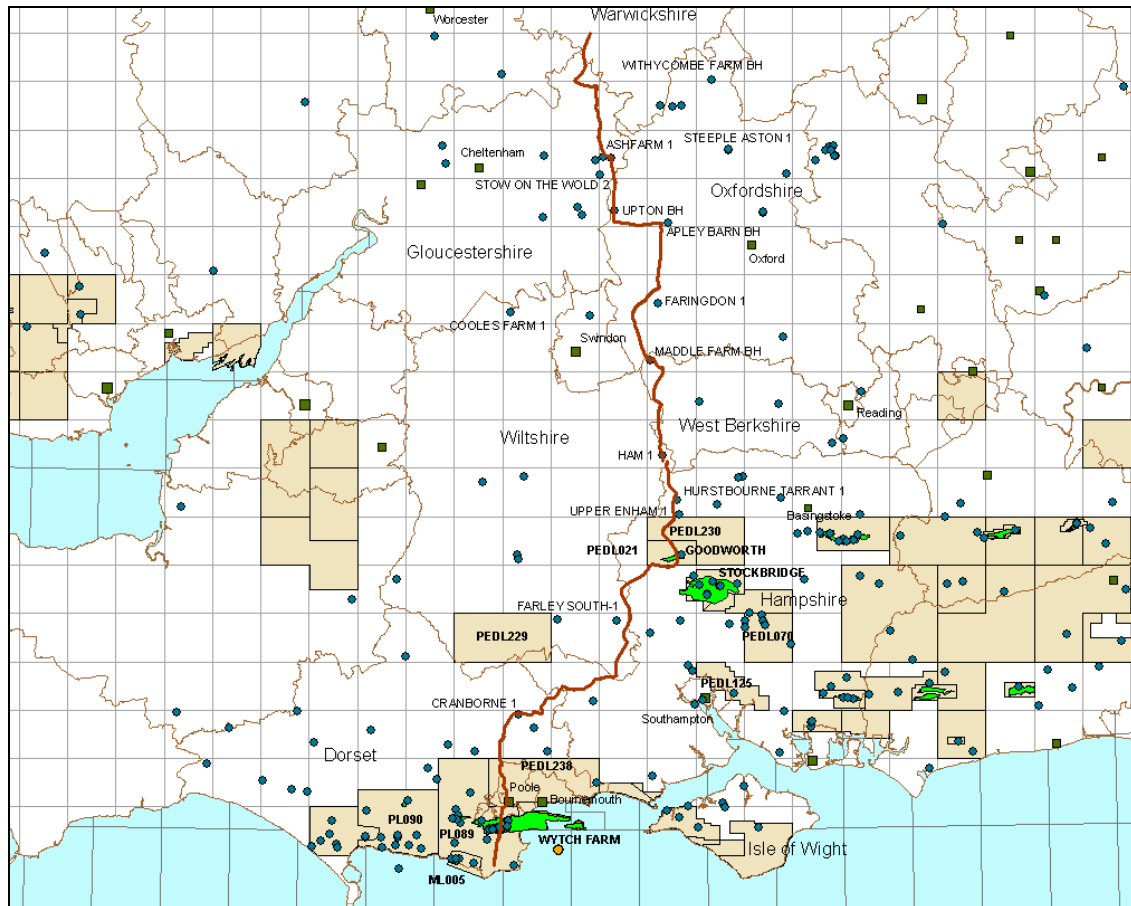


UKOGL-RG-004 - Wytch Farm(S) to Oxford Basin (N)



This profile runs from the edge of the English Channel Basin up through the Wessex Basin into the area of the Oxfordshire Coal Basin and encompasses rocks ranging in age from probable Cambrian up to Lower Tertiary in age.

The profile begins in the area of thick Lower Cretaceous and Upper Jurassic rocks in the Tertiary-age inversion feature of the Purbeck Disturbance and runs through the Wytch Farm oilfield, from which some 450 million barrels have been produced to date from Triassic Sherwood Sandstone and subsidiary Jurassic Bridport Sandstone. Here, wells penetrated a thick Lower Tertiary and Chalk sequence but a very thin Lower Cretaceous whose basal unconformity cuts down deep into the Upper Jurassic. This unconformity persists north to well Cranborne 1, whose Old Red Sandstone (Devonian) pre-Triassic subcrop shows it to be separated from the zone of phyllites seen below the Permo-Trias in the trend east and west from Wytch Farm.

North of here the seismic data shows the development of the thick Upper Jurassic and Lower Cretaceous sequences typical of the Wessex and Weald Basins. The profile crosses a smaller Tertiary-age inversion structure near well Farley South 1, which is situated in a northwest extension of the Hampshire Basin Tertiary outcrop but crossed into an underlying Jurassic high feature at depth and ended in Lower Carboniferous Dinantian limestones.

The profile continues north through the Goodworth oilfield, an accumulation in the Great Oolite limestones similar to the nearby larger field at Stockbridge, in a region where Devonian and Lower Carboniferous subcrops beneath the Triassic.

The line then passes through wells Upper Enham 1 and Hurstbourne Tarrant 1 before crossing the northernmost Tertiary inversion feature drilled by well Ham 1 at the northern margin of the Wessex Basin. This marks the edge of the Lower Cretaceous Wealden sequence and most units of the Jurassic and Cretaceous thin significantly to the north.

The next tie point is the Maddie Farm borehole, which shows that the Triassic sequence overlies a thin sequence of Upper Coal Measures, underlain by Old Red Sandstone. Beneath this is a steeply-dipping basin of what may be Silurian rocks, although there is no well control.

Continuing north, the profile passes close to well Faringdon 1, which demonstrates the presence of a full, but thin sequence of Triassic, Lower and Middle Jurassic rocks overlying Old Red Sandstone. However, immediately north of this well, the profile shows the development of a thick basin of Upper Coal Measures in the main part of the Oxfordshire Coal Basin. The ties provided by the boreholes at Apley Barn and Upton confirm the presence of these coals, unconformably overlying Old Red Sandstone and some marine Devonian rocks. However there are indications on the seismic data of deeper, continuous reflections: ties to other wells in the area suggest that these may be coming from basic intrusions, as at Steeple Aston borehole, or from Cambrian limestones and sandstones underlying a thick Tremadocian shale, as at Cooles Farm 1.

The profile continues northwards, through the wells around Stow-on-the-Wold, and terminates in a well-defined sub-basin. A tie to the Withycombe Farm borehole confirms the presence of a thick sequence of Upper Coal Measures beneath the Triassic unconformity in this sub-basin but also indicates that a series of strong reflectors below the Coal Measures may belong to Silurian rocks and possible Ordovician basalts. The pre-Coal Measures sequence can be seen to be affected by complex thrust-faulting when viewed on east-west tie lines in this area. Unfortunately, the profile ends near Stratford-on-Avon because there is a 45 km gap in the Birmingham area over which no seismic data has been recorded.