

Part 1

Mr. Spock & Hydraulic Fracturing

Natural Gas Drilling in Northeast Pennsylvania

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Natural gas drilling is at our doorstep in Northeastern Pennsylvania and the Upper Delaware region. Land leases have been signed and applications for drilling have been filed. In Sullivan County, NY drilling companies are preparing to initiate drilling pending finalization of regulations to address the horizontal drilling and hydraulic fracturing technologies that will be employed (<http://www.recordonline.com/apps/pbcs.dll/article?AID=/20100111/NEWS/1110325>). In Wayne County, PA Chesapeake Appalachia, LLC had applied to the Delaware River Basin Commission for approval to withdraw surface water from the Delaware River. The application was rescinded due to public hearing delays. However, because drilling and hydraulic fracturing cannot be accomplished without water, millions of gallons of water, it is possible that another strategy may be forthcoming. This likelihood is suggested in the drilling company's letter to the Commission, which states, "We have decided to withdraw our application and reassess our approach to the situation." (<http://www.nj.gov/drbc/dockets/D-2009-20-1.htm>)

As the reality of drilling in our region materializes, much is being written and debated about environmental and health risks versus the benefits of domestically acquired fossil fuel. The arguments on both sides are compelling and passionate, but confusingly polar. Which are the valid arguments? What is the truth?

In my quest for the truth, I turned to *Star Trek's* Mr. Spock. As a Vulcan and science officer for the Starship Enterprise, Spock met every dilemma, conflict, and circumstance with emotional detachment and logic. He surveyed the situation, weighed the data, and calculated either a logical course of action or probabilities of success or failure. Such a strategy, I thought, seemed advisable to wade through the controversies surrounding natural gas drilling and hydraulic fracturing (fracing). I jotted down some questions including what is hydraulic fracturing, how is it done, what are the benefits, what are the risks, and set out on my quest for valid, reliable data upon which to base my opinion.

I asked questions of "those in the know." I surfed the web. I read articles, editorials, fact sheets, and dockets. I sought information from environmentalists, scientists, and geologists. Sadly, I gained little upon which to base an opinion that I could support with confidence.

I listened to politicians, geologists, and gas company executives who extolled the fiscal benefits and employment opportunities that await our beleaguered local, state, and national economies. I heard indictments against wealthy drilling companies for their generous campaign contributions to sway politicians. I learned of allegations of corruption in government vs. sabotage by environmental extremists; of gas company claims of a safe and proven sixty-year-old ever-improving technology vs. homeowners' claims of well and water contamination, illness, toxic spills, and sick and dying livestock. The inventory of alleged and potential environmental impacts is sobering and long while gas drilling

companies claim "no documented evidence" of environmental contamination in one million drilling operations (<http://www.wnyc.org/news/article/104157>).

After countless hours spent searching, reading and investigating, I have concluded that good, objective data, free from prejudice and partiality, have fallen into a black hole of bias on both sides of the issue or are hidden somewhere in the elusive dark matter of our universe.

What to do? It's doubtful that Spock was fortified with *all* the data in forming his conclusions, I reasoned. And he was never influenced by a little thing like bias. In fact, Spock's every logical utterance was met with McCoy's explosion of emotion and outrage at his icy objectivity. So I forged ahead in search of the objective truth.

We, as a nation, are in need of continued sources of fuel and energy. Alternative, green, sources of energy are in development, but it will be decades before clean and renewable energy can replace non-renewable fossil fuels. Until then, we must continue to rely on fossil fuels. We are also better off as a nation if we can produce our own fossil fuels rather than depend upon foreign sources. Moreover, natural gas is the cleanest of the fossil fuels, potentially less expensive than oil or coal, and is domestically abundant. The Potential Gas Committee of the Colorado School of Mines estimates that 2,100 trillion cubic feet of natural gas is available nationwide (<http://www.nytimes.com/2009/06/18/business/energy-environment/18gas.html>). That's enough to supply the nation for about 100 years at our current annual rate of use. The abundance of natural gas also offers opportunities for conversion to natural gas for virtually anything and everything that is now dependent on oil or coal. Whole new industries, jobs, and personal, corporate, and national wealth await.

One of the richest reserves of natural gas lies 4000 to 8500 feet beneath the Appalachian Basin in a thick layer of shale called the Marcellus Formation. The Marcellus spans about 2/3 of

Pennsylvania, large portions of Ohio, West Virginia, and New York, and small areas of Maryland, Kentucky, Tennessee, and Virginia. It is estimated that 50 to 390 trillion cubic feet (TCF) of recoverable natural gas lies within the Marcellus (<http://pubs.cas.psu.edu/FreePubs/pdfs/ua460.pdf>), with the richest deposits in Northeastern Pennsylvania (<http://www.geology.com/articles/Marcellus-shale.shtml>). The wellhead value of 50 TCF is estimated to be about one trillion dollars. Drilling companies have known about the Marcellus for decades, but until recently, gas extraction was not economically feasible. The rise in oil and gasoline prices in the past decade and improvements in drilling technology have altered the fiscal landscape.

Though drilling has yet to begin in the Upper Delaware region, it is occurring now, in earnest, in counties to our west. There were a total of 1,984 drilling permits issued in Pennsylvania in 2009 and 763 wells were drilled (compared to 195 in 2008). More than 5000 permits are expected in 2010. (<http://www.paenvironmentdigest.com/newsletter/default.asp?NewsletterArticleID=14569>). Industry estimates of state revenues from drilling fall at about \$4 billion annually at the start of the decade and rise to at the \$13.5 billion by decade's end (<http://www.free-republic.com/focus/f-chat/2370859/posts>). These are staggering figures especially in times of fiscal crisis.

Part 2 – April Issue
**The Pros & Pollution
of Gas Drilling!**

Glyn Eisenhauer, Ph.D. is co-founder of Pro-Pike PA, who along with co-founder Shirley Masuo, is working with others dedicated to keeping Pike County exceptional. Pro-Pike PA and its members ardently support passage of the Frac Act. Those interested in joining our efforts can reach us at glyn-hike@aol.com or shirleym@ptd.net.