

LETTERS

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ENERGY

We must beware the risks of fracking

The government has announced how it will fast track and force through approvals for fracking.

As there are many issues to consider, this may be OK, but I am concerned at the size of the companies being allowed to be involved in the licence proposals.

Fracking is new to the UK, so it is most unlikely that all the work here will be completed without any unfortunate incident.

As the UK is a very small place, the fracking accident easiest to envisage is a water borne sickness or plague caused by either mixing foul and drinking water aquifers or by the dispersion of toxic waste.

Why these two items?

Groundwater aquifers are policed by the local water authority and local council, who have a duty of care towards us all. If consent is forced from these parties, who has the duty of care?

With regard to toxic wastes, the Ministry of Defence has used its "own" land to dispose of unpleasant things down deep holes since the end of the First World War.

A lot of this land has now passed into private ownership and even if records exist of these caches, it is unlikely that a licence will impose a duty to look for them.

So even if fracking is considered for the greater good, proper risk provision is still required for the billions of pounds of clean-up cost and damages that could occur if a mass sickness incident arises.

It is the lack of a major global company fronting these fracking discussions, one with the necessary billions of assets needed to pay for a mistake, that makes me think these proposals have not been thought through.

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THE MAIN POINT

GEOTECHNICAL

Fracking contamination claims contested



Fracking: Groundwater contamination claims questioned

Having served on the UK and Scottish expert panels that evaluated the risks posed by shale gas developments, I was taken aback by Stephen Penfold's lurid suggestion (*NCE* 10 September) that the primary risk they pose is "a water borne sickness or plague caused by either mixing foul and drinking water aquifers or by the dispersion of toxic wastes".

Evidence we examined from tens of thousands of shale gas operations in the United States revealed not a single instance of the inter-connection of fractured shale zones to overlying aquifers.

This is because such inter-connection would flood the shale gas wells and make them unproductive.

As the prevailing hydraulic gradient would be downwards, pollution would not ensue. As

for "toxic waste", the fluids arising from shale gas operations are essentially sodium chloride brines, in which the principal additive is sand grains.

Given this, does Penfold predict "plagues" around every beach in the UK? In any case, such fluids are subject to double-banded, enclosed storage and certified disposal, policed by the Environment Agency, not (as Penfold claims) by local authorities or "water authorities" (which ceased to exist 30 years ago). In reality, shale gas is far less challenging than myriad industrial activities which UK regulators cope with routinely.

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If we put our heads together we must be able to help. If we do, this might alter the general public's view of the engineer as the guy with the oily rag.

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GEOTECHNICAL

Learning valuable lessons

The description of the challenges met by the consultant and

contractor's team on the Heads of the Valley road between Hirwaun and Abergavenny was of particular interest with reference to the approach taken to deal with the old mining areas over which the route was located (*NCE* 10 September).

The Carillion project manager stated that the traditional approach would have been to drill down to the old workings and pump grout to fill the located voids, but to avoid the risk of missing voids with ultimate collapse migration

decided on a "risk based approach" with the construction procedure used as described.

In 1982, the Fife Region Road Department (as Agent for the Scottish Roads Department) was faced with the same challenge. To meet it, a computer model was created to establish and support a risk analysis approach. The approach was used primarily as part of the design process for the construction of the 30km East Fife regional road and Thornton bypass phase two. The procedure and