

PROJECT DESCRIPTION

**CLIENT: PDVSA.
APBO/APBN, BACHAQUERO/LAGUNILLAS FIELDS**

*Recently
Completed
or
Ongoing
Projects*

PROJECT DESCRIPTION

Teknica was contracted by PDVSA to conduct a geological and geophysical interpretation of 3D seismic data (APBO/APBN areas) shot across the Bachaquero and Lagunillas onshore fields located along the northeastern edge of the Maracaibo Basin, western Venezuela. Both fields produce a heavy oil (10-13° API) in sandstone reservoirs belonging to the Lagunillas Formation of early to mid-Miocene age. The study is focused on evaluating the structure and stratigraphic aspects of the Bachaquero Member that would lead to the identification of prospective areas for future drilling.

PROBLEMS

- Predicting areal distribution of prospective sand trends
- Estimation of sand thickness
- Location of faults especially adjacent to Pueblo Viejo High

OBJECTIVES

1. Develop an integrated seismic/geologic model for the Bachaquero/Lagunillas Fields that will lead to delineation of field extensions.
2. Identify prospective areas for field extension drilling, mainly based on locating and mapping thick sandstone reservoirs.
3. Conduct seismic test studies to examine possible use of alternative techniques and make appropriate recommendation regarding possible application.
4. Estimate the additional OOIP in the identified prospective areas.

METHODOLOGY

To conduct the project Teknica formed a multi disciplinary team of geologists, geophysicists, petrophysicists, reservoir engineers, and support personnel. The project team is supported by a large array of workstation and personal computer software applications. Studies undertaken include:-

- Sedimentological interpretation of available core descriptions
- Detailed stratigraphic studies
- Structural analysis
- Petrophysical analysis of 115 wells
- Seismic mapping, including seismic attributes
- Establish a database to summarize and enter all field information in electronic form

RESULTS

- Developed geologic model
- Enhanced structure interpretation and located new faults
- Improved reservoir characterization using seismic
- Identified additional prospective areas
- Provided estimates of additional potential of OOIP for the prospective areas



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