

Sleeping Dwarfs: Legacy Data Unlocks New Fields Fueling Growth of PDO's Portfolio

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Abstract

The giant oil fields of yesterday in the Sultanate of Oman have been extensively studied, appraised, and produced. In these fields, various novel and advanced oil recovery techniques are currently being applied in a rush to squeeze the last oil-molecule from the ground. It was realized that there is an additional opportunity to fuel growth by targeting small-to-medium sized satellite prospects, for which the size of the prize was not sufficiently attractive to justify appraisal in the past. In this paper we will discuss how a portfolio-based approach was used to target such prospects that were previously overlooked or dismissed. Four key enablers that are continuing to fuel this growth journey of the Oil South portfolio amidst the declining existing fields are: 1) The use of legacy data, including petrophysical, PVT, and production data, and integrating this with improved understanding of the reservoirs enabling identification of “dwarfs” 2) Newer and improved seismic quality enabling identification of structures which have been previously overlooked or misinterpreted 3) Application of new technologies and standardized well designs thereby making it efficient and competitive to appraise & subsequently develop these dwarfs 4) Tapping into existing facilities and surface infrastructure to optimize costs and reduce the time to first oil.

In this paper the authors will highlight several case studies to show how legacy data was successfully reinterpreted, integrated with regional trends, and reviewed with a fresh-pair of eyes to unlock new reserves.

Finally, it will also be demonstrated how scaled (Agile) Integrated Reservoir Modeling can significantly reduce cycle time and accelerate the maturation of successful prospects. Furthermore, time-to-first oil is significantly fast-tracked through standardization of proven development strategies and applying best practices from analogue fields. Additionally, the authors will highlight the novel concept of a ring-fenced team working in an integrated fashion responsible for the full cycle of appraisal planning and drilling, initial field development planning, and finally development drilling. This ensures that all the know-how and detailed knowledge sit in the same team, which streamlines the maturation of the prospects.