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## INTERNATIONAL EXPLORATIONISTS

**HGS INTERNATIONAL GROUP  
DINNER MEETING—JUNE 21, 1993**  
**Post Oak Doubletree Inn**  
**Social hour, 5:30 p.m., Dinner, 6:30 p.m.**  
**Technical Presentation, 7:30 p.m.**

**BERNARD C. DUVAL—Biographical Sketch**



Bernard C. Duval is a graduate of Ecole Polytechnique, Paris and Ecole Nationale Supérieure du Pétrole. He also attended the Stanford Graduate School of Business.

His overseas assignments included Libya with TOTAL, Venezuela with the Institut Français du Pétrole, and Canada where he was Vice President, Exploration & Production for Total's operations in North America.

He also served as Executive Vice President of the mining branch of the Company and became in 1986 Senior Vice President Exploration of TOTAL, in charge of exploration worldwide. He lectures on petroleum systems and exploration strategy at the Ecole Nationale Supérieure du Pétrole.

### DISCOVERY OF A GIANT IN A MATURE DELTAIC PROVINCE: PECIKO, INDONESIA

The Mahakam Delta area has been explored for over a century. The activities in the offshore part of the basin only developed since the 70's, with the major discoveries of the Attaka, Bekapai and Handil oil fields and the Badak and Tunu gas and condensate fields. In conjunction with these discoveries, a high degree of exploration maturity was soon reached in the province and practically all identified structures were drilled.

A special effort of synthesis was undertaken by TOTAL in 1987 to establish a comprehensive inventory of all possible remaining prospects. All available data such as seismic, well logs and production history, were studied again and reinterpreted, using the most modern methodologies, e.g. sequence stratigraphy, geochemical modeling, etc.

At the end of the study, which was carried out over a three-year period by a group of senior geoscientists, an aggressive drilling program was started, which led to several medium-sized discoveries in the most distal part of the delta, where reservoirs previously had been considered to be absent. But the most spectacular result was the discovery of Peciko, a giant, stratigraphically trapped accumulation containing at least 5 TCF of wet gas.

The paper describes the various favorable conditions that converged to make such an accumulation possible: proximity to the main kitchen of the basin, prominent structural nose and updip permeability barrier. But, in addition to these factors, the exceptional hydrocarbon column is due to hydrodynamic conditions created in relation to overpressured shales located both below and laterally adjacent to the reservoirs.

The economic importance of a discovery of this magnitude is underlined by the proximity of an LNG plant to allowing the product to be marketed promptly.

This case history clearly illustrates the considerable added value brought to the knowledge of a mature area by multidisciplinary team focusing the effort, during a limited period of time, on reinterpreting a large amount of "old" data with a "new" eye.