

NEWS / EPIC NEWS • FEB 13, 2023

# Transparency in Hydraulic Fracturing Operations Leads to Reduced Pollution

After several states began requiring that hydraulic fracturing firms disclose their activities and the chemical composition of their fracturing fluids, the firms changed their behaviors and local water quality improved.

Transparency is often touted as one tool to spur public engagement and change. But does it work? A new [study](#) in the context of hydraulic fracturing points to yes.

Following local health and environmental concerns in communities surrounding hydraulic fracturing sites, many states began requiring that hydraulic fracturing firms disclose their drilling activities and the chemical composition of their fracking fluids. A group of researchers set out to determine what impact those mandatory disclosures had on the firms' behaviors, on the public's actions, and on the local water quality itself. They discovered that the transparency led to changes across the board.

"We learned from this study that transparency can be a force for change, and ultimately reduce pollution," says Christian Leuz, a co-author of the study and the Charles F. Pohl Distinguished Service Professor of Accounting and Finance at the University of Chicago's Booth School of Business. "The changes we saw in our study are greatest when the public becomes engaged and plays a more active role in scrutinizing firms or calling for change once they have more information."

Leuz and his coauthors, Pietro Bonetti from the University of Navarra and Giovanna Michelin from the University of Bristol, found that the water quality in watersheds with hydraulic fracturing activity consistently improved after the state mandated the disclosure of information. They studied salt concentrations because they are considered signatures for impact by hydraulic fracturing. In high amounts, they can stunt bone development, increase blood pressure, harm aquatic life, and more. The authors found that salt concentrations declined by as much as 17.8 percent (chloride decline). Other water pollutants not specific to hydraulic fracturing showed no significant decline.

Consistent with the decline in salt concentrations, the researchers found that the hydraulic fracturing firms made several changes after the mandatory disclosure rules went into effect. For example, firms used fewer hazardous and chloride-related chemicals in hydraulic fracturing fluids and there were fewer spills, leaks and other accidents. The researchers also noticed that about 5 percent fewer new wells were being drilled, contributing to about 14 percent of the decrease in water pollution.

"Public pressure spurred by the disclosure led the firms to change their practices, and those changes likely all made a difference in reducing pollution," says Bonetti.

The improvements in water quality were greatest in places where there was more public pressure for change. For example, salt concentrations decreased the most in areas with a greater presence of local environmental NGOs and in counties with more local newspapers, as well as in counties with more news articles discussing hydraulic fracturing and water pollution and in states with more Google searches for hydraulic fracturing after the disclosure mandate. Water quality also improved in areas where a larger fraction of wells was owned by publicly traded firms, consistent with the idea that listed firms likely face more public scrutiny than private operators. When the disclosure mandates required a timelier disclosure and offered fewer trade secret exemptions this also led to greater improvements in water quality.

"Transparency in this context worked remarkably well, leading one to believe that disclosure mandates for other industries and for other causes—from reducing harmful chemicals in products to reducing carbon emissions—could also be successful, and even more so when it leads to the public imposing pressure on firms," Michelin says.

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