

# **Haima Supergroup and Nimr Group Outcrops in Northern Oman: Implications for Regional Facies Mapping and Stratigraphic Trapping Potential**

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## **Abstract**

The outcrops of the Lower Paleozoic Amdeh Formation, c. 30 km south of Muscat, contain lateral equivalents of many of Oman's most prolific hydrocarbon reservoirs, including the Barik, Miqrat and Amin formations of the Haima Supergroup, and the Nimr Group. The outcrops occupy a relatively distal position beyond the known edge of the salt basins of interior Oman, and therefore provide valuable constraint on the northern extent of Haima–Nimr gross depositional environments (GDEs) and reservoir development. Such constraint is of importance when considering the potential for both conventional trapping and stratigraphic trapping of hydrocarbons within the equivalent reservoirs of the subsurface.

Elemental geochemical analyses were performed on samples covering the entirety of the Amdeh Formation type section in Wadi Amdeh and Wadi Qazha, on the southwestern edge of the Saih Hatat tectonic window. The geochemical results, in combination with sedimentological observations of the outcrops and existing biostratigraphy, reveal the Amdeh Formation to be of fully marine depositional origin. Sequence stratigraphic key surfaces (sequence boundaries and flooding surfaces) are identified throughout the Amdeh Formation and are readily tied into the corresponding Haima Supergroup and Nimr Group intervals in the subsurface.