INTERNATIONAL EXPLORATIONISTS DINNER MEETING—APRIL 18, 1990

JOHN D. EDWARDS—Biographical Sketch

Dr. John D. Edwards is currently a geology lecturer at Fort Lewis College, Durango, Colorado and an active member of the American Association of Petroleum Geologists. He was honored as a 1989-1990 AAPG Distinguished Lecturer, on his talk entitled Divergent Margin Basins.

Dr. Edwards holds a BS in Mechanical Engineering from Cornell University in Ithaca New York and a MS and PhD, both in Geology, from Columbia University in New York. He began his geological career as a field geologist with the United States Geological Survey, working primarily in Mexico. In 1951, he joined Shell Oil Company. From then until 1962, he gained experience in field geology, subsurface interpretation and photogeology in West Texas, New Mexico, and southern Colorado. From 1962-1966 he worked in Shell's California region, first as Division Exploration Manager in the Bakersfield, California office, and then as Area Exploration Manager in Los Angeles.

A transfer to Shell's New York City office came in 1966 for Dr. Edwards, where he was appointed Chief Geologist and later Assistant to the Vice-President of Exploration for Shell Oil Company. He became Exploration Training Manager in Houston in 1974 and in 1979 joined Pecten International Company in Houston to work international exploration geology. His final position at Shell Oil Company before his retirement in 1987, after 36 years, was Latin American Exploration Operations Manager.

Dr. Edwards is Editor of the DIVERGENT MARGINS BASINS Volume of the AAPG Special Series on WORLD PETROLEUM BASINS. That volume contains detailed discussions and illustrations of the geology, geophysics and basins of the Northwestern Shelf of Australia, emphasizing stratigraphic sequences, and structural styles related to hydrocarbon habitats.

This year, Dr. Edwards serves as AAPG Program Committee Chairman of the Offshore Technology Conference in Houston. Professional memberships held by Dr. Edwards include AAPG, GSA, HGS, and Four Corners Geological Society.

DIVERGENT MARGIN BASINS

Divergent margin basins such as the Campos Basin, Gabon Basin, and Niger Delta Basin and basins of the Northwestern Shelf of Australia contain sediment thicknesses ranging from 10 to 15 kilometers. The complete set of stratigraphic sequences that may be present in divergent margin basins include pre-rift, rift, transition-early drift, and late drift. Reservoir sandstones can be high-quality due to their origin as first cycle sediments derived from proximal quartz-rich cratonic basement. Rich source rocks are important in the rift sequence, as well as in paralic facies, coastal swamps, and shallow marine environments in deltaic sequences.

All phases in the development of divergent margin basins are dominated by gravity-driven extensional tectonics. A variety of structural traps exist. Stratigraphic trap potential was recently demonstrated by giant Tertiary turbidite discoveries in the Campos Basin, offshore Brazil.

Divergent margin basins are capable of developing and preserving source rocks, reservoir rocks and traps during continuous burial in one tectono-stratigraphic megacycle. The hydrocarbon prospectivity of divergent margin basins is enhanced by these processes and by traps formed contemporaneously with sedimentation in both the rift and drift phases.