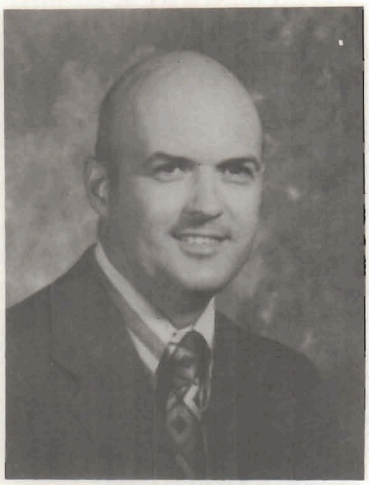
WALLACE G. DOW



Wallace G. Dow was born in Westfield, New Jersey and received a BA in Geology from Rutgers University in 1959. After wasting three years in the Army, he graduated from the University of North Dakota in 1964 with an MS in Geology. He was enrolled at Tulsa University in 1971-1972 as a PhD candidate in Geology and Geochemistry.

He began his professional career in 1964 as an exploration geologist with Pan American (now Amoco) in Casper, Wyoming, and later in Denver, Colorado. In 1970 he transferred to Amoco's Research Center in Tulsa, Oklahoma, as a geologist in their Geochemistry Research Laboratory. In 1972 he left Amoco to join The Superior Oil Company as a senior geochemist and research lab supervisor.

Mr. Dow has several publications on stratigraphy and organic geochemistry, the most recent of which appeared in the July 1974 issue of the *AAPG Bulletin* and in the Preprints of the 1975 *Offshore Technology Conference.* He has also made numerous oral presentations to various geological societies, AAPG National and Sectional Meetings, The American Association of Stratigraphic Paleontologists, and to academic institutions. Mr. Dow is a member of the AAPG, HGS, Sigma Xi and is presently serving as Chairman of the Geochemistry Subcommittee of the C.O.S.T. Stratigraphic Test Program.

PETROLEUM GENERATION IN GULF COAST SEDIMENTS

Analysis of a large number of samples from many Gulf Coast wells has revealed that hydrogen-rich organic matter capable of conversion to oil is concentrated only in some deep water shales. Neritic deposits are low in organic carbon and contain only gas-generating organic matter. It is concluded that liquid petroleum, now trapped predominantly in neritic and continental sands, must have originated in underlying bathyal and abyssal shales.

Vitrinite reflectance data on a series of wells between the Cretaceous and Plio-Pleistocene producing trends have shown that both the generation of petroleum and the coalification of organic matter are rate-controlled processes dependent on both temperature and duration of heating. In wells with 1.4°F/100′ geothermal gradients, the top of the peak oil generation maturity zone, or 0.6 Ro reflectance, occurs at about 9,800 feet (207°F) in the Eocene trend; 14,100 feet (268°F) in the Lower Miocene trend; and 18,300 feet (327°F) in the Pliocene trend). This further confirms that petroleum is not indigenous to productive intervals but has migrated from deeply buried source rocks.

The habitat of Gulf Coast oil confirms these conclusions. The extremely common association of pooled oil and gas with deep structural features such as salt piercements and growth faults attests to the importance of vertical migration pathways for petroleum emplacement. Hydrocarbons are found in neritic and continental sands because that is where the reservoirs are and must have been generated in underlying deep water shales because that is where the source rocks are. Salt mobility has influenced the deposition of source rocks, the formation of traps, and the migration of petroleum. Without it, the Gulf Coast would not be the petroleum province that it is.