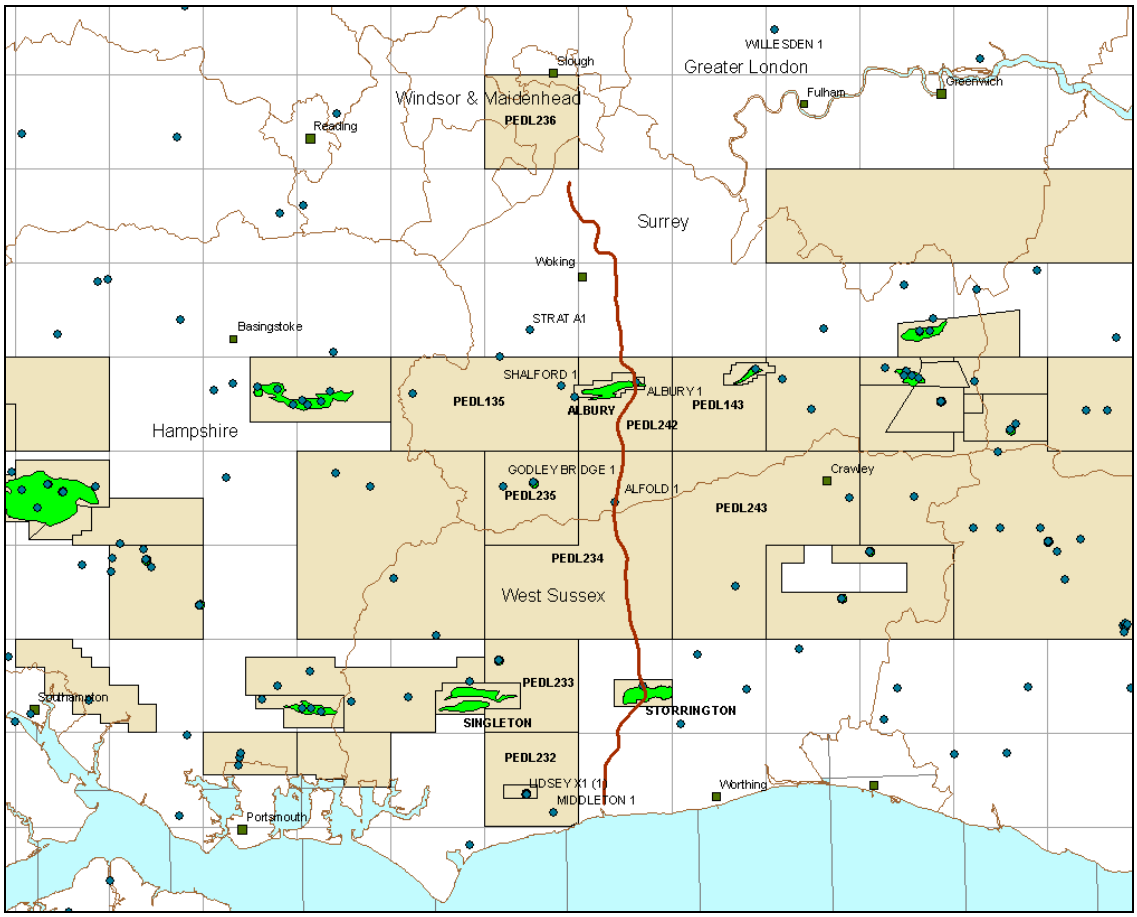
UKOGL-RG-001 - Sussex Coast (S) to Surrey (N)



This profile runs from the Tertiary outcrop near the South Coast, over the South Downs and across the Wealden Anticlinorium , then passing over the North Downs into the London Basin near Woking. The profile runs through, or near to, a number of key wells that enable good ties to the stratigraphy.

At the southern end, ties to wells Middleton 1 and Lidsey X1 confirm the thin representation of Lower Cretaceous and Upper Jurassic rocks on the Portsdown High trend. Middleton also includes a thick clastic sequence of possible Permo-Trias age at its base.

The profile then runs north over the Chalk outcrop of the South Downs, demonstrating substantial thickening in the Jurassic and Cretaceous sections as it enters the Weald Basin. Immediately north of the South Downs, the profile crosses the anticline hosting Storrington oilfield, which produces oil and gas from the Great Oolite limestones.

The upper part of the section dips back into the South Downs, indicating the magnitude of the uplift of the Wealden area during the Tertiary, so that the thickest part of the earlier basin now forms the High Weald. Well Alfold 1 shows the thickness of the basal Cretaceous and uppermost Jurassic sequence but unfortunately terminated in the Kimmeridge Clay. Well Godley Bridge 1, which has a gas accumulation in Portland sands on trend to the west,

gives a tie down to the Lower Lias but none of the wells in this deep part of the basin drilled below the Jurassic.

The Profile continues north to the Albury gasfield, which produces from a thin sand in the lower Purbeck. Well Albury 1 appears to have passed through the major fault forming the northern boundary of the deep Weald Basin and reached total depth in possible Lower Carboniferous limestone. Along trend with this well, Shalford 1 passed through the same fault complex to terminate in possible Silurian rocks. The inversion anticlines drilled by both these wells are part of the trend which forms the Hog's Back ridge to the west, where the Chalk is almost vertical before flattening out northwards and eastwards to form the North Downs. These folds were formed by compression of the thick basinal sequences, with some reverse faulting against the high block that now underlies the Tertiary London Basin.

Moving further northward, the seismic profile shows the dramatic thinning of the Jurassic and Cretaceous rocks beneath the Tertiary of the London Basin. Well Strat A1, on trend to the west shows an intermediate stage, where the Lower Greensand sits on Purbeck rocks and a reduced Jurassic sequence overlies Silurian/Ordovician quartzites. Beneath much of the London Basin, the oldest Mesozoic unit may be the Lower Greensand, sitting unconformably on Devonian Old Red Sandstone, as shown in well Willesdon 1 to the northeast of the end of the profile.