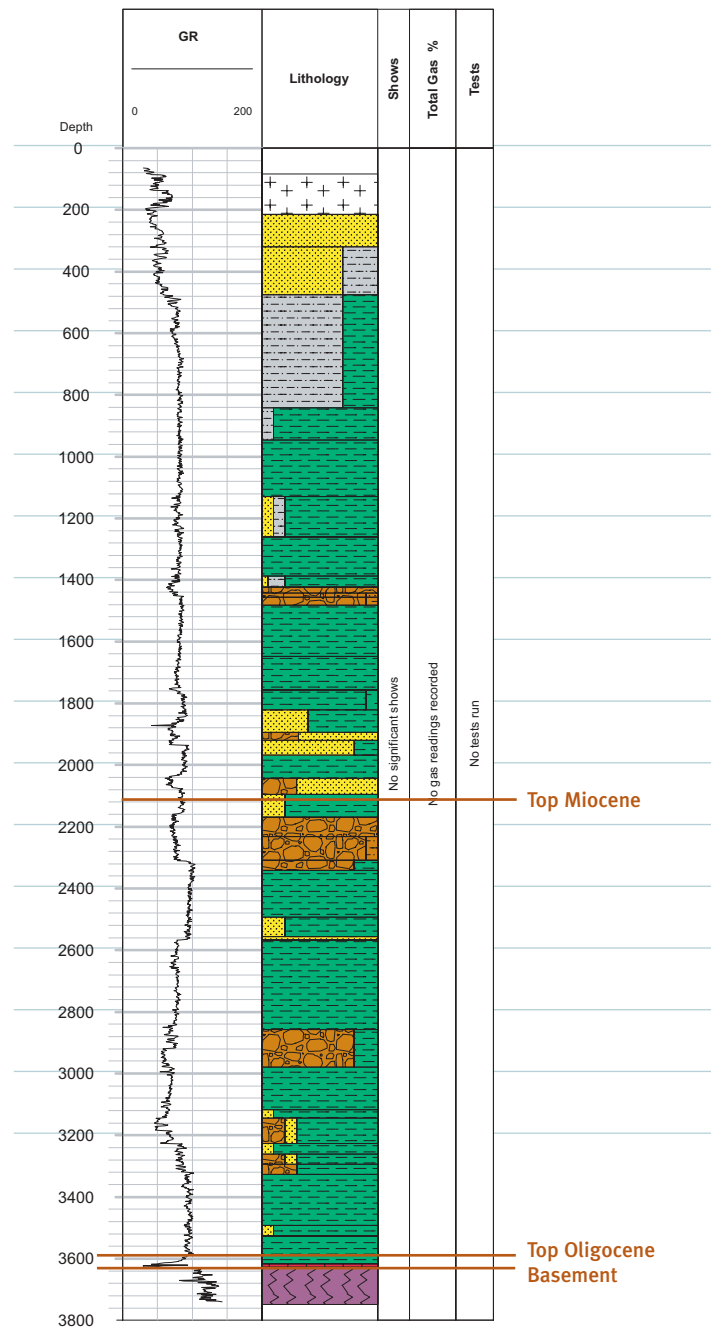


# West Coast Basins Prospectivity

Widespread oil and gas seeps on the West Coast indicates that hydrocarbons have been generated in the Westland and Murchison basins, and have attracted explorers for over a century. Exploration has so far mostly concentrated on the Brunner and Kotuku anticlines in the Westland Basin, without commercial success. However, further exploration is justified given the shallow depths to targets. Evaluating the potential of the Murchison Basin is complicated by intense structural deformation.

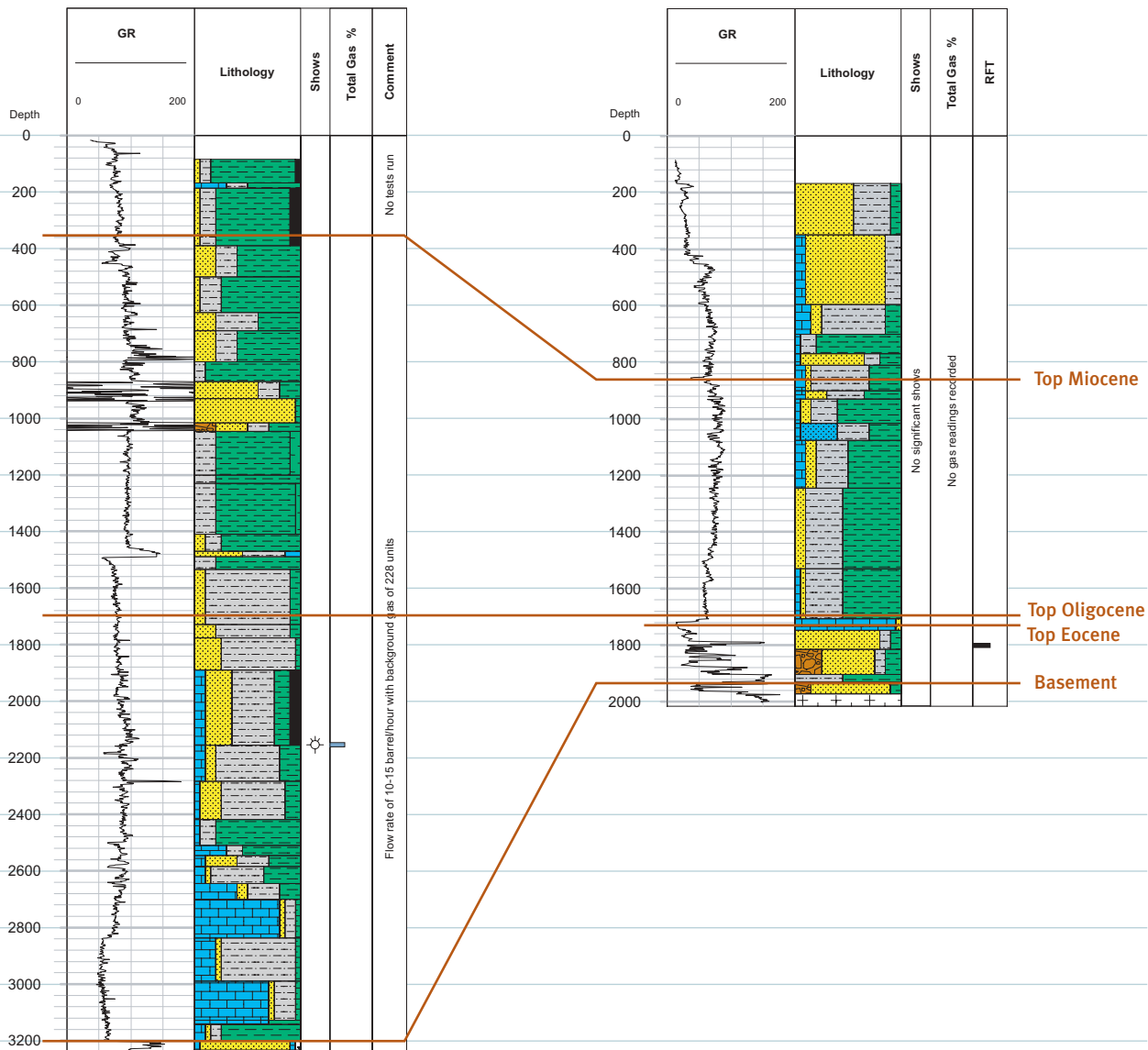
The offshore has only been explored by four wells. Although large areas of the Western Platform have insufficient maturity for hydrocarbon generation to occur, there is considerable potential in offshore South Westland rift basins. Gravity data indicate the existence of several offshore sub-basins, and show that the offshore wells were drilled on rift horsts. A rift-fill section of 3000 m may be present in these basins, overlain by up to 4000 m of Miocene to Pliocene sediments.



## Waiho-1

Waiho-1 was a wildcat well drilled to investigate a thick Tertiary section on the down-thrown side of a major fault lying 2.5km from the well location. A 'build-up' section of sandstone or carbonates was expected and was the primary target for the well, but only 16 m of middle Miocene limestone was present before basement was encountered. This led to a subsequent re-correlation of seismic data in the area. There were no hydrocarbon shows in the well.

Drilling data: Spud date 24 March 1972, TD 3748 m 16 July 1972. 29 1/2", 20", 13 3/8", 9 5/8" and 7" casing strings run. Rotating time for drilling was 975 hours, average ROP 3.84m/hour for the well.



## Kiokiri-1



Kiokiri-1 was drilled as an exploration well to evaluate potential hydrocarbon bearing sediments below the Cobden Limestone as there are numerous oil seeps to surface in the area. The well flowed on five separate occasions with a final drilling mud weight of 15.1 ppg being needed to balance formation pressure. These were caused by salt water influxes although 17.5% methane equivalent was registered at 2156 m (mud weight 9.7ppg).

Drilling data: Spud date 9 May 1980, TD 3233 m 10 July 1980. 30", 20", 13 3/8", 9 5/8" and 7" casing strings run. Rotating time for drilling was 727 hours, average ROP of 4.45 m/hour for the well.

## Kongahu-1



Kongahu-1 was drilled as a wildcat well offshore of the West Coast. The well penetrated no reservoir lithologies above the early Eocene, but stacked sequences of coarse-grained sandstones and conglomerates interbedded with shales were intersected at greater depth. Maturation studies suggest that the sequence is immature, but the shows have regional significance as deeper and more mature structures are indicated as attractive targets.

Drilling data: Water depth 94 m. Spud date 21 June 1984, TD 2014 m 1 July 1984. 30", 20" & 13 3/8" casing strings run. Rotating time for drilling was 110 hours, average ROP 18.31 m/hour for the well.