Hydraulic Fracking: Violating the Rights of Nature

Case Study: The United States
What is fracking?

Hydraulic fracturing, or fracking, is a method of forcing natural gas or oil from rock layer deep below the Earth’s surface.

How fracking works...

1. A pressurized mixture of sand, water and chemicals is injected into a horizontally drilled well.

2. The mix cracks the shale and fills the cracks with sandy grit, allowing natural gas to flow up the well.

3. The recovered water is stored in lined pits or taken to a treatment plant.

1 – Based on research published this year in *Marine and Petroleum Geology*

Sources: Duke University; U.S. Energy Information Administration; National Research Council; *Marine and Petroleum Geology*

By Dan Vergano and Karl Gelles, USA TODAY
Drilling Down: The Bakken, Marcellus, Monterey, and Niobrara Formations
Overview of U.S. Fracking Boom

• Current Production: 300,000 barrels of Natural Gas per day, Oil at a 25 year high (set to double in 5-10 years)

• 800,000 active gas and oil wells (as many as 1,000,000 by 2015)

• Damages to the rights of ecosystems, human rights, health, climate, air, future generations, communities & way of life, food systems, prosperity, democracy

• To blame: Federal and State Government and agencies & thousands of corporations
Chronology of Fracking

- Shale: 400 million years in the making
- 1940s Discovery: cemented sediments lie 2 miles + underground
- Early fracking was different, rarely used
- 2003: Halliburton technology makes shale accessible
- 2004-2005: Bush/Cheney & the EPA "Halliburton Loophole"
  - exempted from Clean Water Act, Energy Policy Act
  - Paved way for massive boom
  - many states: unregulated, unmonitored
Where is Fracking?

• Unlike Most Industrial Activities Fracking Place EVERYWHERE

- 200 feet from homes and schools
- On your front yard: the mineral estate
- On Federal Land
- Urban and rural areas
- farms, ranches, offshore
Mineral Estate: When an oil company builds a well pad (which can range in size from seven to 10 acres), farmers and ranchers lose the use of that land. There is no compensation for losing the use of land adjacent to the well pad.
FRACCIDENTS
Secret Sauce: Water, Sand, Chemicals

- It takes 400 tanker trucks to carry water and supplies to and from well pads
- Each Frack job Takes 2-8 million gallons of water.
- Each well pad can be fracked up to 18 times.
- Nationally, fracking uses over 100 trillion gallons of water and 400 billion gallons of “frack fluid” comprised of up to 600 chemicals
- Toxic additives include: kerosene, benzene, toluene, xylene, and formaldehyde
- 330 tons of chemicals per fracking operation—2/3 of the toxic chemicals remain underground.
- Corporate frack "recipes" protected by Trade Secret Laws: Your doctor may not know
Frack Waste Water

• Toxic Waste water cannot be treated. It is lost.
• Left in open air ponds
• Produces Volatile Organic Compound (VOCs)
• Thousands of ponds washed away during storms
Violation: Climate and Air Quality

- VOCs cause asthma, cancer, and severe illness.
- Emissions are the main source of VOCs in Colorado and the third-largest source of nitrogen oxides.
- Smog caused by fracking sent toxic ozone readings soaring.
- In Uinta (Utah), wells were estimated to be leaking 60 tons of methane per hour.
- Fracking is #2 source of greenhouse gases (EPA)
Violation: Water

- Use of clean water, return dead water
- Leaks contaminate wells, aquifers
- Dimmock, PA lost water
6.2% of all well casings fail initially(*), leading to methane migration.

60% fail over 20 years. They all fail over time.

These numbers are from the PA DEP. Why doesn’t the industry fix this systemic problem?

BECAUSE THEY CAN’T!

-- Dr. Anthony Ingraffea, Distinguished Professor of Engineering, Cornell University
Violation Water (cont.)

DEC’s MONITORING FAILED US ON THIS WELL

How Many More Like This Are Out There?
Photos Taken October 2011
This Well Is Located East of Auburn, NY
Violation: Fracking Causes Earthquakes

- Geothermic Research Journal study: 2011 Ohio tremors caused by spent fracking materials injected deep underground
- Californians are nervous
Violation: Human Health

As many as 353 of these chemicals are often cited in scientific literature, and more than:

- 75% could affect skin, eyes, respiratory, and gastrointestinal systems
- Roughly 40-50% could affect the brain and nervous, immune, and cardiovascular systems and the kidneys
- 37% could affect the endocrine system
- 25% were carcinogens and mutagens

FACT: More than 632 chemicals are used in natural gas fracking fluids.
A Closer Look at the Bakken: Fort Berthold, ND

• $100M Oil Boom, not for residents
• Crumbling Infrastructure, deaths from trucks
• Soaring Crime Rates, rapes, gun sales
• Frack boom towns, man camps of 10,000
• Rich in Oil, 100 M cubic Feet gas flared away DAILY
  - (500,000 homes worth of heating)
  - 2 M tons CO2 = 385,000 cars
• From quiet ag state to industrial powerhouse 660,000 barrels/day

• Alternatives: WIND 1.2 trillion homes or 14,000 x state electricity use
Fort Berthold: Native Americans

• Thunder Butte Refinery: $300M project would be first in US since 1970s
• Unemployment for tribes 40%, fracking as a false solution
• Profits & housing costs soar, forcing many who don't cash in to relocate

This oil boom has divided the people and pitted them against each other in a negative way, says tribal member Kandi Mossett who currently resides in Bismarck, ND. “It’s really hard to see the damaging and negative effects occurring at Fort Berthold and throughout North Dakota as a result of crooked, greedy people - including politicians at the Tribal and State level - lining their own pockets while the Mandan, Hidatsa & Arikara people suffer. I want people to know the reality we are facing here and see that we are heading toward a modern day genocide of the people while the BIA and others stand idly by and let it happen.”
“I expect to live here all my life, and I have a commitment to this land that was my folks’ land. I have an obligation to protect it, not only for me, but for the families that come after.” Bird Bear
Rights of Mother Earth laws protect Communities

Fracking is Clear Violation of the Rights of Mother Earth. We violate natures laws at our own peril. We do not have the moral authority to rape the Earth in this way. Fracking can not be done safely, and we must transform our human laws to align with nature's laws that govern our wellbeing. It is time to stand for the Rights of Nature.

19 US Communities in 6 states
PA, NY, MD, CO, NM, OH have banned fracking by recognizing right for communities and nature.