

G17 Gas and Oil Drilling Zone

This briefing was produced by a collaboration of concerned citizens and edited by Richmond Shreve and Marguerite Chandler. It provides an overview of material offered in much greater detail and depth on the NoFrackingBucks.net website. It was presented at a public meeting at Newtown Friends Meeting on July 7th, 2015. A summary of the discussion that followed will be available on the *NoFrackingBucks.net* website on July 10th or before.

The website also contains a copy of the proposed JMZO ordinance annotated with concerns and comments expressed by Shreve.

Introduction

We are here because there is a draft ordinance to create a gas and oil drilling zone in three townships: Newtown, Wrightstown, and Upper Makefield. We'll say more about the impact of fracking momentarily, but first a bit of history. Most of our state sits atop gas and oil bearing shale. Fracking, short for "horizontal high volume slick water hydraulic fracturing," is a relatively new process that has made it feasible to extract gas and oil trapped in the rock opening the potential for relatively cheap supplies of natural gas.

The last decade has seen a boom of drilling in the Poconos and to the west, with glowing hopes of reduced dependence on foreign energy and an inflow of jobs, money, and prosperity to Pennsylvania. But there have been problems. Fracking requires huge volumes of water and chemicals, large industrial machinery, and heavy trucks to transport it all. The result has been damage to roads, continuous loud noise and air pollution, and unsightly scars on the landscape. Many municipalities reacted by barring fracking. There were also incidents, most notably in Dimock, PA, that spurred the state to pass Act 13 to regulate fracking. In addition to drilling regulations and an impact fee on drillers, Act 13 prohibited municipalities from zoning drilling. Several municipalities sued, and the PA Supreme Court declared those provisions of Act 13 unconstitutional, also **affirming the duty of all Pennsylvania municipalities to protect the air, water, and environment for their residents.**

There remains confusion and disinformation about what our supervisors can and can't do. Meanwhile there is a State-imposed moratorium on drilling in the South Newark Basin which should remain in place until January 1, 2018. The Delaware River Basin Commission has also imposed a moratorium until 2018. Hence, there is no pressure to act in haste on the proposed ordinance. We have ample time to conduct research and engage with experts in this area who can provide fact-based guidance. We believe that fracking poses serious health dangers and is

bad for air, water, and the environment. These remarks represent just a few examples of what we've learned in a short time. We've created a website to share information with you and the community at *NoFrackingBucks.net*.

Real Estate Impacts

Bill DiBeneditto writing for Triple Pundit reported that the FHA lending guidelines prohibit financing for homes within 300 feet of a property with "an active or planned drilling site." The article also states that **Fannie Mae and Freddie Mac prohibit their mortgage holders from signing a gas lease.**

An article in Grist warns of other impacts. Banks and federal agencies are revisiting their lending policies to account for the potential impact of drilling on property values, and, in some cases, are declining to finance properties deemed too near to drilling activity. The **homeowners insurance mandated by lenders may exclude properties with a gas lease or a gas well.** The article states that there are cases of a mortgage being denied because of drilling on a neighbor's property in Western PA.

The Duke Chronicle reported that Duke University researchers found a dip in home values caused by nearby fracking. They studied 19,000 pieces of property located within 1.25 miles of a well. The prospect of a gas lease when a house was within 1 mile of a proposed drilling site increased its value 11% in value. If a house depended on well water, the proposed drilling decreased its value by 24% - a net decrease of 13% in market value.

Health Dangers

The documentation of health hazards has lagged behind the boom in drilling. A group of concerned health professional in New York state undertook a multi-year review of the existing literature, experiences to date, and evidence, published a 70 page report that included expert peer review. This report played a key role that led to the decision by New York to ban fracking throughout the state.

Documented women's health risks include increased frequency of babies being born with low birth weight and birth defects for mothers who live inside a 10-mile radius of fracking. In the general population there is evidence of allergies, skin rashes, cancers, asthma, and bronchial illnesses. The most susceptible are the frail, the elderly, the unborn, and the very young. Physician Brian Moench explained the six-fold rise in infant deaths in Vernal, UT as a result of pregnant women breathing more air pollution since the area's fracking began. High particulate matter and high ozone were specifically cited in the report. This and many other similar reports are in the compendium on the *NoFrackingBucks.net* website.

The work of drilling itself is dangerous. Three to tenfold increases in emergency room visits have been documented in drilling areas, 50 percent of which were for crushed or severed fingers, hands and arms. Silicosis from handling and inhaling the micro-fine sand used in fracking is a long-term risk as is exposure to hundreds of toxins in the fracking fluid. Dr. Walter Tsou of the Environmental Health Policy Institute (PSR) reported this case:

"In 2008, Cathy Behr, a Colorado emergency room nurse at Durango Mercy Regional Medical Center was working the day shift when a gas driller worker, Clinton Marshall, arrived complaining of nausea and headaches. Marshall had spilled "fracturing fluid" on his clothes and boots and the

smell apparently was overpowering and sufficiently strong that they evacuated the emergency room. [Nurse] Behr, without protection, had meanwhile spent just ten minutes tending to Mr. Marshall.

A few days after this ER visit, Behr appeared jaundiced and began vomiting fluid and having difficulty breathing. Behr's husband took her back to the emergency room where she was diagnosed with multiple organ failure, including liver failure, respiratory distress and erratic blood counts. She was admitted to the ICU with the presumptive diagnosis of poisoning from an unknown chemical.

The chemical was and is still considered to be a proprietary formula by the producer, Halliburton, a gas industry leader. It was later revealed to be a product with the trade name, Zetaflow. Halliburton noted that Zetaflow increases gas production by 30% and threatened that it would pull its secret sauce out of Colorado if it was forced to reveal what was in it."

Drill rig workers are not protected by OSHA MSDS "right to know" information in the same way that most others who handle chemicals are.

In the last couple of months new studies have reported increases in the radioactive gas Radon in homes near fracking sites – a recognized health hazard that requires monitoring and mitigation when found.

Fracking leaks, spills, and air and water pollution cannot be avoided and only serve to broaden the operational health risks already documented.

Air and Water Quality

In our area the gas rich shale is about 3000 feet down. Well shafts are drilled down to reach that level and then branch horizontally extending one or two miles, but a four mile lateral is possible. At multiple times in the process the shale is hydraulically fractured by adding chemicals to fresh water and pumping it at thousands of pounds of pressure down the shaft and out holes in the laterals. This cracks the shale around the lateral. **Once fractured, the well ejects the fracking fluid along with brine and methane released by the fracking. This liquid is toxic and contains unknown chemicals from the fracking fluid plus minerals from the shale including heavy metals, corrosive salts, arsenic, volatile organic compounds, and elevated radioactivity.** Mud and solids are filtered out with disposable sock filters that are themselves toxic and possibly radioactive. The liquids and solids must be trucked away and treated for disposal.

For a single well, the average water use is 4.4 million gallons – only 15% of that is recycled fracking fluid. Fresh water is mixed with chemicals to make it into fracking fluid. Most of this liquid is trucked in and out of the fracking site by heavy diesel trucks, over 40,000 pounds per load. Very fine fracking sand is also trucked to the site, the handling of which creates very fine airborne dust particles.

The produced water is often stored in retention ponds open to the air until it can be pumped into trucks. **Transferring, evaporation, and spills put a mix of vapors into the air containing volatile organic compounds (VOCs) and other chemicals.** The result is smells, and the exposures that may account for some of the health impacts reported near fracking sites.

The sheer volume being handled means spills often happen in the process of uncoupling hoses, pumping, and mixing of sand. Overflows, breaches of ponds and surface runoff send contamination into streams and the ground water downhill from the site. Inevitable leaks from the bore hole send

methane and vapors into the air. **After drilling and fracking is complete, about 6% of wells leak and this percentage increases over time until virtually all wells leak.** One can only guess at what the legacy of spent wells will mean in 50 or 100 years.

Collateral Damage

Every heavy industry takes its toll on the neighborhood. Zoning usually tries to minimize the impact on residential areas, creating a sacrifice zone and a buffer around it. Fracking damage is not limited to the drill site. Here's how the Pennsylvania Association of Township Supervisors (PASTS) describes it:

“Formerly quiet townships have been transformed by the drilling industry. Small rural roads that once carried a few dozen cars a day have become the site of daily traffic jams, the result of hundreds of heavy water-filled tanker trucks for fracking, stone trucks for site development, and pipe and drilling rigs transporting the needed equipment to the often mountainous and rural sites. Local and state roads disintegrated under the weight of the loads, at times within days, if not hours. Out-of-state workers for the drilling companies competed for rental properties and hotel rooms, escalating housing costs and displacing tourists. Emergency responders faced new challenges without needed equipment or training. And residents expressed concern over the future of their water supply.”

Heavy trucks moving over narrow country roads increase accidents. Traffic is increased and becomes a nuisance. Diesel trucks are noisy. Drilling machinery is noisy. Pumps and compressors are noisy.

The bore hole remains long after the well is abandoned leaving a path for migration of pollutants into the water table. First responders are ill equipped to deal with well and pipeline fires or chemical spills. The frequent accidents at drill sites add to the number of calls.

Code enforcement is difficult, based on the lack of training and tools to assess whether the well is being constructed correctly, and may lack the enforcement power needed to prevent violations. Court proceedings to enforce land use regulations can drag on for years and have six figure litigation costs.

Our requests

We respectfully request the following:

- A one-year study period in Newtown Township, Wrightstown and Upper Makefield on any decision re: creating a Gas and Oil Drilling Zone
- Full public discussion and open hearings before any decision is made on a Gas and Oil Drilling Zone
- To have an attorney like Jordan Yaeger from Doylestown review any proposed ordinance
- To have Wrightstown withdraw their request for the proposed ordinance

Documentation of these findings can be found in the Resources section at *NoFrackingBucks.net*.