

Fact or Fiction

by Ronalie & Shawn Campbell

We want to thank the Augustana coordinators for this opportunity to tell you about our experience living with oil and gas development on our land. We have called our presentation Fact or Fiction and you will see why that is important as we go along.

Our family has a ranch operation west of Ponoka. We've often said that farmers were environmentalists before the term became popular. We've looked after the land, water and wildlife all our lives. Living on the land, you get a sense of when things are out of balance. It may mean that you have to add something to the soil, or change your crop rotation, or adopt some new farming practices. That's being a good steward- caring for the land, water, animals and the people who depend on it for life. We have learned, though, that we have little control over the subsurface.

We have always had land with oil and gas wells on it, thinking that it would be good to have additional revenue when farm prices were low. Our view started to change after a new round of drilling riddled our land like Swiss cheese and pipelines crisscrossed it going to numerous compressors. Even *all that* we accepted until we began to notice something was wrong with our water. One well dropped significantly in production and a second began burping gas. We started to look for reasons for these changes.

Our area (Ferrybank) has been explored and developed by several energy companies. It produces oil and both shallow and deep gas, and most of it is sweet (not registered as sour). In the 1980's much of the oil in the area was recovered by a process that used potable water from the aquifers to force the oil to surface. The wells were fractured but with less water pressure than today. The waste water was pipelined and injected down energy wells which had already been depleted or were chose for this purpose. Today these same injection wells are still connected to many more wells and waste fluids are filling the formations below our land.¹

In 2005 when gas began burping from our water taps. It was collected and identified by isotopic comparison with energy gas samples and found to be thermogenic in nature, meaning coming from a deep formation. In 2007 Alberta Environment tested our water, as did energy companies, and the University of Alberta. Dr Muehlenbachs, isotope expert, identified some possible energy wells as the source of the contamination.² In 2008 our case was turned over to the ERCB, because of the presence of these gases (methane, ethane, propane, butane and sour gas). In the 4 years that the ERCB has investigated they have found no positive link to a particular energy site. It's like playing hide and seek with a three year old. You don't want to hurt their feelings by finding them right away so you look elsewhere. The ERCB have included nine of over 50 possible energy wells and allowed the companies to co-mingle the gas zones in 2009, making the gas more difficult to fingerprint.

Often when gas is identified in water, it is assumed that the source is biogenic, or from natural decay, but this is not in our case. The next plan was to look for a natural fault that may cause gas to migrate from deep down to surface. The ERCB looked at the natural flow of subsurface water in our area, and the research concluded that the gas could be a combination of deep gas from fracture depth mixing with shallow gas from the aquifer. The study did not mention any natural faults; only fractures. The early fracturing happened on energy wells drilled in the 1980's by Pan Canadian. The ERCB have not

¹ *Are Fracking Wastewater Wells Poisoning the Ground Beneath our Feet?*, Abram Lustgarten, Propublica, June 21, 2012

² *Fingerprinting of Gas Contaminating Groundwater & Soil in a Petroliferous Region, Alberta, Canada*, Barbara Tilley & Karlis Muehlenbachs, Presentation, Cambridge, UK July 23, 2011.

included any of these wells in their study.

When we started to connect the dots in this investigation, we came to the conclusion that fracturing has played a major role in the damage to our water. The last 7 years our life has been a nightmare, trying to get answers as to why the water started accumulating gas from over 1700 meters below. That's supposed to be impossible, but many tests have now proven that this in fact has happened. This "investigative" life that we have been forced to live has prompted us to carefully sift facts from fiction, and we want to help you learn to do the same.

For this little exercise, we chose a website article provided by CAPP (Canadian Association of Petroleum Producers) called *More Facts, Less Friction*. The writer makes several points which I will explore and explain so that you can decide for yourselves if it is fact or fiction.

1. *CAPP says that properly constructed NG (natural gas) wells protect water.*

That may work in an ideal model, but NOT in the real world. We know casings do not protect water.³ After 50 years, the time that oil and gas has been produced in Alberta, cement and steel deteriorate. Injection wells receive salt brine mixed with toxic chemicals from drilling and fracing. This mixture coats the casing and eventually corrosion takes over. No matter how much pipe or how many layers it will break down. With today's caustic chemicals and increased hydraulic pressures and repeated fracturing, it's likely to happen sooner.

CAPP goes on to say there is no evidence of groundwater contamination.

That is an absolute lie⁴ and we are just one of many landowners who are living proof of that. We do not cultivate or plow meters below our land, only the energy industry operates there. In Wyoming in 2011, the EPA (Environmental Protection Agency) released their report that identified a direct link between shale gas wells and gas in area water wells.⁵ This year together with the USGS (US Geological Surveys) they did duplicate sampling and reconfirmed their findings. Take home this fact. There is evidence of groundwater contamination by industry.

CAPP claims no water is needed after the drilling phase. "Fact or Fiction"

I would be embarrassed to make such an outright ludicrous statement. In reality, fracing can occur many times over the life of a well. It is a common practice when the production declines, that the company re-fracs the well to try to increase production. One industry employee shared that he was proud to be part of a multi-drill on one pad that involved 50 pumper trucks, pumping water at 17 cubic meters per second. In order to supply that volume of water, the company had to pipe water from two lakes several kilometers away. When calculated, the volume used was equal to the volume of water that would flow over Niagara Falls for 23 days. That was for one mass fracing operation!⁶ Sadly he was not concerned, because someone had convinced him that there isn't a water shortage in Canada. YET.

Recently I read about a company that fractures with propane to reduce its demand for these volumes of water.⁷ Our water already has propane in it. Thanks, I don't want anymore. It reminded me of the gopher exterminator that injects propane down the gopher hole and fire explodes underground. It appears that some users found that the propane flame shot out of other holes and started grass fires. Kind of like the frac blowout at Innisfail, where one company's

3 *Fracking Contamination 'will get worse'*, Andrew Nikiforuk, The Tyee, Dec. 19, 2011

4 *Migration of Methane into groundwater from leaking production wells near Lloydminster*, CAPP Pub#1995-0001

5 *Water Tests in Line with EPA Finding*, Bloomberg News (business Week), Oct.11, 2012

6 *World's Biggest Experimental Frack Job*, Will Koop in bctwa.org, Jun. 17, 2010

7 *Green Solutions to Fracking Debate*, Jackson Stone, Aug.19, 2011 (<http://www.propane.pro/alternative-fuel/green-solutions-fracking-debate-0819/>)

chemicals came out another company's well bore.⁸

CAPP claims that the water used in fracturing is treated and reused at other wells.

This is quite a play on words. The reference to treated water means that they take our treated potable water to use for their fracture operations. Recently Shell signed an agreement to treat and use the human waste water at Dawson Creek for their fracturing there. What people may not understand is that this was potable water to begin with. The public used it and returned it to the system as waste water. Normally all human waste water is treated and flushed down our rivers where nature does another cleaning treatment. Really one community's waste water is another community's potable water. Once the energy industry, however, uses the water to frac, it is contaminated and the flowback is injected down disposal wells. In fact, flowback water is seldom used because of the potential for corrosion and scaling and clogging parts of the well or the formation. Perhaps that is why Shell chose not to treat their flowback water, but human waste instead. The company was getting accolades for being environmentally friendly by reusing water---now it will be totally unusable and lost forever.⁹

2. *The industry claims hydraulic fracturing is safe and regulated by government.*

If it is so safe why are people all over the world opposing its use and asking for moratoriums? The truth is that it has not been proven safe and most regulations, at least in Alberta, are self-policing¹⁰. There is no full public disclosure of the chemicals used in drilling or fracing. The ERCB admits to minimal inspections of sites and the industry to voluntary audits. What kind of regulating is that? It's the kind that says 'we are protecting the energy industry.' After 3 years of handling our water contamination case, the ERCB admitted that (quote)“The ERCB's jurisdiction is confined to energy development and does not extend to groundwater.” They had no jurisdiction to be testing our water and were only doing the investigation for the oil industry. Alberta Environment could observe but could take no samples, as they were under the direction of the ERCB. That's the kind of regulators, landowners in Alberta get to protect their interests, their land, water and community. Just last week Bill 2 was introduced to approve energy projects even faster by putting control in the hands of one regulator.¹¹ This was applauded by CAPP, so it's definitely not to protect the landowners or the environment.

3. *CAPP's third point is that using **shale gas** means less GHG (greenhouse gas) emissions.*

Why say “shale” gas? Is it somehow different than natural gas that we are all familiar with. No, it appears that the push to sell shale gas to an unsuspecting public is to convince them that it is somehow better than other natural gas. It's kind of like saying that a Shetland pony produces less manure than a Quarter horse. As a livestock producer we know that it depends what you feed it. Do we need to ask 'what are they feeding the shale gas?'

This brings to mind an issue that has made me shake my head for sometime. Why would companies, whose pulse is profit, choose to madly go after such an uneconomic product. The production of which only serves to drive the market value lower. The industry readily admits that these wells drop in production markedly in the first 3 years and may even cease to produce. Yet, they drill, frac and re-frac using valuable water and costly chemicals to extract a near worthless product. How do they continue when other businesses would be bankrupt after expenses continually exceed income? Is there something here we may have missed? Perhaps the one little fact is that these wells qualify for government incentives and minimal royalties.¹² That's right, they pay little, if any, royalties and are given drilling incentives to boot. Energy expenses are covered by government, yet they are limiting protection of water and the

⁸ *Appendix A. Interwell bore Communication During Fracturing Operation Events*, ERCB website, Jan. 23, 2012

⁹ *Shell Funds \$12.5 million Effluent Treatment Plant*, Vancouver Sun, Sept. 8, 2012

¹⁰ *Hydraulic Fracturing and Wellbore Integrity*, Alberta Surface Rights Group, www.albertasurfacerrights.com

¹¹ *CAPP hails Alberta Energy Regulator aimed at streamlining project approvals*, Bill Kaufman, Calgary Sun, Oct. 24/12

¹² *Royalty Incentives-Shale Gas*, Enersight website

environment.

4. *CAPP claims that once completed a NG well is the size of a two car garage.*

This is an absolutely ridiculous statement! One site without an access road is 2.5 acres at minimum. Add access roads and consider the number of acres taken out of food production. If you want to feel good that what you see on the surface as you drive by is a two-car garage, that's up to you, but don't forget that in the energy industry this garage has a massive basement that extends under all the land. This basement is full of pipelines and horizontal drill stems and frac zones. The surface is only one part of the potential risk for damage to the land. If a well site is a garage, then the Industrial Heartland must be the parkade.¹³

5. *Another claim by CAPP: in their view, NG producers support disclosure of fluids used in hydraulic fracturing.*

That would be great news, if it were true!! In fact, when asked about this information, an ERCB lawyer stated “ the ERCB does not currently require licensees to provide detailed disclosure of the chemical composition of fracturing fluids.” To date the companies are not required to disclose to the public the toxic chemicals or proprietary formulas they use fracturing in Alberta.¹⁴ In some American states disclosure has been legislated but doctors must sign non-disclosure “gag” orders, if they are treating someone for exposure caused by these chemicals.¹⁵ The plan, it appears, is to tell you what they use, but not that people are being affected by it. If no one reports that someone was poisoned, were they really poisoned?

The ERCB is apparently working on a plan for Alberta. Take it from our experience. In six years, no culprit has been apprehended in our water contamination case, so don't hold your breath waiting for that to protect you. CAPP is encouraging the companies to use “Best Practices”¹⁶. This was their media propaganda also used in 2006 when CBM (coal bed methane) drilling was questioned. Did it prevent water contamination?¹⁷ No!! So I don't expect this promise will hold water either. Kind of like the leaking pipelines that we have heard about in the news this past year. The rupture is repaired, the obvious spill cleaned up, but the people are left to live with the contamination.¹⁸

6. *CAPP's final point: Induced seismic activity and hydraulic fracturing -understand the facts.*

A study released by the Oil and Gas Commission this summer concluded that fracturing does cause earthquakes.¹⁹ Further the BC Oil and Gas study alleges there is a link between quakes and fracing, especially in regards to injection of fluids. CAPP defends that this may be true for hydraulic fluids but not waste water injection. Is this just a play on words to confuse the people? CAPP claims (quote) “There is no risk to surface, people or environment including groundwater.” (by this shaking ground). Maybe, you just have to look!²⁰

To summarize our landowners' view: ***with more fracs, you are going to get more fiction.*** There are more ads and presentations telling us that fracturing is safe and environmentally friendly. Well, if our trees and rivers could talk, what would they say? Is our land, air and water still healthy? Turning our backs or putting our heads in the sand is not going to make the damage go away. It has come. The impacts are inevitable because there is too much about this whole process that makes no sense. I hope that our explanations have taught you to search out the **facts** and not be confused by the **fiction**.

13 Industrial Heartland map

14 *Frac Chemical Disclosure in North America*, ernstversusencana.ca

15 *Doctors fight “Gag Order” over fracking chemicals*, American Medical News, Aug. 27, 2012

16 *Guiding Principles for Hydraulic Fracturing*, CAPP, Sept. 2011

17 *Frack Attack, Natural Gas Gains, Water Loses*, Joyce Nelson, Watershed Sentinel, March-April, 2010

18 *Big oil spill stink still riles landowner*, Johnnie Bachusky, Sundre Roundup, Aug.21, 2012

19 *Investigation of Observed Seismicity in the Horn River Basin*, BC Oil and Gas Commission, Aug. 2012

20 *Ohio Earthquake Likely Caused by Fracking Wastewater*, Mark Fishchetti, Scientific American, Jan. 4, 2012