

## The BGA Hydraulic Fracturing Debate

17<sup>th</sup> September 2014 6pm

One Great George Street

# The geotechnical and geo-environmental challenges of fracking in the UK are surmountable - yes or no?

**Professor Zoe Shipton, Strathclyde University**

**Professor Robert Jackson, Jackson Consulting**

**Eric Vaughan, Cuadrilla Resources Ltd.**

### Summary:

Hydraulic fracturing, commonly referred to as “fracking”, is a technique for recovering oil and gas from shale rocks. Shale gas extraction is widespread in the US and has been credited by some with reducing the cost of energy and in turn helping the country’s recovery from the recent economic crisis. The British Geological Survey estimates there may be 1,300 trillion cubic feet of shale gas present in the north of England compared to a current annual UK consumption of 3 trillion cubic of natural gas. If 10% of the estimated reserves could be recovered, shale gas offers the potential for the UK to be energy independent for decades to come.

Hydraulic fracturing techniques have been used in the oil and gas industry for decades and recently the UK government commissioned a study by the Royal Society and the Royal Academy of Engineering to review the scientific and engineering evidence around the risks associated with extraction of shale gas by this method. The report found that “the health, safety and environmental risks can be managed effectively in the UK” and set out ten recommendations on how this could be achieved.

Despite the generally positive findings of this study, negative media representation of the technique and high profile public protests continue, principally due to concerns around contamination and induced seismicity as demonstrated in Balcombe, West Sussex in the summer of 2013.

This event will begin with a talk by Professor Zoe Shipton who is a member of the working group responsible for the 2012 Royal Society and the Royal Academy of Engineering report on “Shale gas extraction in the UK: a review of hydraulic fracturing” followed by a debate on the geotechnical and geo-environmental aspects of fracking with contributions from Professor Robert Jackson and representatives of the hydraulic fracturing industry.

***N.B.** There are many technical and socio-economic issues associated with hydraulic fracturing for shale gas, including the West’s continued reliance on fossil fuel and the resulting climate change. Whilst the BGA acknowledges the importance of these issues, this debate will deal only with the geotechnical and geo-environmental issues in accordance with its mandate as a learned society and expert panel of the ICE. Any high-jacking of the discussion off the stipulated topic will be dealt with unsympathetically by the discussion chairman.*

**Biographies:**

**Professor Zoe Shipton, University of Strathclyde**

Zoe Shipton is a Professor of Geological Engineering in the Department of Civil Engineering at Strathclyde University. She works on the link between faulting and fluid flow in applications such as hydrocarbons, CO2 and radioactive waste storage, and geothermal energy, as well as the structure of modern and exhumed earthquake faults. She also conducts research into quantifying geological uncertainties and the perception and communication of risk and uncertainty. She is chair of the Tectonic Studies Group of the Geological Society of London, and is a member of the Royal Society and Royal Academy of Engineering working group on "Shale gas extraction in the UK: a review of the scientific and engineering evidence".



**Professor Robert Jackson, Jackson Consulting**

Robert Jackson held the Mouchel Chair in the Department of Civil Engineering at the University of Salford, Greater Manchester, where he was Head of the Centre for Sustainable Technologies & Regeneration and was Associate Head of the School of Computing, Science & Engineering. He now chairs the Environment & Sustainable Development SIG Committee of the Institution of Civil Engineers. As a Chartered Civil Engineer his professional career has spanned a period of 35 years during which he has worked throughout the UK and in the Middle East, Far East and South East Asia. Previous employers include international consultants, a contractor, local government, and a water utility company. In June 2014, the Journal of the Association of Personal Injury Lawyers published an article entitled 'Frack to the Future' in which Professor Jackson discusses the future health, safety and environmental risks associated with hydraulic fracturing.



**Eric Vaughan, Caudrilla Resources Ltd.**

Eric Vaughan has over 30 years' experience in the drilling and well service industry. He is a former US and European regional manager for NOWSCO Well Service. Following the acquisition of NOWSCO by BJ Services, he established Evergreen Well Services as a flag ship model for internal service provision. This provides a seamless vertically integrated drilling and completion service subsidiary into the parent operating company. It is a model operated by Cuadrilla to underpin operational standards and safeguards.



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