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Hydraulic Fracturing/Fracking

Shale gas is the term used to refer to methane gas that is trapped in small pockets underground. Extraction of such gases is tricky and requires some expertise that would help perform the exercise easily. Hydraulic fracturing is a process through which drilling and injection of fluids into the ground at high pressure is done. The fluid fractures the shale rocks in order to release natural gas. The process involves drilling horizontal shafts with precision to the shale. Then they force the liquid into the shafts towards the shale to crack and open the pockets, and in the process methane releases to the surface. Hydraulic fracturing has been a source of debate in different quarters. Questions of its advantages and disadvantages have been always under public scrutiny. However, there is still no universal opinion whether it is a safe procedure. That is why it is important to give an insight to what the whole process is about in an effort to establish grounds for supporting this process or cautioning its use.

The major question is what the benefits of hydraulic fracturing are. The U.S. has extracted a substantial amount of natural gas in the recent years. The effects of this have been the falling of the amount of carbon emissions in the country. The fact that people are now able to have access to safe methane that would work as a substitute for coal burning is the reason behind the reduced carbon emissions in the air. In recent years, there have been proposals that the shale gas around the world would be a perfect replacement for coal in power stations. Natural gas is

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relatively cheaper as compared to coal. In addition, since the process of burning methane produces very a relatively little amount of harmful emissions, this gas is considered as the most environmentally safe type of fossil fuels. The numbers of hydraulic fracturing shafts are increasing yearly and getting praise from the administration. For example, President Barak Obama has emphasized the importance of using natural gas many times (EFS).

Despite the above-mentioned positive aspects, there are several disadvantages associated with the use of natural gas. Most people consider it as a cheap and clean substitute of coal. The problems, however, lie with the extraction procedures..The extraction of the gas requires a toxic cocktail of chemicals mixed and pumped into the ground at high pressure. The mixture consists of water, sand, lubricants, poison to keep the bacteria from clogging the pipes, and hydrochloric acid to dissolve the excess cement in the pipes. The mixture would not be a cause of concern, if the chemicals remained underground. However, with accidental well blowouts, backflows, and leaks through the system, it makes its way to the surface. It is estimated that about 650 cancer-causing chemical products can make their way to the surface (Elias).

The amounts of water used in each fracturing would better be used to produce food. The estimated one to eight million gallons of water is a large amount that goes to waste in the process of extracting methane gas. The leaking of the mixture to the surface can contaminate the ground with the following toxics: lead, uranium, mercury, ethylene glycol, methanol, hydrochloric acid, and formaldehyde. The excess water that has been pumped into the ground has three main treatments that the technicians can use. It can be returned to the ground, mixed with fresh water and injected back into the ground, or treated and released into the ground. In all the scenarios, the water pollutes soil with the above-mentioned chemicals. The amount of water released back to the ground can make the surface water contaminated too. As a result, there will be no drinking

water available around the drilling site. Documentation has indicated several instances of water impurity. These are the disadvantages of having this type of drilling being permitted to take place in the country (Kurth et al).

Finally, it is necessary to focus on the regulations that have been put in place to minimize such risks. Different organizations are mandated by the United States to regulate hazards that are associated with this type of mining. The Environmental Protection Agency is instructed to control the levels of pollution of drinking water. They also state the minimum requirements that are associated with the practice of underground injection in the fields of oil and gas extraction. The Department of Energy is delegated the duty of carrying out research and experiments to improve the safety and the environmental performance of the extraction of natural gas by hydraulic fracturing from shale. The U.S. Department of the Interior, on the other hand, has to ensure that the public are fully aware of the side effects of the chemicals used in the fracturing process (Mader).

All this goes to show that the extraction of natural gas through hydraulic fracturing is not a safe procedure. The gas produced does help to fight against global warming. However, it is achieved at the expense of ground and water contamination. So, it is possible to conclude that the government must not use this type of extraction. However, the necessity of natural gas as a source of energy calls for creating better ways of making hydraulic fracturing safer.

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Works Cited

"Benefits of Fracking." *Energy From Shale*. Energy From Shale, 13 July 2013. Web. 15 July 2014.

Elias, Scott. "Fracking – the Pros and Cons." *Elsevier*. Elsevier BV, 9 September 2013. Web. 15 July 2014.

Kurth, Thomas, Haynes and Boone. "Understanding Hydraulic Fracturing: Issues, challenges and Regulatory Regime." *HaynesBoone*. Practical Law Company, 2012. Web. 15 July 2014.

Mader, William D. *Hydraulic Proppant Fracturing and Gravel Packing*. New York: Elsevier, 1989.

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