

## SHALE GAS & AQUIFERS

At the beginning of July 2014 the British Geological Survey, in partnership with the Environment Agency, published the results of an electronic mapping project which shows the relationship between shale gas sources and aquifers on a dedicated website: (<http://www.bgs.ac.uk/research/groundwater/shaleGas/aquifersAndShales/>)

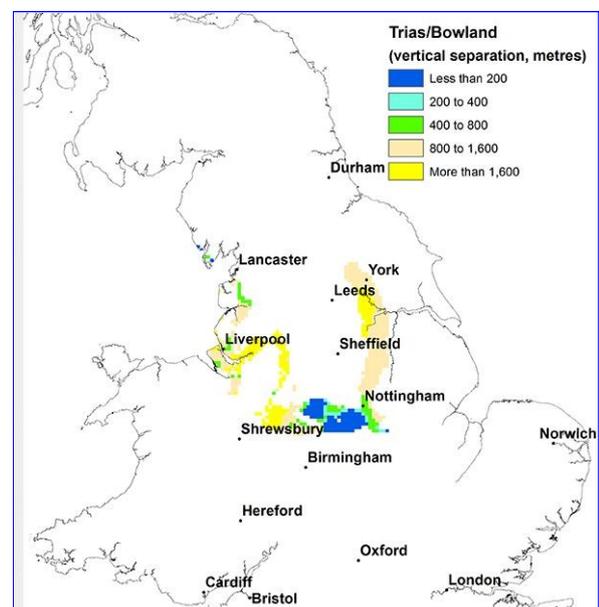
If shale gas resources are to be developed in the UK, the implications for groundwater must be considered as part of any risk assessment; a process that is strictly regulated and controlled by the Environment Agency (NRW/SEPA/EANI). A step in such an assessment is to understand and quantify the spatial relationships between the potential shale gas source rocks and overlying aquifers.

The aim of the BGS website is to provide an overview, at the national scale, of the spatial relationships between principal aquifers and some of the major shale and clay units in England and Wales.

What becomes important in this discussion is what we consider to be “aquifers”. In common language aquifers can be considered to be earth materials from which useful (in terms of quantity and quality) groundwater can be sourced. Where water occurs at depth in the UK, it is often saline and in some cases hyper saline. Envireau Water has analysed samples from 1km depth where the salinity is more than 5 x the salinity of the North Sea.

The UK expert advisory group on groundwater related issues considers a depth of 400m as a limit to aquifers, and it is this depth that the BGS has considered in its project. While this doesn't mean that deeper water bearing formations can be ignored, it does mean that the risk assessment will focus on issues other than drinking water or environmentally important water.

The work undertaken by BGS/Environment Agency is a very useful contribution to the shale gas debate, but as with all science the data and output must be used in context and must be interpreted correctly.



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Relationship between Triassic Sandstone aquifer and Bowland Shale

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