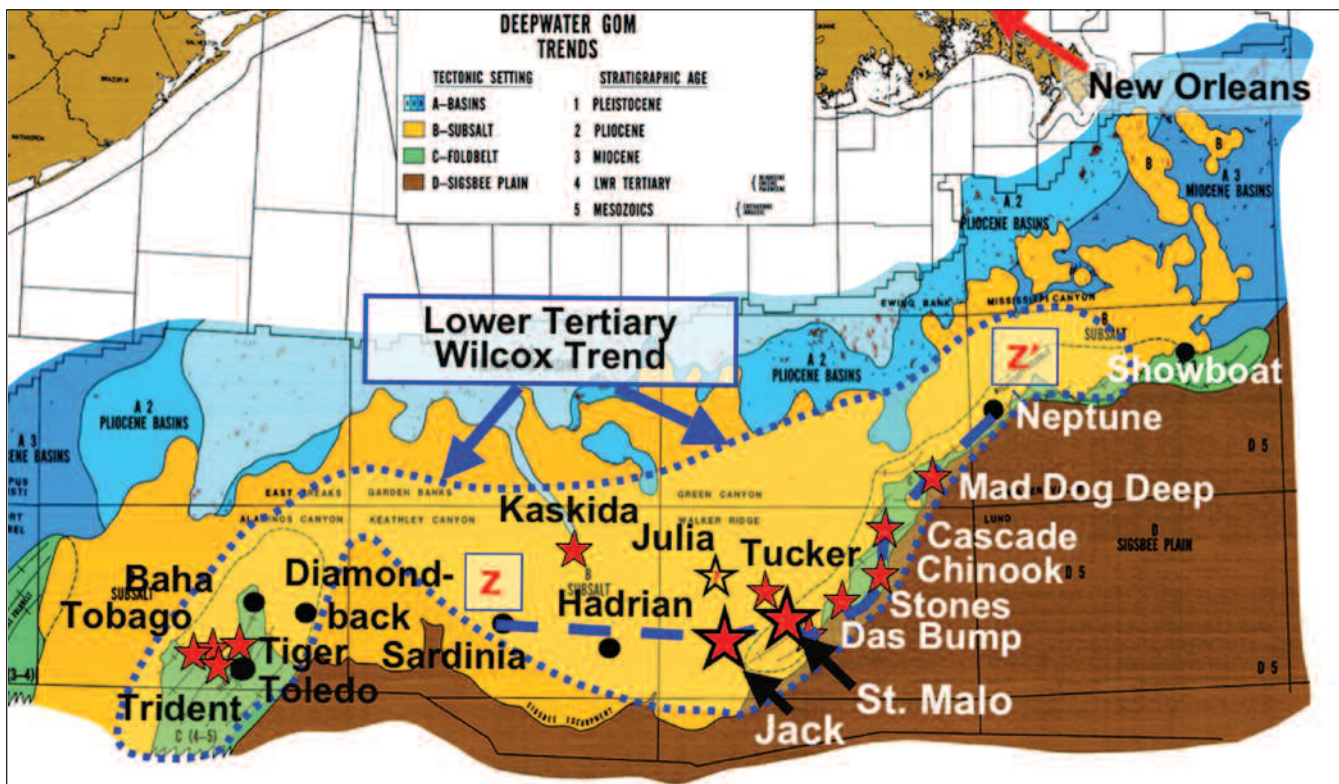


Figure 1: Gulf of Mexico regional map showing deepwater Wilcox Trend and a number of significant deepwater discoveries.

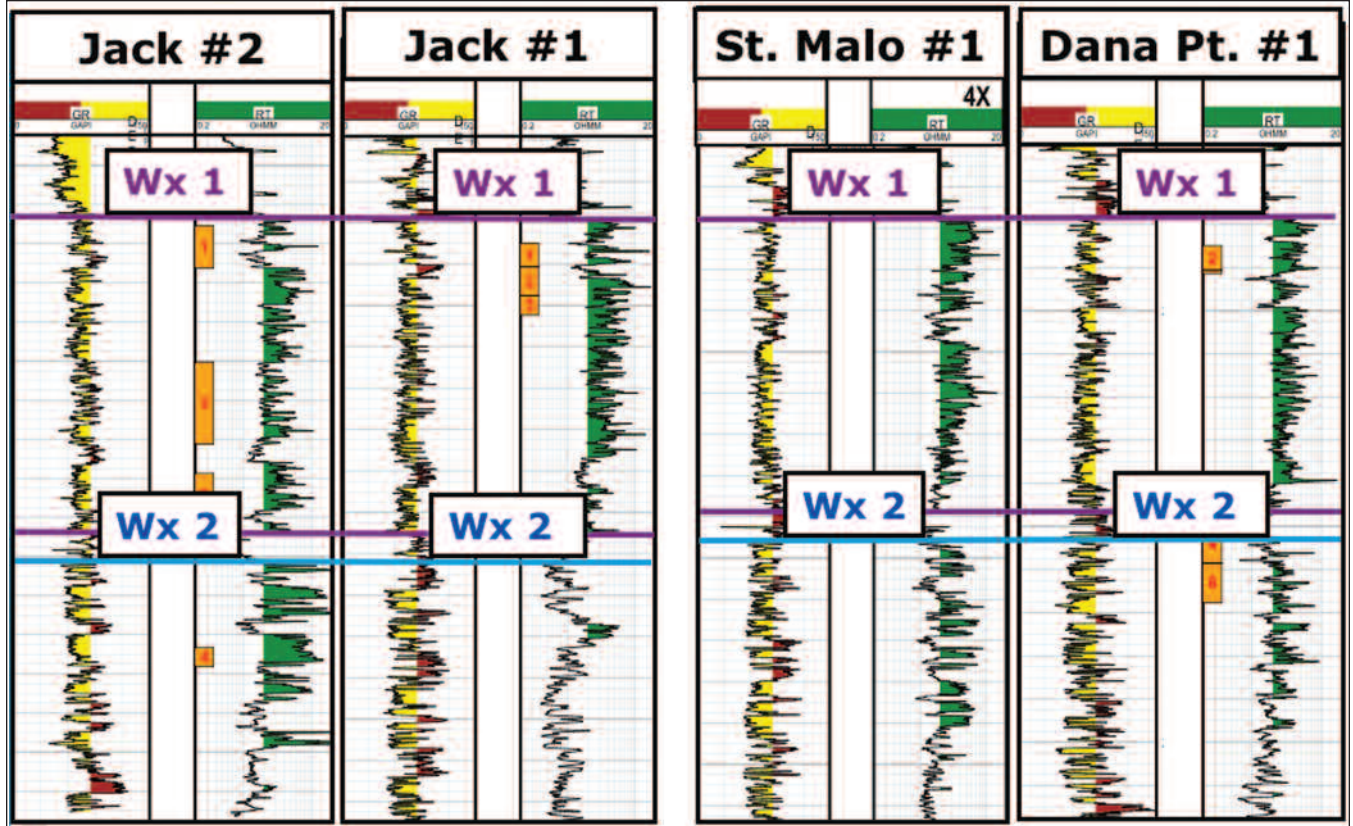


Figure 2: Stratigraphic cross-section through wells at Jack and St. Malo discoveries showing Wilcox 1 and Wilcox 2 pay sands.

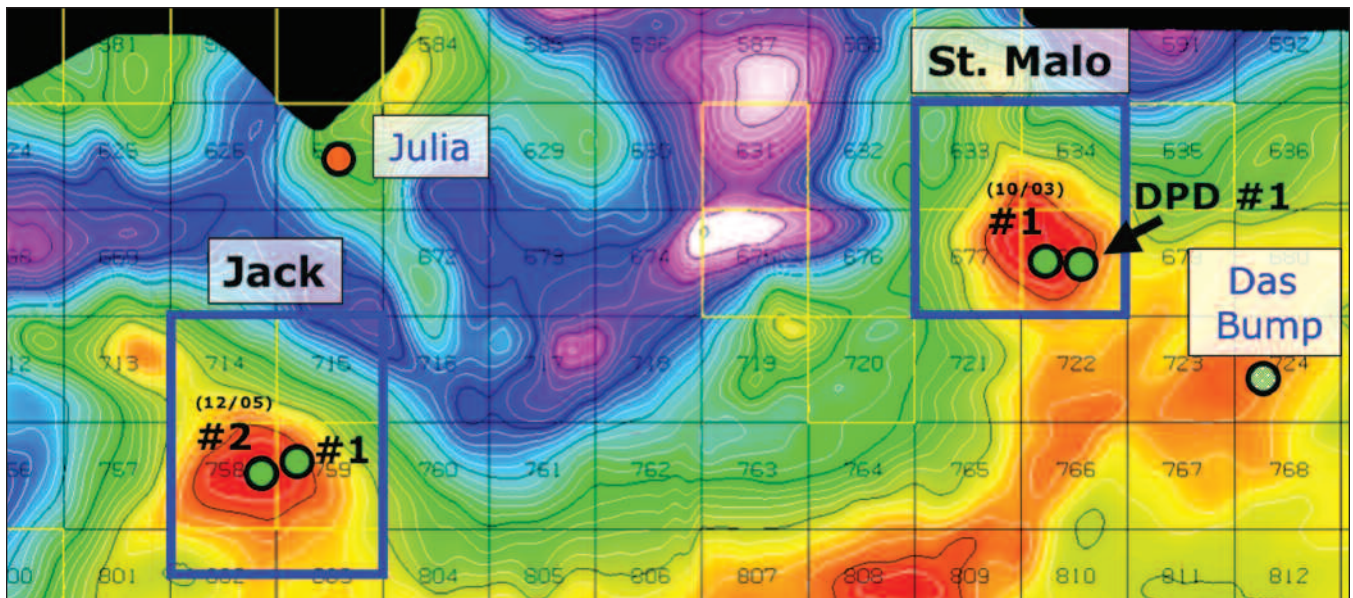


Figure 3: Wilcox Structure map showing relationship of Jack and St. Malo features in sub-regional trend.

from compaction and diagenetic histories, facies controls and structural movement. Petrologic studies, basin analyses and stress field analyses are currently under way at Jack and St. Malo to address the issue.

Additional subsurface uncertainties affecting Jack and St. Malo reserve calculations are structural closure, fault compartmentalization and fluid properties. Poor seismic imaging below rugose salt bodies makes the interpretation of closure and fault patterns difficult. In these large, gently dipping structures, slight interpretational differences result in significant reserve adjustments, and compartmentalization due to faulting can reduce recovery by limiting a well's drainage area and access to reservoir energy. Efforts to acquire better seismic images early in the appraisal and development process are ongoing. Acquisition of a wide-angle towed streamer (WATS) seismic survey over Jack is underway and a newly acquired 3D survey over St. Malo is in the final stages of processing.

Additional appraisal wells are planned for each project, with wells scheduled to be drilled in late 2007 and into 2008. ■

Biographical Sketch

ERIC STROMBOE is a geologist with Chevron Deepwater Appraisal in Houston, where he serves as Project Geologist for the Jack Discovery in Walker Ridge. A native of New Orleans, Eric received a BS in geology from Louisiana State University in 1986, and a MS in geology from the University of New Orleans in 1990. That same year, Eric joined Texaco where he worked South Texas for ten years, with a focus on exploring and developing the Wilcox Formation. After a brief period of time working the Gulf of Mexico Shelf, Eric moved to Deepwater where he spent five years developing the Petronius Field and exploring the Viosca Knoll Area. Eric joined the Jack/St. Malo Appraisal Team in May 2005.

