

Sand mines used to frack oil & gas are destroying the best topsoil in the Midwest

Posted on [January 19, 2017](#) by [energyskeptic](#)

Nancy C. Loem. May 23, 2016. [The sand mines that ruin farmland.](#) New York Times.

Chicago — While the shale gas industry has been depressed in recent years by low oil and gas prices, analysts are predicting that it will soon rebound. Many of the environmental hazards of the gas extraction process, called hydraulic fracturing or fracking, are by now familiar: contaminated drinking water, oil spills and methane gas leaks, exploding rail cars and earthquakes.

A less well-known effect is the **destruction of large areas of Midwestern farmland** resulting from one of fracking's key ingredients: sand.

Fracking involves pumping vast quantities of water and chemicals into rock formations under high pressure, but the mix injected into wells also includes huge amounts of "frac sand." The sand is used to keep the fissures in the rock open — acting as what drilling engineers call a "proppant" — so that the locked-in oil and gas can escape.

Illinois, Wisconsin and Minnesota are home to some of the richest agricultural land anywhere in the world.

But this fertile, naturally irrigated farmland sits atop another resource that has become more highly prized: a deposit of fine silica sand known as St. Peter sandstone. This particular sand is [valued by](#) the fracking industry for its high silica content, round grains, uniform grain size and strength. These qualities enable the St. Peter sand to withstand the intensity of fracking, and improve the efficiency of drilling operations.

In the Upper Midwest, this sandstone deposit lies just below the surface. It runs wide but not deep. This makes the sand easy to reach, but it also means that **to extract large quantities, mines have to be dug across hundreds of acres.**

At the end of 2015, [there were](#) 129 industrial sand facilities — including mines, processing plants and rail heads — operating in Wisconsin, up from just five mines and five processing plants [in 2010](#). At the center of Illinois's sand rush, in LaSalle County, where I am counsel to a group of farmers that is challenging one mine's location, The Chicago Tribune [found](#) that mining companies had acquired at least 3,100 acres of prime farmland from 2005 to 2014.

In the jargon of the fracking industry, the farmland above the sand is "[overburden](#)." Instead of growing crops that feed people, it becomes berms, walls of subsoil and topsoil piled up to 30 feet high to hide the mines.

But the effects cannot be hidden indefinitely. These mines are destroying rural communities along with the farmland. Homesteads and small towns are being battered by mine blasting, hundreds of diesel trucks speed down rural roads dropping sand along the way, stadium lighting is so bright it blots out the night sky, and 24-hour operations go on within a few hundred feet of homes and farms. As a result, some farmers are selling and moving away, while for those determined to stay, life is changed forever.

Quality of life is not their only concern. Silica is a human carcinogen and also causes lung disease, including silicosis. Because of its dangers, silica is heavily regulated in the workplace, but there are generally no regulations for silica blown around from the sand-mining operations. These mines also use millions of gallons of groundwater every day. Local wells are running dry, and the long-term availability of water for homes and farms is threatened.

Because of the recent slowdown in the fracking industry, many of the sand mines stopped or slowed production, providing temporary respite to these rural communities. But with oil edging back up toward \$50 a barrel, and projected to go higher, the Midwest farmlands face a renewed threat.

The sand mines do promise jobs. But it's shortsighted to rely on a new fracking boom when we've already seen how vulnerable the business is to cyclical dips. America's frac sand industry shrank to about \$2 billion last year from \$4.5 billion after the price of oil plummeted in 2014. As mines were mothballed or shuttered, hundreds of miners and truckers were laid off.

Even assuming a coming recovery, there may be as few as 20 to 30 jobs in a mine covering hundreds of acres — a mine that may operate for only 20 years. When the sand is exhausted, the mine is a hole in the ground and the jobs are gone. The farms that it replaced provided employment and sustenance for centuries.

There are alternatives to this despoliation. Not all frac sand is buried under prime farmland. Texas, Kansas, Arkansas and Oklahoma all have usable frac sand that is not "burdened" by rich prairie earth, and transportation costs there are often lower.

In the Midwest, we badly need more legal restraints on how frac sand mines operate. People must be protected from blowing silica. Sand piles should be covered and mines set a safe distance from homes, farms, schools and public spaces. At present, such regulations [are often lax](#), and local residents [have rarely won](#) the needed protections from local or state governments [eager to cash](#) in on the boom.

Groundwater, too, needs stronger safeguards. A good example to follow is LaSalle County, which in 2013 [placed](#) a moratorium on new high-capacity wells needed for mining pending the results of a United States Geological Survey study in [part funded](#) by Northwestern, where I teach, of the capacity of groundwater supplies to support new mines.

Unfettered frac sand mining is ruining the rural communities of the Midwest. All people are left with are thousands of acres of holes in the ground in place of what was once rich, productive farmland. That is too high a price to pay.
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