

Brian E. O'Brien received a B. S. in Geology from the University of Oklahoma in 1958. After working a short period in the oil fields of South Texas, he returned to the University of Oklahoma and received an M.S. in Geology in 1963.

O'Brien began his professional career on an Atlantic Refining Company seismic crew in 1961. In 1962 he was transferred into the geological department as a geologist and assigned to the Houston district working in offshore Louisiana and the Texas Gulf Coast. During this time he was responsible for Atlantic becoming active in the High Island Area of offshore Texas as well as the Cretaceous trend of Southeast Texas.

In 1969 he joined Mesa Petroleum Company in the Gulf Coast as a Senior Geologist and was responsible for Mesa's exploration efforts along the Texas Gulf Coast.

In 1973 O'Brien resigned from Mesa and entered into the Sanchez-O'Brien Petroleum Group joint venture.

O'Brien is active in the Houston Geological Society and is a past program chairman, 1971-72.

THE SOUTH LAREDO AREA
WEBB AND ZAPATA CO S., TEXAS
Brian E. O'Brien

ABSTRACT

In the early 1960's several wells were drilled in the South Laredo area. Two of these wells encountered gas bearing sands, but due to market conditions and nature of the reservoir rocks they were considered uneconomical, and the area lapsed back into obscurity.

In the late 1960's, Petroleos Mexicanos (Pemex) began exploring in Mexico, southwest of Nuevo Laredo. By 1972, Pemex rigs were visible from the Texas side of the Rio Grande. Consolidated Oil & Gas of Denver drilled the first commercial well on the trend in Texas, the #1 Clark, in 1973.

Eighty feet of net pay were encountered, and Consolidated immediately began drilling the confirmation test which was also successful. In early 1974, Good Hope Refinery drilled eight miles east of the discovery and was also successful. To date the success ratio has been approximately 85%.

Production is from a series of Lower Wilcox or possible Midway sands ranging from 4400 feet in the updip to 8500 feet in the most downdip position, a horizontal distance of approximately 35 miles. Production has now been established in an area from 10 miles north of Laredo to 30 miles south of the town of Zapata, a distance of 140 miles.

Gas is trapped in Paleocene age sands lying on the eastern flank of the Solado Arch. These sands pinchout on the flanks of the Arch causing the updip trap. The

lateral trap is probably caused by a combination of faulting and shale-out of the sands.

At least two unconformities are associated with these sands: the Midway-Cretaceous contact is unconformable, and another unconformity between the usual Wilcox section and the producing sands exists. The play is further complicated by buried faulting and the lenticular nature of the sands.

At this time, accurate field reserves are impossible to determine. More time is needed in order to evaluate reservoir performance. It is probably safe to say that at least a trillion cubic feet of gas has been discovered, with 75% being in Texas.

The next year should see at least fifty more wells being drilled. There are reports of additional rigs being brought into the area. Presently 20 to 25 rigs work the trend.

The average cost per completed well is \$450,000. Daily rates per well vary from less than 1 MMCF to 10 MMCF. Gas prices range from \$1.25/MCF to \$1.85/MCF.