# Shale Development and Groundwater Protection

ENERGYINDEPTH

**In every well used to tap into America's vast shale reserves, millions of pounds of steel and concrete are utilized in multiple layers to isolate the well from groundwater supplies. These measures, along with strict environmental regulations, help ensure that development of oil and natural gas continues to occur safely and responsibly.**

## Department of Energy

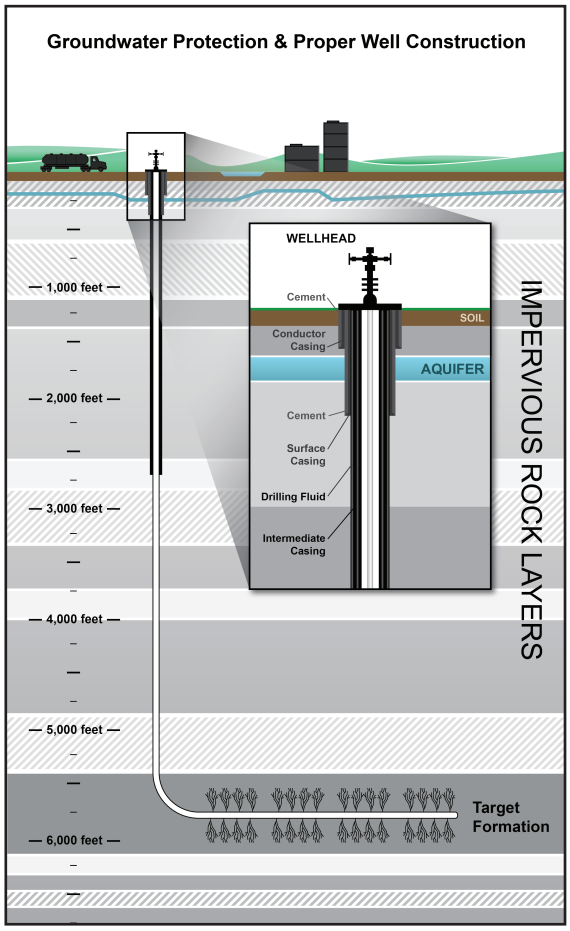
"Hydraulic fracturing …has proven to be a safe and effective stimulation technique. Ground water is protected during the shale gas fracturing process by a combination of the casing and cement that is installed when the well is drilled and the thousands of feet of rock between the fracture zone and any fresh or treatable aquifers." Department of Energy, 2009

## University of Michigan

"When wells are drilled, completed, or abandoned, drilling companies must abide by regulations that specifically state what efforts that must be undertaken to ensure that no contamination of potable aquifers occurs due to fluid leakage up the wellbore or along the well annulus (exterior of the well casing). These include guidelines for well casing, cementation, and plugging." University of Michigan, 2013

## U.S. Government Accountability Office

"[R]egulatory officials we met with from eight states – Arkansas, Colorado, Louisiana, North Dakota, Ohio, Oklahoma, Pennsylvania, and Texas – told us that, based on state investigations, the hydraulic fracturing process has not been identified as a cause of groundwater contamination within their states." U.S. Government Accountability Office, 2012




*SOURCE: API*

## Did You Know?

An August 2011 report from the Ground Water Protection Council examined more than 34,000 wells drilled and completed in the state of Ohio between 1983 - 2007, and more than 187,000 wells drilled and completed in Texas between 1993 - 2008.

0.03%

The data show a failure rate in Ohio of only **0.03%**.

0.01%

In Texas, the failure rate was only about **0.01%**.