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Fracking Disaster

Ban Horizontal Fracking in Michigan

Friends of the Jordan support the effort to ban the use of horizontal or slick-water fracking. For years natural gas has been extracted in Michigan through fracking in shallow wells in the Antrim shale. Typically, the wells are drilled to depths of 1,000 - 2,000 feet and use relatively small amounts of water. This traditional source of gas is abundant and could serve as a transition fuel until other green energy sources such as wind and solar can be brought on line.

However, the massive horizontal hydraulic fracturing operations now being used in many states (and most recently Michigan) to extract deep gas reserves are significantly more invasive. Deep shale methane extraction drills to depths of 10,000 feet. Enormous volumes of freshwater and chemicals are forced down these wells to break the rock and free the gas. Large quantities of contaminated water called flowback returns to the surface. Horizontal fracking has already caused serious damage to drinking water, human health, wildlife, freshwater aquifers, rivers, streams and air quality. The state of New York issued a moratorium on this type of drilling out of concern that the Marcellus shale layer in the northeast lays below the aquifer that supplies drinking water to over 15 million people. The state of Michigan is surrounded by the largest supply of freshwater in the world. Our clean water should not be jeopardized. **We call on our legislators and Governor Snyder to protect our water, our environment, and our health, and ban horizontal fracking in Michigan.**

Exemptions To Environmental Law

Horizontal fracking technology became a possible and profitable method of extracting deep shale methane as a result of industry exemptions from environmental laws such as the Clean Water Act, the Clean Air Act and the Superfund Act. It was given a huge boost when former Vice President Dick Cheney introduced an amendment to the 2005 energy bill. Called the Halliburton Loophole, it stripped the EPA's authority to regulate hydrofracking through the Safe Drinking Water Act. Companies are not required to disclose the contents of chemicals used in the fracking process. They are essentially given free reign to drill where and how they choose, and to dispose of fracking fluids and wastewater without disclosure. Regulations have been left to the individual states. However, while the number of new well permits rises exponentially, state budget cuts have made timely inspection of wells almost impossible. For instance in 2008 Ohio had 24 inspectors to cover 64,000 wells. Pennsylvania had 35 inspectors for 74,000 wells. The EPA is currently re-evaluating the effects of fracking on the environment. However their study will not be completed until 2013.

How It's Done

- *Four to five acres of land are cleared of trees and graded flat for a well pad.
- *A well is drilled 8-10,000 feet deep. The drill bit is then turned into the shale layer at a 90 degree angle and continued horizontally for up to a mile. The shale is fractured every 1,000 feet of the horizontal pipe.
- *One to five million gallons of water are needed for each fracturing event, along with 5,000-25,000

gallons of fracking chemicals (identity undisclosed but known to be harmful). This toxic mix is pumped through holes in the pipes at pressures of 6,000 psi.

*Underground pressure then forces 40-70% of the fracking mixture or flowback fluid back up the pipe. This flowback fluid picks up naturally-occurring compounds from the shale such as dissolved hydrocarbons; benzene, ethylene, ethyl benzene, xylene, heavy metals and radioactive material such as radium 226.

* Flowback fluid is then stored in holding tanks or more often open tarp lined pits where it is allowed to evaporate. It is later trucked to injection wells or landfills for disposal.

*Usable, natural gas later rises through the pipes to compressor stations for purification. Volatile organic compounds and other dangerous chemicals are burned off or vented directly into the air during this on-site process.

Even if no accidents occur, this process of extraction leaves a huge carbon footprint, larger than oil production and at least as large as coal. Trees are cleared for the wellheads. Roads are built through forested areas. Thousands of truck trips are necessary to frack a single well. Rapid withdrawal of millions of gallons of water depletes groundwater, affecting lakes and streams. And the drilling equipment and wells affect air quality. A study in the Fort Worth, Texas area showed emissions from natural gas processing match total emissions from cars and trucks, leading to alarming levels of carbon monoxide, methane and other volatile organic compounds, and particulate matter in the air.

Environmental Damage Has Occurred

Severe environmental damage, drinking water contamination and human health problems linked to fracking are too numerous to list. Wyoming, Colorado, West Virginia, Texas, Pennsylvania, Louisiana, Texas, Pennsylvania, Ohio and New York all have seen cases of poisoned aquifers and rivers resulting in fish and wildlife die-offs, and clusters of unusual health problems such as chronic dizziness, headaches, neurological problems and rare tumors. Bad tasting, polluted drinking water that actually catches on fire when lit with a match has made the news in several states.

*Colorado - 206 chemical spills were linked to 48 cases of water contamination in 2008 alone.

*New Mexico - toxic fluids seeped into water supplies at over 800 drilling sites in 2008.

*Wyoming has numerous reports of high ozone levels from fracking leading to respiratory problems.

*Dish, Texas - a resident-funded health survey revealed dangerously high levels of benzene, toluene and xylene in the air.

*Injection wells used to dispose of wastewater and fracking fluid along the Texas Barnett Shale were recently linked to a series of minor earthquakes.

*Clearville, Pennsylvania - livestock dropped dead after suffering motor skill breakdowns, likely resulting from high arsenic levels in the soil due to flowback fluid leaks.

*Avella, Pennsylvania - a flowback wastewater impoundment exploded producing 200-foot flames and burning for 6 hours.

*Dimock Pennsylvania - New Years Day, 2009, a well exploded from leaked gasses due to improper cementing of the well casing (according to the PA Department of Environmental Protection.) A similar explosion which occurred in Ohio blew a house off its foundations and left a neighborhood with no drinkable water.

*Dimock, Pennsylvania - in September, 2009, 8,000 gallons of fracking fluid leaked from faulty supply pipes into wetlands, poisoning streams and killing fish. Drinking water turned brown and corrosive and would ignite when a match was held to it as it came out the tap. People reported dizziness, headaches and skin sores from showering. In October 2009, the DEP shut down water wells in the area due to

major contamination of the aquifer.

*Clearfield County, Pennsylvania - June 2010, a gas well blew out releasing over one million gallons of gas and drilling fluid before being contained nearly 16 hours later.

*The list goes on and on...

Fracking In Michigan

Horizontal fracking has recently come to Michigan in the form of a 10,000 foot well drilled into the Utica/Collingwood shale near Lake City in Missaukee County. Drilled by the Canadian Encana Corporation, the Pioneer Well produced 2.5 million cubic feet of gas per day for 30 days, making it the most productive drilled in Michigan. It has since dropped to 800,000 cubic feet per day, still considered a valuable well. This discovery triggered a frenzy to buy land leases for mineral rights. The State of Michigan has so far leased nearly 400,000 acres of state land to gas companies for drilling.

The Office of Geological Survey, part of the DEQ, is in charge of overseeing gas and oil drilling in Michigan. The head of that office, Hal Fitch, states that drilling can be done safely here because Michigan has stronger regulations than other states - even though his agency is funded with a portion of the permit fees and cash market value of the gas and oil that is produced.

Already, issues have arisen. The one-time use of 5.5 million gallons of water for fracking the Pioneer Well came from both a freshwater aquifer at the site, and from water hauled in by trucks. This withdrawal exceeded the extraction limits of the Michigan Great Lakes Preservation Act. The company was able to obtain a waiver because gas companies are exempt from Michigan's new water withdrawal rules - rules which are designed to protect wetlands, streams, lakes and homeowner wells from excessive ground water use. Hal Fitch explained that the state would make sure that aquifers at drilling sites are not depleted. However, he admitted that officials do not look at cumulative effects of water withdrawals - they don't track the number of water withdrawals from within the same watershed. According to environmental attorney, Jim Olson, in a Detroit Free Press article in 2010, "No one - neither the state nor landowners - has mapped or assessed the areas from which these massive quantities of water will be withdrawn or where contaminated water might be discharged."

Ban Fracking In Michigan

Horizontal fracking poisons massive amounts of water, destroys forests and wildlife, pollutes the air we breathe and damages human health. The negative effect on our tourism based economy could be huge. We must ban its use. Money and resources should instead be aimed at developing our vast potential for wind energy and other renewable energy sources.

Anne Zukowski
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Friends of the Jordan

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