What is Fracking?

Hydraulic fracturing, commonly known as “fracking,” is a process used to extract natural gas or oil from shale rock and coal beds. Fracking uses millions of litres of water, thousands of litres of chemicals, and thousands of kilograms of sand to blast apart rock formations in order to capture natural gas or oil trapped in shale formations or coal beds.

Fracking is spreading across the country at an alarming rate. Industry representatives and some governments are promoting fracking as a solution to our energy needs. The false promises of new jobs, low natural gas prices, energy security and energy self-sustainability are all part of the industry spin being put forward to push fracking projects.

Governments and industry representatives often say that fracking has been used as an extraction method for more than 60 years. However, the “older” type of fracking – known as vertical fracking or fracking for conventional gas – is different than the new form of fracking that involves multi-stage, high pressure, horizontal fracking. This new form of fracking has just developed over the last decade and uses more water and chemicals than the older version. This toolkit focuses primarily on the new horizontal form of fracking.

The Hazards of Fracking

- Earthquakes
- Fracfluid
- Cement Casing Failures
- Wastewater (Mis)Management
- Greenhouse Gas Emissions
- Underground Migrations
- Results: Water Contamination

Image adapted from Transnational Institute’s report "Old Story, New Threat: Fracking and the global land grab"
Communities stand together to fight fracking

Communities are taking action against fracking in order to protect water and slow down climate change. Farmers, teachers, environmental, youth and water activists, Indigenous leaders and local residents are working together to assert their right to say “no” to fracking.

Efforts to stop fracking are happening across Canada. Municipalities such as Burnaby, B.C. and Niagara-on-the-Lake, Ontario have called on their provincial governments to put a moratorium on fracking projects. Inverness County in Nova Scotia was the first municipality to pass a bylaw that bans fracking within county limits. The Unist’ot’en First Nation in northern B.C. has built a log cabin in a fracking pipeline’s “right-of-way.” Protests by the Tahltan First Nation’s Elders, other Indigenous communities, author Wade Davis and environmentalists resulted in a permanent ban on fracking in the Sacred Headwaters in British Columbia, which is on unceded Tahltan territory. In 2011, a special Assembly of First Nations Chiefs passed a resolution calling for research on the impacts of fracking as well as an immediate moratorium until First Nations have been fully informed and have given their free, prior and informed consent to fracking projects. Opposition from local, national and U.S. groups convinced the small county of Colchester, Nova Scotia to scrap a plan that would have allowed millions of litres of fracking wastewater to be released into the local watershed, which is connected to the Bay of Fundy.

Some provincial governments are moving forward with fracking without adequate research of its impacts on water, public health and the climate. People and communities must band together and demand that the government protect local water sources, public health and air quality. Small Indigenous communities, hamlets, villages and even community centres can – and are – being declared “frack-free zones.”

Fracking our water

There is a global water crisis, and Canadian and Indigenous communities are not immune to its effects. Statistics Canada released a report a few years ago that found that southern Canada lost 8.5 per cent of its renewable water sources over a 34-year period. The Intergovernmental Panel on Climate Change’s 2008 Technical Paper on Climate Change and Water warns of increased droughts in southern Canada and a decrease in annual precipitation in the Prairies.

Fracking uses unsustainable amounts of water. A fracking project requires anywhere from 10 million to 200 million litres of water. Fracking also uses thousands of pounds of sand and thousands of litres of unknown chemicals.

The potential for fracking to cause water contamination has communities raising red flags. Studies in Canada and the U.S. have shown that some chemicals used in the fracking process cause cancer and contain hazardous air pollutants. Governments do not legally require companies to disclose the type and quantity of chemicals used for fracking. This information is even considered proprietary trade secrets.

A 2011 Assembly of First Nation resolution calls for thorough research on the impacts of water withdrawals for fracking, fracking chemicals, wastewater (water that is contaminated during the fracking process), and the treatment and storage of fracking wastewater. Chemical or methane contamination of First Nations’ water sources - some of which are already at risk - would devastate the communities that depend on them for basic needs and for cultural, spiritual, and socio-economic purposes.

There is no method to safely dispose of fracking wastewater. Municipal wastewater plants are not equipped to treat fracking wastewater. The B.C. Oil and Gas Commission has linked the injection of fracking wastewater into the ground with earthquakes in northeastern B.C.
Climate impacts

There is a global climate crisis, and Canada must take responsibility for its previous and ongoing contributions to it. Not only is Canada home to the tar sands, one of the largest industrial projects on this planet, but it is also looking at expanding its fossil fuel industry by increasing fracking operations and projects related to fracking such as pipelines, liquefied natural gas facilities, and fracked gas exports. Canada cannot take meaningful action on climate change while expanding the fossil fuel industry.

Despite industry representatives and some governments promoting natural gas as a "clean, green fuel," studies show that fracked natural gas can produce as much greenhouse gas emissions as coal. Fracking releases large amounts of natural gas, which consists of both CO$_2$ and methane, directly into the atmosphere. Methane, in particular, is a very powerful greenhouse gas because it can trap 20 to 25 times more heat in the atmosphere than carbon dioxide. Fracking and other parts of the fossil fuel industry are preventing Canada from reducing its greenhouse gas emissions and doing its fair share to mitigate the global climate crisis. This is yet another reason we need to stop fracking.

Health impacts

U.S. residents that live close to or downwind from “fracked" wells have reported a number of health problems including eye, throat and nasal irritation, frequent nosebleeds, extreme hair loss, unexplained rashes, chronic coughs and lung congestion and extreme fatigue. Children have developed asthma and even tumors, and are particularly susceptible to environmental hazards. The Fracking and Health Awareness Project (FHAP) warns that “children’s immature bodies are less able to metabolize some toxic substances – so they are more vulnerable when they are exposed.”

Radioactive materials can be dredged up with the gas and oil extracted from deep bedrock. Increased truck traffic – up to 1,400 heavy truck trips are needed per well – not only speeds up climate change, but contributes to local air pollution. The Fracking and Health Awareness Project warns that air pollution from industrial toxins is a major concern in shale gas areas. The FHAP points to a study by the Colorado School of Public Health where researchers found “a 66% increased cancer risk for residents living within a half mile of a gas well, and a 150% increased non-cancer risk (including respiratory, developmental, heart and stroke) for the same population.”

Protecting the human right to water means banning fracking

Since July 2010, the United Nations has passed several resolutions recognizing the human right to water and sanitation and has outlined governments’ obligations to fulfill this right. In Canada, we need a National Water Policy that respects the human right to water and sanitation.

Catarina de Albuquerque, the UN’s special rapporteur on the human right to safe drinking water and sanitation, calls for “a holistic consideration of the right to water by factoring it into policies having an impact on water quality, ranging from agriculture to chemical use in products to energy production activities.” Banning future fracking would be an important step forward by the Canadian government.

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1. pennsylvaniacallianceforcleanwaterandair.wordpress.com/the-list/
2. frackingandhealth.ca/shale-gas-and-childrens-health/
government in meeting its obligation to implement the human right to water in Canada.

**Governments’ responsibilities**

Regulation for fracking falls largely to provinces and territories because of their power to issue drilling and water permits. While it is true that hydraulic fracturing has been used for decades, this argument overlooks the fact that horizontal fracking for unconventional gas – shale gas, coalbed methane and tight gas – as well as conventional sources is new, and provincial regulations have not caught up to this expanding technology.

Provincial governments often have vested interests in permitting fracking because of the royalties they receive. Despite the short-term revenue generated, decisions to permit fracking must also include an assessment of future health care costs, water and environmental restoration, and climate change adaptation.

Federally, the Conservative government has made changes to environmental legislation that makes it easier for industry to move forward on fracking projects with little federal regulation.

Changes to the Canadian Environmental Assessment Act resulted in the cancellation of 3,000 project reviews across the country, some of which were fracking projects, or applications related to fracking. Pipeline approvals have been fast-tracked with a new 18-month time limit. The National Energy Board has broad new powers that allow it to narrow the issues considered and limit the scope of public participation. The clawback of the Navigable Waters Protection Act (now the Navigation Protection Act) not only exempted pipeline projects from this Act, but also removed protections from 99 per cent of lakes and rivers in Canada. The Canadian government is failing in its duty to protect water sources and the public from harmful projects such as fracking.

It is up to communities and individuals to urge governments to protect public health and drinking water from fracking.

**A growing global movement**

Communities in Canada are part of a growing global movement that is calling for a ban on fracking to protect water, ecosystems and public health. In Mexico, South Africa, the United States and all over Europe, communities are joining together to say they want a future lit by clean, renewable energy, not dirty, polluting fossil fuels. The first-ever Global Frackdown in September 2012 culminated in 200 community actions in more than 20 countries, all aimed at stopping fracking. There were more than 250 events in 30 countries in the second Global Frackdown, which took place on October 19, 2013.

The Council of Canadians is fighting fracking in communities across Canada. Our supporters and chapter activists work to promote clean water protection, renewable energy sources, democracy and community health at the grassroots level. We work with communities and local groups to stop fracking projects and protect our air and water commons.
Fracking projects are happening on Indigenous lands without respect for First Nations Treaty Rights and Title. As noted in the Assembly of First Nations resolution on a Moratorium on Hydraulic Fracturing, the UN Declaration of the Rights of Indigenous People states:

“Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.” Article 29 – 1

“States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.” Article 29 – 2

“States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.” Article 32 – 2

“Indigenous peoples have the right to have access to financial and technical assistance from States and through international cooperation, for the enjoyment of the rights contained in this Declaration.” Article 39

Fracking projects are taking place in Indigenous communities, some of which are already struggling to have access to clean and safe drinking water. Governments must obtain free, prior and informed consent before proceeding with fracking and related projects.