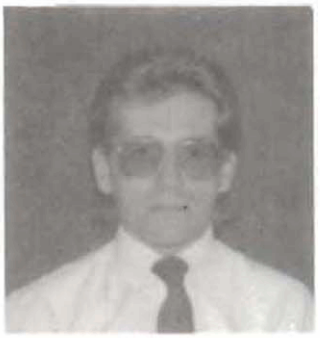
HGS LUNCHEON MEETING—FEBRUARY 27, 1991

SCOTT SUMNER—Biographical Sketch



Scott Sumner is presently a Senior Geologist working in the Gulf Coast Exploration Division of Shell Western E&P Inc. Scott received his B.S. and M.S. in Geology from the University of Missouri - Rolla in 1982. During completion of his M.S., Scott was employed as a Staff Geologist at the Missouri Division of Geology and Land Survey where he mapped Pennsylvanian, Cambro-Ordovician, and Mississippian stratigraphy in Missouri. Upon employment with Shell in 1982, Scott was assigned to the Plio-Pleistocene trend of Central Offshore Louisiana where he continued to work until late 1989. He was then transferred to his present assignment working the Frio trend of Southwest Louisiana.

MORPHOLOGY AND EVOLUTION OF SALT/MINI-BASIN SYSTEMS: LOWER SHELF AND UPPER SLOPE, CENTRAL OFFSHORE LOUISIANA

A complex array of deformed salt bodies and localized salt withdrawal depocenters termed "mini-basins" dominate the subsurface geology of the central Louisiana lower shelf and upper slope. Individual salt bodies climb basinward as horizontal sills supplied by vertical to inclined "feeders". Each level of salt remobilization and emplacement is overlain by an association of structural features which occurs repetitively in space and time due to sediment loading caused by progradation of Miocene to Recent shelf margins.

Mini-basins are generally circular to elliptical (in map view) and contain thick sequences of sediment ponded by salt withdrawal. Mini-basins on the slope typically have a simple symmetric to asymmetric internal structure and are often almost entirely bounded by large, bathymetrically high salt bodies. Salt displaced out of slope mini-basins is loaded by the advancing shelf margin initiating formation of shelf mini-basins. Shelf mini-basins generally have well defined fault/piercement salt boundaries and a strongly asymmetric to-the-south internal structure. Salt displaced downdip by shelf mini-basin loading forms major shallow-seated sill-like bodies that intrude upper slope strata. Subsequent reactivation of these allochthonous salt sills often results in a secondary level of structural features which detach on a salt withdrawal surface ("Roho").

The deformation history of each salt/mini-basin system is largely driven by the interplay of regional differential loading (regional bathymetry) and density inversion. Regional differential loading is the dominant mechanism driving early salt deformation on the slope. Density inversion increases in relative importance in shallower water as overburden strata become thicker and more compacted.

Salt/mini-basin systems exert a profound influence on hydrocarbon distribution. Current production occurs mainly in traps associated with shelf mini-basins. Additional production occurs in traps found above reactivated salt sills ("Rohos") on the shelf. Industry exploration is presently focused on identification of traps in the slope mini-basin setting.