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The True Costs of Fracking

Lisa Parr thought she had the flu. At the time, she was living with her husband, Robert, and her young daughter, Emma, on a 40-acre range in north Texas. Nausea and crippling headaches gripped Lisa, leaving her weak and dizzy, but her ailments didn't go away as she expected them to. A rash crept over her body, leaving her skin covered in raw sores. Emma, only a first grader, was plagued by persistent nosebleeds, and Robert suffered from memory issues. Neighbors were sick. Newborn livestock had birth defects. Pets perished. Air quality tests revealed the presence of the toxic chemicals benzene, toluene, ethylbenzene, and xylene in the air. A medical specialist found over twenty toxic chemicals in Lisa's blood (Deam).

In 2011, about three years after the mysterious health problems arose, Robert and Lisa Parr filed a lawsuit against Aruba Petroleum Inc., a large natural gas company that had been drilling near the Parr's ranch. The family alleged that the company's procedures were detrimental to the air and their health, a claim Aruba Petroleum refuted. Roughly another three years later in April of 2014, the Parrs won a sum of 2.95 million dollars in what is thought to be the first jury verdict of its kind in the United States (Deam).

There are a plethora of families with stories like the Parrs. Judy Armstrong Stiles and her husband Carl gave Chesapeake Energy permission to operate natural gas wells on their land in Bradford County, Pennsylvania. The couple was soon struck by nausea, fatigue, memory problems, and joint pains. Carcinogens were found in the air and water. After moving out of their

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home, health problems remained. Seizures tormented Stiles' daughter, rendering her unable to work and drive, and Carl was diagnosed with intestinal cancer. With his health degenerating, he took his own life (Morgan).

The sorrows of families such as the Parrs and the Stiles' can be attributed to one practice—hydraulic fracturing, more commonly known as "fracking." An economically reasonable practice used for natural gas drilling, fracking consists of pumping a mixture of water, chemicals, and solids into the earth to create cracks in shale rock, enabling the trapped natural gas to flow out easily (Finkel and Law). Strict regulations on fracking must be established immediately to prevent further harm to the health of the environment and communities near fracking sites, and to minimize the effects of economic crises that will likely arise when the natural gas supply is expended.

In recent years, the energy market in the United States has seen a dramatic increase in the demand for natural gas, partially because of the rise of fracking and other unconventional drilling methods. Much of this natural gas comes from the Marcellus Shale, which is a shale formation that rests beneath Pennsylvania and New York. The Marcellus Shale is estimated to contain between 168 trillion to 516 trillion cubic feet of natural gas, a supply that could last for the next 40 years. Considered to be cleaner than coal and oil, natural gas is seen by many as a reliable transition fuel as today's society looks to shift attention to finding and utilizing renewable energy resources (Finkel and Law).

Supporters claim that fracking is a safe and practical technique, one that could capitalize on the approximated 500 billion dollars' worth of natural gas in Pennsylvania alone. However, uncertainty remains regarding fracking's negative environmental impacts, as well as whether it is truly beneficial to remain reliant on a source of energy that is a finite fossil fuel. If fracking

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remains unregulated, the Marcellus Shale will likely not be productive in 50 years (Finkel and Law). Its supply of natural gas will have run out and the economy will face the repercussions of a degraded, diminished environment, where people are ill and their land has no value. The companies and corporations that demanded the use of the land will be forced to compensate the individuals whom they hurt, but their wells of money will have dried up with the gas.

In 2011, before the fracking boom in the United States, the demand for water for hydraulic fracturing was 1.2 billion barrels. The projected demand for 2021 rises to a staggering 6.3 billion barrels of water (Wang). In addition to being excessively used in the fracking process, water is also polluted. The Safe Drinking Water Act normally regulates underground well injections, but it does not cover fracking, meaning that aquifers are subject to contamination from the mixtures of chemicals that are injected into the shale. Fracking is also exempt from requirements that would force companies to disclose what chemicals they are using (Warner and Shapiro 6). This allows companies to use potentially dangerous chemicals while neither suffering the consequences of nor assuming responsibility for toxic waste created as a result of drilling.

Other environmental concerns are applicable on a global scale. For example, there have been dramatic increases in ozone concentrations in areas where drilling is common. Burning natural gas is neither cleaner nor safer than burning oil or coal. The main component of natural gas is methane, a potent greenhouse gas that over a 20-year period heats the climate over 80 times more than the same amount of carbon dioxide. This means that although natural gas may seem like a better alternative, it is still greatly contributing to climate change (Rotkin-Ellman and Srebotnjak 3).

All these environmental concerns are related to potential health issues in individuals who live or work near fracking sites. In Wyoming's Sublette County, increasing ozone concentrations

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correlated with an increase in respiratory problems. In Colorado, people near fracking locations had increased risks of chronic effects in respiratory and neurological systems, and birth defects and low birth weights of infants are linked to air pollution in Colorado and Pennsylvania (Rotkin-Ellman and Srebotnjak 2). The Environmental Protection Agency classifies some pollutants from fracking such as radon gas and radium as "potent human carcinogens" (Morgan).

According to 2013 testimony before Congress by Dr. Daniel Yergin, the vice chairman of global information provider IHS Markit, the fracking industry in 2012 supported 1.7 million jobs and added 62 billion dollars to federal and state government revenues (Nunez). While the demand for fracking has risen even more since then, it cannot rise indefinitely. Natural gas is a finite resource that could be depleted completely in the United States within the next half-century if it continues to be guzzled up at the same rate (Finkel and Law). The gas and oil companies that currently profit from fracking will no longer be making a profit when that time comes. Over 1.7 million jobs will be lost, and the profit made from fracking will be lost as well. The small amount of money companies do have will be spent reimbursing individuals for harm to their land and health. The economy will suffer, and the people will suffer with it.

Many people have been harmed and will be harmed by fracking. Likewise, the environment has and will continue to be harmed, unless regulations on fracking are put into place now. The drilling companies that mercilessly robbed people of their land and their health will be obsolete, leaving the communities they once supported bereft of income. Our reliance on fossil fuels will likely remain unchanged because of the crutch that was natural gas, making the transition to renewable energy sources more difficult. No matter how "clean" supporters claim natural gas is, the mess made by fracking will be insurmountable.

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