PVT modelling of reservoir fluids from the Norwegian North Sea

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ABSTRACT

The primary control of the generative source rock types on the generative fluids and the physical process occurring as a function of secondary migration are of crucial importance in the exploration of an area for hydrocarbon. Therefore, the main focus of this study was on the recognition of source rock control on fluid composition and migration related process by applying PVT (pressure-volume-temperature)data on both regional and field scales using the software PVTsim9 (developed by Calsep A.S. - DewPoint A.S. Denmark).

The study area chosen consists of the main petroleum fields of the Tampen Spur, northern North Sea. A regional PVT database, which was compiled as a part of this study and different geological scenarios proposed for the area are used directly to determine the petroleum populations and migration routes. From the current study five oil populations are recognized in the Tampen Spur with well define migration routes. The model is in good agreement with organic geochemistry based oil population maps and migration models for the area proposed by Horstad et al. (1995) and expand the interpretation presented by di Primio et al. (1998) (based on PVT analysis).

References

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