

Fracking Wastewater: A Toxic and Radioactive Problem

Hydraulic fracturing (“fracking”) is a dangerous drilling practice that produces a chemical-laced wastewater concoction. After drilling down to a rock formation that holds oil or natural gas, millions of gallons of water mixed with chemicals and a proppant are injected under extreme pressure to fracture (or “frack”) the rock.¹ The proppant keeps the fractures ajar, enabling oil or natural gas to flow up the well.² The water mixture pumped underground eventually flows back up out of the well as wastewater.³

Fracking Wastewater: The 411

Fracking fluid injections are exempt from the rules of the Safe Drinking Water Act, and companies can withhold the identity of chemicals used to frack a well because they are “trade secrets.”⁴ Of the known chemicals, 14 are known or possible human carcinogens, and many are linked to developmental health and reproductive problems.⁵

In addition to the original fluids that are pumped underground, drilling and fracking can bring naturally occurring contaminants like brines and radioactive material from underground to the surface in the produced wastewater.⁶ The precise constituents of the wastewater vary depending on the geology of the extraction site,⁷ but it can contain salts (chlorides, bromides, and sulfides of calcium, magnesium and sodium), metals (barium, manganese, iron and strontium), oil, grease and dissolved organics (benzene and toluene) and radioactive material (radium-226).⁸ These chemicals can cause cancer, disrupt the endocrine system, affect the nervous, immune and cardiovascular systems, and affect sensory organs and the respiratory system.⁹

There are no safe ways to dispose of or manage fracking wastewater.¹⁰ Sometimes the wastewater is used to frack more wells, but it can also be discharged into surface waters or stored in pits until it evaporates into the atmosphere or percolates into the ground.¹¹ When await-

ing disposal in storage pits, ponds or surface impoundments, radioactive materials can become concentrated.¹²

For disposal, underground injection is the most common method.¹³ But this practice can put aquifers and drinking water at risk and has been linked to increased earthquake activity.¹⁴ In California, companies have injected oil wastewater directly into aquifers.¹⁵

It is incredibly difficult to safely manage fracking wastewater at treatment facilities.¹⁶ In Pennsylvania, sewage treatment plants that are supposed to treat local municipal wastewater and industrial discharges have been used to treat fracking wastes.¹⁷ They have been ineffective, and heavy metals, radionuclides, salts and other fracking waste contaminants have passed through the processes.¹⁸ One study found that sediments near to a discharge point of a Pennsylvania treatment plant that had been ac-



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cepting oil and gas industry wastes contained radioactive material that was 200 times the level found in sediments at different locations.¹⁹

Reuse of fracking wastewater is shortsighted. The salt from the wastewater has been used for deicing wintery roads and for pool water treatment, and in the Central Valley of California oil wastewater is being used to irrigate crops.²⁰ Yet, there is a negligible amount of information regarding the public health impact of consuming produce irrigated with wastewater. Some tests have been done in California. For example, the state's Cawelo Water District hired a laboratory to test root crops (like carrots), citrus, nuts and grapes irrigated with oil wastewater, but the tests were limited in scope and left out the majority of chemical additives with possible health effects used by oil companies.²¹ The use of wastewater for agricultural irrigation has not been proven to be a safe practice.

In New Mexico, a bill passed that will allow fracking wastewater to be reused and sold.²² An official with the New Mexico Department of Energy suggested that the wastewater could be advantageous to farmers, while the former land commissioner proposed that it could be used for drinking water.²³ In April, a company applied for permits to use fracking wastewater to irrigate land.²⁴

Conclusion

There are no good management or treatment options for fracking wastewater. The best way to stop these radioactive and chemical-laden wastes from further imperiling communities and the environment is by banning drilling and fracking everywhere. Instead of doubling down on fossil fuels, we should invest in a fair and just transition to 100 percent renewable energy.

Endnotes

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