INTERNATIONAL EXPLORATIONISTS

HGS INTERNATIONAL GROUP DINNER MEETING—MAY 17, 1993
Post Oak Doubletree Inn
Social hour, 5:30 p.m., Dinner, 6:30 p.m.
Technical Presentation, 7:30 p.m.

EUGENE J. MURRAY—Biographical Sketch

Gene Murray graduated from Boston State College with a B.S. in geology in 1973 and from Western Michigan in 1975 with a M.S. in geology.

He was first employed by Texaco to work offshore Gulf Coast Louisiana from 1975 to 1978. In 1978 he was hired by Occidental Petroleum where he gained his initial experience in South America, with an emphasis on Peru and Argentina. In 1981 he was transferred to Pakistan and spent 3 years as Oxy's Chief Geologist. In 1984 he was transferred back to Bakersfield and spent a year as lead geologist for a Sub-Andean Basin Studies Group.

In 1985 he joined Kerr-McGee Corporation and has gained wide-ranging experience in the geology of the North Sea, the Middle East and South America.

This presentation was first shown at the AAPG/SVG International Congress in Caracas, Venezuela on March 17, 1993.

FALCON BASIN REGIONAL GEOLOGIC FRAMEWORK AND PETROLEUM OCCURRENCES

The Falcon Basin developed during the late Eocene as a result of dextral strike slip movement along the Caribbean-South American plate boundary. During the Oligocene and early Miocene as much as 16,000 feet of sediment, dominantly sandstones and shales, accumulated within the east-west trending, pull-apart basin. Localized carbonate buildups were also developed in association with the Paraguana and Dabajuro Platforms.

During the middle to late Miocene, uplift of the now emergent Central Falcon Basin Anticlinorium (Falcon foldbelt) resulted in the northward progradation of delta systems. Sandstones associated with these deltas now make up the producing reservoirs within the basin. The complex present-day structural configuration is the result of continued movement along the Caribbean-South American plate boundary. Landsat imagery and field mapping indicate a basin dominated by northeast-trending folds and thrust faults in addition to north-northwest-trending normal faults and fracture patterns commonly associated with dextral strike-slip models.

Commercial production is currently limited to the Tiguaje and Cumarebo areas. The former occurs as four small fields (±52 MMBO) related to structures developed by dextral movement along the Oca fault. The Cumarebo Field (±60 MMBO) is a thrusted anticline on the northern flank of the Falcon foldbelt. The tectonic complexity and sandstone-dominated nature of the onshore Falcon Basin severely limit potential field size.

Significant, yet currently undeveloped, reserves have also been discovered offshore in the Gulf of La Vela. Fractured granite, carbonates, and sandstones associated with tilted fault block structures have tested hydrocarbons in several wells.