Migration and Alteration Processes in Barents Sea Oils and Condensates - A Geochemical Approach to Improved Petroleum System Understanding

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INTRODUCTION

Repeated uplift and erosion of the Barents Sea might play a crucial role in the distribution, alteration and composition of accumulated hydrocarbons. Commonly biomarkers are used to infer post-emplacement alteration or migration induced alteration processes. However, oil and gas-condensate correlation studies show that biomarkers can almost be absent in high maturity oils and condensates. Here, the use of light hydrocarbons (LHC) is of greatest importance as markers can almost be absent in high maturity oils and condensates. The biomarker compounds decreases with increasing maturity and biomarker compounds are fractionated and plot with high aromaticity values.

RESULTS

The sample area experienced an uplift of approximately 300m to 1000m (Dawson et al., 2006). The sample area expanded with uplift of approximately 300m to 1000m (Dawson et al., 2006).

OBJECTIVES

This study examines oil and gas-condensate samples from the Hammerfest Basin and the Loppa High (Figure 1) in terms of biodegradation, evaporative fractionation and long-distance migrated hydrocarbon phases, whereby the properties of cap-rocks may play a crucial role.

MATERIALS & METHODS

Geochemical analysis was carried out on 32 oil and condensate samples from the Hammerfest Basin and the Loppa High. The parameters are obtained locally through vertical migration (Fig. 8B). Fractionated oils and condensates occur mainly in the Hammerfest Basin and derived locally through vertical migration (Fig. 8B).

CONCLUSIONS

Biodeterioration occurs on the margins of the Hammerfest Basin where localized cap-rocks are present favoring the intrusion of water or traps are exposed closer to aquifers (Fig. 8A).

REFERENCES


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