

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

Efrain Mendez-Hernandez¹ (1) Pemex Exploracion y Produccion, Villahermosa, Tabasco, Mexico

Seismic technology in Mexico: past, present, future

Several facts and case studies illustrate how the increased use of seismic technology in Mexico has strongly contributed to incorporate new reserves opening frontiers in appraisal and reservoir characterization. Although offshore 3D seismic has been successfully employed in Mexico during thirty years, its use was extended onshore just at the mid 1990s. So far, 3D surveys account for 95% of both onshore and offshore seismic activity under leasing basis. In 1997, the Mexican oil government company reorganized its data processing activities to create a high-performance seismic processing center whose main objectives were to manage the processing work both in-house and under contract, as well as to develop applied technology projects. On the other hand, new exploratory concepts, improved risk analysis tools and the increased use of interactive and visualization technologies have enabled the interpreter to diminish turnaround time providing reliable seismic predictions to discover important new fields as the giant Sihil, and recover the most from the present reserves in mature fields as Cantarell. Natural gas is playing an important role in the Mexican industry. The government strategy to develop gas basins has allowed seismic technology to incorporate new exploration opportunities for gas. In addition, new applications to predict lithology and fluid content, detect abnormally high-pressure zones and estimate fracture density/orientation from the seismic data are being tested in Mexico. Future trends include the exploration and development of deeper water targets, and the use of both seismic time-lapse monitoring and multicomponent seismology to improve the understanding of static/dynamic reservoir properties.