

Hydraulic Fracturing in British Columbia

*Creating a better BC one step at a
time...*



Overview

- Introduction
- Process of Hydraulic Fracturing
- Effects on our Environment
- Demonstration: Diffusion of Fracturing Fluids
- Fight Against Fracking
- Fun Facts
- Take Action
- Conclusion: Video

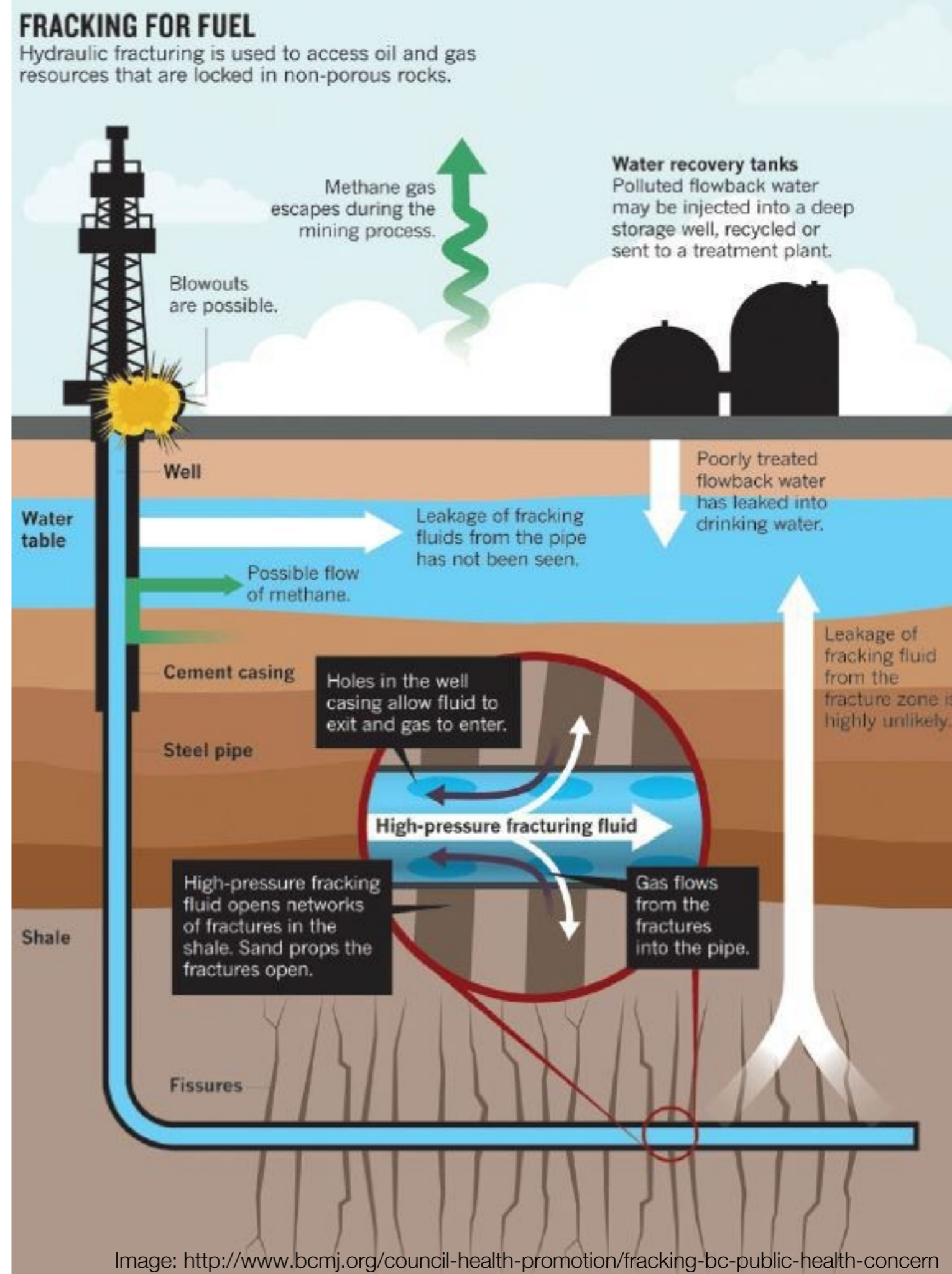
Introduction

- What is fracking?
 - Technique used to extract gas trapped underground
 - Allows companies to obtain previously inaccessible gas reserves
 - Yields for a higher natural gas extraction rate



Fracking: The Process

1. Shaft is drilled underground (Can reach up to 3 km beneath Earth's surface)
2. Hole is drilled horizontally into the porous shale containing natural gas
3. Fracking fluid (water, chemicals, sand) is pumped into well with incredible pressure.



Fracking: The Process cont'd

4. Billions of tiny cracks are created. Sand in the fracking fluid holds cracks open. The chemicals dissolve unwanted minerals/kill bacteria
5. Fracking fluid is drained. Natural gas flow out of the cracks and gets collected.

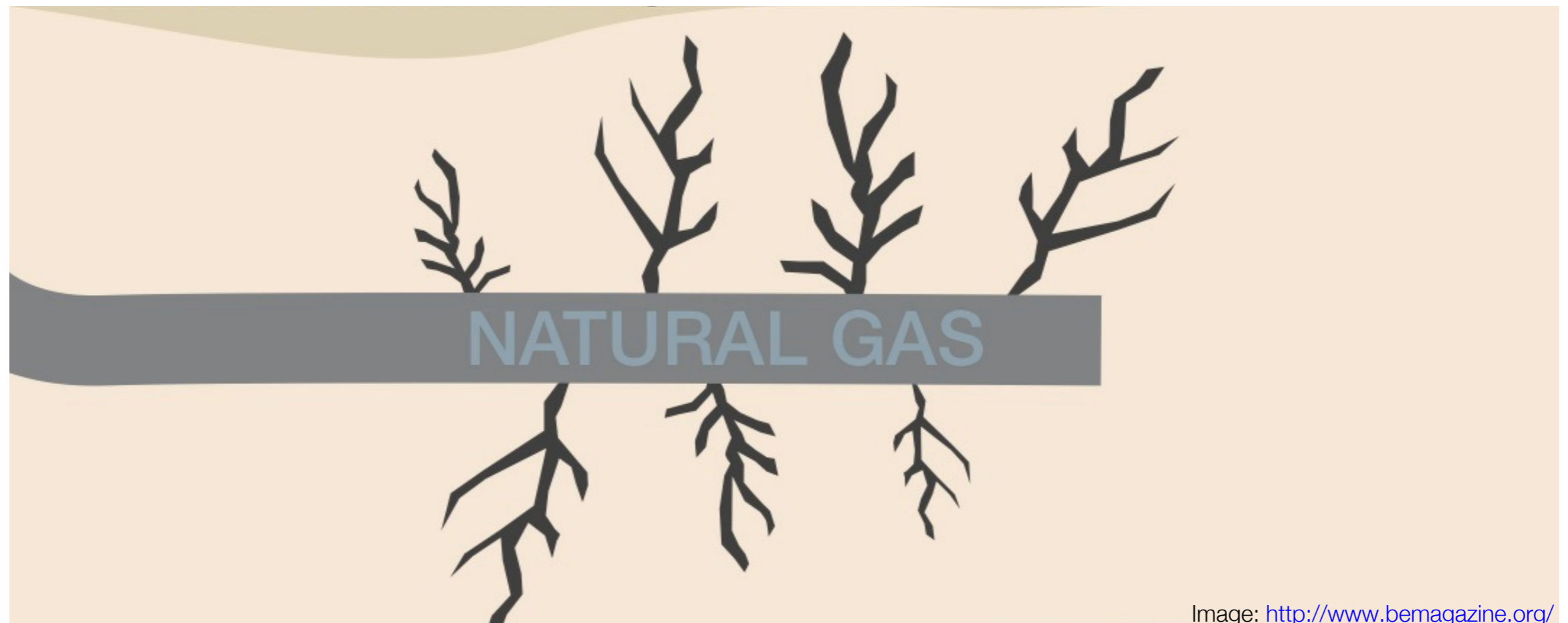


Image: <http://www.bemagazine.org/>

Impacts on Wildlife

- Deforestation destroys wildlife habitats (fragmentation)
 - During dry season, clear cutting increases the risk of fire danger
 - Provides ideal habitat for harmful insects/small mammals
- Changes biodiversity of a region



Impacts on Wildlife cont'd

- Contaminates water sheds with toxic pollutants
- Chemicals & high salinity negatively impacts salmon

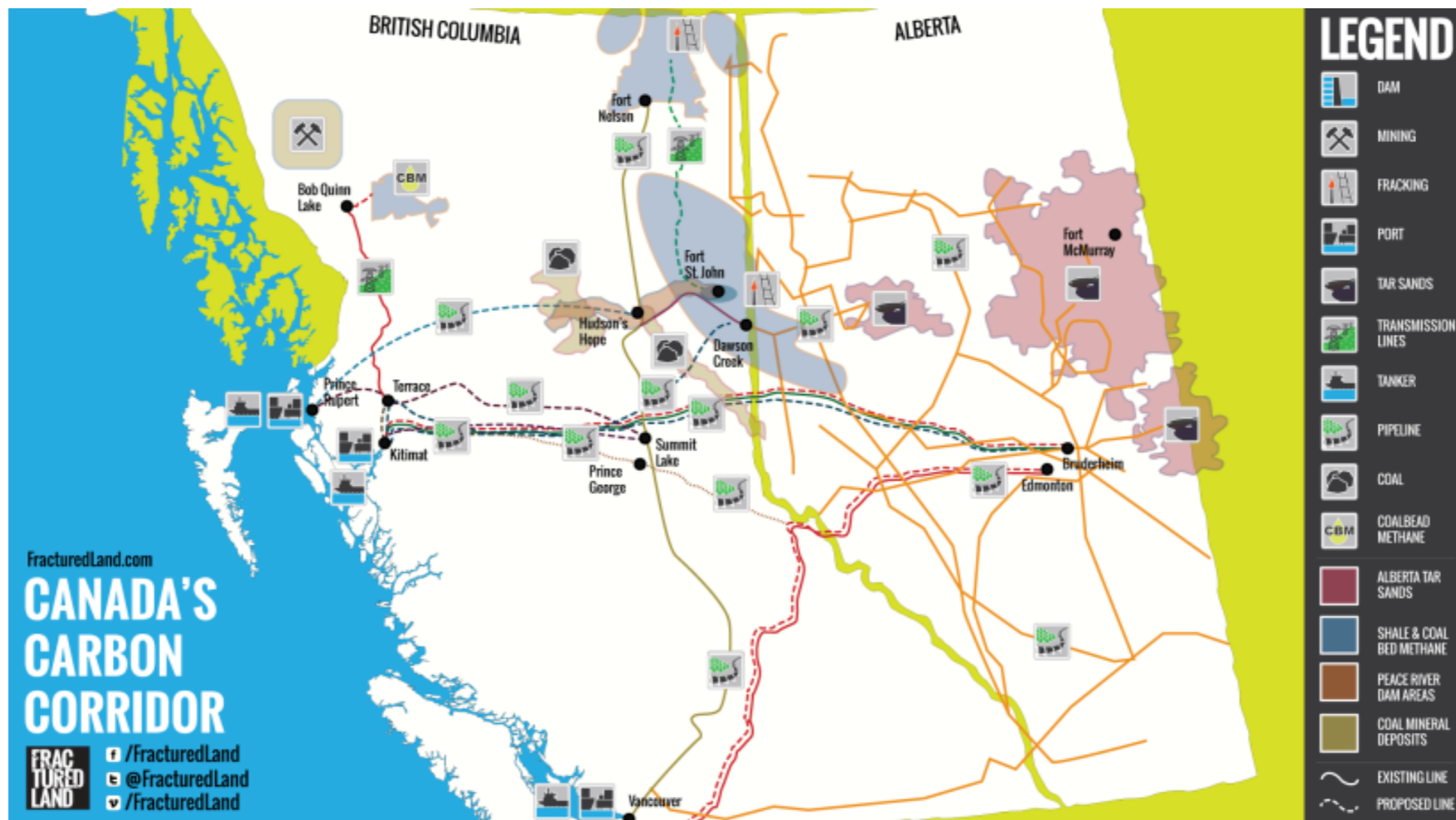


Image: http://fracturedland.com/the-issue/?doing_wp_cron=1386566064.0526950359344482421875

Impacts on Vegetation

- Clear cutting removes stored seeds and transpiration is reduced
- Waterlogged water table can inhibit seed germination/ decrease seedling survival
- New/open environments can deter certain plant species from growing
- i.e. deter the regeneration of desirable trees



Impacts on Vegetation cont'd

- Depletion of over storey increase the chance of freezing temperatures early in a growing season
- Potentially kill or damage plant species/alter nature of ecosystem
- Lack of vegetation can hinder natural water purification
 - Polluted water can harm watersheds



Impacts on Humans

- More than 75% of the chemicals used can lead to respiratory, gastrointestinal, dermatological and ocular problems
- 40-50% of the chemicals could be neuro-, immune-, and nephrotoxic



Impacts on Humans cont'd

- 37% of the chemicals could be endocrine disruptors
- 25% of the chemicals could be carcinogenic
- Exposure to noxious fumes/flare gas have been reported to cause complications such as nausea, asthma exacerbations, depression, and cognitive functioning.



Earthquakes

- Common in places where natural gas extraction processes occur
- BC Oil and Gas Commission reported that at least 38 earthquakes over the past few years in Northeastern BC were caused by fracking



Earthquakes cont'd

- Geologic structure extending from High Prairie, Alberta to Fort St. John, BC is seismically active
- Serious earthquake risk



Image: www.fortstjohn.com



Image: www.campscout.com

Fight Against Fracking

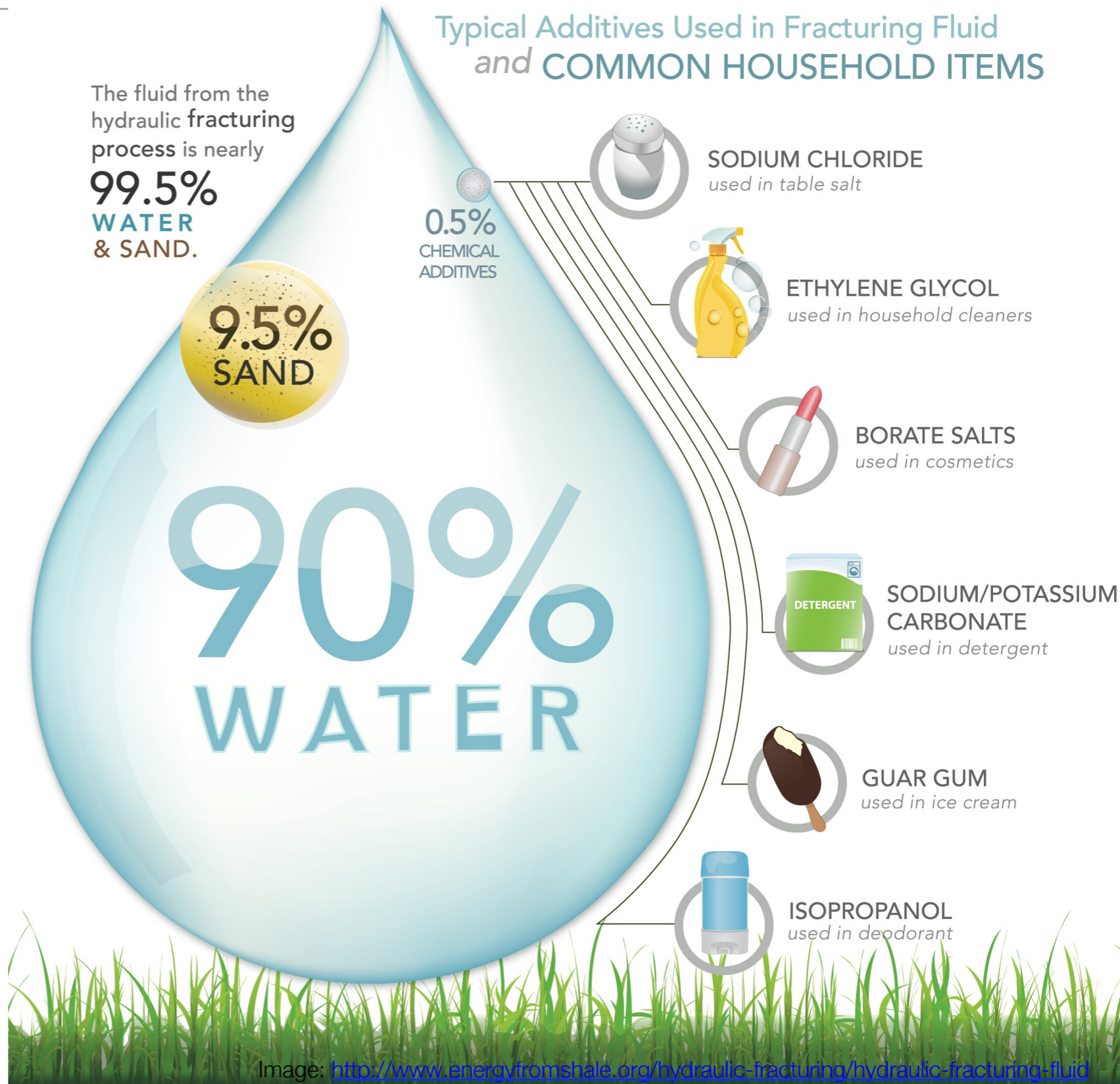
- Cordova Embayment already has 180 wells drilled
- Dene Tha' First Nation is suing the BC government
 - Forcing the province to learn about the impacts of fracking on the Cordova Embayment (northeastern BC)
- Caleb Behn, a young, indigenous warrior/ law student is fighting to save his people's land/culture



Fun Facts

- Companies do not have to disclose the chemicals they have used
- Canada is the largest consumer of energy **in the world**
- Canada is the second largest producer of greenhouse gases after the US.

Understanding Fracturing Fluid



Fun Facts cont'd

- Quebec, New York and Delaware has temporary prohibited fracking
- Precautionary bans of fracking have been put in place in the Sacred Headwaters region of BC
- >11 000 wells have been fracked in BC since January 2000



Image: <http://www.daveheidebrecht.com/>

PREVENT FRACKING IN BC



January 12, 2014
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Did You Know #4

Recently our fracking blog has taken a decidedly more general turn. With the approval of the Enbridge [Northern Gateway Pipeline](#) project and the plethora of environmental concerns that have sprung up as a result, today I thought I would show you the cumulative effect that our human race has had on the planet in the past 25 years.

Obviously it is difficult to see environmental destruction in our day-to-day lives. However, Google aims to change that and several months ago they launched their stunning time-

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