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The Fracking Revolution in the Oil and Gas Business and its Implications from both the Environmental and Energy Perspectives

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Hydraulic fracturing, or fracking as it is more commonly known, has become a despised term in many quarters, but most people do not look at both sides of the process but simply see it as a blessing or a curse. In my opinion it can be both but there is a need for better communication on both sides and not the general mass hysteria that accompanies such discussion. In this presentation I will try and outline some of the issues on both sides of the argument. These are simply my opinions backed up as far as possible by published data.

First a little history, not many people realize that the first patent for fracking was issued back in the 1850s during the Civil War and applied to water wells to improve supply of fresh water for the soldiers. There were various attempts at fracking oil and gas wells during the 1920s and 30s with limited success. After that in the 50s and 60s many vertical wells were successful fracked with little attention from people outside the industry. However it was in the 1990s and the first decade of this century that fracking started to gain attention. The first big shale gas development was in the Fort Worth Basin, TX. Mitchell Energy desperate to find gas in the basin finally successfully developed the technique of horizontal drilling around 2000 after many failed and expensive attempts. The real breakthrough coming with the combination of horizontal drilling and fracking leading to significant gas production from the Barnett and later many oil source rocks long thought to be past prime.

So what are the major environmental problems? The first is the water issue. Fracking a well requires large amounts of fresh water, a precious resource in states such as Texas, Oklahoma and California where there are steady droughts and water could be used for other purposes. This issue is being addressed and alternative techniques are being developed. Second, the concern that gas will get in water wells. This has been happening in oil and gas producing regions for years and has not been shown to cause health issues. Numerous papers were published a few years back suggesting fracking was responsible for this and these papers were later found to be false and some were retracted. Third, chemicals from the fracking operation will get into the aquifers and water wells. This is indeed a concern but many studies have shown a limited number of occurrences and few health related incidents. Fourth, damage to the environment in rural areas. That is a problem, huge storage pits have to be dug for water storage and new roads for rig transport. Fifth, earthquakes are another big problem but not directly related to the fracking. The earthquakes are caused by disposal wells where salty formation water is reinjected into very deep formations, subsequently causing the earthquakes.

Finally I think one has to ask the question why would the oil companies want to intentionally fracture the ground water aquifers? By doing so they would only produce water and that is not their goal.

6:00-6:30 pm Social Half Hour
6:30-7:30 pm Dinner
7:30-8:30 pm Presentation

East Central University, Ada, OK 74820
Oklahoma Room: lower level of the Student Union
parking: visitor lot on S Francis Ave
No parking permit is required, they are expecting us.
map: https://www.ecok.edu/about-ecu/campus-map

Menu
grilled chicken breast
w/ mushroom's, peppers & onions
south western ranch potatoes
green beans, tossed salad, roll's
assorted pie, tea, and water

RSVP is NOT required to attend the presentation.

Cost
$12 members
$5 students
RSVP Deadline
Thursday, Sep 28th, 5 pm
Contact: Daniel McInnes
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ECOK campus map QR code

Biographical Sketch on next page →

R. Paul Philp Biographical Sketch

Dr. R. Paul Philp is Emeritus Professor of Petroleum and Environmental Geochemistry at the University of Oklahoma. He received his Ph.D. from the University of Sydney, Australia in 1972 and a D.Sc. from the same University in 1998 on the basis of his research in geochemistry over the past 20 years. Prior to starting at the University of Oklahoma in 1984 Dr. Philp was a Principal Research Scientist, C.S.I.R.O., Sydney, Australia. His current research interests center around petroleum, environmental and forensic geochemistry with an emphasis on molecular and isotopic characterization of oils, gases, rock extracts and contaminants for the purposes of source determination, characterization of depositional environments, maturity, biodegradation and for correlation purposes. Much of the current research activity in the area of forensic geochemistry involves the use of stable isotopes for the purposes of fingerprinting contaminants in the environment for correlation purposes; source determinations and evaluating whether or not natural attenuation is active. This approach is particularly valuable in the case of refined products or single component contaminants when the more traditional GC and GCMS techniques are of little or reduced use.

He has authored or co-authored over 340 articles and books and has lectured extensively on petroleum and environmental geochemistry in SE Asia, South America, Europe and Africa.