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A frack tour checklist for the committee's consideration

By PETER BECKER

A number of distortions on hydraulic fracturing have been presented to the Yukon community and to the MLAs who serve on the select committee on fracking.

I will enumerate a few that are important to be addressed during and following this week's fact-finding tour in Alberta.

The newly released agenda, as the original one, does not show any evidence of balance or respect for science, but fortunately, Kevin Heffernan himself has been put out of the agenda, which is a plus. You'll see why.

1. As a key unconventional natural gas industry promoter, Heffernan stated Oct. 28-29, 2013 in Whitehorse and Watson Lake that the average life expectancy of a frack well is 25 years.

This is false, as it is the production life of conventional gas wells; frack wells last on average (!) little more than five years.

Industry data from across sections of gas fracking companies show an average well life of 7.5 years up to well abandonment.

Only eight per cent of Texas Barnett frack wells ever made any money, and that was only over fewer than five years.

Frack-generated road damage exceeds all oil and gas revenue in the state, and at a seven-year boom's endgame, local unem-

higher than other fossil fuel GHG emissions as part of shale gas extraction.

In fact, it is part of a growing body of work with similar results, including from the University of Colorado, the National Oceanic and Atmospheric Association, the Cooperative Institute for Research in Environmental Sciences and the National Academy of Sciences.

He claimed in Whitehorse that a 2013 EDF-funded UT chemistry institute study that presents low findings on shale drilling-related methane emissions was corroborated by other academic studies: "Ah, so it has been looked at by the U.S. National Energy Technology Laboratory, National Resources Canada, the Environmental Protection Agency in the U.S., Stanford, Canadian McGill University, MIT, University of California L.A., the list goes on and on."

Except for the MIT Energy Initiative with a series of gas frack-related studies that were initiated and partly funded by the shale gas lobby group American Clean Skies Foundation, none of these bodies have carried out scientific work on methane emissions of shale gas extraction.

Involved MITEI key authors Tony Meggs and Ernest Moniz were on the payroll of Talisman Energy and the oil consulting firm ICF International without declaring it while carrying out the frack

Key preparation for hydro fracking involves the use of a perfing gun that deploys explosive shaped charges punching through horizontal steel pipe (production casing) and into rock.

Without it, hydraulic fracturing fluid wouldn't have holes to come through the steel casing essentially like water jets through the holes in a monstrous shower head.

COMMENT

It's hard to believe Heffernan's omission was an accident, since it follows his strategy of hiding brute force shattering into gravel and mangling of geology and water tables as much as possible behind conventional gas drilling language and imagery.

(Source: wide range of literature from oil and gas industry and petroleum engineering.)

6. Heffernan shifted the scientific understanding of gas flow in rock by tens to hundreds of times.

A key metrics of oil and gas geology and industry is the darcy scale, which describes permeability of rock for natural gas or water or crude oil.

As an illustration, a mosquito net would be more permeable for movements of air or water drops than a tent wall but less than an open tent door.

Conventional versus unconventional gas is a meaningful dis-

people are not prepared to resist its manipulation. A good example is some of the presentations made to the select committee late in 2013.

The Economic Development department of the Yukon government in its presentation stated: "The supply of North American natural gas is now largely dependent on unconventional resources."

In fact, the opposite is the case. About half of Canadian crude oil production and three quarter of Canada's natural gas production is conventional.

About half of U.S. natural gas and about three quarter of U.S. crude oil production comes from conventional extraction.

Of course, net production from conventional petroleum reserves is roughly five to 10 times better than from unconventional reserves.

Net energy is what counts, as it relates to energy production figures in the way net income compares to gross revenue or wages before deductions.

It means that unconventional production wastes precious and shrinking conventional reserves, creates mountains of public and environmental debt, and derails the economy.

The oil majors don't pursue energy; they are after frack fiction-based handouts to extend an outdated monopoly position.

EcDev failed to mention even

extracted with, at this point, staggering increases of force which already exceed the overall intensity of nuclear underground test scenarios.

(Source: Colorado Medical Association and other medical associations which have said no to frack regulations because the process defies regulation. The *New Solutions* journal special issue compilation of peer reviewed health impact studies describing health decline and harm in regions with always regulated shale development.)

9. The speaking notes of the Yukon Water Board to the select committee representatively state: "Further, since hydraulic fracturing is but one specific method of a rapidly evolving set of technologies of formation stimulation, the board chose to issue its guidance in a sufficiently general manner allowing for future industrial innovations and government policies."

The adoption of the word stimulation more than by its out-of-place sexual possibilities indicates the water board has no clue.

The meaning core of the word stimulation describes an acceleration or intensification of a reality that would be there without the stimulation.

But a horizontal drill hole in shale without fracking is just that: a hole in the rock releasing a cow fart. Yes, the water board made a joke out of a serious assignment,

tions of gas fracking companies show an average well life of 7.5 years up to well abandonment.

Only eight per cent of Texas Barnett frack wells ever made any money, and that was only over fewer than five years.

Frack-generated road damage exceeds all oil and gas revenue in the state, and at a seven-year boom's endgame, local unemployment is among the highest in Texas.

(Source: Natural gas analyst Deborah Rogers and Texas Gov. figures.)

2. Heffernan referred to studies a known shale development lobby group, the Environmental Defense Fund, initiated, funded and contracted with the University of Texas.

Among the involved departments are the energy and chemistry institutes.

Representative of a wider academic fraud scandal that follows the EDF is the UT energy institute study that claimed fracking supposedly does not pollute ground water.

Lead author Prof. Groat and institute director Orbach had to resign after it became known that Groat had received personally $1.5 million from the oil and gas company PXP before and while involved with the 2012 study.

Groat had failed to mention this, as did Heffernan. UT distanced itself from its energy institute's water study.

(Source: University of Texas.)

4. Heffernan painted as a supposed outlier a 2012 Cornell University study by Ingraffea, Santoro and Howarth that observed lobby group American Clean Skies Foundation, none of these bodies have carried out scientific work on methane emissions of shale gas extraction.

Involved MITEI key authors Tony Meggs and Ernest Moniz were on the payroll of Talisman Energy and the oil consulting firm ICF International without declaring it while carrying out the frack gas studies.

MITEI is funded to the tune of $145 million by the oil and gas industry. Heffernan failed to mention MITEI's conflict of interest position.

(Source: Listed universities and Public Accountability Initiative.)

5. Heffernan attempted to methodically confuse a well-established nomenclature in the industry literature. Some of the firm basics that he mutilates are:

- source rock applies to conventional and unconventional reservoir (rock) to conventional;
- conventional requires source rock and reservoir trap, cap or seal characteristic to conventional low, slow permeability to unconventional;
- unconventional reserve – five per cent – 10 per cent of unconventional resource, or less frack gas well depletion – 60 per cent to 90 per cent in year one, after two years approaching zero conventional gas well depletion – several decades.

These are universal operational parameters of the natural gas (oil) industry involving fundamentally different financial and logistics sets. They don't apply by 100 per cent, but close.

geology and industry is the darcy scale, which describes permeability of rock for natural gas or water or crude oil.

As an illustration, a mosquito net would be more permeable for movements of air or water drops than a tent wall but less than an open tent door.

Conventional versus unconventional gas is a meaningful distinction not randomly chosen. Conventional gas moves freely when tapped, unconventional gas does not flow without high-intensity fracking.

Heffernan positions conventional gas above a permeability of 100 microdarcy (0.1 millidarcy).

Everybody else in the oil industry and academia define conventional gas reservoir rock in millidarcy, usually above 10 millidarcy, never less than one millidarcy. He makes unconventional gas look conventional, to say fracking is well-established and was done since the '40s. He falsely dismisses critics of brute force fracking in this way.

Again, Heffernan prepared the ground for a false expectation that geological, hydrological, petroleum engineering, economic and environmental viability of gas fracking would be along the lines of conventional gas drilling architecture.

(Sources: Exxon Mobile, Halliburton, Chesapeake Energy, Total and other shale gas players.)

7. This kind of parallel universe communication approach by the unconventional oil and gas extraction PR is different to conventional oil and gas tactics, and

It means that unconventional production wastes precious and shrinking conventional reserves, creates mountains of public and environmental debt, and derails the economy.

The oil majors don't pursue energy; they are after frack fiction-based handouts to extend an outdated monopoly position.

EcDev failed to mention even the aspect of net energy as it presented hype, not facts, to the select committee.

(Sources: Canadian Association of Petroleum Producers, U.S. Energy Information Administration, Oil Drum (petroleum economy internet archive) and the presentation of Yukoners Concerned to the select committee.)

8. Yukon chief medical health officer Brendan Hanley advised the implementation of regulations for fracking. His deduction from the regulatory landscape of fracking is false.

There is no evidence anywhere that regulations break into the rock-hard physics and mechanics that determine frack operation standards, which are becoming more destructive and even less safe going forward.

The trend is to pulverize and crack the depth of entire regions and destroy their geological integrity more and more, not less.

The context is further highlighted by the typical but already summed-up extraction results in the end game of the Barnett shale that show wells are abandoned with eight per centof gas actually produced.

And there is, of course, the hope that more might be

the water board has no clue.

The meaning core of the word stimulation describes an acceleration or intensification of a reality that would be there without the stimulation.

But a horizontal drill hole in shale without fracking is just that: a hole in the rock releasing a cow fart. Yes, the water board made a joke out of a serious assignment, but what it presented is highly misleading or misled or both.

Its presentation does not look coherent enough to have considered the Gas Buggy experiment from New Mexico in 1967, which used an atom bomb for shale gas fracking.

It is the only other time in history or future conception that a significant release of shale gas entered the stage that is not based on brute force hydraulic fracturing.

" ... is but one ..." says the water board, which actually believes, along with Heffernan-style deceptions, there are other methods for shale gas extraction than high-intensity hydraulic (or pneumatic, perhaps, but not likely have they heard of it) fracturing from multi well pads.

A universal standard was established for the first time in northeast B.C. in 2007. The nuclear test ban treaty from 1973 also bans industrial uses of atom bombs like in the Gas Buggy experiment.

The word "ban" might be a hint for a Yukon Water Board that wanted to earn its department's title and wages.

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