

Buzzard Soars to Success: The Discovery and Development of a Billion Barrel Oil Field in a Mature Basin

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Buzzard soars to success, the discovery and development of a billion barrel oil field in a mature basin.

The Buzzard Field, with over one billion barrels of oil in place is one of the biggest discoveries in the UK North Sea in the last twenty five years. This prospect had been recognised by numerous previous operators but why did it remain undrilled for so long? The primary reason why it was not discovered until May 2001 is that it is a stratigraphic trap which was always deemed too risky to drill.

The key to its discovery was detailed play analysis. The explorationists went back to basics and studied the source rock, used isopach maps and log correlations to determine the gross reservoir sequence, looked at the sedimentology and palaeostructure to determine areas of sediment deposition. The seismic data was reprocessed to help image the up-dip pinch out edge which still now at the development stage is one of the biggest uncertainties. They looked at well results in the area, specifically at a well drilled in 1986 which targeted a small 4-way dip closure in the middle of the basin and encountered hydrocarbon shows and a small residual oil column. This well was key to the whole play concept as it triggered the explorationists into thinking about the distribution of these hydrocarbon-bearing sands. They recognised the stratigraphic upside and were successful in getting the high risk, high reward prospect drilled. The discovery well encountered 260ft of net sand with average porosity of 24% and multi-Darcy permeabilities.

Less than six years after discovery the Buzzard Field started production and is currently producing ~200,000bbls/day sustained through water injection of ~250,00bbls/day.

This presentation discusses the exploration and early production of the Buzzard Field.