Regulating Hydraulic Fracturing for a Safer, More Renewable Future

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Abstract

Oftentimes produced water from hydraulic fracturing in the Marcellus Shale region is not treated and disposed of properly because drilling companies are taking advantage of loose regulations. Hydraulic fracturing is exempt from many federal regulations, including the Federal Safe Water Drinking Act, which allows drilling companies to be careless when dealing with their produced water. However, some western states such as Wyoming, Utah, and Texas have strong regulatory frameworks that allow hydraulic fracturing to thrive, but in a safer manner. If local and state governments in the Marcellus Shale region tailor a plan similar to the ones of Wyoming, Utah, and Texas, then hydraulic fracturing could flourish throughout the United States.

Background

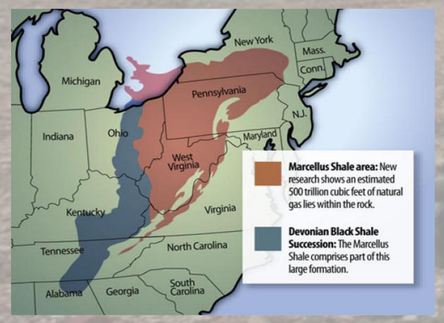
Produced water from hydraulic fracturing is generated in very large quantities. This produced water is a byproduct of gas and oil production that contains a high salt content, oil and gases, and is heavily contaminated with chemicals. Drilling companies often do not dispose of or treat the produced water from drilling sites properly, allowing for potential groundwater pollution. Current regulations in the Marcellus Shale region are not strictly enforced so drilling companies have been evading lawsuits and fines. Wyoming, Utah, and Texas all have stricter regulations, resulting in cleaner, more sustainable hydraulic fracturing operations.

Project Goals/Objectives

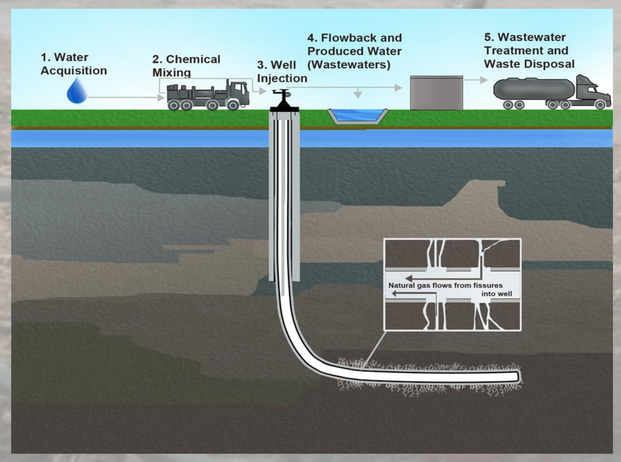
- Determine how to effectively regulate hydraulic fracturing
- Create plan to regulate hydraulic fracturing
- Inform people of problems with existing regulations
- Make public aware of solutions

Methods/Process

- Gained understanding of the hydraulic fracturing process
- Evaluated surface and ground water pollution from produced water
- Analyzed specific companies' practices concerning treatment and disposal of produced water
- Analyzed successful local and state regulations focusing on western states such as Wyoming, Utah, and Texas
- Applied idea of local and state regulation to Marcellus Shale states



The Marcellus Shale region
Source: USGS



The water cycle of hydraulic fracturing
Source: US Environmental Protection Agency

Conclusions

Local and state regulations concerning the hydraulic fracturing industry in the Marcellus Shale region are ineffective, allowing drilling companies to evade lawsuits and government fines. When not treated and disposed of properly, produced water poses a high potential for contaminating both surface and ground water alike.

Results/Outcomes

Our proposed solution focuses on the regulation of hydraulic fracturing to combat ineffective treatment and disposal of produced water. Because a company's main goal is to obtain maximum profit, they tend to spend as little money on treatment and disposal as they are legally able. We are proposing stricter regulations at the local and state levels to minimize water pollution caused by hydraulic fracturing operations.

References

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Recommendations

- Local and state governments tailor solutions unique to their area based on western frameworks
- Utilize existing reform groups for inspiration on how to put forward a successful plan
- Spread awareness in the east—fracturing can be fixed

Photo Source: Joshua Doubek