



Tools

[« Drug Discovery Company Lands \\$25M in Private, State Funding](#)[Drug-Related Hospitalizations Double for Age 45+ »](#)

## Study: Hydraulic Fracturing Can Release Uranium from Shale

BY ALAN, ON OCTOBER 25TH, 2010

University at Buffalo (UB) researchers have found indications that the process called hydraulic fracturing or “fracking” to release natural gas from Marcellus shale deposits can cause **naturally trapped uranium** inside the shale to be released. The findings add to the environmental concerns about the process, particularly chemical contamination of the groundwater in populated regions in and near the shale deposits.

**Marcellus shale** is a rock formation that stretches from New York through Pennsylvania, Ohio and West Virginia, with an estimated 14-year domestic supply of natural gas. Hydraulic fracturing involves repeated pumping of **water, sand, and chemical additives** at extremely high pressure into the rock, fracturing the rock, and injecting sand and the additives into the cracks to open them up to release the natural gas.

A research team led by UB geologist Tracy Bank investigated the question if metals such as uranium known to be naturally held in the shale could be released into the groundwater with the hydrocarbons when hydraulic fracturing occurred. Uranium in this state is not a radioactive threat, but it is still a toxic material.

To answer that question, the team tested samples of Marcellus shale from western New York State, near Buffalo, and Pennsylvania. The tests involved both chemical analysis and mapping of the locations of the metals and chemicals found in the shale samples.

Their tests and analysis indicated that the uranium and hydrocarbons occupied the same physical space in the shale samples, suggesting that the uranium metal had physically and chemically bound to the hydrocarbons. Further lab tests with sample drilling fluids indicated the uranium was also becoming soluble as a result of the process, which suggests the uranium could be released into the large amounts of water forced into the shale that came back to the surface.

The research will be presented at the annual meeting of the Geological Society of America in Denver on 2 November.

Related: [More Research Urged on Marcellus Drilling Impact](#)



Marcellus shale gas well in West Virginia  
(dep.wv.gov)