

Hydrogeology of Wales: Carboniferous aquifers - the Marros Group

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This page is part of a category of pages that provides an updated review of the occurrence of groundwater throughout Wales.

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The Marros Group is thickest near its southern limit of outcrop around Oswestry. It comprises a varied sequence of sandstones, shales and cherts, of which the uppermost 90 m, the Gwespyr Sandstone offers the most favourable conditions for groundwater transport. Borehole yields are generally modest although a yield of 25 l s^{-1} was attained in a public supply borehole near Oswestry [SJ 2759 3405].

In south Wales, the Marros Group forms a relatively thin horizon at the base of the South Wales Coal Measures Group. The dominant lithology is fine-grained shale and mudstone which tends to act as a barrier between the Pembroke Limestone Group and the overlying South Wales Coal Measures Group. Along the north crop of the South Wales Coalfield is a sandstone unit, the Twrch Sandstone Formation, which with the Bishopton Mudstone Formation and an upper sandstone unit, the Telpyn Point Sandstone Formation, is collectively up to 150 m thick. To the south and east the sequence thins to only 20 m and is finer grained. The sandstones are hard, massive and quartzitic with low porosities and intergranular permeabilities. Transport of water is dependent on fracture flow with fracture density reducing in intensity away from outcrop and with increasing depth. Borehole yields are small, typically only a few l s^{-1} with overall permeability no better than the South Wales Coal Measures Group sandstones, although occasional higher yields have been found where boreholes intersect an open fracture system.

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