What is shale gas?

Basically, it is **natural gas** – primarily methane – found in shale formations, some of which were formed 300-million-to-400-million years ago during the Devonian period of Earth's history. The shales were deposited as fine silt and clay particles at the bottom of relatively enclosed bodies of water. At roughly the same time, primitive plants were forming forests on land and the first amphibians were making an appearance.

Some of the methane that formed from the organic matter buried with the sediments escaped into sandy rock layers adjacent to the shales, forming conventional accumulations of natural gas which are relatively easy to extract. But some of it remained locked in the tight, low permeability shale layers, becoming shale gas.

Many large shale formations were formed during the Devonian period of Earth's history, more than 300 million years ago.

This map shows what geologists believe the land looked like 385 million years ago during the Middle Devonian Period (with outline of today's states). Also indicated are the bodies of water that occupied the Michigan, Appalachian and Illinois basins, regions with thick layers of sedimentary rock containing fossil fuels, including shale gas. Credit: Ron Blakey, Colorado Plateau Geosystems, Inc.