

Pladang Q Survey: High-Resolution Seismic Technology and Its Application in the Gulf of Thailand

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The North Pladang-South Platong area is located in the northern part of the Pattani Basin in the Gulf of Thailand. This area was covered by three existing 3-D seismic surveys acquired in 1981 and 1984. These three surveys were acquired by a single-streamer, single-source seismic vessel with 75-m streamer separation. The data quality is considered as moderate and spatial imaging is problematic. Fault image is critical in this area because most wells will be planned and drilled close to faults. The primary objectives of any new seismic acquisition should be to improve the data quality, including bandwidth, signal-to-noise ratio, and spatial and temporal resolution in order to optimize the future well locations.

In 2005, 384 km² of 3-D seismic data over this area were reacquired by WesternGeco using a vessel equipped with Q-Marine technology. With Q-Technology, the smaller group interval (6.25 m) is beneficial for noise attenuation due to a better sampling in the shot domain. Smaller trace spacing (37.5-m streamer separation) in the CDP domains is important for multichannel processing. Streamer steering, which provides the ability to maintain consistent streamer separation, is good for maintaining uniform coverage over the survey and improving the crossline spacing consistency. The use of a full-streamer acoustic network provides improved streamer positioning accuracy.

There are two producing platforms and 14 proposed platforms within the survey area, and two delineation wells are planned to be drilled in 2006. The new high-resolution 3-D seismic data have provided important insight into the fault and stratigraphic architecture of North Pladang-South Platong Area.