

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Ronald B. Meers¹, Peter E. Gale¹ (1) BHP Billiton, Houston, TX

Exploring Brazil's Southeast Atlantic Margin Basins: What Are the Geologic Keys to Success?

Approximately 14.2 Bboe have been discovered in Brazil's southeast Atlantic margin basins, with the overwhelming majority coming from ten fields in a 12,000 square kilometer sweet spot in the Campos Basin. Judging from the last 3 ANP bid rounds, many in the industry believe this type of success can be repeated in other parts of the region. Indeed, the Lagoa Feia -- Carapebus (!) petroleum system responsible for most of these world-class accumulations has been postulated to extend across the area into the neighboring Espirito Santo and Santos basins that are relatively underexplored. Good quality seismic data, key wells with biostratigraphy and geochemical studies are now available to industry. As a result, analog fields, key dry holes and leads and prospects can be placed within a regional petroleum system framework for proper evaluation. Recent work by BHP Billiton in preparation for the ANP 3RD Bid Round indicates significant areas of the Santos and Espirito Santo basins are prospective. The pre-salt rift section (containing the Lagoa Feia lacustrine source rock) is well imaged with many anomalously thick areas comparable to the central Campos. This potential source rock distribution, coupled with maturation models and kitchen maps, highlights areas conducive to oil and gas migration. Isopachs of the post-salt Cretaceous and Tertiary sections help to delineate areas with good reservoir potential. Isopachs of the post-rift Aptian salt sequence assist with the identification of hydrocarbon migration windows. Analyzing these regional petroleum system elements in a GIS format can help rank regions for detailed prospect mapping.