

Ten Myths about Fracking in Pennsylvania

Background information for the Resolution in Support of a Statewide Moratorium on Hydraulic Fracturing, submitted for consideration at the June 15, 2013 meeting of the State Committee of the Pennsylvania Democratic Party available at:

http://www.monroepadems.com/images/files/Moratorium_Fracking_Resolution.pdf

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MYTH #1: *Fracking is clean energy that reduces greenhouse gases released into the atmosphere and will help in the fight against climate change.*

FACT: The gas industry points to the fact that when burned, methane releases about half the amount of carbon dioxide (CO₂) into the atmosphere as burning coal to generate the same amount of energy.¹ What they don't tell us is that methane is also a powerful greenhouse gas, and through the process of fracking and transporting the gas, large amounts of methane are released into the atmosphere. In the short term, methane is a far more potent greenhouse gas than CO₂, with a global warming impact, pound for pound, 56 times greater than carbon dioxide over a 20 year period and 21 times greater than CO₂ over a 100 year period.²

Cornell scientist Robert Howarth, in a peer-reviewed paper on methane emissions from fracked gas, found that gas drilling in the Marcellus shale play is ***dirtier than coal*** in terms of its impact on global warming.³ In a recent update to that paper, the authors concluded:

“Using all available information and the latest climate science, we conclude that for most uses, the GHG footprint of shale gas is greater than that of other fossil fuels on time scales of up to 100 years. When used to generate electricity, the shale-gas footprint is still significantly greater than that of coal at decadal time scales but is less at the century scale. We reiterate our conclusion from our April 2011 paper that shale gas is not a suitable bridge fuel for the 21st Century.”⁴

MYTH #2: *Fracking is creating tens of thousands of good jobs in Pennsylvania.*

FACT: The highest paying jobs are going to skilled workers imported from the gas and oil fields of the southwest United States. A report from the Keystone Research Center showed that the industry was grossly overstating the number of jobs created by fracking.⁵ The jobs created for Pennsylvanians are largely driving trucks carrying fresh water to the frack pads and carrying flowback water and drill tailings to disposal sites. These non-union jobs offer modest pay, usually without any health benefits. Because of an exemption in federal law about the hours that truck drivers in the oil and gas industry can be on the road, it is not uncommon for drivers to be on the road for 60 to 90 hours per week. Unfortunately, such drivers are not exempt from fatigue. Over the past decade, more than 300 oil and gas workers in the U.S. were killed in highway crashes, the greatest cause of fatalities in the industry.⁶

The cause of these fatalities may not just be fatigue. An investigative report in the New York Times found that “data from the Pennsylvania State Police indicates that 40 percent of 2,200 oil and gas industry trucks inspected from 2009 to [February, 2012] were in such bad condition that they had to be taken off the roads.”⁷

Additional hazards to workers include exposure to radioactive drill tailings and flowback water,⁸ and the danger of silicosis, from exposure to crystalline silica or “frac sand” used to keep the gas flowing. A recent study by the National Institute for Occupational Safety and Health (NIOSH) identified “exposure to crystalline silica during hydraulic fracturing as the most significant known health hazard to workers” in the industry.⁹

MYTH #3: *Fracking is good for our local communities.*

FACT: Some businesses are certainly benefitting from the boomtown conditions created by shale drilling. But boomtowns also create problems for local residents and municipalities. In gas drilling areas, formerly peaceful towns are overwhelmed by increases in crime, prostitution, homelessness, and drunk driving.¹⁰ Counties that formerly had excess jail capacity are now shipping prisoners to counties outside of the shale drilling area. Rural counties once noted for their clean air now have the highest rates of air pollution in the state.¹¹ For local residents, the gas boom has created a sharp spike in the price of rental housing, with the greatest impact on the poor, the elderly and the disabled.¹² Counties are also hard-pressed to repair the damage to local roads caused by thousands of heavy trucks operating 24 hours per day.¹³ The constant heavy truck traffic has also destroyed the sense of peace and quiet valued by many in rural communities.¹⁴

MYTH #4: *Fracking is safe because the wells are lined with cement and steel.*

FACT: The reality is that between 6 to 7 percent of the cement casings in wells drilled in Pennsylvania ***fail during the very first year***, allowing gas and frack fluid to migrate to the surface and pollute the land and water. A recent white paper by Cornell scientist Anthony Ingraffea explains the many ways in which gas wells fail.¹⁵ The long-term failure rate is even greater. As wells age, their casings corrode and the cement linings shrink, crack and de-bond. Industry studies show that over a 30-year period well casing failures can be as high as 45 to 60 percent.¹⁶ 100,000 frack wells are planned for Pennsylvania. Can we risk the failure of 45,000 to 60,000 of those wells over the next 30 years?

Even without a well failure, a peer-reviewed study published last year in the journal *Ground Water* found it is possible for frack fluids and gas to migrate to the surface and contaminate groundwater. The study found that natural faults and fissures in the rock layers, exacerbated by the effects of fracking itself, could allow chemicals to rise to the surface in just a few years.¹⁷ Another study published last year in the *Proceedings of the National Academy of Science* found that the geology of northeast Pennsylvania, with many natural fissures, created a greater risk of frack fluid migrating to shallower groundwater.¹⁸

MYTH #5: *There is no evidence of water pollution from fracking.*

FACT: An investigation by the Scranton Times-Tribune revealed: “State environmental regulators determined that oil and gas development damaged the water supplies for at least 161 Pennsylvania homes, farms, churches and businesses between 2008 and the fall of 2012.”¹⁹ The newspaper reviewed DEP “letters confirming contamination or water loss from drilling and the orders that require companies to fix the damage.”²⁰ Images of brown tap water and flammable faucets in Bradford, Susquehanna and Washington counties are familiar to many Pennsylvanians. The Scranton Times-Tribune study shows that in many instances, the DEP found that the problems were caused by gas drilling.

The industry claims this pollution is the result of naturally occurring methane in the water. A study of water wells in northeast Pennsylvania and New York, in close proximity to fracked gas wells was published in the *Proceedings of the National Academy of Science* in 2011.²¹ The study found the level of methane in wells near gas drilling sites to be 17 times greater than in wells not proximate to a gas well. There were low levels of methane in some of the wells not located near drilling site. This methane is known as biogenic methane. The methane recovered from fracking is thermogenic methane. Chemical analysis can distinguish the two types. The type of methane found in the wells near the gas pads was thermogenic methane consistent with fracked gas. Some investigations have been cut short by settlements between residents and the gas companies. Cabot Oil and Gas, which drilled the wells in Dimock, recently entered into a settlement with most of the affected families and that settlement included a gag order.²² A gag order imposed by Range Resources in a settlement with a family in Washington County was recently lifted by a judge who found the company’s privacy claims had no merit.²³

MYTH #6: *Fracked gas will provide the bridge to a future of renewable sources of energy.*

FACT: Oil and gas baron T. Boone Pickens touted fracked gas as the bridge fuel that would lead to a future powered by renewable energy. In 2007 and 2008 Pickens said he was investing in both wind and natural gas and promoted his “Pickens Plan” through paid advertisements and a national speaking tour. He claimed he would build the largest wind farm in the world in Texas.²⁴ By 2010, Pickens had divested from wind energy and told MSNBC that cheap gas from fracking had undercut the market for wind energy.²⁵

Fracked gas is not a bridge but an obstacle to shifting to clean renewable energy. This was confirmed recently by a report of the International Energy Agency. The head of the agency stated: “Renewable energy may be the victim of cheap gas prices if governments do not stick to their renewable support schemes.”²⁶ Despite the damaging impacts of burning fossil fuels, the fossil fuel industry worldwide receives six times more in government subsidies than renewable energy.²⁷

MYTH #7: *There is no evidence of health problems from fracking.*

FACT: The Pennsylvania Alliance for Clean Water and Air maintains a “List of the Harmed” with over 1350 names of people who claim to have suffered health problems as a result of exposure to fracked gas and chemicals.²⁸ The gas industry dismisses all such reports as “anecdotal.” But the anecdotes are adding up. One study of the public health concerns raised by gas development recommends a moratorium on new gas permits in Pennsylvania until the public health issues are fully understood.²⁹ The American Public Health Association has issued a policy statement warning of the dangers of high volume hydraulic fracturing (HVHF) that is used on the Marcellus Shale. The statement says: “HVHF poses potential risks to public health and the environment. HVHF raises concerns about groundwater and surface water contamination, climate change, air pollution, and worker exposures to toxins, all of which have significant public health implications.”³⁰

There are additional health hazards for those who work in the industry. OSHA has recently issued a hazard alert because “NIOSH’s recent field studies show that workers may be exposed to dust with high levels of respirable crystalline silica (called “silica” in this Hazard Alert) during hydraulic fracturing.”³¹

MYTH #8: *Fracking is subject to strict federal and state regulations.*

FACT: Thanks to Dick Cheney, fracking is exempt from the Safe Drinking Water Act, the Clean Water Act, and the Superfund Act. Cheney, the former CEO of Halliburton, managed to slip in the exception into the 2005 Energy Policy Act. The Clean Air Act also contains an exemption for the oil and gas industry so there is very little regulation or oversight at the federal level.³²

At the State level we are stuck with Act 13 and Tom Corbett’s DEP. Michael Krancer, until recently head of the DEP, began his tenure by forbidding DEP inspectors from issuing any violations without his personal approval.³³ He rescinded that policy after leaked emails made it public. While DEP Secretary, Krancer attacked the EPA, the Delaware River Basin Commission, and Delaware officials for their involvement with regulating fracking, and said that Delaware officials “smelled like the tail of a dog.”³⁴ Krancer left the DEP on April 15 to return as a partner at Blank Rome where he will head the firm’s “Energy, Petrochemical & Natural Resources Practice to support current and potential upstream/midstream/downstream client companies looking to benefit from Pennsylvania’s abundant natural gas reserves.”³⁵ Corbett appointed his deputy chief of staff as a replacement.

MYTH #9: *Fracking is generating tremendous revenues for Pennsylvania state and local governments.*

FACT: The “impact fee” adopted by Act 13 is among the lowest tax on gas production in the nation.³⁶ Because Pennsylvania does not levy a severance tax based on production, but a flat fee based on the number of wells drilled, the price of gas, and the Consumer Price Index, Pennsylvania collected less money in 2012 (\$199 million) than in 2011 (\$204 million) even though production doubled in 2012 from 1 trillion cubic feet of gas to just

over 2 trillion.³⁷ Other gas producing states impose taxes on production ranging from 5 percent in West Virginia to 7.5 percent in Texas. The revenue generated last year is equivalent to an effective tax rate of about 4.1 percent. As production increases, that effective rate may fall as low as 1.3 percent.³⁸

An impact fee implies that all the money will be going to compensate local municipalities for the damage caused by fracking. But only 60 percent of the revenues go to local governments. Forty percent goes to Harrisburg.³⁹ Counties where there is no active drilling but are suffering environmental damage from new gas lines and compressor stations get nothing from Act 13 revenues.

MYTH #10: Fracking is the solution to energy independence.

FACT: As a result of the shale boom, natural gas is now plentiful and cheap in the United States. There is a glut on the market, and producers are looking to overseas markets to shore up prices. Dominion Resources has applied for an export license and plans to build a liquefied natural gas (LNG) terminal in Cove Point, Maryland, with pipelines tied directly into the Marcellus gas fields. The company plans to export the gas to India and Japan where prices are much higher.⁴⁰ The Obama Administration has already approved two LNG export facilities, one in Louisiana and another facility in Texas in May of 2013. The price of gas rose three percent on the news of the Texas export permit.⁴¹ Widespread export of shale gas will mean price increases for U.S. consumers. Chemical and steel manufacturers oppose the exports fearing sharply higher energy prices.⁴² Gas is a commodity controlled by multinational corporations and subject to global energy prices. Once facilities are created to export the gas, we will be competing with the rest of the world for use of this gas, and at much higher prices.

Over the last 390 million years the remains of ancient life trapped in an ancient seabed were transformed into the gas deposits embedded in the Marcellus Shale formation. As leaders of the largest political party in the Commonwealth of Pennsylvania the question before us is this: Will we support the rapid exploitation of this resource by out-of-state corporations for export to foreign countries at fire sale prices, with minimal impact fees recovered by the state, with little to no regulation or regard for the damage inflicted on life, property and the health of our communities, or will we put the health and welfare of the citizens of Pennsylvania first, and call for a moratorium on fracking, until such time as it can be done safely and in the interest of the Commonwealth?

¹ See: <http://www.eia.gov/tools/faqs/faq.cfm?id=73&t=11>

² See: http://unfccc.int/ghg_data/items/3825.php

³ Howarth, R. W., R. Santoro, and A. Ingraffea. 2011. Methane and the greenhouse gas footprint of natural gas from shale formations. *Climatic Change Letters*, DOI: 10.1007/s10584-011-0061-5 - Available at: <http://www.eeb.cornell.edu/howarth/Marcellus.html>

⁴ Howarth, R. W., R. Santoro, and A. Ingraffea. 2012. Venting and Leaking of Methane from Shale Gas Development: Response to Cathles et al. *Climatic Change. In Press*. Available at: <http://www.eeb.cornell.edu/howarth/Marcellus.html>

⁵Drilling Deeper into Job Claims: The Actual Contribution of Marcellus Shale to Pennsylvania Job Growth, June 20, 2011. <http://keystoneresearch.org/publications/research/drilling-deeper-job-claims-actual-contribution-marcellus-shale-pennsylvania-jo>

⁶ Ian Urbina, "Deadliest Danger Isn't at Rig but on the Road," *New York Times*, May 14, 2012. Available at: <http://www.nytimes.com/2012/05/15/us/for-oil-workers-deadliest-danger-is-driving.html?pagewanted=all>

⁷ Ibid.

⁸ Paul Peirce, "Shale truck sets off alarm in South Huntingdon" *TribLive*, available at: <http://triblive.com/news/westmoreland/3888698-74/radiation-max-poister#axzz2RNbI3txG>

⁹ <http://blogs.cdc.gov/niosh-science-blog/2012/05/silica-fracking/>

¹⁰ http://www.huffingtonpost.com/2011/10/26/oil-drilling-boom-towns-increases-drunkenness-rowdy-behavior_n_1032326.html

¹¹ Laura Legere, "Northern Tier counties top state list of Marcellus air pollution." *Times-Tribune*, February 13, 2013. Available at: <http://thetimes-tribune.com/news/northern-tier-counties-top-state-list-of-marcellus-air-pollution-1.1444316>

¹² Mark Maroney, "Housing Woes Worsen," *Williamsport Sun-Gazette*, April 14, 2013. Available at: <http://www.sungazette.com/page/content.detail/id/576617/Housing-woes-worsen.html?nav=5011>

¹³ Jim Efstathiou, Jr., "Taxpayers Pay as Fracking Trucks Overwhelm Rural Cowpaths," *Businessweek*, May 15, 2012. Available at: <http://www.businessweek.com/news/2012-05-15/taxpayers-pay-as-fracking-trucks-overwhelm-rural-cow-paths>

¹⁴ The toll taken by truck traffic can be seen in this film clip from the movie *Groundswell Rising*: <http://www.youtube.com/watch?v=KZZQxe6FiGA>

¹⁵ Anthony Ingraffia, <http://www.psehealthyenergy.org/site/view/1057>

¹⁶ <http://www.archerwell.com/challenges-well-integrity/353/well-integrity.htm>

¹⁷ Tom Myers, "Potential contaminant pathways from hydraulically fractured shale to aquifers." *Ground Water*. 50(6):872-82, 2012 Nov-Dec. Discussion of article at:

<http://www.propublica.org/article/new-study-predicts-frack-fluids-can-migrate-to-aquifers-within-years>

¹⁸ Nathaniel R. Warner, et al., "Geochemical evidence for possible natural migration of Marcellus Formation brine to shallow aquifers in Pennsylvania." *Proceedings of the National Academy of Sciences of the United States of America*. 109(30):11961-6, 2012 Jul 24. Available at: <http://www.pnas.org/content/early/2012/07/03/1121181109.full.pdf+html>

¹⁹ Laura Legere, "Sunday Times review of DEP drilling records reveals water damage, murky testing methods," May 19, 2013, *Scranton Times-Tribune*, available at: <http://thetimes-tribune.com/news/sunday-times-review-of-dep-drilling-records-reveals-water-damage-murky-testing-methods-1.1491547>

²⁰ Ibid.

²¹ Stephen Osborne, et al, "Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing. *Proc Natl Acad Sci U S A*. 2011 May 17; 108(20): 8172–8176. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3100993/>

²² <http://www.csmonitor.com/USA/Latest-News-Wires/2012/0815/Pa.-drilling-town-agrees-to-settlement-in-fracking-federal-lawsuit>

²³ <http://stateimpact.npr.org/pennsylvania/2013/03/21/drilling-companies-agree-to-settle-fracking-contamination-case-for-750000/>

²⁴ http://lubbockonline.com/stories/061407/nat_061407027.shtml

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- ²⁸ <http://pennsylvaniaallianceforcleanwaterandair.wordpress.com/the-list/>
- ²⁹ Gas Patch Roulette: How Shale Gas Development Risks Public Health in Pennsylvania, available at: http://www.earthworksaction.org/issues/detail/public_health_and_gas_development#.UJzGF84Jt2-1
- ³⁰ American Public Health Association, "The Environmental and Occupational Health Impacts of High-Volume Hydraulic Fracturing of Unconventional Gas Reserves " Issued 10/30/12, Policy No. 20125, available at: <http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1439>
- ³¹ http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html
- ³² A summary of exemptions for fracking from federal environmental laws is available at: http://www.edcnet.org/learn/current_cases/fracking/federal_law_loopholes.html
- ³³ Donald Gilliland, "New DEP policy: no violations against drillers without approval from the top" *Patriot-News*, March 30, 2011, available at: http://www.pennlive.com/midstate/index.ssf/2011/03/new_dep_policy_no_violations_a.html
- ³⁴ <http://stateimpact.npr.org/pennsylvania/2012/05/03/secretary-krancer-calls-delaware-officials-dogs/>
- ³⁵ <http://stateimpact.npr.org/pennsylvania/2013/05/02/revolving-door-keeps-spinning-for-former-dep-chief-michael-krancer/>
- ³⁶ See: <http://pennbpc.org/gas-drilling-tax>
- ³⁷ "Pa impact fee misses billions in revenue, researchers say" *Pocono Record*, May 12, 2013, available at: <http://www.poconorecord.com/apps/pbcs.dll/article?AID=/20130512/NEWS90/305120327/-1/NEWS>
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