

by Barbara A. Luneau, Jeffrey A. May,
Joseph J. Garbee, and Charles Hinson
Schlumberger Holditch-Reservoir Technologies, Denver, Colorado



Sequence stratigraphic framework and depositional variations of Miocene lowstand systems tracts, South Louisiana

Facies of Miocene lowstand systems tracts comprise a large portion of the remaining exploration potential for deep untested objectives in southwest Louisiana. The complex and highly variable section is contained in 22 major depositional sequences deposited from 21.9 to 7 million years ago. Each sequence ranged in duration from 0.5 to 1.5 million years. Regional well log, seismic, and biostratigraphic correlation and mapping of the sequence stratigraphic framework defines the occurrence and extent of lowstand facies that filled intra-slope basins across south Louisiana's coastal zone.

From oldest to youngest, the sequences encompass the *Cristellaria R.* through *Cristellaria K.* biozones. In onshore and state water areas, 14 sequences contain regionally correlative lowstand systems tract components. Amalgamated, massive turbidite facies of basin floor fan complexes are not recognized in intra-slope basins in association with rapid depositional cycles. Deepwater fan and channeled levee facies of slope fan complexes and deltaic facies of prograding complexes are well-developed throughout the early and middle Miocene section.

Late Miocene lowstand deposits are best developed in the offshore trend.

Syn depositional fault movement and salt withdrawal controlled thickness trends, facies patterns, sandstone content, and the position and trend of the shelf/slope break. Sandstone-rich basin floor fans, slope fans, and prograding deltaic complexes are best developed in intraslope basins where paleobathymetric confinement and accommodation were greatest.

Biographical sketch

Barbara Luneau is a principal consultant with Schlumberger Holditch-Reservoir Technologies. She has worked as a geologist in the Reservoir Technologies group for the last 8 years, participating in regional stratigraphic studies and reservoir modeling.

Barbara holds an MA in geology from the University of Texas at Austin, and a BA in geology from the University of Vermont. She has worked at the Texas Bureau of Economic Geology, RPI International, and Intera Information Technologies. □

HGS Luncheon Meeting • Wednesday, May 24, 2000 • Hyatt Regency Downtown • Social 11:15 a.m., Lunch 11:45 a.m.