

5. Protecting Drinking Water

There has never been a case of drinking water in British Columbia being contaminated by hydraulic fracturing.

Drinking water in northeastern B.C. is normally found less than 300 metres below the surface. Natural gas in the province is typically much deeper, at two to three kilometres underground, leaving a barrier of rock between the water and the natural gas.

Strict regulations in British Columbia protect drinking water from drilling activities including hydraulic fracturing.

- Hydraulic fracturing fluid is a mix of 99% water and sand. The remaining 1% are additives to help reduce friction.
- All ingredients used in hydraulic fracturing must be reported to the BC Oil and Gas Commission and publicly disclosed.
- All wells in B.C. are double-lined with cement and steel to protect drinking water from natural gas extraction activity. The double linings are up to 600 metres deep – twice as deep as most groundwater levels.
- Fracturing fluid is pumped underground and returned to the surface in a controlled process within the well. The fracturing process lasts only a few weeks, and fluid is prevented from coming into contact with groundwater.

- Provincial regulators ensure natural gas wells comply with Canadian standards for oil and gas health and safety. Every well requires a permit to operate, and owners bear all financial risks associated with their operations.

Common misconceptions

There are several misconceptions about the effects of hydraulic fracturing on B.C.'s drinking water:

Misconception: Hydraulic fracturing wastes water.

- **Fact:** It takes an average of 17 million litres of water to extract natural gas from a well in B.C. using hydraulic fracturing. Metro Vancouver consumes 1 billion litres of treated water per day.
- The fluid is removed from the well, reused in another well or safely disposed of.
- Hydraulic fracturing takes only a few weeks. It opens a well that will likely produce gas for 20 to 30 years.

Misconception: Natural gas wells use too much drinking water.

- **Fact:** There is an abundance of water in northeast B.C., and it is managed carefully. The natural gas industry uses less than half of 1% of the annual water runoff (the amount of water that flows into rivers and lakes) in northeastern B.C. for hydraulic fracturing.
- Water use applications from the natural gas industry are reviewed by experts – hydrologists, hydro-geologists and hydrology technicians. They consider all geographic and ecological factors to make sure water levels are maintained, and give priority to communities and ecosystems.

Points to consider:

- How do we balance the need to protect drinking water and the environment with the increasing demand for clean energy alternatives around the world?
- What additional safety measures could be implemented to protect water for all users?

Dig a little deeper:

How much water?

In 2013:

- Metro Vancouver used approximately 365 million cubic metres of treated water.
- Hydraulic fracturing in B.C. used 5.3 million cubic metres of water.

In northeastern British Columbia, annual runoff averages 120.6 billion cubic metres. Runoff is the rain, snow or ice water that drains into lakes and rivers over the year.

