

## **The Natih Paleo-trap in Northwest Sultanate of Oman**

Nadeem A., Al Balushi<sup>1</sup>

<sup>1</sup>Exploration , Petroleum Development Oman, Muscat, OMAN

### **ABSTRACT**

In the past few years, the northwestern part of PDO's concession has been intermittently explored for the truncation traps of the Albian-Turonian Natih formation. It was initially thought that the oil distribution is controlled by the present-day truncation geometries, with sub-cropping formations ranging from the Upper Cretaceous Fiqa shales to the Lower Cretaceous Shuaiba carbonates at the centre of the Lekhwair High. The hydrocarbon-water contacts were seen to be at varying depths across the region, and thought to be trapped by the combination of (Tertiary) Shammar and (Cretaceous) intra-Natih top seals, with intra-Natih also forming a lateral seal, by juxtaposition across faults.

In 2014, a detailed study was carried out to re-evaluate this area, focusing on the overburden events relative to the contacts that were observed in the different fields. This study showed a very remarkable match of the Hydrocarbon- Water Contacts with a (now-tilted) large paleo-closure of Base Tertiary. It is now postulated that the different reservoir layers within the Natih were charged prior to the Oligocene tilting, but for some reason the oil is still not re-migrated and there is trapped oil wherever there are good facies above the Base Tertiary paleo-contact. This model has been used to plan new exploration wells, which came on prognosis.