

LUNCHEON MEETING—JANUARY 27, 1982

GILBERT DePAUL—Biographical Sketch



Gilbert DePaul graduated in 1976 from The University of Texas at Austin with a Bachelors of Science degree in Geological Sciences. Subsequently, he attended Texas A & M University and received his Masters of Science in Geology in 1979. Since graduation, he has worked for Cities Service Company, in the Southern Region geological department in Houston. He is a member of AAPG, SEPM and the

Gulf Coast section of SEPM.

ENVIRONMENT OF DEPOSITION OF UPPER WILCOX SANDSTONES, KATY GAS FIELD, WALLER COUNTY, TEXAS

At Katy gas field, sandstones of the Upper Wilcox Group produce gas from depths of 10,021 to 11,000 ft. (3054 to 3353 m) in reservoirs controlled by both stratigraphy and structure. Producing zones are from 6 to 42 ft. (1.8 to 12.8 m) thick in the "First Lower Massive", and in the "A", "B", "C", and "D", and "Second Wilcox" sandstones. The reservoirs are dip-trending with production localized on the top of the anticline.

The Upper Wilcox sequence has been interpreted as delta-front to bay-marsh transitional deposits (Williams, et al., 1974) and, alternatively, as deep-water turbidite deposits (Berg and Findley, 1973). The field is downdip from the Wilcox fault zone, downdip from known delta-destructive deposits in the Upper Wilcox, and as much as 45 miles (75 km) downdip from the postulated Late Sabinian shoreline. Full-diameter cores from the Upper Wilcox sequence indicate that the sandstones were deposited as turbidites which gave way vertically to thinner turbidite sandstones in a predominantly shale section. The sandstones at the base of the section have bedset associations characteristic of channel deposits. Upward in the section, more complete bedsets predominate. The thicker channel sandstones show limited lateral extent along strike and grade to thin, overbank sandstones.

The sandstones are sparsely bioturbated, and the shales are bioturbated only where they directly overlie sandstones. The burrows are characteristic of a wide range of water depths from middle neritic to bathyal. Benthonic foraminifers are abraded by transport and represent water depths from middle to outer neritic. Therefore, water depths during Wilcox deposition were probably outer neritic, indicated by the deeper-water trace fossils.

The deposition of the Upper Wilcox Group is associated with transgression during Late Sabinian and incipient uplift of a deep-seated, diapiric mass under the field. Electric-log correlations and sandstone-isopach maps suggest that the sands were deposited as parts of a system that shifted northwestward through time.

Funds for this study were provided by the Center for Energy and Mineral Resources, Texas A&M University, and cores were provided by Exxon Company USA. This assistance is gratefully acknowledged.