

Fracking and Farmland: What Farmers and Landowners Need to Know About the Risks to Air, Water, and Land



The Ohio Ecological Food and Farm Association

Promoting and supporting
sustainable agriculture since 1979

Potential Impacts on Organic Production

There are more than 500 certified organic operations and nearly 53,000 acres of certified organic pasture and cropland in Ohio, much of it in areas of the state containing shale deposits.

Water and soil contamination resulting from fracking could jeopardize a farmer or rancher's organic certification.

All products applied to certified organic land, whether intentional or not, must be disclosed in the farm's Organic System Plan. Gases and heavy metals in amounts that are excessive or pose a risk to soil and water quality, can compromise certification, even if the elements are naturally occurring. Soil, product, or tissue samples can be taken by an organic inspector or certification agency at any time to verify compliance with the National Organic Program (NOP).

For more information about how a gas lease could impact your farm's organic certification, contact OEFFA Certification at (614) 421-2022 or organic@oeffa.org.

Source: OEFFA/Ohio Environmental Council,
Fracking and Farmland Webinar, 9/27/11

About Fracking

Fracking uses water, sand, and chemicals injected at high pressure into deep underground shale formations to create underground explosions that crack the rock and release natural gas. Also known as "high volume hydraulic fracturing (HVHF)," "horizontal fracturing," and "slick-water hydraulic fracturing," fracking became popular after 2005 when the process was made exempt from important provisions of the Clean Water Act, Safe Drinking Water Act, Clean Air Act, and other environmental and public health protections. Gas companies are now signing leases with landowners in parts of Ohio containing Marcellus and Utica shale deposits.

Potential Impacts to Farmland

Water Contamination

Fracking requires up to 300 times more water than conventional hydrofracturing. Each well can be fracked up to 18 times, using millions of gallons of water each time. Waste water, or "brine," that contains chemicals used in the fracking process, as well as naturally occurring materials, such as heavy metals and toxic gases, which return from the well, can contaminate ground and surface water supplies through underground fissures, surface spills, and blowouts.

Air Emissions and Plant Growth

Many of the chemicals used in the fracking process, including methanol, are hazardous air pollutants. In addition, fracking is a highly industrial process that increases ground level ozone. Ozone damages plants by inhibiting photosynthesis and root development. Soybeans—Ohio's largest commercial crop—are particularly susceptible to yield loss caused by ozone. Other ozone sensitive crops include beans, spinach, tomato, alfalfa, and other forages.

Soil Contamination

In addition to the chemicals used during the fracking process, waste water returned to the surface can contain radioactive materials, including strontium, uranium, and radon; and heavy metals which can contaminate the soil through spills, leaks, or during venting and flaring. Heavy metals such as lead, mercury, cadmium, chromium, barium, and arsenic have been found in soils near gas sites.

Land Fragmentation

Fracking creates significant disturbance to the land. Well pads can be four acres or larger, each containing up to eight wells, which can be fracked multiple times. Semi-truck trailers are needed to deliver water, sand, and drilling equipment, and remove waste water. A typical well pad with seven wells could result in 13,000 round trips on local roads. Additional roads and pipelines to transport the gas may also be built.

Livestock Health Effects

Livestock and wildlife are attracted to the salty taste of fracking fluids and waste water. Animal poisoning can result in death or loss of normal reproductive function, still births, birth defects, and other health problems. Light and noise pollution from fracking wells can also increase stress livestock.

Decreased Land Values

Gas development can lower land and property values, making resale difficult, and leave farmers "stuck" with contaminated land that cannot be farmed.