

## **Potential for Near Field Exploration in the North Sea – Missed Sand Injectites**

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### **ABSTRACT**

As a result of the reduction in oil price, many E&P companies have had to balance their books by downsizing their exploration teams, investments and exploration efforts; however, there is still the requirement to replenish reserves. Near field exploration can be economically viable in the current climate and exploring for Tertiary injectites (remobilized sands) in the mature Viking Graben is a proven and attractive option as improved imaging is leading to reduced risk for this play. The first well designed to target these injectites was drilled in the Norwegian sector of the North Sea in 2004. It subsequently led to the discovery of the Volund field in block 24/9. The latest expansion of the Volund field - the addition of the Kobra and Viper satellites to the north east, has proven that even small reserves can be viable when the infrastructure is already in place. The reservoir quality within these Paleogene/Eocene injectites has proven to be good, but the volumes may vary depending on connectivity with the feeder sand and between the individual injectites. From the Frigg Ridge to the Gudrun Terrace (Viking Graben), these injectites and their feeder dykes have been clearly imaged in a recently reprocessed and depth migrated dual-sensor broadband seismic datasets. Multiple classic injectite characteristics such as dipping reflectors of feeder dykes and deformation of host rock, indicates the presence injectites. These are in the vicinity of existing fields, and show untested sands with promising amplitude anomalies. The good coverage of enhanced seismic imaging and well data within short distances from these untested sands, improves the performance of robust reservoir characterization work. This should reduce the potential risks such as the timing of injectite emplacement and hydrocarbon migration associated with injectites as targets for exploration.