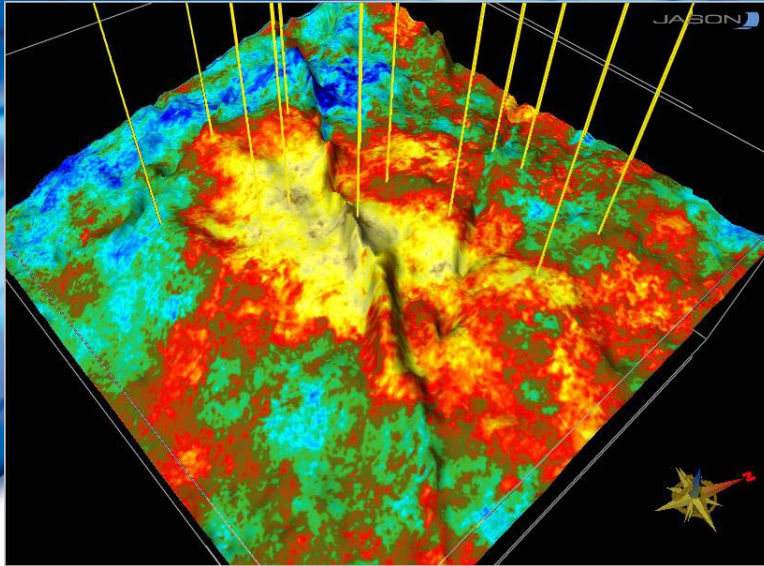


Accurate Lithology and Porosity Prediction in a Heterogeneous Carbonate Reservoir



Clear Objective

ADCO's objective in the development of one of their heterogeneous carbonate reservoirs is better placement of wells to optimize recovery rates whilst minimizing overall drilling costs. To achieve this a high-resolution reservoir model that defines the lateral and vertical distribution of porosity within the reservoir is essential. Conventional interpretation of the 3D seismic reflection data can not successfully delineate the different porosity sub-zones within the reservoir.

Solid Implementation

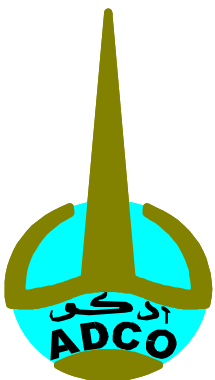
Together, ADCO and Jason applied Jason's **StatMod**® technology for seismic driven geostatistical modeling and inversion to create high-resolution 3D reservoir models. Generation of the models in RESCUE format supports transfer to upscaling and reservoir simulation applications.

A quantitative differentiation was made between porous, less porous, and tight carbonates. Porosity within each reservoir sub-zone was modeled. The lithology predictions and distribution of porosity within each sub-reservoir, both vertical and lateral, were validated by blind well testing.

Drilling Result Confirms Accurate Prediction

The first well drilled based on the results clearly demonstrates the predictive capability of the Jason **StatMod** models. The thickness of each sub-reservoir unit (~ 7 m thick), the porosity distribution within these units, and the position of the tight carbonates were all predicted accurately.

ADCO is now using these models for further field development well planning.



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