

## The Early to Middle Cenozoic paleoenvironment and sediment yield of the southwestern Barents Sea margin

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2D and 3D seismic data and results from 6 exploration wells have been utilized to study the development of the Lower to Middle Cenozoic deposits in the southwestern Barents Sea. The western Barents Sea margin shows a complex history of structural configuration of highs and basins related to the Greenland and Eurasian plate movement and subsequent sea floor spreading of the Norwegian-Greenland Sea.

At the Paleocene and Lower Eocene interval, the sediment infill of the Sørvestnaget basin is dominated by offshore shale as shown in the wells 7316/5-1 and 7216/11-1. The Middle Eocene strata in the basin includes shelf-edge delta and deepwater sandy fan deposits, sourced from the Stappen High area. Oligocene-Miocene sediments represents a shallow marine setting.

At least two major uplift and erosion event occurred in the Early to Middle Cenozoic; (1) at the Early Eocene time which resulted in uplift of the intrabasinal highs and deposition of major volcanics strata in the Vestbakken Volcanic Province. This event is related to the continental break-up. (2) at Oligocene-Miocene period probably related to a major change in plate reorganization coupled with global sea-level fall due to the opening of the Fram Strait. Sediments of assumed Miocene age are seen downlapping to the uplifted marginal high in the west. Notable compression structures can be observed from seismic data suggesting a period of structural inversion that also affected the intrabasinal highs at this Neogene period.

Isopach maps were generated to calculate the volume of sediments deposited. Sediment yield of the Lower to Middle Cenozoic were also estimated. These result will be presented and discussed.