

## **Don't Play with Gas**

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This past August, hand-painted signs with the words "HOLD OFF" appeared along county routes in Otego and Oneonta, NY. These signs are part of a large public debate that continues to grip the Southern Tier of New York State. The natural gas industry is attempting to employ a controversial drilling technique to improve extraction rates. However, environmental groups, farmers, and community activists vehemently oppose this development. The resolution of this issue has global implications, as it addresses modern international natural gas mining practices and the impact these practices have on communities. New York State officials must "HOLD OFF" on permitting these companies to drill in New York and examine the serious risks to the environment, human health, and community that drilling poses.

New York State's natural gas extraction industry has existed for decades, with 6,683 active vertical wells in 2007, according to the NYS Department of Environmental Conservation (DEC). Recent controversy has developed around horizontal hydrofracturing, a drilling technique that uses pressurized water to extract natural gas thousands of feet below the surface. The Marcellus Shale geological region, which is located in parts of upstate New York as well as Pennsylvania and Ohio, is a low-permeability gas reservoir 6,000-8,000 feet under the surface, with gas contained in pores in the shale and where the shale is fissured in the formation (imagine Swiss cheese). These pore spaces and fissures are small and not well connected, which makes extraction even more challenging. Horizontal hydrofracturing requires millions of gallons of water to bore a vertical hole that will reach the gas regions in the shale and then move horizontally to intersect more fissures and thus extract more natural gas. This expensive technique has become profitable in the Southern Tier as the demand for "clean" natural gas energy continues to rise.

For the oil and gas industries, horizontal hydrofracturing in the Southern Tier offers great rewards and great risks. The DEC estimates that the Marcellus Shale region contains between 168 and 516 trillion cubic feet of natural gas. This would be enough to feed the demand in New York State, which uses about 1.1 trillion cubic feet of gas per year, for quite some time (assuming it is not sold on the world market). Since natural gas mined in New York does not necessarily stay in the state, this resource is not a "temporary-sustainable" solution for New York's energy problem. Because New York State is experiencing a severe budget deficit and an economic crisis, there is also momentum to take advantage of the potential for extra tax revenue from gas production, as well as regional job creation, landowner royalties, and leasing bonuses. In the last year, land leases have increased from \$300 per acre to \$2,100 an acre for private landowners. However, these prospects turn grim quickly in the face of potentially irreparable environmental damage and the industry's hegemony over New York State inhabitants.

The gas industry and policy makers have left the decision to mine to individual landowners, who sign leases to gas companies to use the land. However, I would argue that these leases are unequally distributed throughout New York State, signed mostly by low-income farmers and others in need. These people are left without a choice and without a means of defense if gas companies break the lease, destroy the land, or contaminate water. Poor landowners cannot afford to fight multinational gas

companies in a lawsuit if something goes wrong. The DEC has also explicitly stated that it will not intervene in “contract law,” which describes the relationship between landowners and gas companies. The question is: who is protecting landowner rights against a limited liability multinational company?

For now, New York State should resist these benefits. Water is a significant concern. One hydrofrack job requires about three million gallons of fresh water. The DEC has no regulation in place regarding water sources. It could come out of Cayuga Lake, the Susquehanna River, small water sources, or any other water source that is readily available. With a projected 1,500 new wells per year, this is a massive amount of water. Once the fresh water is extracted, it is mixed on site with undisclosed chemicals during the drilling process. At this point, the chemical cocktail is treated as a “trade secret,” which can be legally safeguarded as proprietary information. The DEC announced during a hearing on October 15 in Albany that the chemicals used will be disclosed, although exactly when is unknown. This is another example of citizens losing their right to information. Landowners who have signed leases this winter are being told to do pre-drilling water tests to serve as evidence in the case of future water contamination. Ironically, these tests can only be completed with knowledge of fracturing fluids, since the test specifies the presence or absence of the chemicals under inquiry. The average landowner has minimal access to this information.

Groundwater contamination is a primary concern, especially in floodplains in the 2,000 square mile watershed that contains New York City's drinking water. James F. Gennaro, Chairman of New York City's Environmental Protection Committee, is arguing against drilling in the reservoir area. “This is an activity that is completely and utterly inconsistent with a drinking water supply. This cannot happen. This would destroy the New York City watershed, and for what? For short-term gains on natural gas? We’re not saying no to exploration for natural gas anywhere in New York State. We’re saying the part of New York State that is the New York City reservoir system should be off limits to this kind of activity.” The New York City's Department of Environmental Protection has decided to hire private consultants to evaluate the risks that large-scale horizontal hydrofracking would pose to the watershed. If New York City is not willing to risk its water supply, then why should poor farmers be put at risk?

Another water problem emerges when the hydrofracturing job is finished and wastewater is removed (about 70% of the original 3 million gallons). Wastewater from natural gas sites is considered to be hazardous waste and has to be processed in a specialized water treatment facility. New York State does not have a treatment plant that can handle the amount of this type of wastewater, which is extremely salty brine with contaminants such as the aforementioned added chemicals, heavy metals, and possible low-level radioactive materials. Currently, wastewater must be transported to Pennsylvania to be treated, involving huge trucks barreling down the already over-used rural roads and highways. Before increasing the volume of wells in the Southern Tier and the use of hydrofracturing, the state needs to build an infrastructure to safely handle this wastewater.

The natural gas mining industry in New York State is prepared to exploit the environment and people of the Southern Tier to make a profit. The majority of landowners in the Marcellus Shale region often don't have the luxury of choice in an environment of peer pressure by neighbors and gas companies to “be good citizens and good neighbors.” In this time of needed energy reform throughout the country and the

world, who knew that the battlegrounds would take place in small rural communities, literally in our backyards? New York State has an opportunity to indicate to the natural gas industry that it must address the needs of citizens before it can profit off the environment.

**Suggested Further Readings:**

Cornell Cooperative Extension. <http://gasleasing.cce.cornell.edu/>

NY State Department of Environmental Conservation. Commissioner's Testimony at NYC Council Hearing on Natural Gas Drilling in the New York City Drinking Water Watershed. <http://www.dec.ny.gov/energy/46795.html>

NY State Department of Environmental Conservation. Draft Scope for Draft Supplemental Generic Environmental Impact Statement (dSGEIS) on the Oil, Gas, and Solution Mining Regulatory Program; [http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/draftscope.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/draftscope.pdf)

Oil and Gas Accountability Project. Shale Gas: Focus on the Marcellus Shale. <http://www.earthworksaction.org/pubs/OGAPMarcellusShaleReport-6-12-08.pdf>

Shaleshock Citizens Action Coalition. <http://www.shaleshock.org>

Ziegenfuss, Katherine E. and Chapman, Duane. Leasing of Natural Gas Drilling Rights on Public and Private Land in New York. <http://aem.cornell.edu/outreach/extensionpdf/ebo315.pdf>