

Disposed of – Legally or Illegally – At YOUR Expense

The new high-volume hydraulic fracturing method requires an enormous amount of freshwater far more than the 80,000 gallons allowed under New York's 1992 Gas Environmental Impact Statement.

Into Sewage Treatment Plants – And YOUR Drinking Water

Many drilling operations go the route of sewage treatment plants to dispose of their waste. But these plants are not designed for this and the endocrine disruption chemicals, as well as the salinity, radioactivity etc. passes through into waterbodies.

"Endocrine disruption chemicals often are even more harmful at extremely low concentration."

- Dr. Adam Law

Onto Icy Roads – And the Environment

Another legal option for waste disposal in Pennsylvania is administration to icy roads—because of its high salt content. In a document known as a 26 R, drilling corporation Ultra Resources reported that the wastewater they were putting out registered radiation levels at 892 pCi/L Radium-226 and 2589 pCi/L Radium-228. The acceptable limit for the presence of radium-226 and 228 in drinking water is 5 pCi/L.¹

Illegal Dumping – One Story out of Many

Hiram Lewis, a citizen of Pennsylvania, was traveling with his son along Route 19 on their way to his son's hockey game. He saw a trucker pull his rig, a tanker, off the road and open the valve to let its contents drain onto the ground.

Mr. Lewis grabbed the video camera he was going to film his son's game with and managed to catch the trucker on tape, although the man left in a hurry. The video can be found on YouTube under the title "FracDump.mpg." He also collected a sample of the water, which he described as "a smoky color, like 'Frost Gatorade.'"

He had the sample analyzed and the results came back with high total dissolved solids, high salinity, and high conductivity, all of which are characteristic of drilling wastewater.

The Industry Claims 90% of Wastewater is Recycled

The Marcellus Shale Coalition, an organization of gas drilling companies, has been claiming a recycling rate of ninety percent of the water involved in hydraulic fracturing.

Claim Revealed to be False

The claim that a rate of ninety percent is being achieved is based on data provided by National Fuel Gas Co. to the EPA, which has recently been called into question. It is being reported that the numbers were presented as being in the millions, when, in reality, they were actually in the hundred-thousand range. This sort of misrepresentation should not be surprising given that the party providing the data themselves have interests in gas drilling.

Additionally, another rebuttal against the reuse of water is the fact that the fluids involved in drilling become increasingly contaminated over time.

"From start to finish, the water is more dilute to more concentrated," Bruce Ross, assistant civil engineer at Auburn, explained, "So, you're gonna have more chlorides, and more dissolved solids by the time the well is at completion."

In a report called "Radioactivity in Marcellus Shale" by Radioactive Waste Management Associates, they demonstrate that radium becomes progressively more concentrate after every use.

Recycled water is even more contaminated than plain wastewater straight out of the ground, and when the time comes that it can't be used any more, it will be even more difficult to treat properly.

NY Treatment Plants Take Fracking Fluid

Based on primary research conducted at the wastewater treatment facilities in Auburn and Watertown, both of which have accepted drilling waste in recent times, fluid from Pennsylvania has not made its way to these two at least; however, our interviews with them were not reassuring.

Confusion at Auburn

Assistant civil engineer at Auburn, Bruce Ross, spoke of a time in 2008 when confusion over the definitions of the various fluids almost led to a fiasco with the Department of Environmental Conservation (DEC).

They had been accepting material from drilling operations when a call came from the DEC, asking if they had been accepting drilling fluid. Mr. Ross recalled, "When I asked the people at the plant, they said, 'Well, we take brine,' but they didn't know any difference and neither did anybody else at that time."

The permit process for sending waste to treatment plants like the one at Auburn includes the possibility of random testing on incoming waste to ensure that it is what the drillers say it is. An investigation by the Cayuga Anti-Fracking Alliance in 2011 revealed that the plant was in fact accepting fracking flowback water. A petition and protest campaign led to the City of Auburn banning the acceptance of flowback fluid in July 2011.

Miscommunication in Watertown

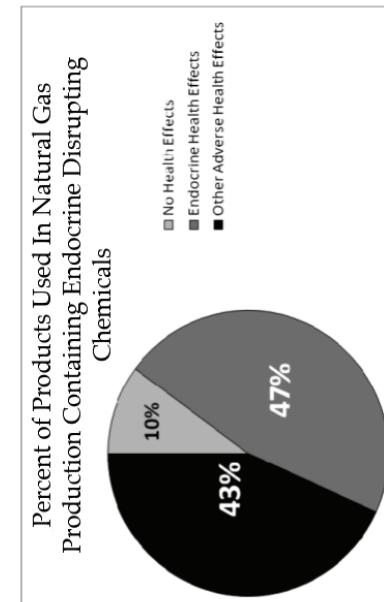
In 2009, Gastem USA Inc. began developing the Ross 1 well, a vertical well into the Marcellus shale, in Maryland, New York. They applied for and were permitted to send their waste to Watertown, a total of 35,000 gallons altogether.

While the plant did accept seven tankers, two loads of wastewater were rejected. Chief Operator Michael Sligar stated that, "this was before the hydrofracking operation started, and all it was supposed to be was just groundwater." However, analysis showed an unusually high amount of total dissolved solids that should not have been present in ordinary subsurface water.

Mr. Sligar also indicated that the water was tested for radioactivity, but did not indicate how often they tested or what the results of the tests were.

Asked if they had plans to accept more wastewater in the future, Mr. Sligar stated, "It's not that we wouldn't, it's just that nobody has made an application to us." The door for future shipments of drilling waste is still open.

Figure: Created by The Endocrine Disruption Exchange.



¹U.S. Environmental Protection Agency, Office of Water. (2005). A regulators' guide to the management of radioactive residuals from drinking water treatment technologies (EPA 816-R-05-004). Retrieved from <http://www.epa.gov/safewater/>

The Murky World of Gas Drilling: Terms and Definitions

Distinct definitions for each of the fluids involved in drilling can be difficult to achieve. This is because each subsequent stage of the operation can contain remnants of fluids from the previous ones, and so, to an extent, they all bleed together.

Drilling Fluid

Also called "drilling mud," this is the liquid that is pumped into the hole during initial drilling. It is usually made up of mostly water and bentonite, which has been found to have adverse effects on the human sensory, respiratory, gastrointestinal, liver, and immune systems.

Hydraulic Fracturing Fluid

Used during fracturing, and following the use of drilling fluid, the three main components of hydraulic fracturing fluid are freshwater, a friction reducer, and a proppant—to prop open fractures in the formation and allow gas to escape. Many chemicals with varying purposes and toxicity go into the fluid. Hundreds of new compounds are created underground by combinations of these chemicals.

Formation Fluid

Formation fluid is liquid that is already present in the rock, and comes to the surface during drilling and gas production. While natural, it is far from harmless. The Marcellus Shale formation has been documented to contain high levels of thorium, and radium, as well as bromide, arsenic, and barium.

Flowback Fluid

The liquid that emerges from the well immediately after fracturing is called "flowback fluid." On average, 15 to 40 percent of the liquid pumped into the hole returns to the surface. Flowback is made up of spent-fracturing fluid, drilling fluid, and formation fluid.

Produced Water

Once the well begins producing gas, what comes up along with that gas is known as produced water. The gas is put through a glycol tank that strips the water from it, leaving just the methane. Whatever fluid is left over is stored in a separate holding tank.

Note: the term "brine" can be used to describe almost any of the fluids described that contain formation fluid since all it means is "a liquid with some level of salinity."

What YOU Need to Know About Wastewater from Hydrofracking



Photo: Private property after illegal dumping
Used with the permission of Harry Boyd

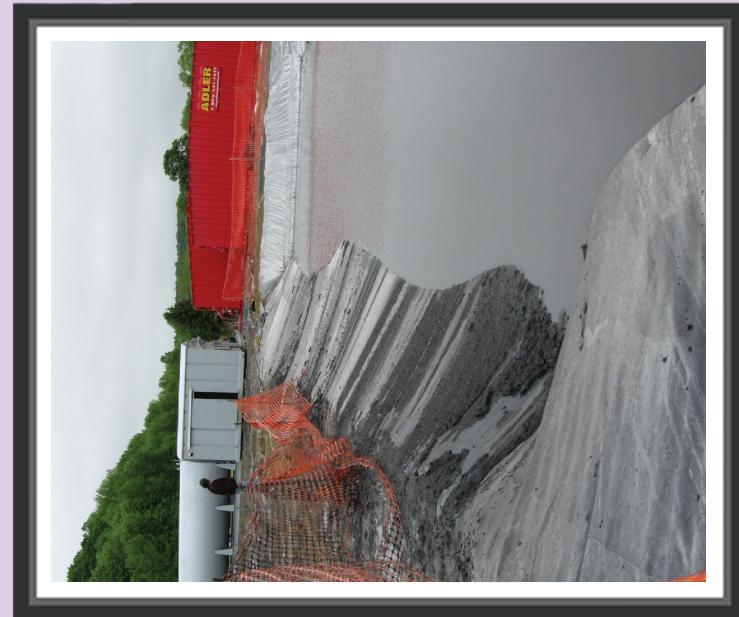


Photo: Wastewater fluid pit in Dimock, PA



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