

HYDROFRACKING 101

Diocese of Rochester Public Policy Committee, November, 2011

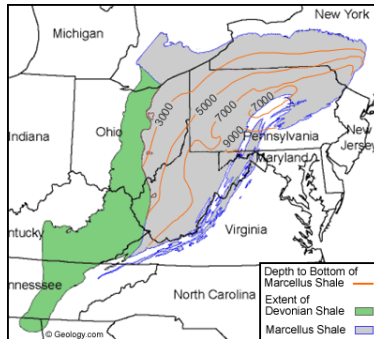
"How can we as a family of nations exercise stewardship in a way that respects and protects the integrity of God's creation and provides for the common good, as well as economic and social progress based on justice?"
U.S. Conference of Catholic Bishops

OVERVIEW

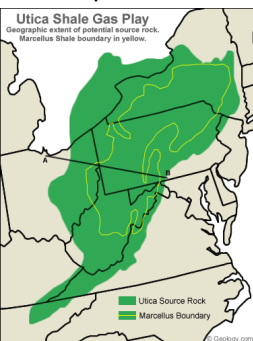
The process known as high-volume hydraulic fracturing (HVHF) for natural gas is currently under review by the New York Department of Environmental Conservation. Public comments will be received until Dec. 12.

Although some communities and landowners are looking forward to the income from the sale and leasing of mineral rights as well as an influx of jobs, others have profound concerns about the long-term environmental, social and economic impact of hydrofracking. It's very important that all people in New York State be informed decision-makers and convey their opinions to the DEC and lawmakers. Here are some basics:

Wells from easily-tapped pools of natural gas can be found throughout our region. These are being rapidly depleted. HVHF targets gas trapped in shale formations deep underground. Pennsylvania has been experiencing a "gas boom" as companies drill wells 3,000-7,000 feet deep into the Marcellus shale. As seen in the map above (both maps from geology.com), the Marcellus shale extends into the Finger Lakes region and the Catskills. It becomes narrower and closer to the surface at its northern end, so the areas closest to the Pennsylvania border are thought to have the richest potential for drilling.



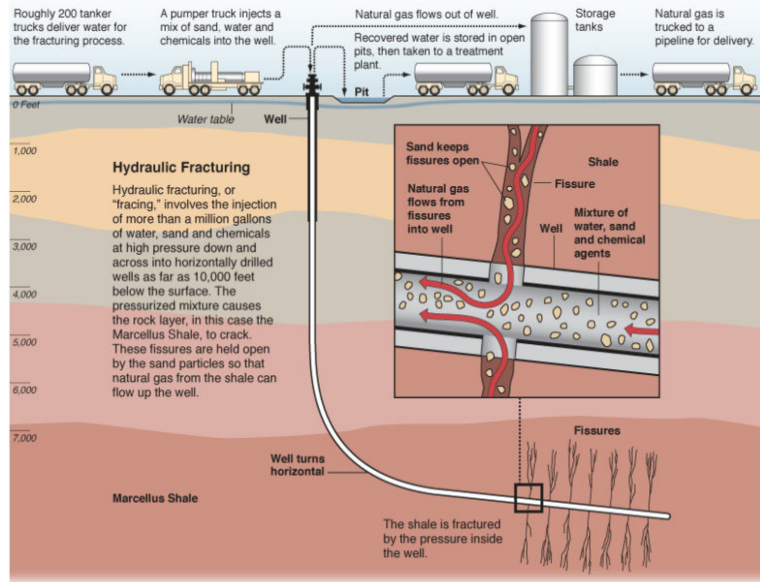
Another layer of potentially gas-rich shale lies under the Marcellus. The Utica shale (map to the left) reaches out into Lake Ontario. Although the Utica shale is already being tapped in Ohio, its potential in New York is still unknown.



HVHF is an industrial process by which large amounts of water are mixed with sand or other particles and forced down into the earth to break open, or fracture, rock to release trapped gas.

First a deep vertical well is drilled then turned to progress horizontally through the shale layer. New York's draft regulations would require 3 linings on the vertical section of the well, one that goes deeper than the water table, another intermediate one that goes even deeper, and a third that usually would go as far as the turn. These linings are intended to keep frack-ing fluids from entering the water table from the well.

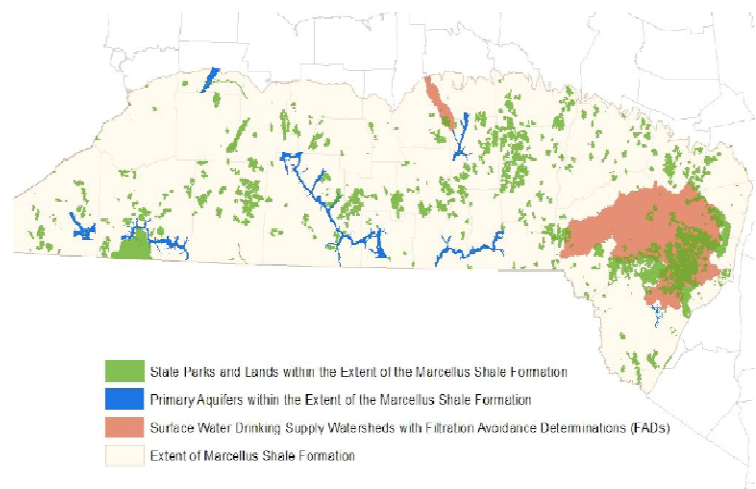
After the well is completed, millions of gallons of water (DEC estimates an average of 3.6 million) are trucked onto the site by tankers, then mixed with sand and chemicals and injected at great pressure into the well, causing the shale to



Graphic by Al Granberg

fracture. The sand particles hold the fracture open so that the gas can flow out and back up the well. The gas is then moved to storage tanks and trucked to a pipeline for delivery. A single well may be injected several times during its lifetime. The DEC has estimated close to four thousand heavy truck trips per well for building and fracking. Multiple wells will be drilled from a single well pad, reaching out in all directions under a mile-square area. If owners of 60% of the involved land have signed leases, the compulsory integration rule would prevent other landowners from forbidding drilling under their property.

The DEC's implementation plan would ban drilling on state lands (green on DEC map below), within 500 ft of primary aquifers (blue) and in the Syracuse and New York City watersheds (orange). Both of those water supplies are currently pure enough that they require no filtration. Should contamination occur, building filtration plants to supply all of New York City would be cost prohibitive.



Potential benefits could include:

- Increased wealth for some (smaller amounts for leases, more for royalties on successful wells)
- increased revenues for municipal services,
- job creation
- an increase in state revenue from taxes on landowner leases and royalties as well as from leases and royalties from wells on state lands
- lower natural gas prices, though the existence of the Millennium pipeline and increased demand worldwide raise the likelihood that much will be exported, eliminating the cost benefit
- expanded employment in businesses servicing gas drilling (hospitality, retail, legal, construction, etc.)

Potential problems could include:

- Some of the chemicals used in HVHF are known to cause human health problems. New York is not proposing to ban any of them.
- Air pollution from escaped methane and generator exhaust at well sites in addition to diesel pollution from increased truck traffic.
- The thousands of heavy equipment trips per drill pad for construction and fracking will put great stress on local roads and bridges and greatly increase traffic, emissions and noise over the level normally experienced in rural areas.
- 30-70% of the fluid pumped into a well flows back out after accumulating additional contaminants such as arsenic and radioactive materials. These require safe disposal. Increasing costs of disposal increases the likelihood of unsafe dumping by unethical disposal agents (occurred in Pennsylvania).
- While natural gas burns cleaner than other fossil fuels, natural gas extraction releases greenhouse gases into earth's atmosphere. The extraction process results in the release of methane, a much more potent greenhouse gas than carbon dioxide.
- Many rural residents use unfiltered water from wells. Inevitable drilling accidents have the potential to threaten our water supplies. The ban on drilling in pure watersheds reflects this reality.
- Increased stress on community services as temporary workers move into communities – temporary increases in the need for housing, healthcare, education, emergency responders – as well as conflict between community members who benefit from new wealth and those who are negatively impacted by drilling (for example, inability to obtain mortgages on property near gas wells). What happens when drilling ends?
- Agriculture and tourism, two of the biggest economic drivers in our region, are both threatened by the industrialization of the Finger Lakes region. Drilling for gas is a finite industry, coming to an end when the gas is gone. Will our long-term industries survive drilling's impact?
- an outside consultant has provided the state with info about the economic benefits of fracking, but does not include the potentially steep costs to communities. Can communities afford HVHF?

Some economists suggest that a focus on *clean, renewable, sustainable* energy development could create jobs for the New York economy and help reduce the climate-altering emissions from gas, oil, coal that get trapped in earth's atmosphere. It is estimated that gas from the Marcellus shale formation could meet the natural gas needs in the U.S. for up to 30 years. Eventually, we will need to shift to other fuel sources. Should we put our resources into finding alternative fuel sources and new ways of conserving so that our gas lasts even longer? What are we leaving our grandchildren?

YOUR ONE CHANCE TO ACT

You have until December 12 to submit comments. All comments, long or short, matter. Public hearings on the proposed hydrofracking regulations are scheduled for Wednesday, November 16 at Dansville Middle School in Livingston County, and Thursday, November 17 at the Forum Theatre in Binghamton. All hearings are from 1-4 p.m., and from 6-9 p.m.

Comments (due by Dec. 12) can ONLY be submitted:

- 1) Electronically at <http://www.dec.ny.gov/energy/76838.html>
- 2) on paper by mailing or delivering to: Attn: dSGEIS Comments, New York State Department of Environmental Conservation, 625 Broadway, Albany, NY 12233-6510. Please include the name, address, and affiliation (if any) of the commenter
- 3) On paper, submitted at the public hearings.

Due to the expected volume, comments that are faxed, telephoned, or emailed to the DEC will not be accepted for the official record.

Letters directly to Gov. Andrew Cuomo are also important: www.dec.ny.gov/energy/75370.html

For more information visit the DEC website: <http://www.dec.ny.gov/energy/46288.html>

NYSCATHOLIC CONFERENCE POSITION

Prior to permitting hydraulic fracturing for natural gas, the state should develop a comprehensive legislative and regulatory package to assure:

- ✦ transparency regarding all chemicals, additives and substances used in hydro-fracturing. Gas companies should bear the full cost of remediation in case of spill or groundwater/well contamination.
- ✦ that gas companies fund, develop and maintain waste water reservoirs and treatment plants and pay a fee for withdrawal of water from public sources.
- ✦ adequate buffer zones/setbacks from homes, schools, hospitals, public and private water sources and other sites where public health could be compromised.
- ✦ that gas companies fund the reconstruction of damaged/high use infrastructure (roads, etc.) and emergency response costs.
- ✦ the revocation of compulsory integration to allow non-leaseholders to opt-out.
- ✦ the establishment of a severance tax for each well drilled and the dedication of a percentage of taxes collected to fund human needs programs.
- ✦ citizen awareness of the socioeconomic benefits and costs to the state, local communities and families.