

## **TURBIDITE RESERVOIR: AN ANALOGUE MODEL FROM OUTCROP AND SHALLOW SUBSURFACE DATA FROM THE ITAJAÍ GROUP (SOUTHERN BRAZIL)**

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The Campo Alegre Formation, a Cambrian marine succession deposited in a retroarc foreland basin (Itajaí Basin), includes near its base a complex facies association ascribed to a turbidite system and slope-related deposits. Detailed outcrop drawing of five distinct facies associations, including facies description, paleocurrent data and gamma-ray logging, sampling and petrographic studies, has allowed the characterization of the architecture, geometry, heterogeneity, gamma-ray signature, porosity and permeability of each facies association. This geological-based, outcrop description of each facies association was compared to their sub-surface extend. The sub-surface data were collected through the execution of ground-penetrating radar profiles undertaken at and nearby the described outcrops. Both 10 and 100 MHz antennas were used to acquire data from different depth ranges. Integration of surface and shallow-surface, closely tied data has allowed the 3-D delineation of several features of prime importance in terms of the characterization of the distinct facies associations that comprise the turbidite system (channel-slope, channel-lobe transition, lobe, lobe fringe and basin floor facies associations). These results can be used as an analogue model for similar settings in actual oil fields as well as a field area for training of geologists and engineering dealing with problems associated with size, geometry, architecture, heterogeneity and petrophysical aspects related to turbidite oil reservoirs.