

**CUADRILLA RESOURCES  
LIMITED**



**APPENDIX - B**

**SEISMIC INTERPRETATION**

**Cuadrilla Resources Limited**  
**January 2010**

Lower Stumble Hydrocarbon Exploration Site  
Planning Application [January 2010].  
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## GEOLOGICAL SUMMARY LOWER STUMBLE PROSPECT

The Lower Stumble prospect forms on a east-west trending anticline of Alpine origin in the centre of the Weald Basin. The location is approximately 8km south-east of Crawley and 5km north west of Hayward's Heath near the village of Balcombe.

It lies on the downthrown side of the Borde Hill Fault and dip closure is present to the east and west at Upper Jurassic level. Stratigraphic thinning of the Upper Jurassic towards the east reduces the amount of structural closure at deeper stratigraphic levels and little or no structural closure is observed below the Middle Jurassic (geological and seismic cross sections, Fig. B01 & B02)

The well is located at the same place as the Balcombe-1 well drilled by Conoco in 1986. The Geological column encountered in the Balcombe-1 well is shown in Fig. B03. The original objectives were the Portland sandstone, Ashdown Sands and Kimmeridge Sandstones. A number of oil and gas shows were recorded in the well but none proved to be economic.

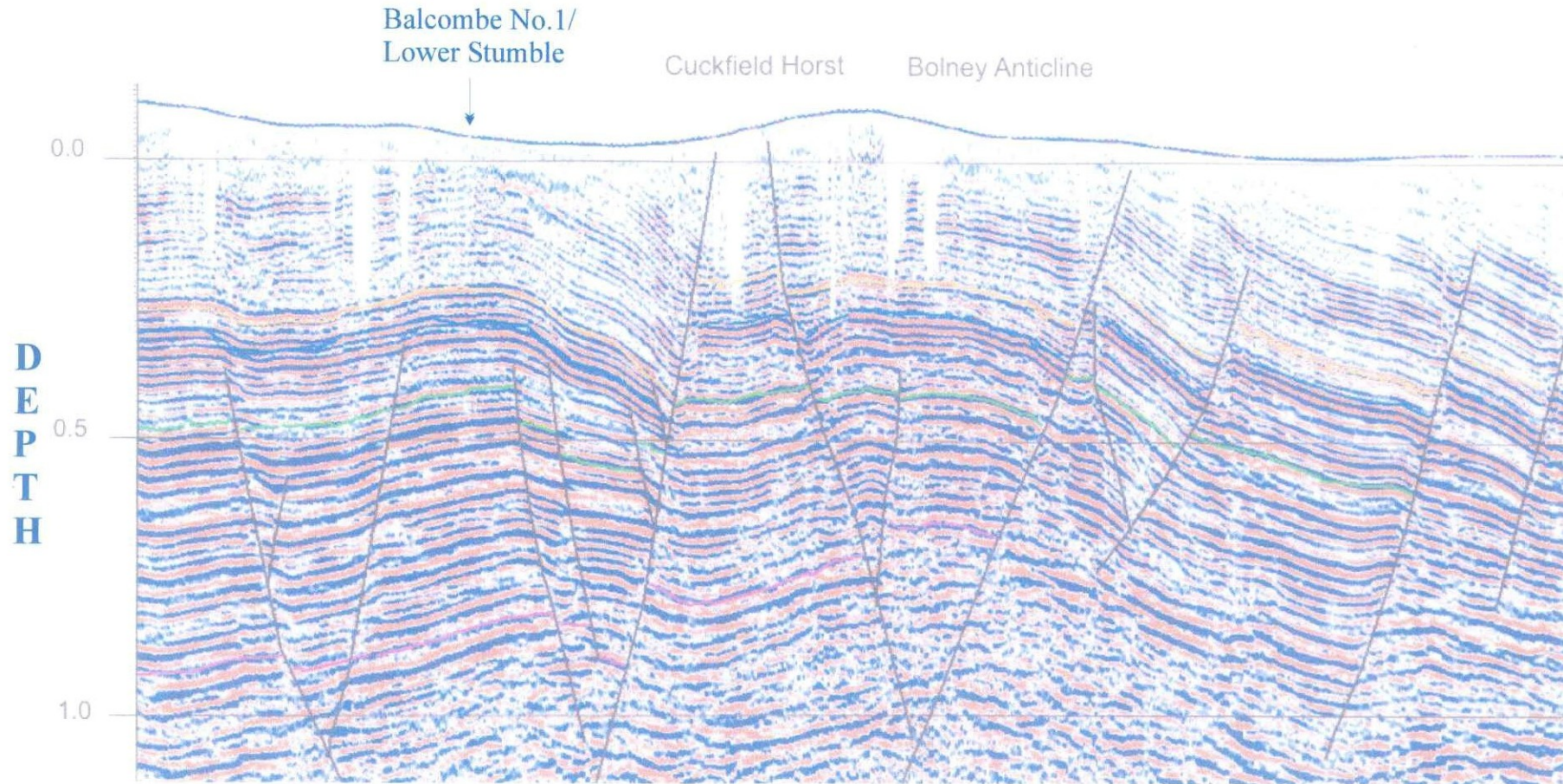
The target formation for the Lower Stumble well is the Middle to Upper Jurassic including the Corallian Sandstone, Kimmeridge and Portland Sandstone. The Cuadrilla exploration plan is to drill vertically through the Middle to Upper Jurassic sequence, recover core from some of the intervals and drill to a total depth of 4700 feet (below surface) in the Great Oolite. If the result of the core analysis and geological investigations appear promising we may choose to drill a horizontal well section to further test the presence of hydrocarbons.

## DRILLING HISTORY

Balcombe-1 was drilled by Conoco in 1986 as one of a number of hydrocarbon exploration wells in the Weald basin and the surrounding area in the 1980's. We plan to use exactly the same well pad at Lower Stumble as that used by Conoco in 1986. The fact that a vertical well has been drilled on this location gives us excellent control on the nature and depths of the formations in the subsurface. The geological column based on the Balcombe-1 results is shown in Fig. 2. This location in west Sussex lies near the axis of the Weald Anticline and as a result the Chalk and Greensand horizons are missing as a result of erosion. No aquifer problems were encountered by Conoco; the Ashdown Beds produced 150 barrels of water at 178 ft. Our well design will set surface casing at 830 feet in the Purbeck Beds. After drilling to a total depth of 4700 feet 5-1/2" production casing will be set and the well plugged back to drill a horizontal section at a depth to be determined on the basis of our geological and core analyses.

The fact that a well has been drilled previously on this site removes much of the uncertainty regarding the subsurface geology. The original well showed indications of hydrocarbons at a number of levels in the Middle to Upper Jurassic and our principal objective is to make further evaluation of these occurrences.

# LOWER STUMBLE SEISMIC CROSS SECTION



- Top Purbeck
- Top Portland
- Mid-Kimmeridge Micrite

FIGURE (B01)

# BOLNEY STRUCTURE

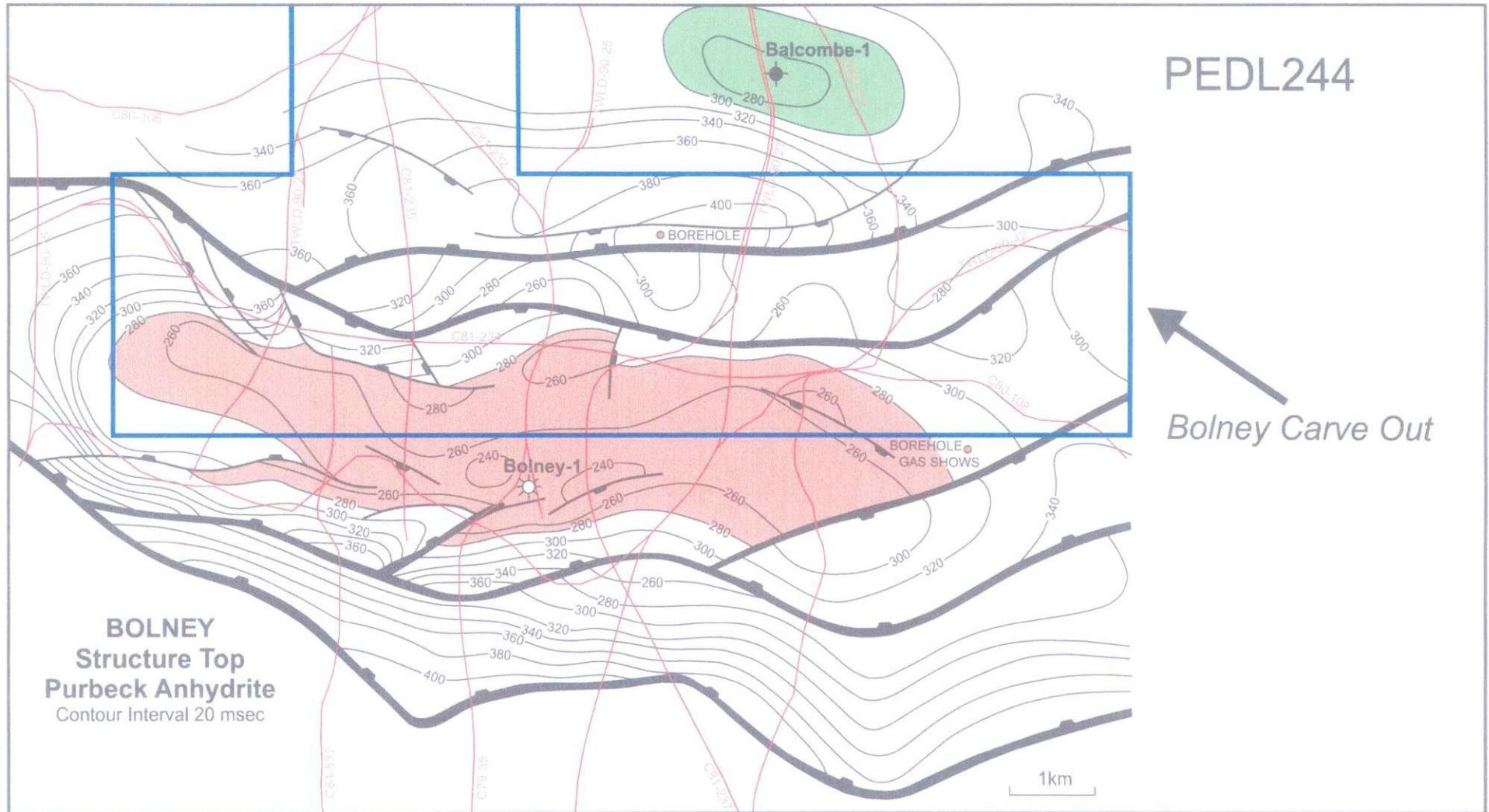
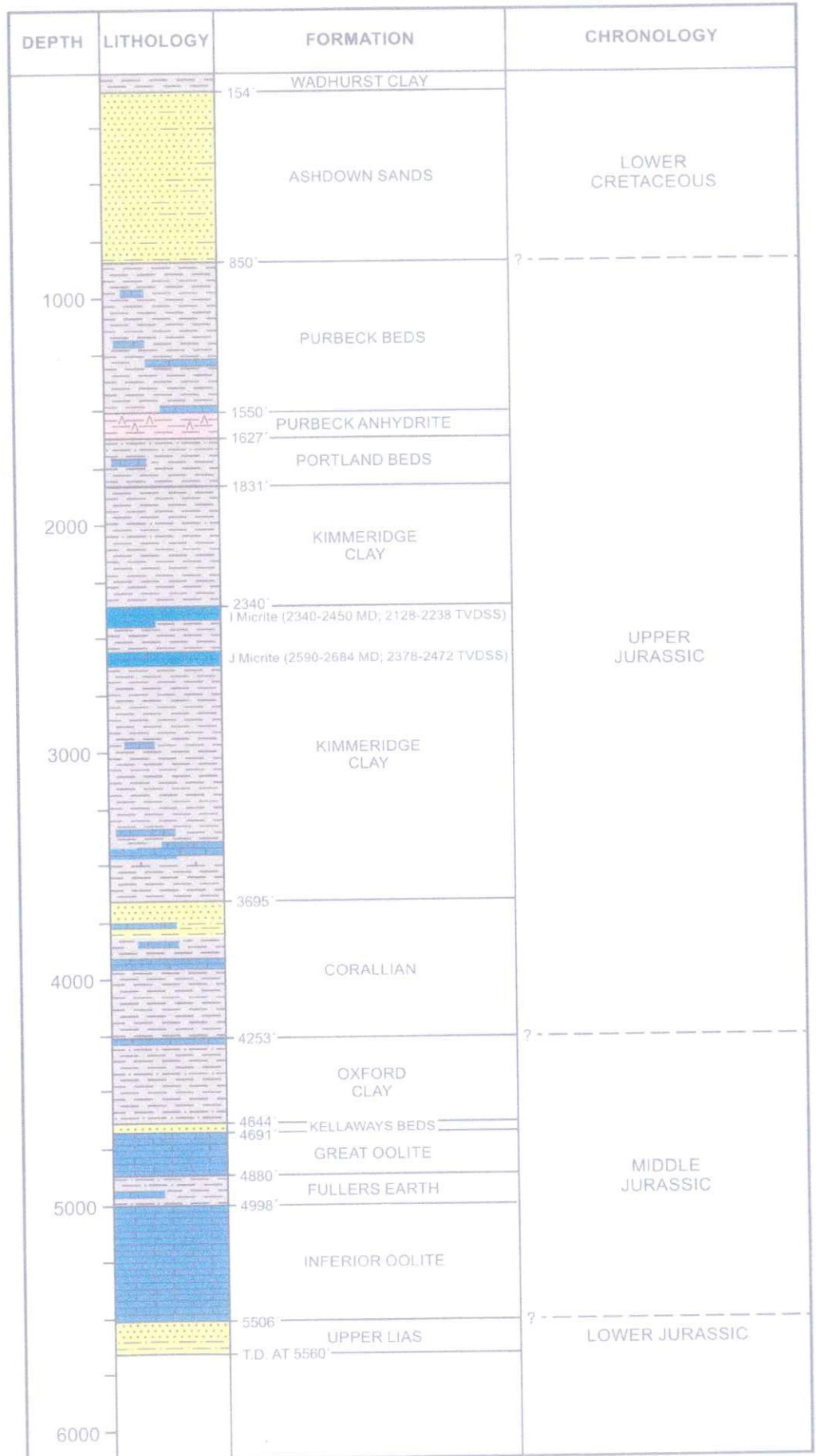
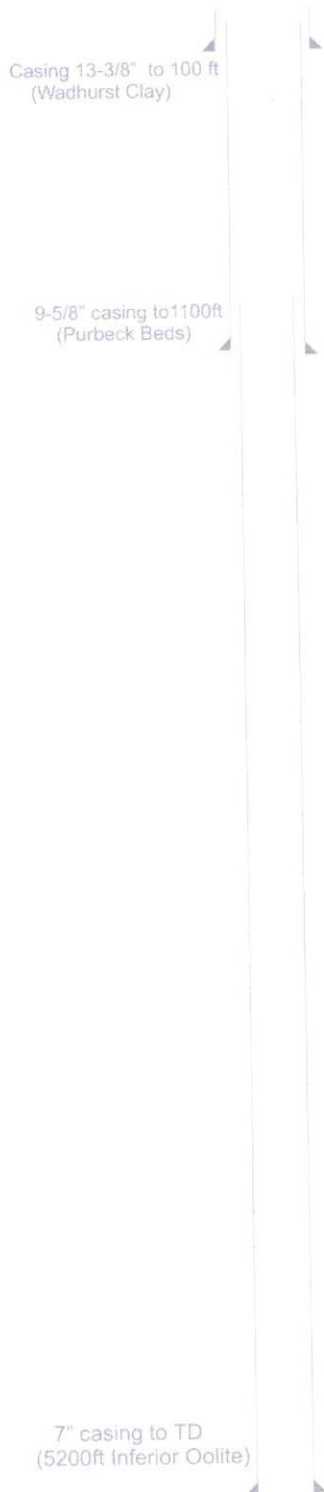


FIGURE (B02)

# GEOLOGICAL COLUMN AND CASING PROGRAMME



**FIGURE (B03)**