

Hydraulic Fracturing

What is it?

■“Fracking”

■A process that facilitates the release of natural gas and oil from shale rock by pumping sand, water, and various toxic chemicals into the rock.

Why is it important?

■It is an advanced drilling method that can utilize the vast reserves of shale deposits in the US.

■The state of Pennsylvania has enough shale to supply US gas needs for at least a decade.

■It has created a newer market for energy companies to get gas cheaply.

What recent events occurred?

■Chesapeake Energy blowout, Bradford County, PA (Marcellus Shale) in April 2011

■BP Oil spill, Gulf of Mexico in April 2010

■EOG Resources blowout, PA, in June 2010

Why is it an issue?

■2005 Safe Drinking Water Act not relevant to oil and gas industry

◇coal-bed aquifers

◇75,000-325,000 pounds of fluids used in fracking a single well

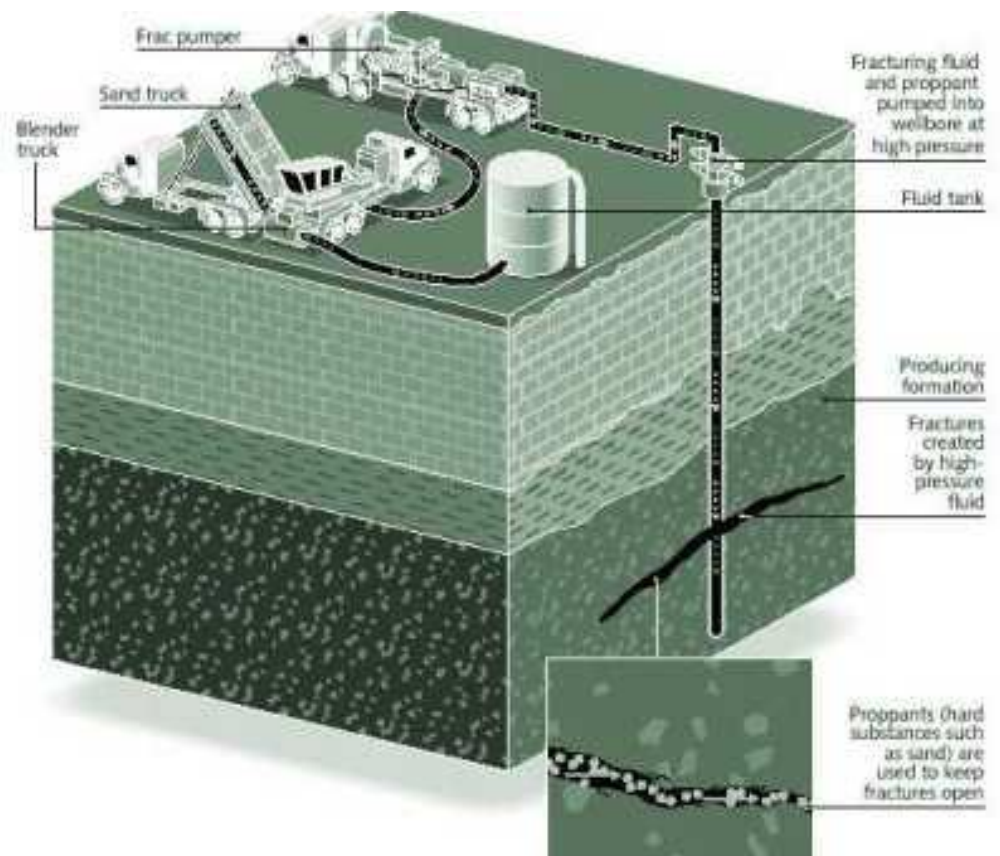
◇EPA reported, 20-40% of fluids remain in rock formation

◇groundwater pollution (ie HCl used for “acidizing” and small amounts of benzene)

■Well blowouts, pits and venting

◇surface water pollution

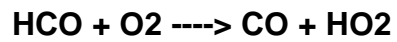
◇often close to homes



◇VOC's such as formaldehyde (HCHO) released from waste cause photochemical smog in troposphere

◇Polycyclic Aromatic Hydrocarbons (PAH) and benzene released into the air

Atmospheric chemistry



Future implications?

■Steel tanks instead of lined surface pits for waste

■Non-toxic additives in fracking fluid

■NYS banned high-volume hydraulic fracturing gas drilling until at least July 1, 2011

◇other states to follow?