

High Volume Fracking and Agriculture: why YOU should be concerned

Overview

- High volume horizontal hydraulic fracturing or “fracking” is a controversial new method of natural gas drilling undergoing a massive boom in Pennsylvania and around the country. The shale gas fracking rush is now entering Ohio.
- The fracking process involves drilling into the Marcellus or Utica Shale, 5,000-8,000ft deep vertically then horizontally into the shale layer. Once the well is drilled, 4-8 million gallons of water, sand, and between 40,000 and 60,000 pounds of chemicals are injected into the rock under high pressure to release gas and oil. This new process of hydraulic fracturing, only in use since the late 1990s, was exempted by Congress in 2005 from the Clean Water Act, Clean Air Act, Safe Drinking Water Act, Superfund, RCRA and other regulatory protections. A typical well surface footprint can be 3 to 15 acres.



“There is no safe level of radon –any exposure poses some risk of cancer.”-United States Environmental Protection Agency

Effects on Water Quality

- Less than half of this mixture of toxic chemicals and water flows back to the surface as wastewater or “fracking fluid” that can be either injected into Class 2 wells (NOT rated for hazardous waste), stored in lined pits and evaporated into the air by sprayers, or sprayed onto local roadways. Ohio is not prepared to deal with the millions of gallons of wastewater that are often contaminated with high levels of radioactivity and naturally occurring heavy metal like arsenic, barium, cadmium, chromium, lead, mercury and strontium. The wastewater contains brine, which can be 10 times as salty as the ocean. Although this wastewater is harmful to forests and people, Ohio law allows local governments to spray brine wastewater on roadways to control dust and ice. Dewatered sludge can be shallow buried onsite.
- Fracking fluid contains about 2% chemical additives, which can amount to 40,000 to 60,000 pounds per frack. Most of these chemicals are extremely toxic to the environment and public health (98% of chemicals found in pits are on the Superfund list):
- Some of these chemicals are dangerous at very small amounts. For example, methanol is a common corrosive inhibitor used in fracking yet consuming only 10ml will cause blindness in humans; 100ml causes death. Benzene is toxic at 5 parts per billion, equivalent to a few drops in a swimming pool.
- *Bioaccumulation* is the uptake of chemicals by animals from either water or food. Many toxic organic chemicals increase in concentration as they travel up food chains; therefore bioaccumulation poses a serious threat to both animals and fish and the people who eat them.
- 93% of chemicals identified have adverse health effects
over 25% cause cancer and mutations
37% are endocrine disruptors
52% are neurotoxins

Risk to Livestock and Agriculture

- After a recent spill in PA, authorities quarantined 28 cattle that came into contact with leaked wastewater due to possible radioactive strontium contamination. A year before that, 16 cows that drank fluid from a fracked well in Louisiana began foaming at the mouth before dropping dead.
- Although gas drilling does not inhibit organic certifications, if there is any contamination from the drilling process that is tested by your inspector, then the certification may be revoked. Industry violations that pollute the land, air or soil on or near a farm could have serious repercussions for a farmer and the farm's economic viability. Drilling also replaces land that could be used for farming, and food production is important to combat increasing food and water insecurity.



A Duke University study found that groundwater methane levels were 17% higher in areas near fracked wells. Released methane increases soil acidity, decreases soil nutrients, and contaminates drinking water.

- If a landowner can prove their water has been “substantially disrupted” by fracking contamination, Ohio law requires the polluter to supply the landowner with water. Drilling companies can also elect to pay landowners for losses in property value caused by contamination of drinking water, but only if doing so would be cheaper than replacing a landowner's water. Unfortunately, these “remedies” come after the productivity of one's farm has been compromised, perhaps permanently. Also, Ohio law limits the maximum civil penalty for most groundwater and surface water contamination to \$10,000 per incident – not much incentive for companies to dispose of wastewater properly.

- The promise of lucrative contracts for high volume horizontal hydraulic fracking may seem tempting to people not provided with sufficient information on the drilling process. As real life examples play out in Pennsylvania and some Ohio regions, it is imperative that Ohio farmers understand the risks to their air, water, land and health and to the safety of food production.



June 7, 2010, Atlas Energy Marcellus well blowout
Mounds, WV

For more information:

Buckeye Forest Council – www.buckeyeforestcouncil.org

Ohio Environmental Council – www.theoec.org/Fracking.htm

NoFrackOhio – www.nofrackohio.com

Watch film: “Everything you Need to Know About Natural Gas,” by Theo Colborn, Ph.D