

Geology Paper 5

UTILIZING SEQUENCE STRATIGRAPHIC CONCEPTS TO DEFINE NEW PLAYS IN NW SABAH BASIN

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NW Sabah basin, located in offshore of northwestern Sabah continental margin, is one of the most prolific hydrocarbon producing basins in Malaysia. The basin has been explored the last 110 years since the first exploration well Menombok-1 was drilled in 1897.

The sequence stratigraphic study for NW Sabah Basin was conducted since first March 2007 in conjunction with basin evaluation study for this area. The main objective is to identify new hydrocarbon plays and leads other than the conventional play type in the study area with seismic sequence stratigraphic application.

The regional seismic stratigraphy interpretation was established to identify the regional flooding surfaces and sequence boundaries leading to a regional sequence stratigraphic framework within the study area. The regional cross sections were also constructed to have sequence stratigraphic well correlation framework supported by surface age interpretation based on biostratigraphic data. Most of the interpretation is based on the major sequence stratigraphic event such as flooding surfaces, transgressive surfaces, sequence boundaries and also from genetic reflection packages (top lap, down lap, truncation and baselap), as shown in figure 1.

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Some leads have also been identified in Highstand Systems Tracts (HST) prograding sand, Lowstand Systems Tracts (LST), ponded turbidites, incised valley fill and lowstand delta and also Basal Transgressive Sands (BTS) deposited in a variety of tectonic settings and they will be exhibited in this paper. One example of BTS is shown in Figure 2.

Preliminary conclusion of the study is that the sequence stratigraphic concept can be applied in NW Sabah basin to come up with new play interpretation. The detail mapping and volumetric calculation of the new leads based on the new plays identified will be conducted as the study progresses.

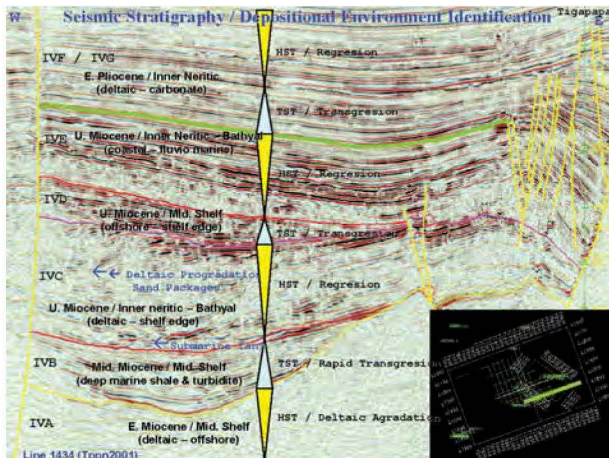


Figure 1: The sequence stratigraphic framework and depositional Environment identification within the study area interpreted based on seismic genetic reflection package.

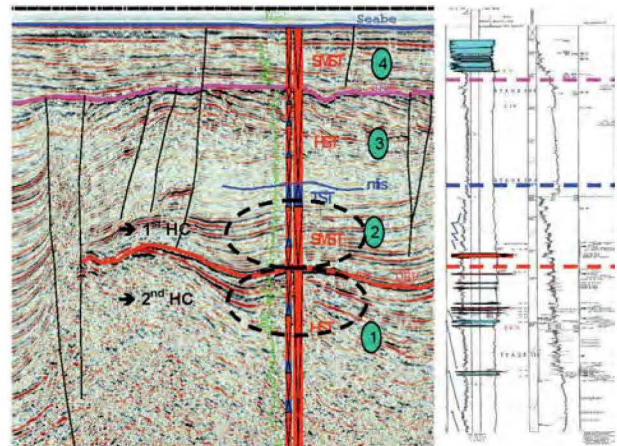


Figure 2: Sequence Stratigraphic Framework Calibration between seismic and well correlation.