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An Integrated Approach by Using Seismic Attributes for Carbonate Reservoir Characterization : A Case Study from Silivanka-Beyçayyr Oil Fields, SE Turkey

Almost 12 million bbls of oil have been produced from Silivanka and Beycayyr oilfields since the discovery in 1962. In the early stages of the development only structural features were the main consideration for the new production wells. However, this development strategy was proved to be inefficient mainly because of lacking lateral continuity of reservoir facies. This integrated approach of carbonate reservoir characterization has utilized 3D seismic, well logs, core descriptions and production data in order to delineate the distribution of reservoir facies across the field. The results of this study have helped to identify new appraisal well locations more efficiently at minimum risk. The main reservoir intervals in the Silivanka and Beyçayyr Fields are the Beloka Formation, the Garzan Formation and the Upper-Sinan Formation. These formations are interpreted as shallow shelf carbonates rocks. P roductive intervals in the reservoirs rocks are rudist-build-ups and their talus deposits. Integration of seismic attributes, core data and well log interpretation in the Garzan formation and the Beloka formation has showed lateral continuity of lithofacies in the field. Incised valley system at the top of the Garzan formation created discontinuity of the reservoir interval. The incised valleys were filled with shale and marn based on well data. The Beloka Formation has a member called Bada that has high porosity up to %18. The Bada member is not widespread in the field. P resence or absence of the Bada member controls oil production from the Beloka formation.