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SELECT COMMITTEE REGARDING THE RISKS AND BENEFITS OF HYDRAULIC FRACTURING

Public Hearings: Evidence

Tuesday, September 23, 2014 — 5:00 p.m.

Chair: Patti McLeod

**SELECT COMMITTEE
REGARDING THE RISKS AND BENEFITS OF
HYDRAULIC FRACTURING**

Chair: Patti McLeod
Vice-Chair: Lois Moorcroft

Members: Hon. Currie Dixon
Darius Elias
Sandy Silver
Jim Tredger

Clerk to the Committee: Allison Lloyd

Speakers: Dave Weir
Rhonda Markel
Jim Sutton
Mike Crawshay
Elsie Hume
John Farynowski
Ellen Bielawski
Brent Liddle
Carol Buzzell
James Allen
Will Jones
Meghann Willard
Anthony Basic
Derek Wolfe
Cindi Cowie
Dieter Gade
Miles Morton
Debra Osbourne
Katherine Johnston
Suzanne Delisle

EVIDENCE**Haines Junction, Yukon****Tuesday, September 23, 2014 — 5:00 p.m.**

Chair (Ms. McLeod): Well good evening, everyone — or late afternoon. I want to thank you for joining us today and welcoming us into your beautiful community of Haines Junction.

I'd like to call this hearing to order. This is a hearing of the Yukon Legislative Assembly Select Committee Regarding the Risks and Benefits of Hydraulic Fracturing.

I'm going to start with some introductions. I'm Patti McLeod. I'm the Chair of the Committee. I'm the Member of the Legislative Assembly for the riding of Watson Lake.

Hon. Mr. Dixon: Hi folks. My name is Currie Dixon. I'm the Minister of Environment, Minister of Economic Development and the minister responsible for the Public Service Commission. I'm also an MLA for a riding in Whitehorse called Copperbelt North.

Ms. Moorcroft: Hello everyone. Thank you for coming out this evening. My name is Lois Moorcroft. I'm the MLA for Copperbelt South and the Official Opposition critic for Justice, Highways and Public Works and Advanced Education. I'd like to acknowledge that we're here on the traditional territories of the Champagne and Aishihik First Nations and welcome Chief Allen and any other members of the council who are here. Thank you.

Mr. Silver: Hi. I'm Sandy Silver. I'm the Leader of the Liberal Party and the MLA for Klondike.

Mr. Tredger: Good evening. I'm Jim Tredger. I'm the NDP MLA from Mayo-Tatchun. I'm honoured to be here on the traditional territory of the Champagne and Aishihik First Nations in the beautiful village of Haines Junction. It's always uplifting to come to the communities, and Haines Junction in particular. I thank you for your hospitality. I look forward to hearing from you as you help us with our deliberations on the risks and benefits of hydraulic fracturing. Thank you for coming out.

Chair: Also present with us is Allison Lloyd, to my left, who is the Clerk to the Committee; Dawn Brown, who is at the desk at the front, who is helping with our registrations; and of course to our sound and recording staff members.

On May 6, 2013, the Yukon Legislative Assembly adopted Motion No. 433, thereby establishing the Select Committee Regarding the Risks and Benefits of Hydraulic Fracturing. The Committee's purpose, or mandate, is set out in the motion and it includes a number of interconnected responsibilities. The Committee has decided to fulfill its mandate in a three-phase approach.

Firstly, the Committee endeavoured to gain a science-based understanding of the technical, environmental, economic and regulatory aspects of hydraulic fracturing, as well as Yukon's current legislation and regulations relevant to the oil and gas industry. Secondly, the Committee pursued its mandate to facilitate an informed public dialogue for the purpose of sharing information on the potential risks and

benefits of hydraulic fracturing. The Committee invited experts to share their knowledge over four days of proceedings, which were open to the public and are all now available on-line.

Finally, the third stage of the Committee's work is gathering input from the Yukon public, First Nations, stakeholders and stakeholder groups. This is the purpose of today's hearing, and of course all of the other final hearings we've held in various communities across the territory.

After these hearings, the Committee will be in a position to report its findings and make recommendations to the Legislative Assembly. A summary of the Committee's activities to date is available at the registration table at the back. All of the information the Committee has collected, including presentations from experts on various aspects of hydraulic fracturing, is available on the Committee's website.

The Committee will not be presenting information on the risks and benefits of hydraulic fracturing at this hearing. The time that we've allotted will be devoted to hearing from as many Yukoners as possible.

In other hearings in other communities, we have limited the amount of time for a speaker to five minutes. We currently have three confirmed persons in attendance who have acknowledged that they wish to address the Committee. So I think we'll just let people have their say.

If you would like to present to the Committee, please register with Dawn at the back so that we can make sure that we have the names correctly. I want you to please note that the hearing is being recorded and transcribed. Everything you say will be on the public record and posted on the Committee's website.

I'd like to welcome everyone and ask that you respect the rules of the hearing. Visitors are not required to disrupt or interfere in the proceedings and would ask that we all pay due respect to the speakers.

First of all, Dave Weir — if you would like to come up and begin your presentation whenever you're ready, please.

Dave Weir: Thanks for coming to the junction. I appreciate you guys coming out. You can hear me all right?

Chair: Yes.

Mr. Weir: So my name is Dave Weir. I'm a husband. I'm a father. I have two boys. I'm a business owner. I also sit on the village council here. I'm here to speak today as a member of the public.

I was 17 years old when I moved out of my mom's house. Since that day, I have managed to support both myself and now my family by going to work — by working with my two hands. Along the way, I've also provided employment for dozens of other people. So I appreciate the importance of our economy.

As a small business owner, I feel the pinch when our economy slows down. Economic slowdowns have a real effect on my businesses and, as a result, a real effect on my family. I have two businesses — a construction company called Wild Coast Carpentry and a guiding company that specializes in high Arctic expeditions.

Since 1998, when I started guiding in the Arctic, I've been lucky to spend my summers each summer in the high Arctic. It's in the high Arctic that I first started seeing the impacts of climate change. In those first years when I came home at the end of the summer, I listened to people debate about whether climate change was real. Meanwhile, every summer I watched as hundreds of square kilometres of ice sheet disappeared and landforms literally fell apart.

This past May, news came that the west Antarctic ice sheet is in collapse. That ice sheet is now a runaway freight train — one that will release enough water to raise sea level around the globe by 15 feet — 15 feet.

Also this spring, Reuters reported on a recent government-commissioned report that concluded that climate change will cause 100 million fatalities by 2030. One hundred million lives will be lost due to climate change. Ninety percent of these deaths will occur in developing countries, although the vast majority of climate forcing has come from the developed world. In other words, our lifestyles and our decisions here in the west are killing innocent people in the Third World.

Ninety-seven percent of climate scientists are now in agreement that the climate change we are experiencing is anthropogenic — it's caused by us and it's directly related to our consumption of fossil fuels. Here in the Yukon, it seems we have chosen to move toward liquid-natural-gas-powered generators rather than diesel. We continue to debate the risks and benefits of fracking here in Yukon. Certainly these decisions are linked. Let's not be naïve. This is evidenced by the *Energy Strategy for Yukon* which states very clearly that the policy calls for the replacement of imported diesel fuel with Yukon's own oil and natural gas.

LNG is often touted as a bridge fuel and indeed, measured at the tailpipe, LNG puts less carbon into our atmosphere than diesel. What this equation does not include is the methane released during the fracking process. Methane is about 80 times more potent of a greenhouse gas than carbon. Many studies, including a recent one by Cornell University, have concluded that LNG has a greater impact on our rapidly changing climate than traditional fossil fuels. From a climate change point of view, we're better off burning diesel than LNG. Worldwide, the less fracking that occurs, the less we force climate change.

Climate scientists agree that if we are to avoid catastrophic runaway climate change — if we are to avoid that runaway freight train around the globe, we need to keep global temperature change below two degrees. That's a target that Canada has signed on to. So far, we have managed to increase the temperature by 0.8 degrees, with a further 0.8 degrees already guaranteed and in the pipe because of carbon already released. In other words, we are, in effect, 1.6 out of two degrees. We're getting close.

The question becomes: how much more carbon or methane can we emit before we break that two-degree ceiling? The answer is pretty simple to figure out: 565 gigatonnes is the answer. That's how much we can afford to emit — we as a

species can afford to emit — of carbon dioxide and stay below the two-degree threshold. But here's the kicker: fossil fuel corporations have 2,795 gigatonnes in existing proven reserves — five times what we can safely burn. The scientific reality is that if we are to avoid runaway climate change, we need to leave most of the proven existing fossil fuel reserves in the ground. It's an unfortunate reality, but that's what science tells us.

The bottom line here is that hydraulic fracturing for natural gas simply does not have a place in a jurisdiction that is taking climate change seriously. This is scientific reality. Now, I realize that political realities and scientific realities are often at odds. The fact is, however, that when it comes to climate change, physics trumps politics.

In Rome this summer, Pope Francis stated that we have an imperative to fight climate change. His words were, "If we destroy Creation, Creation will destroy us."

Also this year, Nobel Peace Prize winner, Archbishop Desmond Tutu stated that climate change is "the moral struggle that will define this time." It is our moral struggle. We have to put this puzzle together. Our local decisions on how we fuel our generators and whether to allow fracking is one that has implications that go well beyond our borders and beyond our generations. This decision is not just about our own selfish wants.

Now, I'm sure that some would argue that Yukon's contribution to greenhouse gases is so minor that we will have no realistic impact no matter what we do. What I would like to bring your attention to is that this argument is the moral equivalent of my 10-year-old stating, "Dad, everyone else was cheating on that test. What difference does it make if I do?"

For Yukon to choose fracking is morally indefensible. We know too much. To choose fracking is a clear statement that you believe that our privileged lives here are worth more than the disadvantaged lives of millions less lucky than we are. Choosing fracking is a decision that we will grow to be ashamed of. I would rather see us as a territory make a decision that we can be proud of. Thank you.

Chair: Thank you. Is Werner Rhein in the room, please? We're going to move on then to Rhonda Markel. Whenever you're ready, please.

Ms. Markel: I'd like to thank you for the opportunity to present my views on fracking. I do have serious concerns, many of which have been addressed at other Yukon public meetings in presentations that were given to your committee and from reports from a variety of organizations around the world.

My concerns include, but are not limited to, the following: to start off, the incredible amount of water required, which can range from 12 million to 80 million litres per well. Which Yukon water sources will be tapped and during which seasons? How will this impact the hydrological cycle? Water, as you know, is a resource that is not just nice to have, but that is essential for life, and water issues are becoming more important around the globe.

Many of the chemicals used in fracking are toxic and carcinogenic to humans, fauna and flora. Contamination of groundwater through leakage is of major concern as well. There is a lack of solutions for disposal of the wastewater that is laden with natural chemicals from deep down and from the fracking fluid itself. In the U.S., waste is typically stored in steel containers or in open pits and later injected underground in oil and gas waste wells. How long can we do this? How safe is it? What about earthquakes? There are also many unknowns, including how fracturing fluid waste works underground in different geologies and with different aquifer and groundwater situations. What about the impact on permafrost?

It's my understanding that the life of a well drilled from fracking is less than that of a conventional well. Currently in Colorado, they are drilling 1,000 new wells a month. As the impacts on wildlife and habitat are well-documented — and you've had many presentations on that — I will not speak to that, except to identify the need for the assessment of cumulative impacts. Often we look at everything individually and we do not look at the cumulative impacts, which is a requirement.

There are so many data gaps with respect to fracking that our ability to thoroughly assess the risks and therefore assess, mitigate and monitor impacts is severely limited.

I also agree with some of what the Council of Canadian Academies have said, and quote: "The burden of proof should not be on the public to show impacts, but on industry to verify that their claims of performance are accurate and reliable over the relevant scales in space and time."

There are numerous health and social concerns that have been eloquently spoken to by Drs. Hanley, Cleary, Badenhorst so I'm not going to repeat them. If the people want to see them, they're on the site that you guys have and they were really, really well-spoken. But to me, the observation that YESA does not address any health concerns is quite alarming as well, and that's a real gap in the process.

The big one that I was going to talk to was climate change and the production of methane, but I think Dave spoke really eloquently on that. I couldn't say anything more than he did because he spoke so well on the topic. I think the Yukon should follow the lead of some of the other provinces and be leaders, despite the lack of initiative from our current federal government. We have the opportunity and I feel that we really need to take that.

The decision with respect to fracking should not just be a question of cost-benefit analysis in terms of economics, but we also need to look at human health and both social and environmental impacts. We need to bring ethical values to the table when we make these decisions.

The new shift worldwide to green energy is producing economic gains around the world. A report from the Global Commission on the Economy and Climate said that all countries can build economic growth while reducing climate change risks. I challenge the Yukon government to do that. I urge the Committee to place a permanent ban on fracking.

My last comment is a question — and I realize that the Committee will not answer questions, but I feel that this is something that should be taken into consideration. That is, What are the implications of FIPPA — the *Foreign Investment Promotion and Protection Agreement* with China, where Chinese companies will be able to sue for unlimited damages against laws passed by any level of government in Canada that threatens their profits — in other words, legislations or laws on social, environmental or economic issues. I don't even know how that affects First Nation rights.

In agreement with what Dave said before, morally, I don't see how we can allow fracking to occur in the Yukon. Thank you for listening.

Chair: Thank you. The next speaker, please — Jim Sutton.

Mr. Sutton: Good evening. My name is Jim Sutton. I'd like to present what Chief James Allen has done for us. This is 2014. This isn't 1930. We live in a new house. It's a new beginning. We don't need LNG there because we're on electricity. This house there is a new design completely and about 90 percent of our houses in Yukon should be torn down and replaced. This house there has got four-pane windows. It's got a 12-inch wall on it. It's completely insulated. Today is what we should be living for. Yesterday, there, is something they should kick out.

I have the plans here — it's the first house here in North America, and it's a beautiful home. I believe that there should be more of these homes built. Thank you.

Chair: Thank you very much. Mike Crawshay, please.

Mr. Crawshay: I'd like to thank the Committee, first of all, for coming out to Haines Junction to listen to the concerns that this community has. I've got sort of three parts of my concern about fracking that I'd like to talk about.

The first one is the volume of water that's consumed in the fracking process. While we all may think that we have an abundance of water in parts of the Yukon, it seems strange to me why we would utilize so much of it to extract something that is nowhere near as valuable. We can live without natural gas, but we're not going to live without water. The volume of water used just doesn't seem like it's worth it for what we're going to extract in natural gas.

The second part of it is the unknown — because of patent rights — chemicals that are used in the fracking process. That, to me, is totally unacceptable. It's like back in the 70s, car manufacturers saying, "Well, we don't want to put" — sorry, not car manufacturers — fuel manufacturers saying, "Well, we don't want to tell you what's in the fuel because we don't want to give away our secrets." It turned out that it was not much of a secret. It was lead. It was proven to be a health hazard.

So just because they don't want to do it doesn't mean they can't be legislated to do it, and it's totally unacceptable to me that they can pump unknown chemicals into something that could very well be human beings' water supply in the future.

The third point is the cumulative impacts. Right now in northern Alberta, there is a caribou herd that is not doing very well in just about every place where oil and gas exploration is occurring. The population is decreasing, despite the fact that the Alberta government is killing a thousand wolves a year to try and minimize the predation effects on that caribou herd. The population is still decreasing and there is no resident hunting or First Nation hunting pressure to speak of.

The latest data suggests that the reason that the caribou herd is reducing is because of the cutlines allowing access to that boreal forest that the wolves didn't have that easy access to before. That's something that doesn't show up when the people putting the cutlines in are doing that. They don't have to worry about the cumulative effects of what those cutlines are going to do to a caribou herd. That scares me. I don't hunt the Yukon's biggest caribou herd, but the idea of a population — a wonder of the world — of a barren ground caribou herd in the Yukon being threatened because of a patchwork of cutlines for a short-term extraction, leaving the Yukon with a legacy of a greatly reduced or non-existent caribou herd, is another totally unacceptable effect if this process is allowed to continue.

Other people have spoken about the greenhouse effects, but those are the three points that I wanted to make. Thank you again for coming to Haines Junction.

Chair: Thank you very much. We don't have any other person registered on the list, so I'm going to ask if any person would like to address the Committee. Please come to the table and state your name for the record.

Ms. Hume: My name is Elsie Hume. I'm originally from Old Crow. I presently reside in Haines Junction. I have issues with fracking. I have serious issues with climate change.

A few years before I retired, I went to teach in Old Crow, my home community. We did — I presented climate change to my students, which were in grades six to nine. They took it so seriously. We had Bob Sharp come up and work with us. We did some — we examined some views from outer space. They saw how the river was changing and the lakes in Old Crow Flats were shrinking over ten years. So we did — we spent the whole winter studying.

Once the students had presented their finds and their concerns, we presented a climate change conference in Old Crow. Even the shyest student in my class spoke up. They were so concerned about what they saw. The next spring, we did a camp in Old Crow and lo and behold — yes, the water is down. I used to walk out here; I used to do this and everything. It changed. So we asked, what changed that? What do you think changed it? Well, of course everybody around the world had something to do with it. That was their thinking. Of course, I agreed with that.

The following year, we talked about oil and industries in that area. No, that would just destroy Crow Flats. That would destroy our life. I would never be able to live on muskrats, caribou and whatever — you know? It made them very, very worried. So we dealt — we just made some questions and

presented to the climate change conference. Nobody had answers, as we all don't — except that we had to reduce our garbage and fracking. So that is where it went.

Last summer, I had an opportunity to go back to Old Crow for two weeks. Those students are now 20 years old. They said, "Mrs. Hume, do you remember us talking about this?" I said, "Yes. What do you — what answers do you have?" They said, "You know what, there's less caribou. There's less muskrat. There's less of everything since we talked about it in 2004." I said, "What do you suppose caused that?" They said, "People not looking after our land. People are throwing garbage on the land. People are throwing their baby diapers on the land. People are throwing their cigarettes on the land and stomping it on our Mother Earth. I think that is what is causing this." I said, "Well, what do you think we should do?" They said that we need to talk — to educate the younger ones like you did to us, ask questions and let us live and figure it out. But it's not going to — it's too long of a process for that.

So you know — when they saw the destruction to the lakes in Crow Flats, that was the most eye-opening thing for them — that their lakes are so small now, you could see on the map — from an aerial photo — that it has decreased about two feet or three metres.

So now they are exposed to the Internet and what have you. This summer, like I said, when I was up in Old Crow, I asked them if they do visit the Internet and find out more about their Crow Flats and what do they predict for the future.

Well, we're coming up to an election in Old Crow and I'm very, very curious to see some of them step up to the plate to see if they can stop this. As a government of the Yukon, I totally expect you — all of you — to work against climate change, work so that we don't have any more disasters. I want you to keep fracking out of the territory.

We have a young chap from Fort Nelson — I'm sure you're all aware of his name. He's a Behn. He's a lawyer. He's researched everything that oil companies have done to his land and how it upset his whole community, his whole life. I think he's up in the territory doing his second round of awareness. I would like you guys maybe to take him on into your government to educate people.

It's just not one person that makes a difference. But there's us in the community that don't get any information. You all can go out and talk your political talks, but I really want some sincerity, some commitment and honesty that you are all here to protect the Yukon from fracking and take the First Nations culture and system to heart, because we are — our ancestors lived it. For years, they've been trying to teach you guys — all of you — to make Yukon and Canada and the world to live our culture and our way. I don't know what else to say, but I sure hope you all take it to heart, whatever you heart tonight from this community. Mahsi' cho.

Chair: Thank you. John Farynowski, please.

Mr. Farynowski: I apologize for not having a prepared line, but there's really only one thing that I want to talk about. I moved to the Yukon in the '60s and I worked for

Public Works Canada, in charge of all geotechnical investigations until '79. From '79 until '91, I managed a consulting engineering firm in Whitehorse, J.R. Paine, which did geotechnical investigations all over the Yukon. After I moved here to work for Property Management for the government, I was 15 years in municipal politics, both as mayor and councillor, and therefore travelled to quite a few places in Canada where fracking has happened and is happening — and some of the comments that I heard at the meetings.

The biggest thing that I wanted to discuss was the permafrost thawing. The permafrost — I don't know that very many people are aware of it, but on the west side of the Richardson Mountains — really, the Yukon territorial border — the permafrost on this side of the border is all at 0 degrees Celsius. It's borderline permafrost. On the Northwest Territories side, it's minus 15. You can just about do anything there and get away with it. In the Yukon, as soon as you disturb the permafrost and any water starts running into it, it thaws.

When the highway — I did all the geotechnical work on the Dempster Highway from Ogilvie River to the border — or I was in charge of that crew. Some of the things we saw were the oil companies had put in a winter road — not very carefully — and cleared out the overburden. A year later — we only were allowed to work from December 1st until spring thaw, which was usually April — that's when we did our work. We went in there with rubber track and Nodwell vehicles and we did everything we could do avoid disturbing — because we were drilling for the centre line of the highway to be built.

The oil companies built a road to a rig site where they were sloppy, and we followed that road one winter right to Eagle River bridge from what used to be Parkin camp — Chevron oil had — at about mile 170 of the Dempster. It was perfectly good and it took us just about to where we wanted to go and we did our work at the bridge site and we came back out. Next year — a year later only — we went back — because unfortunately, somebody decided to change the location of the bridge — so we had to do it again. We went back and we said, "Well, we'll just follow that road route again. It's easy to get in." You could not follow that road. It was thawed out permafrost. It was 30 feet gullies in places that we couldn't even cross with our track machine. That's how quick it happens.

Andrew Philipsen, who was killed — who was an ex-minister and the law centre is named after — the highway, when it was first opened — he was killed with a truck on the Dempster Highway when he ran into an area that had settled and the road disappeared and he drove into this big pit. Some of those areas, the road crews weren't that careful with, because the plan was to always dump on top of the overburden, but some places, they got a little sloppy. This was one of those places.

I can assure you that if you pump any water into any well in that north part of the Yukon, you will have consequences

that you wouldn't believe. Once it starts, it just snowballs — as soon as the water — the river routes will change and everything will change. There's permafrost in all of the Yukon. I mean, if we drove by Drury's farm where there's permafrost in the bumps, and it's settling. It was 60 feet down. At that time — this was in the 70s as well. At that time, they said, "Oh, it's no problem. It's 60 feet down; we don't worry about it." Well it took that long now, and this is what we're paying for now — because we just stripped it and built a road on top of it.

All over the Yukon and Haines Junction when they did — I worked for the engineering firm that did the forest main from down by the restaurant up to the sewage lagoon — when we did that drilling through the bush, it was all frozen ground and it was all borderline permafrost. We suggested that they strip it and leave it until it thaws and then dig their trench. Well it was thawed the next year. They could dig their trench and there was no more frost.

So any pumping of water into those areas is going to have disastrous effects. When I think about the Yukon, one of the reasons I stayed here and brought my family here was because of the pristine — the water that I used to drink out of Tagish Lake just with a glass while I was fishing and the headwaters of the Yukon and how nice and clean it was — then the disaster when they realized that hey, Whitehorse is pumping raw sewage and so Lake Laberge was getting a bunch of stuff.

So some of the old happenings were because of ignorance, but we can't use that excuse any more. We know what some of this will cause. I've seen the town of Lacombe — I talked to the mayor back 15 years ago — where their water wells were all useless because they're half natural gas and everything else because of shallow fracking. So they say, "Oh, don't do shallow fracking any more. Let's go deeper." Well, one of the states says the earthquakes they're having now are probably because of that deeper fracking. Our water well here is 1,000 feet deep. So that's not shallow fracking any more. That's deep fracking. So you could destroy this artesian well that's giving you an unlimited supply of water and probably use up some of the aquifers like happened in Lacombe and those areas — and now they're taking water out of the Red Deer River and cleaning it up and buying water from Red Deer with a pipeline to Lacombe. It's ridiculous, some of the things we have done to our environment and ourselves.

I think that it has to be given serious consideration on what you do in this Yukon — and especially in the high permafrost areas — because we're only seeing little pieces of it, but I've also seen it where — like that road built, a year later, everything's gone. Some of the places — the Eagle River Bridge — the north abutment is sitting on 60 feet of pure ice. Off the auger, we would fill a glass and it was pure water. It's a north-facing slope. The piles are frozen into it. If you route that river — change the route someplace because you did something further upstream or downstream, that whole bridge will disappear. Half of the road will disappear if

you start fooling around too much, or if they pave it or do something foolish like that.

So I just wanted to bring that to the attention — that they should — there isn't very many people left from the 70s who are still working in the geotechnical field and I don't know if there are any left in the Government of Yukon any more. There was some a few years ago. But all that information should still be somewhere there when Public Works Canada turned over all the records.

Like I say, I have 35 years of permafrost work in the Yukon and I've seen buildings destroyed — Faro school was one, because it didn't follow the rules — and in Mayo, the First Nation — basement of their building dropped three feet and the furnace and everything was hanging from the ducts because it thawed the permafrost below — because they did a test hole 15 feet deep and said, "That's good enough. There's no frost here." The frost was a little deeper and it only took five years for that one.

So I think we have to give it some serious thought before we do anything — a moratorium, at the very least. However, I've heard other speakers say, "You know, we're not going to ease the pollution by changing my furnace to a gas furnace from an oil furnace. Do we need to do that in the Yukon for 30,000 people? Do we need to destroy this whole area?" That's probably what could be happening. I thank you very much.

Chair: Thank you. I'm going to try this — I hope I don't mess up this name. Ellen Bielawski.

Ms. Bielawski: I don't like speaking with my back to people, so I just want to say — the first thing I want to say is, I want to — oh, you're welcome — I have to turn around in a minute — but I really wanted to say thank you to Chief Allen and to Mayor Crawshaw because, as Elsie said, some of us are trying hard to live and work together. These kinds of things are bigger than all of us, and I really thank you both for being here. I also want to thank all my neighbours — some friends, some maybe not so much — but I'm really happy to see us all here — and I thank you guys for coming too, but I really think it's your job. That's what we got you in there for, right?

Okay, I will be very brief. I recently had occasion to peer-review research from Ohio State University. It compares the First Nations' experience of colonialism, loss of resources, loss of land with the current experience of white middle-class voters in the State of Ohio, a swing-voter state in the United States, with fracking. What it shows — although you hear much about fracking and the environment, and I agree with a good deal of it — what this research shows is that clearly fracking is not only bad for the environment, it is bad for communities. It is bad for people. It is bad for civil society. It leads to a loss of engagement in the public process, a loss of belief and participation in the public process, in the exercising of personal responsibility through good governance. It damages civil society. I'd be happy to provide you with the reference.

I'd also like to say my partner can't be here tonight, but we'd represent two votes if we did vote directly against fracking. Thank you.

Chair: Brent Liddle, please.

Mr. Liddle: Yes, hello. My name is Brent Liddle from Haines Junction. I can hardly believe that we're sitting here in the community talking about fracking. You know, I've gone through a lot of land use planning meetings here over the last 30-plus years and fracking was certainly never on my long-term agenda. I think it's a sad comment that we have to be gathered here today for yet another meeting. Judging by the number of times I've been to meetings that have been ignored, unfortunately, I hold serious doubts that the public input will be taken seriously. I'd like some guarantees from the board that if this meeting turns out as I expect it will be — largely against fracking — that that is clearly stated in the minutes. That's all I have to say. Thank you.

Chair: Thank you. We don't have any other registered speakers at this time. Is there anybody who would like to address the Committee?

Unidentified speaker: I would.

Chair: Thank you. Please state your name for the record.

Ms. Buzzell: My name is Carol Buzzell. My maiden name is Hume. I was born in 1945, lived the first six years of my life in Dalton Post. We didn't have garbage. We utilized everything we had. We lived off the land and with the land. We didn't have pollution. After living down there, I moved — the family moved to Haines Junction. I've seen a lot of changes — a lot. Now we have piles of garbage we don't know what to do with.

My question to you is reporting to the Legislative Assembly — I'll quote — the report will include the Committee's "findings, if any, regarding the potential risks and benefits of hydraulic fracturing and whether allowing use of this technique is in the public interest" and the Committee's "recommendations, if any". Can you please explain what you mean by, "if any"?

I say no to fracturing. It's time we cleaned up our act. Thank you.

Chair: I'm going to ask if there's any other person who wishes to address the Committee. I'm going to suggest then that we take a 15-minute recess and maybe after recess, we've had a coffee and something to eat, maybe someone else will want to come forward and address the Committee.

Ms. Buzzell: Are you going to answer that question — "if any"?

Chair: Thank you for that. That was a direct quote from the motion, as established by the Legislature, and no, I don't have an answer for you. That was just a quote from the motion.

Ms. Buzzell: Will you be able to provide the communities with an answer to this — "if any"?

Chair: The term "if any" is in the motion in the event that the Committee is unable to reach consensus or agreement

or indeed any resolution. So it's a type of a catch-all phrase, if you will.

Ms. Buzzell: (inaudible)

Chair: I would ask you to come back to the microphone please so that your words can be recorded.

Ms. Buzzell: So what you're telling me — that this is just a quote — so you don't have any answers for my question. If it's in the best interest of the public and the Committee's recommendations, if any, regarding any steps that should be taken to responsibly regulate hydraulic fracturing, should its use in Yukon be allowed — I'm not happy with that term, "if any". From what I'm reading from this is, it's going to go ahead anyway.

It's no to fracturing.

Chair: The Vice-Chair, Ms. Moorcroft, is going to respond to that.

Ms. Moorcroft: Thank you for your comment. The simple answer to your question about the wording of the motion is that the motion was worded to allow for all contingencies.

The Committee has a responsibility after it concludes the public hearings and the hearing of all the evidence from various presenters to see if it can come to a resolution on what it will recommend, so we have made no decision as yet. The wording was just to allow for all contingencies.

I'm afraid I'm just going to have to leave it at that. The Committee will continue to hear from the public until September 30, and we do have a number of public hearings in communities throughout the balance of this week and we'll take your comments into account along with all the others. So, thank you.

Chair: Thank you for that. We are going to recess now for 15 minutes please.

Recess

Chair: Hi folks. Can we resume now? Please load up your coffees — and if can get the Committee members to rejoin us at the table. Thanks everyone. I invite Chief Allen to the table please.

Mr. Allen: My name is James Allen. I am Chief of Champagne and Aishihik First Nations. As chief, I welcome you to our traditional territory, but that is all officially I am going to do tonight as chief. I would like to speak as a private citizen, if anybody can — Currie, can you speak as a private citizen without being a politician?

I'd like to speak as a private person, and anything I say will hopefully not be held against my First Nations. We will be giving an official position paper to the Committee next week, before you have closure on your hearings.

I would like to maybe just tell you a story, because I may look young, but I have been around. I used to work for Yukon lands and forest services. I was stationed in Dawson and I was stationed in Old Crow, and we did a lot of land use. In those days, Yukon lands and forest services also looked out for land use inspections and land use issues. I have been up in the

Arctic and I went up as far as Shingle Point to watch them ferry some fuel bladders across the ice because the fuel ships that had come in were frozen in the bay at Herschel Island — so we monitored the fuel bladders being brought across the ice. I was around when there was a lot of oil activity going on. I was also up in Eagle Plains. Mr. Farynowski mentioned Parkin base. I know it. I slept in the trailers there overnight when I was going up to do some land use inspections in that area, plus there was an airport there too that flew us out to Herschel Island and Shingle Point and that.

I was trapping one winter up there with Charlie Abel, who was former chief of the Old Crow First Nation, and he was happy that the oil companies were doing some work there, because I don't think there were any impacts that were evident. This was when everything was happening up there. There was a big boom on oil exploration and we didn't have to cut lines, which was great because, when I trapped down here, I always had to cut a line to set out my traps. Up there, we followed the seismic lines. So, you know, we moved our traps from one seismic area to another whenever we trapped out an area. So in a sense, he liked that. He didn't have to cut his lines. Also, we stayed in a cabin that was given to him by one of the oil companies that had moved out of that one site that they were at, and there were a number of — they call them Christmas trees, where the valves — the natural gas was capped off, so you could see them every once in a while, wherever they drilled.

Back then, you talk about climate change — well it was pretty damn cold sleeping in a tent and also in the cabin up there — and one of the coldest Yukon winters that I spent, anyhow, and I vowed never to go out trapping up there again — but anyhow, I — so when people think about climate change, if you're sleeping in 50, 60 below, then you wish it was warmer, but I guess the reality is that it is changing the world. As 30,000 people, I don't know how much of a change we can make, as people.

But I also remember the cold winters when my dad — we lived at the farm up here, just three miles up the road. My dad worked at the farm, and he used to build a little fire with kindling in kind of a metal wash basin and put it under the truck to warm up the oil to get the truck running when it was 60 below.

There are always two sides to every story, and I guess I read the *Farmers' Almanac* and it says that — in it, their theory is that there's a cycle of 50 years that the Earth warms up and then cools off, and this is probably — I mean, it's been measured when people do ice measurements, that our planet has heated up and it has cooled off naturally. But when you have a lot of scientists saying that climate is changing — you know, I believe it's changing, but is it natural?

And I think, personally, like, I still trap. I still live on the land. I like — I don't want to see that pristine wilderness change by any stretch of the imagination, so I'm not for fracking, but I think there are two sides to every story, and when you hear and see things in the media that say that fracking is evil and is bad, there's the other side of the story

where some people say, well, the stories are exaggerated and that people in the southern areas where the fracking is happening are saving their farms because of the income that they're receiving from a wellhead being on their farmland, where it — where they could have lost their lands because of the time of the economy's downturn, there aren't a lot of farmers making a lot of money.

When I say there's two sides to every story, there — I don't want to jump on one wagon or the other wagon, because to me, if you go too far one way, then your blinders are on and you only see one thing. I like to be able to see everything, but I want to know the facts, and to me, personally, I don't know all the facts. I'm not sure — because I do know that we have an economy and our people — I don't envy you when you say that you are the Minister of Environment but also the Minister of Economic Development, because a lot of times those clash. Like, you know, if you're — today, we as people, and even First Nations, we depend on economic development to put food on our table. We hunt, as well, which is great and I wouldn't — I'd hate to see — if anything, that fracking does harm the animals that we hunt and we eat, the fish that we harvest, but the reality is we have to work and we have to make money to survive today.

So I think whatever decisions you make, you have to base all of that on what you hear and the reality of things. I mean, we could do everything to prevent fracking in the Yukon, but if LNG is being brought in from some other place, then we don't have the jurisdiction from where it's brought in. I mean, Casino mine is going to — from what I hear — is going to have electric generated by LNG, so there's — what do they say? — 40 truckloads of LNG coming in to Casino mine, and that's a reality. Do you put roadblocks up to stop them, or — you know, I mean, it's always a choice, I guess, for all of us. I think there's — we have to come up with solutions.

I think Pete brought up one solution — to have energy-efficient homes to reduce the cost of energy, the cost of heating. You know, there's the company that owns Yukon Electrical now. What is it called?

Unidentified speaker: ATCO.

Mr. Allen: Yeah, ATCO. They're a big company. Why can't they look at wind generation or a different generation of creating power? Thermal — I mean, they make a lot of money, so — and they're a big company, so why not put some money toward researching the other possibilities. I mean, those windmills on top of Haeckel Hill — I mean, I haven't seen those fans running for very long and I don't think there was enough data that was gathered during that period — and who's doing the project? The electric company that's making money from the way they're doing things, they don't want to change.

So it's like the oil companies. I mean, you know, there's a lot of research that happens in how to run different types of engines, but they don't want to see the industry that they are in impacted by an engine that may run on water, or hydrogen, or any other — other than oil and gas. That's the same with the electric company looking at this project of windmills. I

think you have to have an independent company — an independent source to find out whether wind power is possible or not. I know my friend, Frank Turner, has his water heated on his roof and he has solar panels. These are costly for an individual, but you know, I think if government is really serious in reducing greenhouse gas emissions and that, they'd put more money into looking at ways of reducing the use of fossil fuel.

But I think the reality is — I don't know how many people drove here, but you use — you're emitting fuels — fossil fuels — into the air. These lights that are burning, they're — you know, they're created somehow, and I don't think any way that you look at creating energy is always going to run into backlashes, roadblocks — because if the hydro company wants to build more hydro dams, do you think the First Nations in different areas that they oppose these dams are going to sit around and wait, because when the hydro dam was built at Aishihik, we weren't organized as a government. We weren't organized even as a people. So it was easier to build these hydro dams back then. Today, if you want to flood somebody's land, there's going to be a lot of cost to that and a lot of meetings like this.

But I guess I don't have the answers, and I think we all have to look at, if we say we don't want a certain type of energy, then we have to think of solutions too, as people. What's the alternatives that we can suggest? You know, you can bring out all the facts of why something should happen — shouldn't happen, I mean — but you also should come with an alternative as to what is possible. What are some of the possible answers that we can bring up, as well as bringing up the problems and the — I don't know — the negative impacts.

So anyhow, that's my personal thoughts and I don't have my crown on as a chief — or my war bonnet — but anyhow, thank you. Thank you for listening and for coming up.

Chair: Thank you very much. Will Jones, please.

Mr. Jones: Thanks very much for coming out to listen to the citizens of Haines Junction. And, from what I've heard tonight, I think we're pretty — most of us are very clear on what our priorities are, very clear that fracking is not good for the Yukon and that it's not about fracking, it's not about the stories in the news, it's about a huge back story underneath the surface, that we're none of us really sure of, and I wish — I think it'd be a really great public service if all of you were able — I understand, given your responsibilities and your ethical limits due to being MLAs, that you can't tell the whole story — but I think this is not about fracking. It's about a much bigger issue, and that is how a vision for developing the Yukon and the fracking agenda is one that is all about massive development and all the benefits going south and Yukoners being left with the mess, Yukoners being left with the fractured and divided communities.

I think we all know that's what this is about: a cheap power source to power huge industrial development — something that I don't think, if you told the whole story, there'd be many Yukoners lining up supporting you.

I don't know how that can change, but how — you know, how can the politics reflect the truth, reflect what the aspirations of massive companies, whose benefits go to a tiny minority — how can we do politics differently? I hope maybe you can think about that and make that part of your discussions and part of your recommendations to the ministry.

But I just want to state very clearly that I am absolutely opposed to fracking. It's a bad idea. We're in an earthquake zone, for God's sake. Pumping thousands and thousands of litres and thousands and thousands of PSI into the ground — they're having earthquakes in Oklahoma, you guys.

We need to follow the examples of other jurisdictions that have banned fracking and protect our water, protect the future — a sustainable future, for the Yukon. Thanks very much.

Chair: Thank you. Meghann Willard, please.

Ms. Willard: Hi there. My name is Meghann Willard. I am not a geotechnical engineer or an expert of any kind. I'm just a regular citizen of Haines Junction in the Yukon. I moved here eight years ago for a year, just to try out a job and see if I liked it or not. I moved here from southern Ontario, where you can't walk out the door without tripping on another person. I came to Haines Junction for work and fell in love with the place immediately, and the people — they're amazing — and especially, though, the environment and just the — I'm not going to call it pristine wilderness, because I spend a lot of time out there and I see it's not pristine. There's trails cut everywhere and there's old garbage from years ago — highway camps, that kind of thing. But so far, right now, it feels very different from northern B.C. If you've ever been in northern B.C. in the last five years, it's crazy.

I don't see personally, from a social perspective, how fracking is going to benefit the population of the Yukon to a huge amount. I think that ATCO is starting to do a program where people can actually generate their own power and sell it back to the grid. Is that something that's happening?

For myself and my husband, we feel pretty strongly about this, and we live in the Alsek Valley. I don't know if anyone here has been there. I know there's some people that are my neighbours in the audience here, and it's like a wind tunnel there, so wind generation feels like maybe it's something that, if people feel strongly about helping to decrease their footprint and using less energy, they can take on some personal responsibility to help out the grid. But as Will was saying, the LNG project feels like it's more about getting some of these bigger projects going.

I just — I don't agree with it. I know that private citizen Chief Allen was talking in sort of a measured perspective, trying to look at things from a bigger picture, which I think is also important, but we also just need to remember that the Yukon now, although it's not a pristine wilderness — areas of it are — we do need to try and keep what we have the way that it is as much as possible, or make it better. It just feels like we have so much to lose and very little to gain for the large population of people.

I also like the point that John Farynowski made about 30,000 people live here and do we really need to make such a

huge impact for such a small population and such a huge area? What else did I want to say?

I wasn't going to say anything. I actually left and came back because I was ruminating and I knew I wouldn't be able to sleep unless I said something. Regardless of whether fracking comes to the Yukon or not, at least I know that I've said something. My dad used to say that if you see one mouse, you know there's a hundred other ones out there. I see that you guys are keeping track of how many people show up to the meetings and which communities and how many people actually get up and speak. I would think that it would be really important that everyone here, if they don't agree with fracking in the Yukon, come up and just say that so that we can show lots of witnesses speaking in Haines Junction. Thank you.

Chair: Thank you. I'm going to ask Anthony Basic please to come up.

Mr. Basic: Hello. Thank you for coming. I wasn't going to speak prior to coming here, but I've heard a few people talk and they've said some good things. I think if you're going frack, you've got to be very concerned about your water sourcing. You've got to be concerned about your water disposal and of course the chemicals used in fracking. I think we're all aware they could be rather hazardous to a human's health.

But on the other hand, we have to look at, why are we here discussing the potential for fracking? It's a bigger picture and it's obviously — Canada, the last I checked, I believe, at the end of 2013 produces roughly 3.2 percent of the world's energy and we consume, at that time, about 2.9 percent of the world's energy on a daily basis. So we're — Canada as a country is becoming very close to being an importer of energy. North America as a whole, including the States, is a net importer of energy. We are not self-sustaining. We require additional reserves to produce the energy.

For example, just as we broke there, a lot of people went and had a bite to eat. For every calorie we eat, we need 10 calories of energy to produce that. So it's a question of energy in North America, as foreign sources are becoming harder to come by — and this relates to Dr. King Hubbert, a Shell geophysicist back in the 50s who properly analyzed a reserve of energy and would predict when it would peak. So he extrapolated that over the years and it is now — he thought the world would peak in 1995. It turns out it was in 2005, talking conventional oil production, and it was delayed a little bit only because of embargoes in the 70s and we did go through a little bit of conservation.

So we need energy. North America especially is running out of really good, cheap, plentiful energy. In 1998, a barrel of oil — West Texas Intermediate — would cost \$12; Brent was around \$8. In 2014, now, it's — today I think was \$92, \$93 and it's been as high as \$150. One of the reasons it's come down from \$150 is through demand devastation. During the peak boom in the States, during their housing bubble, up to about 2006-07, they were consuming about 22 million barrels a day. That's currently down just under 18 million barrels a day. Plus, through the production of energy — be it shale gas

or shale oil — that has now added about one million barrels a day through domestic production that we didn't have prior to 2000, I'll say.

Shale gas and shale oil has been around for a long, long time. It's very poor quality reservoirs, obviously. It's much better to drill a well somewhere and produce it for 20 or 25 years as opposed to shale gas and shale oil, which is not really a long-term developmental strategy for energy. It's a stop-gap strategy; it's an economic strategy; it's people with deep pockets who want to put that money to work to get a meagre return in today's world, which could be seven or eight percent.

We are now seeing in the Bakken field in North Dakota — where I believe the annual legacy decline rate is about 62 to 70 percent right now. That means they have to drill thousands of wells every year just to maintain that production before they can add any. In the process of fracking, it takes enormous energy. I think someone mentioned the MPAs or the KPAs — the amount of pressure that is put down the wellbore. These things are done with massive engines that run on petroleum products — the hauling of water, the injecting of water, trucks. So lots and lots of energy goes into producing shale. The question really needs to be asked is, what energy is really coming out of it?

We know and the world is aware that in 2004 or 2005 — I am not sure of the exact year, but it's about 10 years ago now — the world oil industry spent more energy looking for energy than it found. I do know that there are some major corporations out there — the Exxon Mobiles and the Chevrons and that — that are not able to replace the reserves annually any more. But these are not the big companies that are really going into the shale play. They are a little bit more mid-tier companies. Now we are starting to see them go bankrupt. They are borrowing massive sums of money to continue to produce energy out of this formation.

In the Yukon, I am not sure exactly how much reserves are there and what we're talking about. I am pretty sure it's not a game-changer, or else they would have been here a long time ago producing them, much like they did in Alberta in the '40s and '50s and in B.C. maybe in the last 30 years. I can't see there being too much there. There is probably some energy there, but how much energy is needed to produce that? Then your lasting legacy, if it's an economic play, you're probably not going to be looking at producing more than 10 or 15 years. I can't see it going on much more than that.

So what you're looking at with a shale well in production is a decline — proficient energy production anywhere between eight and 18 months, with a dramatic decline within 18 months. By "dramatic", I mean you are going from producing 100 barrels a day to producing 10 or less in less than two years. This is why the decline rates are so massive — so that they have to continue drilling just to keep production up.

It is an issue that, as North Americans — because we are being forced to be North Americans in some ways — we are not self-sustaining as we sit here now and as we speak here now. We are relying on foreign countries to produce energy so

that we can bring it to our shores. Like I say, Canada, with the Kitimat line they want in there to take tar sands oil to the coast — well, there's another pipeline going back to the tar sands. That's going to be filled with condensate to dilute the tar sands to make the viscosity good enough so that you can even put it in a pipeline and transport it somewhere to a refinery. Ratios of energy input to energy output is what is important. Shale gas probably has a very poor output. You would be breaking even at best. You might make a little bit of money in the short term, but I think in the not-too-distant future you would probably go broke from producing shale gas.

You can look at the Marcellus, you can look at the Bakken — there's fields in Texas now that have been around for 10 years and we have seen the ramifications of having this massive decline rate where 60 to 70 percent of your energy is spent replacing the energy you already produced. That's something to consider from a government perspective.

I think other speakers have adequately mentioned the benefit. What is the benefit and how can you tell the Yukoner what the benefit is going to be by fracking that field or that reservoir? What is the royalty going to be? An old term we used to have is wellhead to wallet. How much does it cost you to buy the land, drill the well, produce the well and then how much to market it and get it going? What do you get back at the end of the day?

I think that's what a lot of people don't know — and I don't either — what exactly that direct benefit would be to a Yukoner to want to produce that in the first place, knowing it's not a long-term prospect. At least so far there is no shale showing itself to be a developmental play versus an economic play — somewhere to park your money for 10 years, make a little money, and churn it and walk away. There are all kinds of stories about health effects from fracking in new areas. Obviously they are new areas. Shale rock is not the hardest rock in the world, so when you put these enormous forces down there where the fissures go into waterways — aquifers are getting polluted. Alberta — around Grande Prairie, for example, you can probably light your tap water on fire. I am sure people have seen that in Pennsylvania and other places. That's just something to think about — putting at risk the land for really what is going to be a short-term boost of energy.

So we get into the alternatives. What shale has done is allow us to bridge the gap after we have kind of produced out our really good, efficient energy — the ones where people were able to drive their Hemis in the '60s and '70s and stuff like that. The natural gas especially goes into pharmaceuticals, goes into our plastics and into our everyday life. It has given us a better life in a lot of ways. Our foundation in the west has been built on cheap, plentiful energy. As I have already outlined, it is no longer getting that cheap. It's only because of shale production that we've still got a \$100 a barrel. Historically, it was probably about \$14 a barrel up until the '00s there, or the first Iraqi war.

I think the only other thing I would like to add is — I know someone was saying, you know, energy-efficient homes — coming from Calgary, we saw a lot of people knock down

old homes and build a new one. It was kind of misallocation of capital where you could have probably not spent all that money to buy the property and build a new house. A fraction of that money probably could have went into it to upgrade the existing structure. So I'm not so sure I would be knocking down houses and building new ones as a way of saving energy. I guarantee you are not going to save anything in energy, because you will spend it building the new house.

So I think that's kind of the benefits. We do know that the benefits of natural gas production are enormous. We all live in — it's all around in this room right now — energy, natural gas. I read somewhere that if we wanted to replace hydrocarbons — which is the proper term for it — hydrocarbons — we would have to build 30 nuclear plants a year for the next 50 years at a cost of \$3 billion a plant. We are not doing that. We should have been doing that 15 years ago. So I believe that we are in a loop — a feedback loop where when we had cheap, plentiful energy and we understood, as per Dr. King Hubbert's calculations, that we were going to come to this point in time of peak oil, which is real because it happens on a reservoir level and it can be extrapolated to a world level. It's there in black and white, really. But we decided that we didn't want to do that and that we needed a pickup truck to go to the grocery store. We needed more energy coming from cities. We are so car-centric in a city. You see four lanes of traffic, bumper to bumper, and you will be hard pressed to find a vehicle with two people in it. We are not talking nice little commuter four-cylinders. These are big vehicles with V8s and V10s people are using to commute with.

So I think if you want to look at it from a moral perspective, we will have to dramatically change our lifestyles if we don't want to produce more energy locally. That's not saying that fracking is not necessarily the way to go. I am not really against it and I'm not really for it, because it's a contentious issue, but I'm not so sure that the people are really ready to sacrifice their lifestyle for not doing it. There have been some jurisdictions that have been against it — and rightfully so, and good for them, because, like I said, the water is so important. Water is so important, especially in the world today — freshwater. To use it to produce energy is starting to become an equation we have to moralistically look at, because even today we are not paying our true price for oil and gas. Last time I checked anyway, a litre of gas was way cheaper than a litre of milk.

There's a problem there in terms of how many litres of water were used to produce that litre of gas. It's enormous. I know that in Alberta, water level flows compared to all-time natural levels — like the river north of Athabasca; I think it's Athabasca River actually — whatever that river is, it's something like less than 30 percent less of its all-time natural flow rate. That is how much water has been taken out of there.

I've seen rivers sucked dry to produce oil. They come back, I guess — if you get enough rain, they'll come back — but they will never come back to where they were 50, 60 or 70 years ago without being used to produce. Energy in, energy

out — I am not so sure fracking has more energy out than goes into it. That would have to be, I think, well-detailed to a government that it's worth okaying fracking because there actually is going to be something there.

I don't — there are lots of examples you can go look at now. Like I say, companies are now going bankrupt. Companies that are still in it — their balance sheets are getting out of whack because they've got to borrow so much money to continue drilling and keep it going. At the end, somebody is going to be left with that legacy of — you can drill from one pad now, but it's going to be kind of a scarred landscape, because you're still going to have to move these big trucks around. If you're up on the tundra moving these big trucks around — they are huge now — the fracking trucks. They are nothing like they were 20 or 30 years ago. They are absolutely huge now.

The water — of course we know water is heavy. It is one of the heaviest — what is it, a mineral — things on the planet is water. It's extremely heavy, so you're going to have water trucks going back and forth. I just don't know if it's something — I don't know, again, if it's something that can really — it should be done in the Yukon yet without more clarity to the benefits of even bothering. I know trucking it in from Fort Nelson or somewhere like that — well, Fort Nelson is not exactly a young developmental play. It has been around for a long time now and I'm sure they are using enormous amounts of water to produce a little bit of energy. That game only goes on for so long and then the oil companies are bankrupt. They walk away and they leave the mess behind for the citizens to chip in and pay for to clean up.

I know in Teslin — I was talking to someone — and there is contamination there just from putting the highway through. There is contamination there from hydrocarbons. It's not something that is going to — even after it's produced out, it's still going to leave residual effects. So I think from a government perspective, granting the right to do this would require some pretty hard numbers to say it's worth it and what the direct benefits would be to the Yukoner.

Again, there are only 35,000 Yukoners, so there are places around North America with way more population that they are doing this around. That's where we're seeing clusters of cancers and different types of ailments that are affecting humans. Thank you.

Chair: Thank you. Derek Wolfe, please.

Mr. Wolfe: Hi. Good evening. Thank you for having me. I did not plan to speak tonight, but these issues — I just thought of a personal story that I wanted to tell in relation to how I associate my life here and my relation to the environment.

I don't want to take too long — again I didn't know what I was going to say, but I am a cancer survivor. About 18 years — and I don't tell many people about this and I can't believe I'm talking about it in public, but I'm working on writing a book about it. It had a profound effect on my life in a very short amount of time.

I will just speak of it. At one point, when I was going through that, I had a tumour in my jaw muscles and it closed my jaw for about six months. I couldn't eat and I lost a lot of my body weight. At one point where I wasn't eating and receiving radiation treatment, I sort of had what I remember — and this is going to sound crazy — I had an out-of-body experience. At that moment — and I'm saying this to you all as individuals, just because I do understand that you are making a decision or you have the power to make that decision. What this did to me — this experience at that moment in time — was in a split second I was embarrassed about everything that I ever worried about as a human being in my life. I was in college at the time, so there was rent and car insurance, these types of things — financial things. They became very insignificant to me in a split second. I don't have much more of a description of that experience, but it's something that's wanting me to express this to you, because — I'm not trying to lay guilt or anything like this to you as individuals, I'm just trying to speak of it so you can think a bit deeper — maybe in a more larger perspective — a big-picture perspective, per se — for our environment, our Earth and our planet.

After going through that, I will speak shortly of what I experienced. I was in a city. It was like I was opened up and could see everything around me. It seemed to me that human beings were essentially sort of hurting each other in cars. They had no regard for where their food came from. I would go into grocery stores. I couldn't eat. People were in a rush, grabbing what they could. I would just look at the shelves and I couldn't believe what we had in front of us to use. A lot of us didn't know where it came from.

The long and short of that — I was quite upset with people and things. I had to do a lot of contemplating and I ended up — essentially it goes to kind of — I guess a spiritual place for me — not religious — but anyhow, I had to have a lot of compassion for people and I kind of had a feeling that people didn't really understand. A lot of people don't really know or have time to even think about these things, so I had to have a lot of compassion for people and sort of saw us all here on this Earth in these bodies, doing our thing.

Aside from that, it sort of divided a lot of things in life. For me, it was either, you know, what human beings — our laws that we've made around economy and money, where we get what we live from — and those things have been around for a long time. There were other ways of monetary gain and things like this before we developed dollar bills and these types of things — or it was the laws of nature or the higher power. So there was man's world and then the natural world.

Now it seems that we see dollars in nature. Unfortunately, in the past, I believe — and what I can understand from history — is that human beings lived in harmony with nature, because they respected nature first. I think that now we tend to overlook those little subtleties in our everyday life and perhaps we all go about our life and do what we do according to our social environment and our environment. I suppose my point is that I wanted to express that because I really hope

people take really a lot larger look at what decisions we're making as far as how we treat our environment and how we get our needs met from our environment.

I don't know a lot about fracking. I don't know what exactly it does or what it can do to our environment, but it just seems to me to be kind of — we are at a point on the planet where we are very overpopulated on the planet. There's a lot of people on the Earth. There's a lot of things that we all need. I have heard water come up as one of them and that's a very important thing, but I was hoping by saying this that we could all perhaps look at the bigger picture and maybe look at other ways to fuel our economy and be perhaps leaders with the resources that we have here by making decisions that are — I think about these things a lot. It's hard to change the way the world works, but there has to be somebody who steps up and takes the step forward in doing something perhaps that is perhaps a little different.

I just felt like I should talk about that for some reason. It's not for me, but it was for all of you just to consider. I don't know if it had an impact on you or not, but just consider that — I guess the impact of even just a foot stepping on something on the ground or, you know — like I've heard a baby diaper — you know, this type of stuff — just these little things that impact our environment that didn't impact our environment 100, 200, 500, 1,000 years ago depending on where we were.

But I know in First Nation culture that a lot of their people respected the Earth first and gave back to it before they took from it or if they took, they gave back. Why people were allowed to live for so long on this Earth — perhaps that's why we were allowed to live. It really deeply concerns me how we live now.

I know I cannot change the world, but maybe I can have an impact on all of your cognitive capabilities here, as you are leaders in this territory. It deeply concerns me how we go about our life now and how life — how we evolved before now — before 100 years ago per se — before a lot of technology got involved and oil and things like this. I mean, I work out on the land. I'm a firefighter — wildland firefighter and I've worked as a guide — and I was born in Juneau, Alaska. I've seen a lot of the country and I do see the changes, and personally, I don't have a conclusion for why these things are happening — if it's actual global warming or climate change — but it does seem to say that something is changing.

I just wanted to express these things in hopes that we would all think about just how we treat our planet and for what reason we do what we do. We're probably all thinking of the benefits to society and to people and what our needs are as far as how we live now, but I'm just asking that maybe we can please consider some alternative ways and look at the big picture and look at the future and look at the past as well. I think I'm finished, so thank you.

Chair: Thank you for that. Cindi Cowie, please.

Ms. Cowie: Hello. Thank you for coming out to Haines Junction.

I will make this quick. I work at the school. I have two children. I'm a wife and an individual in the world. I would just like to say that I think water is the most precious resource that us Canadians have. I had the fortunate experience to go to Haiti for two years with my children and watch millions of people with no clean water. I believe that there should be absolutely no fracking in the Yukon Territory. There's a lot of facts out there — a lot of scientific facts out there — and we need to listen to those people who have studied it.

That's all I want to say. Thank you.

Chair: Thank you. Does any person wish to address the Committee?

Mr. Gade: Good evening. My name is Dieter Gade. Thank you very much for visiting our community and allowing us to speak. As many others, I wasn't really planning to speak but I was encouraged by all the excellent comments and thoughts that our community addressed here tonight. It's difficult to add something to all those great points.

One specific area of concern concerning oil and gas development in general, but fracking specifically, is the development of roads. We heard that the longevity — or short-leivity, I guess — of a well is very short — 18 months, I believe. That means we have about a hectare of cleared area — a road that leads to this development. It will be used for 18 months, then new wells will be drilled.

Unlike forestry, where roads can be closed and harvested areas can be re-established, it is my understanding or concern and understanding that those wells — when they are capped — still need to be accessible for maintenance, for frequent monitoring.

I'm concerned that we will be seeing a situation as we see in Alberta that over time, will we see a crisscross of linear features, of roads, basically destroying the wildlands corridor. Roads are proven to be very detrimental to wildlife — to grizzly bears — not only grizzly bears, but all kinds of creatures and some of the issues have been addressed — but also to water because roads are channeling water and we will see erosion. We see fast runoffs of water after a rain, which can cause floods. The rivers swell and we see the negative effects it can have on downstream communities. We also see siltation of the rivers because of the erosion that the runoff will cause from the roads, which then negatively affects the fish population.

That is a very strong concern, that we may see a slow start of the development, but not considering the end — and in the end will, like in many places of Alberta, we see a network. We see basically a beautiful natural environment turned into a prominent industrial landscape. Thank you.

Chair: Please.

Mr. Morton: Good evening, my name is Miles Morton. I'm a resident of Haines Junction. Thank you for coming out to hear our concerns.

As I listened to this tonight, I've heard a lot of values expressed. It's my hope that the Committee will capture all of those expressed values and that you include those in the final report. I am specifically concerned that this may be heard or

interpreted in a very narrow economics frame alone, and I don't think that's appropriate. When a public meeting is held to gauge public concern and interest and values, I think it's necessary to capture all of those values.

I have heard some interesting points made here, including — Anthony had some excellent points around the economics of the situation. I'm going to address that, because I think in this decision-making process, there will be some people who will be focused entirely on the economics and that may out-balance all of the values that are expressed.

I'm not an economist, but one thing that strikes me as odd about this is there's a desperation, I think, in fracking. It's expressed both by its opponents, but also proponents itself. There seems to be just the fact that so much capital is required to go after ever-diminishing returns on the energy extracted — it suggests a kind of desperation.

What has puzzled me is, why the rush on this? I don't recall a groundswell of public opinion in the Yukon calling for fracking. I get the feeling that the drive for this is coming from elsewhere. What puzzles me is, why? Why now? Hydrocarbons are a finite resource. As a finite resource, they're diminishing day by day. My basic understanding of economics is that what that means is the commodity will increase in price. Why on Earth would we be wanting to extract this at the lowest price it's going to fetch on the world markets in the foreseeable future? It doesn't make sense to me.

There's a feel about this hearing and discussion — it puts me in mind a little bit of, I think, the situation in England in the 1840s. They built a tonne of canals. They thought this was the way to go. They invested heavily in this and then the railways came along and that didn't happen anymore.

The previous speaker — no, two speakers ago — spoke about the historic low prices of gas in North America. This has been a good thing, I think, if you've been living that experience. I grew up in a place where gasoline cost twice as much. I think there's a liability when energy is so cheap and the liability is that it stifles innovation. It stifles the need to look for other resources and I think that we're actually at a disadvantage here because we've had this kind of blinkered view of what's possible. I think many other countries and jurisdictions have been looking at energy shortages for a long time and they're actively working for getting around those and coming up with innovation. I think — I would hope — that our focus in the Yukon is for innovative ways to meet our energy needs and not simply go into canals because that's what's we've always done.

Thank you very much.

Chair: Thank you. Does any other person wish to address the Committee?

Ms. Osborne: My name is Debbie Osborne. I've lived in the Yukon all my life. I just have nothing more to say because everyone said it so well. I just want to say no to fracking in the Yukon. Thank you.

Chair: Thank you. Does anybody else wish to speak to the Committee?

Ms. Johnston: Thank you for this opportunity. My name is Kari Johnston and no to fracking in the Yukon. Thank you.

Chair: Thank you. Does anybody else wish to address the Committee?

Ms. Delisle: Thank you. My name is Suzanne Delisle. I have lived in the Yukon six years. I say no to fracking. Thank you.

Chair: Thank you. I want to thank all of the people of Haines Junction for being such gracious hosts today. In the absence of additional speakers, I think we'll bring this to a close. I'll just ask another time if there is anybody else who wishes to address the Committee.

Thank you very much then. I do want to tell you though that the Committee will be taking written or e-mail submissions until September 30. Our website address is available at the back table. If this format wasn't comfortable for you then please submit your written comments.

Thank you everyone. Good night.

The Committee adjourned at 7:32 p.m.