

What's All The Fuss About Fracking?



Blue Ridge Environmental Defense League
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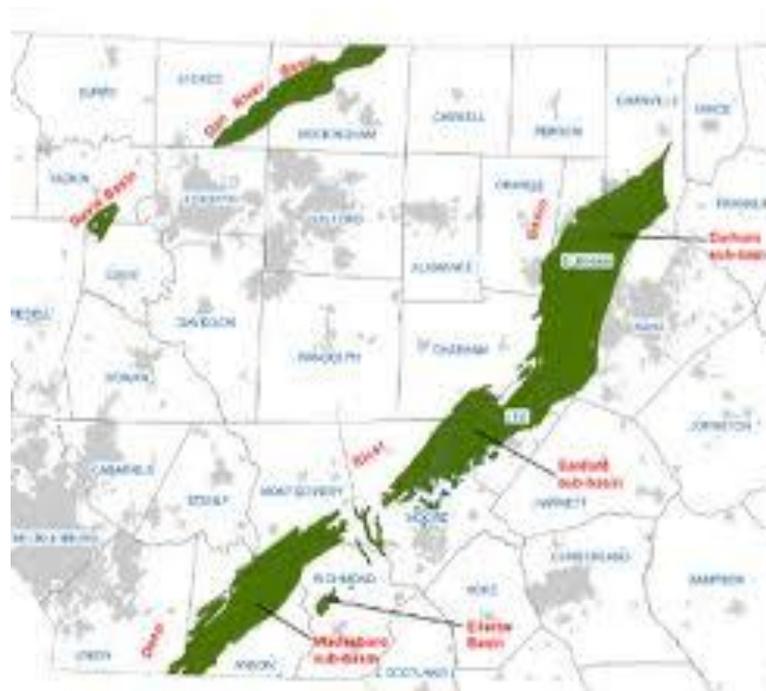
Therese Vick

Exactly What is Hydraulic Fracturing aka “Fracking”?

Fracking is a way to release previously unattainable gas deposits from deep within the ground. This is achieved by drilling vertically down through the earth from hundreds, to thousands of feet, then drilling horizontally for long distances, and injecting millions of gallons of water laden with undisclosed toxic chemicals (fracking fluid) into the shale in order to release the gas.

North Carolina's Role

Potential Shale Plays in North Carolina's Triassic Basin



[Geologic Assessment Information](#)

- North Carolina's Triassic Basin has been identified as having the potential for the extraction of shale gas, although it is not known how much recoverable gas is in the basin. The USGS has not released its projections as of yet.
- A state-wide moratorium is in place until 2014.
- The Mining and Energy Commission is currently developing rules for fracking.
- There are no protections for North Carolina landowners.

- Water use
- Water Contamination
- Waste Product Disposal
- Air Pollution
- Public Health
- Earthquakes
- Leases, Split Estates and Forced Pooling
- Infrastructure Strains
- Community Disruption
- Political Pollution

Water Use

- ❖ Each time a well is “fracked” it can take up to **10 million** gallons of fresh water
- ❖ This water will never be available for drinking and is permanently removed from the hydrological cycle
- ❖ Depletion of this precious resource will seriously inhibit an area’s ability to grow

Water Contamination

Contamination of wells by methane released by fracking is widely reported on, its not hard to find examples of “water on fire” almost daily. That’s not the only problem. In addition to the millions of gallons of fresh water injected into the ground, toxic chemicals and other unknown substances are also used to release the gas and make it flow better. Drilling companies are not required to disclose these chemicals, and are not regulated by the Safe Water Drinking Act. This toxic cocktail is now known as “fracking fluid”. Industry claims that only .05 to 2.0% of the fracking fluid contains chemicals. That can mean up to 200,000 gallons of toxic chemicals injected into the ground *each time a well is fracked.*

Water Contamination Continued

Some of this now highly toxic fluid flows back to the surface. The flowback or “produced water” may now also contain arsenic, barium, strontium and radium226, a water-soluble radioactive material. This toxic and now radioactive fluid is stored in open pits or tanks and can be taken to underground injection wells or wastewater treatment plants where it is eventually discharged to surface water, potentially contaminating the receiving body. However, some of the chemical laden fluid – up to 85% can remain in the ground, potentially contaminating groundwater.

["Burning Questions- What's What, When it Comes to Water?"](#)

["Physicist Warns of Fracking's Radioactive Side Effects"](#)

["Regulation Lax as Gas Wells' Tainted Water Hits Rivers"](#)

Waste Product Disposal

- ❖ Waste products from hydraulic fracturing include flowback water, production brine (or produced water), and shale cuttings, all contaminated and possibly radioactive.
 - In Pennsylvania, it is estimated that over 9 million gallons of fracking wastewater is generated every single day. This wastewater must be treated to be reused to frack, or taken offsite for disposal. The Pennsylvania DEP has asked drillers to stop taking wastewater to water treatment plants because of radioactivity and high levels of bromide (a salt) being found in rivers.
 - Maryland is considering a ban on the importation of fracking wastewater.
 - In Ohio, underground injection of the wastewater is thought to have contributed to recent seismic activity.

Waste Product Disposal Continued

- ❖ In addition, highly radioactive metal piping, drill cuttings and other contaminated equipment may have to be disposed of
 - Dr. Marvin Resnikoff of Radioactive Waste Management Associates said in a recent interview: “ A lot of the aboveground apparatus that’s associated with recovering gas [can be] contaminated with calcified brine, now radioactive, and that material is a concern. Because the radioactive pipes can be quite hot in terms of radiation that comes off the pipes. If the pipes are cleaned that material can get in the air, and people can inhale it so that’s a concern for workers at these sites and for people who live near these sites.” Dr. Resnikoff goes on to say:

“What then is going to happen, to all this radioactive material? It’s like a house built without bathrooms, there’s no place to get rid of the waste material, who would buy that kind of house?”

Waste Product Disposal Continued

- ❖ Drill cuttings contaminated with chemicals and possibly radionuclides could end up in municipal solid waste landfills. Certain percentages of solid waste can be liquid, around 20% which means that some of the highly toxic waste fracking fluid can be disposed of in solid waste landfills also.

Air Pollution

- Fracking produces uncontrolled air emissions of volatile organic substances such as benzene, radon gas, and methane- a more potent greenhouse gas than carbon dioxide.
 - Some rural areas have air quality as poor as major cities, directly attributed to fracking:
 - Dish, Texas had levels of benzene 55 times higher than levels allowed by the Texas Commission on Environmental Quality
 - In one area of Wyoming, smog from fracking has been found to be worse than in Los Angeles
 - In an interview in Colorado, EPA Administrator Lisa Jackson acknowledged that drilling had led to poor air quality in some areas. Smog was worsening in rural communities where drilling had increased sharply, she said, and the agency was concerned that without better regulation those problems would grow. **(Update February 10, 2012, the Rocky Mountain Front Range has reached record levels of ozone and other pollutants, much worse than expected. This is being attributed to oil and shale gas drilling.)**

Administrator Jackson said: "People's health will be affected"

Public Health

Health problems are being reported in communities living with fracking from around the country Many people are unable to leave and are virtual prisoners of their own homes.

- Dish Texas, where Mayor Calvin Tillman left town out of concern for his family's health. His children were suffering nosebleeds, and when his 5-year old son woke up with a very severe nosebleed and his house "looked somewhat like a murder scene" he decided he'd had enough and left.
- In Erie, Colorado, residents are complaining of asthma, dizziness, migraines and gastrointestinal upsets.

In testimony before US Congress on February 1 2012, toxicologist Dr. Bernard Goldstein stated:

- Adverse health effects will be statistically associated with unconventional gas development activities
- Ignoring the public health implications of unconventional natural gas extraction is not going to work.
 - 1) the public is concerned about the potential health impacts of unconventional shale gas development;
 - 2) there is genuine cause for this concern, and
 - 3) the current lack of almost any support for research directly related to the health effects of unconventional gas drilling is shortsighted and counterproductive.

"This is not a one-time event in a single location whose health effects could be hidden by simply not looking for them. Let us not, five or ten years from now, find conclusive evidence that we are hurting people or the environment."

Earthquakes

Increased seismic activity has been recorded in areas of hydraulic fracturing. North Carolina regulatory agencies admit that underground injection of fracking wastes can cause earthquakes. Earthquakes have been occurring more frequently in:

- Arkansas
- Colorado
- Ohio
- Oklahoma
- Texas
- The UK

Leases, Split Estates and Forced Pooling:

- Leases

- Companies are taking advantage of NC landowners' lack of knowledge concerning mineral rights
- Landowners could be liable for damage to adjoining property
- Signing a mineral lease could void mortgages and other loans on property and lead to foreclosure
- Signing a mineral lease could lead to loss of insurance coverage
- Years worth of tax breaks and grants for agricultural land uses may have to be repaid if the land is leased for hydrofracking

“The contracts are putting liabilities on landowners that the average person wouldn't know about; people in North Carolina aren't getting a very good deal” Jordan Treakle, Rural

Advancement Fund International.

Leases, Split Estates and Forced Pooling Continued

- Split Estates

A landowner may or may not own the mineral rights to their land. The landowner may only own the surface rights, and another individual or company may own the mineral rights. The owner of the surface rights may not prohibit the owner of the mineral rights from extracting the gas under the property. The owner of the gas has the right to enter the property and construct the necessary infrastructure to get to it-including roads, the well pad and evaporating ponds.

- Forced Pooling

- In some states, landowners who refuse to sign leases can be compelled to if adjoining property owners have done so. North Carolina has no protections in place against this practice.

Infrastructure Strains

- **Damage to Roads**
 - **One New York road supervisor visited Pennsylvania, leaving a skeptic and returning a believer; he noted up to 1000 trucks per day delivering water to one well. This did not include all the other trucks needed to deliver fracking chemicals and remove fracking wastes, or worker's vehicles.**
- **Increased Educational Needs**
 - **In North Dakota, one county has seen a 57% increase in primary school enrollment.**
- **Law Enforcement**
 - **Drunk driving, bar fights, drug use, and other criminal activity is exploding in fracking communities.**
- **Emergency Services**
 - **Many areas where drilling is occurring are served by volunteer fire and rescue departments who may not have the personnel, training, budget or equipment to handle an explosion, hazardous spill or increased traffic accidents.**
- **Housing Shortages, Increased Rent and Lease Costs**
- **Human Services**
 - **Mental health and substance abuse treatment, housing, medical care, food stamps and other social services have seen upswings in areas of hydraulic fracturing.**
- **Water Use**

Community Disruption



Community Disruption

The exploitation of natural gas has created an unprecedented sense of communal loss wherever it is occurring. In addition to environmental degradation, sociologic and psychological effects are creating a deep sense of sadness in shale gas communities. Constant noise and light pollution disrupt sleep, loss of property value creates financial insecurity, the huge increases in traffic contribute to frustration, and the indifference or downright animosity of public officials and regulatory agencies fosters anger and distrust. The division in opinion which sets neighbors and families against one another, feelings of helplessness, depression, anxiety, frustration and anger all contribute to the unraveling of a community's sense of place.

A Bradford County, Pennsylvania citizen quoted in a recent study eloquently described it this way:

“It’s Like We’re Losing Our Love”*

[*It's like we're losing our love: Documenting and Evaluating Social Change in Bradford County, PA during the Marcellus Shale Gas Boom \(2009-2011\)](#)

Dr. Simona Perry, Rennselaer Biotechnic Institute



Dr. Stephen Cleghorn, after his wife's swift death from cancer: "Her joy was in sustaining our farm against the threat of fracking. After Lucinda's ashes become a part of this piece of the good earth, it becomes sacred ground to me, and the company that owns the so-called "rights" to the gas in the shale below our farm is advised to keep their hell away from this place"



Political Pollution

Along with dirty air, water and land, hydrofracking also comes with all the dirty politics money can buy. For example:

- In Pennsylvania, natural gas companies have given over \$7 million dollars to political candidates since 2000. Over \$3 million of that went to politicians currently in office. Between 2008 and 2010, contributions doubled.
- Members of the House committee that has oversight of the gas industry received almost \$200,000 from the industry between July 2009 and June 2011.
- Between 2001 and 2011, the gas drilling industry spent \$726 million on lobbying Congress and \$20 million in campaign contributions.
- There are public officials in North Carolina who own land that is within the Triassic Basin.

