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SELECT COMMITTEE REGARDING THE RISKS AND BENEFITS OF HYDRAULIC FRACTURING

Public Hearings: Evidence

Thursday, September 25, 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: Gill Cracknell
John Streicker
Colleen McCarthy
Anne Middler
Deanna McArthur
Erich Stoll
Skeeter Wright
Allison Furniss
Rick Griffiths
Ted Garland
Liz Reichenbach
Gordon Gilgan
Corliss Burke
Gordon Smith
Reinhard Saure
Mary Amerongen
Frank Patterson
Jimmy Johnny
Bob Jickling
JP Pinard
Gerald Haase
Astrid Vogt
Gary Bemis
Michele Genest
Davina Harker
Lee Mennell
Daphne Mennell
Sean Smith
Jim Boyde
Jan Davies
Werner Rhein
Gerard Tremblay
Annie Pellicano
Anne Smith
Winnifred Peterson

EVIDENCE**Whitehorse, Yukon****September 25, 2014 — 5:00 p.m.**

Chair (Ms. McLeod): Good evening, everyone. I am now going to call this hearing of the Yukon Legislative Assembly's Select Committee Regarding the Risks and Benefits of Hydraulic Fracturing to order. This public hearing is scheduled for 5:00 to 8:00 p.m. tonight. For those of you who do not have an opportunity to address the Committee tonight, you have the option of attending a public hearing being held on Saturday, September 27, from 1:00 to 4:00 p.m., and we remind Yukoners that they may also provide their input using e-mail, letter mail or by using the comment form on our webpage.

We are going to start with the introduction of members of the Committee. I am Patti McLeod. I am the Chair of the Committee, and I am the MLA for Watson Lake.

Hon. Mr. Dixon: I am Currie Dixon. I am the Minister of Environment, Minister of Economic Development and minister responsible for the Public Service Commission. I am also the MLA for Copperbelt North.

Ms. Moorcroft: Good afternoon. My name is Lois Moorcroft. I am the MLA for Copperbelt South and the Vice-Chair of the Committee. I also serve as the Official Opposition critic for Highways and Public Works, Justice and Advanced Education. Thank you for coming out this evening. I want to acknowledge that we are here on the traditional territory of the Kwanlin Dun and Ta'an Kwäch'än First Nations. Thank you all for coming.

Mr. Silver: Hello. I am Sandy Silver. I am the MLA for Klondike and the Leader of the Yukon Liberal Party. I would like to thank the Kwanlin Dun for letting us to host this event in their longhouse. Thank you.

Mr. Tredger: Good evening. Thank you for coming into this room on such a sunny day. I appreciate your presence. I would like to acknowledge the fact that we are on Ta'an Kwäch'än and Kwanlin Dun traditional territory. I am honoured to be here. I would like to thank the citizens of the Yukon for coming out tonight. I look forward to hearing from you and hearing your input to the Committee and then doing our deliberations on the risks and benefits of hydraulic fracturing. Thank you.

Mr. Elias: Good evening. My name is Darius Elias. I am the Member of the Legislative Assembly for the Vuntut Gwitchin riding. I want to thank all of you passionate and caring Yukoners for participating in this process over the course of a couple of years. I also want to congratulate my colleagues because this is by far the most challenging select committee that I have participated on. We have done a lot of good work, learned a lot and have grown together. Again, I appreciate all of those Yukoners who have participated so far and shown that they care for our territory. We look forward to hearing from you tonight and I thank you very much for coming.

Chair: Also present is Allison Lloyd, the Clerk to the Committee, to my left; Helen Fitzsimmons, who is helping with the registration and keeping us organized; and to our sound recording and transcription staff. You will note that there is a bit of an echo on these microphones, so when you come to present, please speak closely to the mic. Thank you.

On May 6, 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 now available on our website.

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, indeed, all of the other hearings held in communities across the territory. After these hearings, the Committee will be in a position to report its findings and recommendations to the Legislative Assembly.

A summary of the Committee's activities to date is available at the registration table. All of the information that 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. This time is allotted and will be devoted to hearing from as many Yukoners as possible.

Individual presentations to the Committee will be limited to five minutes. If there is time remaining at the end of the presentations, presenters may be invited to speak for longer. If you would like to present your opinion to the Committee, please ensure that you have signed in at the registration table. Please note that this hearing is being recorded and transcribed. Everything you say will be on the public record and posted to the Committee's website.

I want to welcome everyone in the audience tonight and ask that you respect the rules for this hearing. Visitors are not allowed to disrupt or interfere in the proceedings. Please refrain from making noise, including comments and applause, and mute all your electronic devices. Thank you very much.

Our first speaker, please — Gill Cracknell.

Ms. Cracknell: Thank you for this opportunity to speak to you all. I represent CPAWS Yukon. I am the executive

director. CPAWS Yukon is opposed to fracking in our territory. Fracking continues our dependence on fossil hydrocarbons. Yukon should be planning for renewable energy sources and a sustainably based economy. We have an abundance of creative and passionate people in the Yukon. We can and should lead the way for northern Canada. We should inspire the rest of the country with our leadership.

Other countries and jurisdictions have already shown the way. Nova Scotia recently added their name to the list of jurisdictions worldwide that have banned fracking. Denmark has committed to having a fossil-fuel-free energy sector by 2050. This is not frivolous. It is a conscious, proactive response to the economic, environmental and health-related issues facing us today.

The Yukon already has the policy direction in place through Yukon government's energy strategy and the climate change plan to set a course for a sustainable Yukon based on renewable energy sources. This is the leadership we need in the north. We are already seeing the impacts of climate change, and this is only the beginning. We do not need to frack.

In terms of our water and our land, fracking has been shown to use unsustainable volumes of water. Fracking contaminates vast quantities of water. Water is one of our most valuable resources. It sustains our populations and our ecosystems, and we must protect it.

Public health and safety is vital to Yukoners. Water contamination due to fracking puts Yukon communities and untold numbers of birds and animals and their habitats at risk. The Northern Cross 3D seismic program at Eagle Plains shows how even the exploration phase has significant impacts in terms of access roads and seismic lines, and this is only the beginning. It is the exploration phase.

Crossing the border into B.C.'s Horn River Basin, you get to see the massive impacts that fracking and the oil and gas industry is having on the land, water and wildlife, and the lives of local people. Animals have been shown to avoid areas where active exploration and development is taking place, and the network of roads, drilling pads and other infrastructure creates disturbance and fragmentation on a massive scale, destroying connectivity. Predator use of seismic lines has been shown to put significant pressures on already vulnerable populations, causing, for example, caribou population crashes in northern Alberta.

The list is long and probably largely undocumented as untold numbers of birds and animals are displaced or die due to disturbance and fragmentation of their habitats. The much-needed connectivity between protected areas from western Canada south through the United States will be threatened.

The socioeconomic front doesn't bode well either. The B.C. oil and gas jobs make up 0.01 percent of all jobs in the province, and oil and gas revenue is only 0.1 percent of B.C.'s revenue.

Fracked wells are known to have limited longevity, with rapid declines in production. We are long past the heyday of high energy returns on energy investment. Fracked wells are

simply not as economic as conventional oil and gas. What this means is that we spend way more energy finding oil than we did 40 years ago, and we spend way more energy recovering that oil. Compared to pre-1970s figures, we now get about half the amount of energy out of the ground for every unit of energy we spend recovering that oil from the ground. In a word, we need to find another way.

Chair: Thank you, Ms. Cracknell.

Ms. Cracknell: Thank you very much.

Chair: John Streicker, please. You will notice that I am holding up this sign when you have one minute remaining.

Mr. Streicker: Hi everyone. My name is John Streicker. I am a city councillor, but I am not here as a city councillor. I want to just first of all establish that my other background is as an engineer and climate change scientist, and so I am here to speak to you in that capacity — as a climate change scientist. Our climate is changing, and this is one of those things where we have a lot of confidence that this is happening, and we also know that the reason it is changing is because of emissions of greenhouse gases, and this is sort of critical to the point that I want to raise for you here tonight.

First of all, thank you to the select committee for what you are doing and for offering to listen to the public.

The way it changes really depends on how strong those greenhouse gases are. We measure everything against carbon dioxide and the emissions of carbon dioxide, but methane, as it turns out, is a much more potent greenhouse gas. In the neighbourhood of — well, it depends because it has a different lifecycle. If we look at it over 100 years, it is 35 times stronger; if we look at it over 20 years, it is 85 or 84 times stronger. So it is really important that, if methane is coming to the atmosphere, we try not to let it get into the atmosphere. It would be better to flare methane than it would be to just let it get into the atmosphere. This is the problem — and natural gas, largely, is methane.

When you think about what is happening now, the natural gas that we are trying for when we use fracking is stored in these shales — in these rocks that are porous, but don't have a connectivity between those pores. If it weren't stuck there, what would it have done? When you think about how it got there in the first place over geological time, normally what would have happened to that gas is it would have made its way up, either stopped by a capstone or, more often, it would make it out into the atmosphere.

That methane exists in a cycle that goes back and forth between the growing things, the atmosphere, the soils, the ocean, and it stays in that cycle. For the last several million years, we have seen that methane stay fairly constant, but it has gone up and down with our ice ages. We have watched it, and recently what we have seen is that it is going up off the charts, just like carbon dioxide. So it is very important, given that we in the north want to not have short-lived climate producers — like black carbon and others — that methane is also a short-lived climate producer. So we need to be very careful about allowing it to escape out into the atmosphere.

We have confidence that this is a problem gas. We have confidence that it is creating deep issues for us, but what we don't know about right now is how much methane we will release into the atmosphere when we frack. We are sure that some gets out, but we don't know exactly how much — and this is where the debate is in the scientific literature — but, more or less, what we are saying out there is that the range is anywhere from a half percent to two percent of gas per volume. So, if — whatever we get up out of the ground, some of it is escaping.

You can work back, and where we have a lot of confidence is in understanding the effect of that methane against the effect of other climate change forcers. What we can do very quickly is to work backwards and say, well, if I added some methane into the atmosphere, where would it change from, say — what would be the difference, for example, to compare it against diesel? It turns out that it's very, very small amounts of fugitive emissions would already make it worse than diesel than others. So, 0.4-percent emissions would make it worse than diesel, because we have no confidence in understanding how to keep that methane, once we fracked, in the ground, nor how to guard against fugitive emissions.

The risk is too great. We are very likely to be creating a deep problem for ourselves, for our country and for the world, and so it is my recommendation to you that you do not allow fracking in the territory.

If for some reason, if the government hears back from you as a Committee and the government decides that you should go forward with fracking, then you would need to try to regulate it. I just don't know how that's possible. I am watching in the literature for that, but my recommendation to you as a result is to not frack. The net result would be to exacerbate climate change and that would be a large mistake for us. Thank you.

Chair: Thank you. I am going to ask people who are providing their comments from a written copy if they wouldn't mind providing a set of those notes to Hansard, just to make sure that we get the record correct. Thank you.

Colleen McCarthy, please.

Ms. McCarthy: Good evening, ladies and gentlemen. Thank you very much for this opportunity to speak. I would like to read from an article written by Dr. David Suzuki with contributions from Ian Hanington, senior editor of the David Suzuki Foundation Science Matters blog. If you would like to see the text of this, it is on www.davidsuzuki.org in the blog section. This was written in February 2014, with some additional information that I have added by myself from some research that I have done. The article is entitled, "Trading water for fuel is fracking crazy."

"It would be difficult to live without oil and gas. But it would be impossible to live without water. Yet, in our mad rush to extract and sell every drop of gas and oil as quickly as possible, we're trading precious water for fossil fuels.

"A recent report, 'Hydraulic Fracturing and Water Stress', shows the severity of the problem. Alberta and B.C.

are among eight North American regions examined in the study by Ceres, a U.S.-based non-profit advocating for sustainability leadership.

"One of the most disturbing findings is that hydraulic fracturing, or fracking, is using enormous amounts of water in areas that can scarcely afford it" — and not just using it, but poisoning it, and then re-injecting it back into the Earth, effectively removing it from the water cycle.

"The report notes that close to half the oil and gas wells recently fracked in the U.S. 'are in regions with high or extremely high water stress' and more than 55 per cent are in areas experiencing drought. In Colorado and California, almost all wells — 97 and 96 per cent, respectively — are in regions with high or extremely high water stress, meaning more than 80 per cent of available surface and groundwater has already been allocated for municipalities, industry and agriculture. A quarter of Alberta wells are in areas with medium to high water stress.

"Drought and fracking have already caused some small communities in Texas to run out of water altogether, and parts of California are headed for the same fate. As we continue to extract and burn ever greater amounts of oil, gas and coal, climate change is getting worse, which will likely lead to more droughts in some areas and flooding in others" — as well as continuing the unprecedented melting of the glaciers.

"California's drought may be the worst in 500 years, according to B. Lynn Ingram, an earth and planetary sciences professor at the University of California, Berkeley. That's causing a shortage of water for drinking and agriculture, and for salmon and other fish that spawn in streams and rivers. With no rain to scrub the air, pollution in the Los Angeles area has returned to dangerous levels of decades past.

"Because of lack of information from industry" — thanks to lax regulations regarding such reporting — "and inconsistencies in water volume reporting, Ceres' Western Canada data analysis 'represents a very small proportion of the overall activity taking place.' Researchers determined, though, that Alberta fracking operations have started using more 'brackish/saline' groundwater instead of freshwater. The report cautions that this practice needs more study 'given the potential for brackish water to be used in the future for drinking water' and the fact that withdrawing salty groundwater 'can also adversely impact interconnected freshwater resources.'

"Although B.C. fracking operations are now mainly in low water stress regions," — for now — "reduced precipitation and snowpack, low river levels and even drought conditions in some areas — likely because of climate change — raise concerns about the government's plan to rapidly expand the industry. The report cites a 'lack of regulation around groundwater withdrawals' and cumulative impacts on First Nations lands as issues with current fracking."

Just because the current operations are in low-stress regions now does not mean that, thanks to climate change, that will stay that way.

“Ceres’ study only looks at fracking impacts on freshwater supplies, and offers recommendations to reduce those, including recycling water,” — which we haven’t figured out how to do yet — “using brackish or wastewater, strengthening regulations and finding better ways to dispose of fracking wastewater.”

In my opinion, however, at this point, they are feature theoretical fixes to a huge problem that should not have to exist in the first place. Besides the water-use issues, this drilling method “comes with other environmental problems, from groundwater contamination to massive ecosystem and habitat disruption” to the release of other more powerful greenhouse gases such as methane and small earth tremors — all done in the name of short-term gain.

With regard to the small earthquakes, from an article by technology specialist, Tina Casey, the Seismological Society of America cites significant increases in seismic activity linked to increased fracking and frackwater wastewater operations in Colorado, Oklahoma, Texas, Arkansas and Ohio, among other states.

Chair: Excuse me.

Ms. McCarthy: Yes. Am I out of time?

Chair: You are out of time. Are you just about finished?

Ms. McCarthy: Yes, but I will just say that I am against fracking and I’m against LNG in the Yukon. I will leave it there. Thank you very much.

Chair: Thank you. Just another reminder that if you have not already done so, please register at the back registration table if you wish to address the Committee.

Anne Middler, please.

Ms. Middler: My name is Anne Middler and I’m an energy analyst with the Yukon Conservation Society. YCS commends the Yukon Legislative Assembly for acknowledging the importance of this issue to Yukon people by creating the all-party Select Committee Regarding the Risks and Benefits of Hydraulic Fracturing. Thank you to the Committee for all of the work that you have done since and for sharing all of the information that you’ve received.

The Yukon Conservation Society has weighed the evidence put in front of you throughout this process. Our conclusion, our position — and we hope that you agree — is that fracking is not in the public interest. Fracking cannot be safely regulated, and therefore, fracking must not be permitted in the Yukon.

The environmental risks — or harms, more accurately — are serious, undeniable, and irreversible. The body of evidence is vast and new evidence emerges every day showing that oil and gas development is bad for the environment. I won’t go into detail about massive water removals and contamination, habitat fragmentation, noise and air pollution from flaring and other industrial activities, increased heavy highway traffic, induced seismicity, poor well integrity and the further destabilization of our climate from methane emissions. I won’t go into detail about that, in the name of competitiveness, industry has succeeded in

convincing governments to cut red tape, gut regulations, bypass environmental assessments and all but eliminate environmental monitoring and enforcement to make exploitation of this finite resource easier.

The fact that Yukon has joined forces with the B.C. Oil and Gas Commission does not instill any confidence that the hard lessons learned by and from our neighbours would allow us to do things differently. Clearly, best practices are designed for the benefit of industry and not for the environment or for communities. I trust that many others here will remind you of these things.

What I will focus on is the economic development argument for fracking. It seems the only thing going for fracking — the only case to proceed with shale gas development — is the promise of revenue and jobs, but what we are learning from B.C. is that these promises do not bear fruit. The revenues from fracking in B.C. have not materialized in B.C. government coffers. This is because the deals struck by B.C. with companies allow five years of well production before the company pays any royalties. The sharp decline rate of shale gas wells means that most of the methane from a well is tapped within five years. By that time, companies are eager to drill new wells to start the five-year clock again and further avoid paying a fair price — any price — for our public resources.

As it happens, only 0.1 percent of B.C.’s revenues come from oil and gas royalties. If we think that the Yukon can break our dependence on Ottawa’s transfer payments, squandering our natural capital by encouraging the fossil fuel industry to take hold is not a smart way to do it. The few people I have talked to who support fracking want jobs and economic development and many people who oppose fracking want jobs and economic development too. The Yukon has vast renewable resources we could harness to stimulate a renewable energy economy, create jobs, meet our energy needs, achieve energy security, reduce our reliance on fossil fuels and address the climate crisis.

YCS has a vision for the Yukon’s energy future that is shared by many. It includes appropriately scaled low-impact renewable energy projects distributed around the territory. Incremental additions of wind, hydro, solar, geothermal and biomass energy projects will help reduce fossil fuel consumption in the transportation and space-heating sectors which currently are our biggest greenhouse gas emitters. But before we build low-impact renewable energy projects, we need a real commitment to energy conservation and efficiency. This can be an economic driver. We need to use less and waste less so that our demand for energy, however it is generated, is reduced. When this fracking exercise is finished, we look forward to a public discussion on how we will realize this vision.

More and more, this reality is becoming accepted. The Government of Nova Scotia banned fracking. The New Brunswick election was just won on a promise to ban fracking. Here, the Council of Yukon First Nations unanimously passed a resolution declaring the traditional

territories of the Yukon frack-free. Many individual First Nations have passed similar resolutions.

Thank you to the Legislative Assembly for initiating this process and thank you to the select committee. The Yukon Conservation Society trusts that you and our government will make the right decision.

Chair: Thank you.

Deanna McArthur, please.

Ms. McArthur: Thank you. This is my first-ever experience in speaking at something like this.

In March of this year, I and a small group of people decided to begin sharing information about fracking with friends and neighbours and Yukoners in general. We took this action because we believe that for a democracy to function well, it is critical that we as citizens be informed and aware so we can protect and defend ourselves against corporate and government agendas that may not be in our best interest.

I strongly believe that fracking is a very destructive practice anywhere and, in the Yukon, it would go far to damage and ultimately destroy much of our beautiful part of the world. We now have clean water and a wilderness that supports an incredibly diverse and fragile ecosystem that would not survive in an environment damaged by hydraulic fracturing.

In the past six months, I have knocked on several hundred doors, talked with Yukoners about their knowledge of and feelings about fracking and if it should be allowed in the Yukon. I was so encouraged by the majority of those I talked with — individuals who do not want that practice allowed here.

On the downside though, I was saddened by the cynicism of so many who, in spite of their feelings on the subject, wondered if it mattered much one way or the other what they said or signed, as the decisions have already been made by those in power — a very sad commentary on how citizens of the Yukon see the actions of our current government, but they may be right. Perhaps our Yukon government has no real power as they must do the bidding of our federal government and in turn, our government in Ottawa has chosen to follow directions given by corporate oil and gas.

I too wonder if voters have any real say in what happens in our territory. As we have seen in the Yukon, even when huge numbers of people state their position on an issue, individuals in power can disallow whatever they choose on the basis of whatever whim they decide upon. Unfortunately, the electorate can do little or nothing about it — at least not until the next election.

Among other things, I have learned that to varying degrees, but without exception, where fracking has had a presence, the land, water, animals and people have been left worse off than before the rigs arrived. Of course, oil and gas corporations are very pleased with their profits, tell us what excellent work they have done and how very safe fracking is for us and the environment. Some workers will have more money for a while, but much of that new money, instead of helping to build healthy communities, more often leads to

greater social problems. Governments will certainly boast of prosperity and jobs, but what they won't say is that in reality, very few jobs are actually created for locals, the flood of money is transitory and fracking as an industry offers only an illusion of stability. What is permanent is the devastation left behind when the rigs move on to a new area.

In Germany, on some days this past summer, they were able to get around 60 percent of their energy needs from solar sources. In winter, there are days when wind provides almost as much. By 2020, they anticipate getting more than half their total energy from wind and solar. They have taken major steps to reduce their dependence on oil and gas so that they and the rest of the world, including us, are better off. If Germany is able to do that for almost 80 million people, could we not work in that direction and provide more for our 37,000 Yukoners by using more wind and solar sources and no LNG?

Speaking of dependence, diesel fuel has served us well for many years and new diesel units could have continued to provide the half to one percent to one percent of energy needed for peak demand. Certainly, we did not have to go to LNG to provide the same amount of energy that now will cost far more, both to taxpayers and to the environment. Clearly, Yukon Energy was not familiar with the old saying, "If it ain't broke, don't fix it." Unfortunately, it would appear Yukon Energy saw replacing the aging diesel generators with LNG generators as an opportunity to actually create a dependence on LNG here in Yukon, but for what reason we do not know.

It is so terribly wrong and short-sighted to allow the industrial use of clean water which, after being used only once for fracking, is made permanently unusable and will never again sustain the life of anything. We must protect our water from that happening. We know fracking is done to produce a greenhouse gas. We know fracking contaminates enormous amounts of water. We know the large amounts of methane released into the atmosphere from this practice is accelerating at an already rapid rate. We know that all gas recovered from fracking will be used and add to an already perilous situation for all of us on Earth. I believe it is extremely critical that we do not permit fracking here.

Chair: Thank you, Ms. McArthur.

Erich Stoll, please.

Mr. Stoll: Thank you, Chairman, for the five minutes. Yukon concern — yes and for all of us. Fracking is breaking the rock structure to get the gas, so what about our drinking water or what about life after 40 years of fracking? We will be gone. Yes, our children — they have the pleasure to clean up — maybe too late, no more money — all gone, goodbye. So the outsider will come here, steal or rob the land and run away, just like an Anvil. Nothing for the people — only stronzo — that's Italian; I can't say it otherwise.

I believe we need a moratorium of at least 15 years to listen what's happening in this world of ignorance and not knowing. Gas will always be here. It not going to rust. Our children perhaps will get a lot more money if in need and use in limit amount. But today, my dear friends and others, if we do nothing now and swallow Pasloski's call for fracking or

Stephen Harper — I think that's where it come from — we will be guilty to our children for not standing up today because we are nothing. No, we must fight those frackers come hell or high water because it's a monster. Thank you.

Chair: Thank you.

Skeeter Wright, please.

Mr. Wright: Yes, my name is Skeeter Wright. This Committee has heard from a lot of Yukoners and, as I understand it, you have a collection of reports and studies about fracking. If you don't have a copy of the Ohio Report on the Investigation of the Natural Gas Invasion of Aquifers, I have an executive summary and a citation for you.

I have also the peer-reviewed journal article, *Radionuclides in Fracking Wastewater* for you. There are some other reports from peer-reviewed journals for you as well. Many others are publicly available. They all refer to the problems generated by fracked natural gas. Fracking is also used for oil production, but the associated problems are a bit less.

I expect you will be presented with or find reports indicating an absence of proven cases of aquifer contamination by fracking fluids or natural gas. Well, there are some documented cases such as the one in Ohio and in Alberta, and a search for other incidents in the United States will yield some more. However, legal liability is constrained by legal technicalities and hairsplitting. You've heard how a person is acquitted of a criminal offence due to a technicality. Legal liability has many technical constraints, so the regulatory and court records on fracking-related contamination are sparse.

Technicalities also are a constraint on what regulators are allowed to say. The report commissioned by the Government of Nova Scotia is a case in point. However, that report also notes the importance of social licence, something politicians become acutely aware of as an election nears.

Some fracking proponents say, "Don't worry. Regulations will reduce the probability of fracking problems." However, the Ohio aquifer contamination case shows regulations reduce, not prevent accidents. All those people now have water trucked in from an area that is not contaminated.

How much bottled water will the Yukon government buy for us, for how many years, if a permitted fracking operation contaminates the aquifer below Whitehorse, Haines Junction, Carmacks or Watson Lake? Regulations cannot prevent frack fluids or natural gas outside the drill hole casing from seeping through fractured rock into the aquifer. The purpose of fracking is to shatter the rock outside the drill hole casing and no regulation can control what happens there. Contamination can be by either the fracking fluid or the natural gas, or both.

I commend the Committee for holding hearings in most of the communities about this. We've recently witnessed the Yukon government's Energy Corporation twice successfully prevent important information from coming forward. I'm glad this Committee is taking a different approach.

An overwhelming number of Yukoners have made it very clear in these hearings — many by signing petitions and many by public demonstrations — that we do not want fracking in the Yukon. We don't want to have to take showers with bottled water that is shipped from someplace where fracking is not allowed. Thank you.

Chair: Allison Furniss, please.

Ms. Furniss: Hello everyone. This will not be long. I just want to say I'm Allison Furniss. I was born literally across the river at Whitehorse General Hospital. All I want to say is that I, as a citizen, I oppose hydraulic fracturing and I really hope that this Committee will hear that message from everyone. It's what I've been hearing since I've been here and I think most people stand in solidarity against fracking here. I just really hope that the Committee can take that forward and really listen to that message that everyone is saying here today. Thank you.

Chair: Thank you.

Rick Griffiths please.

Mr. Griffiths: Thank you. It is appropriate that these select committee hearings coincide with the United Nations' summit on climate change. UN Secretary-General Ban Ki-moon said climate change is the defining issue of our age. It is defining our present; our response will define our future.

What an apt comparison to the issues confronting Yukoners. Our response to hydraulic fracturing will define our future, our relationship to the land and its people. Do we say no to a dangerous, harmful process that will only escalate greenhouse gases and climate change or do we bury our heads in the sand and pretend nothing will affect us?

The overwhelming majority of Yukoners who have addressed this Committee by speaking at meetings, through on-line comments, hundreds of letters to our newspapers, public demonstrations and the largest petition in Yukon's history say we don't want hydraulic fracturing here — so no social licence for fracking.

The reasons are manifest but, in brief, fracking contributes to climate change by continuing our dependence on fossil fuels. It requires vast quantities of water which can never be returned to the hydrological cycle. Leakage from wells is a yet-unresolved problem, says the Council of Canadian Academies. The oil and gas industry commonly claims that fracking has no verified impacts on groundwater, but the council says "peer-reviewed literature refutes this claim." Longer-term impacts may "not yet be evident."

Shale gas development alters the land and local hydrology" and may affect migration patterns and predator-prey relationships.

The council affirms that the health risks of shale gas development are not well-studied. This examination is brief and incomplete, but it highlights the key finding of the Council of Canadian Academies that there is, "scientific uncertainty" because "the data about potential impacts are currently neither sufficient, nor conclusive."

This panel of scientists, commissioned by Harper's former Environment minister, tells us there are many unknowns about hydraulic fracturing.

Who would enter a dangerous situation, aware of the risks and harms, when not obliged to do so? The answer can only be the foolish or the naïve. Nor can we open the door to a little fracking. Given the cost involved in development, only a large build-out with multiple pads will prove economic. Once permitted in Yukon, everywhere bids for oil and gas exploration occur will be susceptible to fracking. Yukon is bound by trade agreements Canada has signed with the U.S. and, as of two weeks ago, with China, after the Harper Cabinet approved FIPPA, the *Foreign Investment Promotion and Protection Agreement*. An American-owned company like EFLO, with rights to the Kotaneelee, for example, or Northern Cross — 60-percent controlled by CNOOC of China — could sue Yukon if an application of our already weakened environmental laws undermine their right to make a profit.

We would be misguided to believe that oil and gas development in the distant Kotaneelee or Eagle Plains will have no detrimental impact on this city. Remember that former Energy, Mines and Resources minister, Brad Cathers, only removed opening the Whitehorse Trough to bids from the oil and gas industry under intense public pressure in 2012. He was also very clear that this withdrawal was only until the end of the current Yukon Party mandate in 2016. Will the Whitehorse Trough be open to oil and gas exploration after 2016? Could hydraulic fracturing, if permitted, also occur in the Whitehorse Trough?

Nova Scotia's timely decision to ban fracking should be a salutary lesson for us in Yukon. Minister of Energy, Andrew Younger said, there is not a community in this province pushing to allow hydraulic fracturing. Younger also heeded Nova Scotia's expert panel, which recommended no fracking. He concluded the resources belong to Nova Scotia and they get to decide how they are harnessed. Yukoners should have the same right.

You have only one opportunity to say no to hydraulic fracturing. As politicians, you serve as an honour and privilege, making it incumbent upon you to listen to Yukoners and not accede to the blandishments of the oil and gas industry. Do you have the wisdom, the strength and courage to say no to fracking and to propose that the Yukon Party government ban its use in Yukon?

Thank you for listening.

Chair: Thank you.

Ted Garland please.

Mr. Garland: Thank you very much for the work you're doing on our behalf and thank you for giving us the privilege of speaking to you. Just before I begin my fairly brief remarks, I would like to point out that, in the handout that we received at the door, there was a list of experts who advised you on various aspects of hydraulic fracturing, many of whom, naturally, are from the oil and gas industry. That's to be expected, but I would remind you to consider whose experts you are consulting. That's always the case. Many of us

can probably remember some years ago when nine out of 10 doctors recommended smoking Chesterfield cigarettes. So you can bear that in mind, possibly, and asking oil and gas representatives about hydraulic fracturing may be somewhat akin to asking the fox on matters of chicken coop security.

My name is Ted Garland and I came here on a holiday in 1973. I stayed because this is a special place. I'd like to keep it that way. As I mentioned in a letter a year ago to Premier Pasloski, the Hon. Brad Cathers and Currie Dixon, before coming to the Yukon, I was a hardrock underground miner north of Sudbury, so I don't think I'm qualified as a tree-hugger — not that there's anything wrong with that.

I feel very strongly, however, that hydraulic fracturing should have no place in the Yukon for the foreseeable future. Years ago, in reference to sex, a British politician — I think it was Lord Chesterfield — said that the pleasure was momentary, the position ridiculous and the expense damnable. To paraphrase, I suggest that when it comes to fracking, the benefit is transient, the consequences appalling and the cost incalculable.

I'm sure that many in this room remember when Faro was in its heyday. At one time, it provided many jobs, though I don't believe the majority of beneficiaries were Yukoners. The profits have left the territory. What is left is a massive bill for reclamation and cleanup — a job to be done, if I'm correct, by Outside companies to the tune of several hundred million dollars over the next few decades. I don't think Yukoners ever want to see that scenario again, and I believe that fracking has the possibility of making the mess in Faro look like a mud puddle.

The time may come that, years down the road in the time of our grandchildren's children, our need may be greater, the product more valuable, the risks more manageable. In the meantime, why rush to extract? I believe there's good reason so many areas around the globe, including some in Texas, have declared a moratorium on hydraulic fracturing or have declared a ban outright.

I also suspect that supply and demand will lower the value of this resource. No one seems to talk about that. Just over the N.W.T. border, many experts claim that the shale and oil deposits in the Northwest Territories may dwarf what's in North Dakota. So do we want to sully our wilderness in pursuit of what may well be, near term at least, a resource that's diminishing in value? If we leave this potential resource in the ground, we can benefit by learning from the experience of others, and the future generations have not developed energy sources that will render shale oil redundant, if the time ever comes when they need it, it will be a potential blessing.

In the meantime, let's not let it be a potential curse. I advocate as strongly as possible for the extended moratorium on hydraulic fracturing in the Yukon.

Chair: Thank you.

Liz Reichenbach, please.

Ms. Reichenbach: Hi, my name is Liz — or Elisabeth with an "s", not a "z" — Reichenbach. I'm from Whitehorse, Yukon. I came to the Yukon in 1980, been here since, retired

now, planning on living here until the end of my time. I love the Yukon, I love the water. I love everything about it. I'd really like to keep it as is.

I've got to tell you, I'm very nervous. Not used to doing this — but anyways, here she goes.

I'd like to express my strongest voice against LNG and fracking in the Yukon and feel that there should, in fact, be a moratorium on both. I see absolutely no benefits for either of them, only a lifetime of devastation and pain for present and future generations.

I'd like to acknowledge the meeting that you had in Carcross yesterday. It was quite phenomenal. I was there as well, just to sit in. There were 98 people registered to speak for Tagish, Yukon — a tiny, little community. I believe there were around 150 people that attended and the crowd overflowed into the halls — quite phenomenal for a tiny, little town. Kudos to them.

In a unanimous voice, they brought forward their support in banning fracking in the Yukon as well. The other day — or yesterday, as a matter of fact — I spoke to someone in Superstore, of all places. We were just kind of chatting, and she was saying that she had spoken to a couple of Texan tourists who were all waiting for a bus in town. So she thought she'd approach them and see what they had to say about fracking, because oil and gas — territory, or province, anyways, whatever you call it — state.

So apparently they kind of looked at each other and looked back at her, and said, "Don't do it" — end of story. Don't do it. There are alternatives — solar, gas — or sorry, not gas — solar, wind had already been mentioned. One that I hadn't heard mentioned — maybe it has and I just didn't hear about it, but my understanding is that, in Atlin, they have a hydroelectric dam built. They have way too much electricity for their use. They were hoping that we would plug into theirs and share. Another one that I had heard of is that Skagway has too much in the wintertime, when we need it the most. In summertime, we don't need it, they need more. So that would work — sort of go hand-in-hand.

I'd kind of like to read one thing that I got in the mail from the David Suzuki Foundation. It's a testimonial from someone who moved to Alberta for the fresh air and stunning landscape. I'll just read this part of it here. They tried to put an oil well on his property and he wouldn't let them. So they went across the fence and just drilled underneath. Consequently the flaring and whatnot impacted all of his family's health and the health of his livestock.

Anyway, just to finish off, I'd really like to encourage you to do the right thing and make the right choice, and support a frack-free Yukon. Thanks very much.

Chair: Thank you.

Gordon Gilgan, please.

Mr. Gilgan: My name is Gordon Gilgan. You've asked for comments on the risks and benefits of fracking. There are many risks to fracking and, in my opinion, very few benefits. I'd like to observe that the risks are mainly borne by the Yukon, the land, the water and the people, and the benefits, on

the other hand, go mostly to those outside the Yukon. The employment, which will be short-lived, will go predominantly to skilled workers from outside the territory and this will benefit the GDP of Alberta and B.C., but not the Yukon.

The profits, if any, will go to investors not only outside the Yukon, but also outside of Canada. The companies that will share these profits are from the United States and China. Most politicians and corporations claim that the first benefit of fracking is jobs, jobs, jobs. This claim lacks credibility in the Yukon, where the unemployment rate in August of this year was 3.4 percent, and we have to employ temporary foreign workers to staff many of our service industries.

The fracking industry is land, technology and capital intensive. It makes limited use of human labour. Unlike many industries, fracking does not bring the multiplier effects that other industries do. The reasons for this are that most of the equipment, tools and materials used are specialized and have to be imported. Secondly, the workforce is mobile and most of the payroll leaves the local economy. And finally, when production does begin, the products are shipped out of the territory for processing.

If this industry was a solution to the unemployment, then why does the U.S., which has been fracking for nearly a decade, still have an unemployment rate of 6.1 percent?

The mines we have operating in the Yukon currently fly most of their skilled workers in and out so that the promise of jobs is foolish in an economy where we have trouble filling employment vacancies and are bringing in temporary workers. We have the opportunity to look to our neighbours in the south to check on their experiences with fracking.

First we have to realize that employment benefits, as well as any other economic benefits, are fleeting. Production in shale formations usually last only three to six years, compared to 30 to 60 years for conventional production. In the U.S., now that frackers have come and gone, we can examine their experience. Yes, there was an increase in employment when they began fracking, but the increase in oil and gas employment was accompanied by a decrease in other sectors of the economy, most notably in tourism and agriculture.

The most highly paid jobs in the fracking industry are not open to local unemployed but filled by the highly skilled workers from other states. Tourism and agriculture did not resume to their earlier levels after frackers left, as they then had to deal with the environmental devastation left behind.

Other occupations that increased with the frackers were prostitution, strippers, gamblers and drug dealers. With the temporary increase in employment comes an increase in social costs such as crime, drug use, violence, and particularly violence against women. The benefit of a small amount of employment does not offset the devastation wreaked by these social consequences.

Another area of the economy that was damaged by fracking in the south was the local infrastructure. Roads, bridges, sewage and water treatment facilities were all damaged by overuse and the taxes levied on the frackers did

not cover the cost of repairs, leaving local taxpayers with the deficit.

There are many economists who are now questioning the whole economic structure of the fracking industry. Those people who make money in the industry are those who speculate on land values and on the stock market. Many financial advisors are recommending that investors get out of the petroleum industry altogether.

This raises the question of why the Yukon government would invest in this industry that is predicted to be a loser. I'm sure you remember the investments made by the Yukon government in asset-based securities.

In conclusion, it seems obvious that the benefits of fracking to the Yukon economy would be sparse, if they exist at all. The industry is not sustainable; why then would we risk well-established industries, such as tourism? Why would we risk the assured damage to the local environment? Why would we risk the impact on the global environment? Why would we risk the social cost and why would we risk the opportunity to develop alternative energy sources — all of this on the speculation that we might make a quick buck?

I think this is a bad economic deal. I urge the select committee to recommend a ban on fracking in the Yukon.

Chair: Thank you.

Corliss Burke, please.

Ms. Burke: I want to first acknowledge my appreciation of the Ta'an Kwäch'än and Kwanlin Dun First Nations, as we are meeting on their traditional territories. My comments will reflect the themes that emerged last night in the select committee hearing in Carcross. These presentations were so powerfully and passionately presented by First Nation and non-First Nation people alike. There were 150 people in attendance and a strong plea from every one of the 55 people who spoke over the four-hour period recommending that no fracking take place in this territory.

We heard about the false economies of fracking, statements that it is the industry only which will benefit from fracking, statements that investors are being warned to get out of this sector because of the lack of future financial return on their investment and the news that the Rockefeller Foundation has pulled its funds out of the oil and gas sector.

We heard that the promise of jobs for Yukon is a false promise, since experience in other jurisdictions has shown that most jobs created are of a highly technical nature and the remainder are for seasonal and unskilled labourers and are of very short duration. We heard many reminders that the Carcross-Tagish First Nation has passed a resolution to ban fracking in their traditional territory and that fracking is irresponsible and immoral because of the damage it causes to water, land and air, as well as all life forms.

There were warnings that yet another lawsuit against this government will take place if the Committee recommends yes to fracking. Another comment that received resounding support was, "If this Committee says yes to fracking, we will say no to this government."

Many speakers presented impassioned stories about the importance of preserving our environment for the continuation of animal and human life and stressed that they were speaking on behalf of their children, all future generations and the animals that cannot defend themselves against this destructive process. There was a strong statement that we don't have the right to contaminate the Earth for all creation.

The point was made that fracking is a crime against life itself because it destroys the air, water and the land upon which we depend for our very existence. It was noted that the Committee has the opportunity to hear the scientific evidence around the environmental, health, economic and social impacts of fracking in other jurisdictions.

The primary concern expressed was about the quantity of water required for each fracked well — water that is never returned to the hydrological cycle, and that regulation is not the answer, since it has not worked in any other jurisdiction. There is no appetite here for the establishment of regulations, as we know that they are not enforced and they are not effective. There is only an appetite in this territory for a complete ban on fracking.

The viability of investment and sustainable jobs and the development of renewable energy, however, was pointed out. The suggestion was made that the key question that really should be asked of Yukoners right now is, Are you ready for the Yukon government to make huge investments in renewable energy? Although unspoken, the palpable answer throughout the crowd in attendance to that question last night was, "Yes. Let's make that investment."

Lastly, there were concerns about the integrity of the process of these hearings —

Chair: One minute, please.

Ms. Burke: — that they have been unnecessarily bureaucratic. The right to speak required prior registration. It was necessary to register again at the door to the meeting and the furniture in the meeting room was set up like a courtroom, requiring presenters to stand with their backs to their fellow community members. The entire process, it is feared, might have been designed to intimidate people and discourage participation.

In summary, I have to say that it was an incredibly powerful experience to hear First Nation and non-First Nation citizens coming together around this issue, presenting the same arguments to the Committee and standing shoulder to shoulder in opposition to the current race to allow fracking in this territory. I implore you to listen to these individuals and to the 6,000 citizens who have signed the petition against fracking.

You have nothing to lose by recommending against fracking in the Yukon. On the other hand, if fracking is allowed in this territory, the Yukon Party and the citizens of the territory have everything to lose.

Chair: Thank you, Ms. Burke.

Gordon Smith, please.

Mr. Smith: Thank you very much for this opportunity to speak. My name is Gordon Smith and I'm addict. I'm

addicted, like everyone else in this room, to fossil fuels and I think it is time to think about some harm reduction.

One thing that brought me to the Yukon years ago was my addiction to a clean environment — fresh air and pure water. My children, unfortunately, have also inherited that addiction.

I'd like to talk about fracking from the perspective of my addictions. I started to investigate the fracking issue a few years ago as a parent and a grandparent with the potential for unconventional fracking in the Whitehorse Trough, but also as a naturopathic doctor whose primary focus is disease prevention and health promotion. I started to investigate a few years ago this whole issue of fracking. I was reminded of a treatise that written by Hippocrates, who is regarded as the founder of modern medicine. He wrote a treatise over 2,000 years ago entitled, "On Airs, Waters and Places", which stressed the need to observe the place where we live and accurately grasp its role in our well-being. He rightly defined the quality of the wind, the water, the soil and the climate as significant contributors to our suffering as well as for our potential healing. These concepts helped the birth of fields of bio-climatology and public health.

I feel that this is very much a public health issue. Past and ongoing present evidence and research regarding the impacts of oil and gas development and the ensuing damage to the environment and to human health really needs to be acknowledged solidly and communicated to the general public — which is really what's occurring during these sessions — and thank you for that — as well as to our policy makers.

Considering the evidence of harm and the virtually unchecked pace of its expansion, fracking could prove to be one of the most serious health threats to confront this generation and subsequent generations. In my opinion, as well as the opinion of a number of health care practitioners — especially the Physicians for Social Responsibility here in Canada and the United States — the most prudent and appropriately precautionary measure is to ban fracking here in the Yukon.

We indeed talk about the need to regulate and to mitigate. Unfortunately, model regulations for fracking are too frequently industry proposals dressed up in Sunday clothes. There's no — I repeat no — scientific evidence that exists to say that regulations can make fracking safe for people and the environment. I have an interesting quote here. "Regardless of the strength of regulation and safe practice, accidents will occur and water and air will become contaminated."

Chair: One minute, please.

Mr. Smith: A United Nations environmental alert published in 2012 has shared environmental health concern. It includes the following: unconventional gas exploration and production, or fracking, "may have unavoidable environmental impacts. Some risks result if the technology is not used adequately, but others will occur despite proper use of technology."

Although natural gas is marketed and has been marketed and presented as a bridge into a fiscally healthy and

prosperous future, from a public health perspective, it's actually not a bridge; it's an exit ramp.

There are some pages of signatures on a recent petition which is being circulated, and it's a call for action from health care providers to recommend a fracking ban in the Yukon. I expect more signatures as well.

Chair: Thank you, Mr. Smith.

Mr. Smith: Thank you very much.

Chair: Fay Tangermann, please. Is Fay Tangermann not here? Reinhard Saure, please.

Mr. Saure: Good evening, everybody. I'm Reinhard Saure. I came to voice my opposition to fracking anywhere on this planet, and of course, also in our territory included. It is generally accepted and understood that global warming is the biggest challenge mankind is facing. So the only reasonable response to that is to stop the error of fossil-burning fuels for energy production as fast as possible and move on to green, alternative energies. This can only be achieved if there is a political will from our leaders. That's, so far, in my opinion, not there yet and that needs to change. Thank you.

Chair: Thank you.

Mary Amerongen. I hope I didn't wreck that too much.

Ms. Amerongen: My name is Mary Amerongen and I thank you all for being here to listen and I thank the government for setting up this process. I recognize that we are on Kwanlin Dun traditional land.

I oppose fracking and I request a ban or a moratorium for many years for three reasons. One is the pollution of water, one is that it leaks methane, and one is that it inhibits our work to reduce global warming.

It pollutes our groundwater and aquifers. One well uses around 200,000 cubic metres of water, which is polluted with over 600 chemicals. A number of carcinogens and neurotoxins are included in those chemicals. Forty to 70 percent of this water remains underground, lost. We do not know how it migrates or what it does when we leave it underground. It's simply not known. We have evidence that it pollutes.

One well uses 200,000 cubic metres of water. It is not uncommon to have 1,000 wells at one site. Fracking requires the economies of scale. There's no such thing as a little fracking, like there's no such thing as a little bit pregnant. About the pollution of water — I refer you to the CBC documentary "Burning Water", which will give you lots more information on that.

My second reason is that it leaks methane, which is 20 times more potent than carbon dioxide in terms of being a greenhouse gas. It can't be regulated away. At this point, leaks cannot be stopped. They don't have the technology for it.

Here's an example: in North Dakota, in one year alone, they had 1,000 leaks and spills which the industry admitted to. The well casings fail. I don't remember the exact numbers on this. I think it's 10 percent in the short term and 30 to 40 percent within the long term that they leak. So we can't stop the methane leaking at this point. The science just isn't there.

They don't know what's happening. The Council of Canadian Academies is only one authoritative voice to say that we don't know what's going on underground there.

So you have to have the science before you can even design effective regulations. It's just not being regulated. Even if governments had the will, their regulations aren't yet effective — if they ever could be.

There is little, if any, accountability by the large and powerful companies. Once they're allowed in, you usually can't regulate them, even if the government wanted to. They're like the tobacco companies, only they have more power.

In Wyoming last year, the Environmental Protection Agency was doing research that showed that there were fracking chemicals in groundwater near to a fracking operation. There was an uproar from the fracking industry and the protection agency dropped the study. They stopped doing their research.

If people do get compensation, which they usually don't — but if they do get compensation for their water being contaminated and their air, they must sign a gag order so that nobody can find out that it was actually happening there. Shell Oil in Australia had a media campaign to promote fracking but somebody took them to their advertising standards authority and they were found guilty on four accounts of violating —

Chair: One minute, please.

Ms. Amerongen: Yes.

So companies can go ahead with little to stop them. Instead of industry having to prove that they're safe, people have to prove that they have damage.

But the biggest reason not to have fracking is because of the global warming. It contributes methane, which makes global warming worse, but it's not a bridge to renewables; it's more like a roadblock to renewables.

I believe that to act with integrity in this time is to reduce the causes of global warming, which is the biggest issue facing our times. Thank you.

Chair: We are going to have one more speaker and then we are going to take a 10-minute break.

Frank Patterson, please.

Mr. Patterson: Thank you. Good evening and thank you very much for allowing me to speak. I speak on behalf of my community — the renewable resource council mainly — and also the First Nation of Na Cho Nyäk Dun. I was born and raised in the Yukon and since we've settled land claims, I have seen nothing but destruction. It's with our lands. It's all money-based. Our elders tell us that we will have no future with money. The jobs are given to the people that they bring with them. We are given very minimal jobs — minimum wage and they're labour jobs. That is not what we're seeking. We want our people to be successful.

We want them trained. It never happens — it's in change of government. The government, as of now, I have no trust in, because when you guys went around to all the meetings, we were here fighting for the Peel River watershed. I notice in

here it says that on July 9, in Mayo, 11 people attended. Well, there's more than 11 people who are concerned about fracking in the Yukon.

I am totally dead against fracking in the Yukon. I would recommend that you put a ban on fracking in the Yukon. It's destructive. We need our water. We need our water for a lot of different reasons. First of all, our elders walked this land. They understood. They are our scientists, our professionals. We as middle-aged people are young elders in training. We are here, mandated to look after our children's needs. What are those going to be with technology? I don't know, but we are doing the best we can. It's just been a constant fight, fighting for the land.

I'm born and raised in the Yukon. I was very heavily into alcohol and drugs. I pulled out of it. Nothing is impossible. Now, it's — where's the old ways gone — the drilling — the old ways of drilling? We are not against mining. We have lived with mining all our life. Dawson — you know, it's a perfect example. It's just got to be done right.

Our biggest thing is water, because water feeds our animals, our fish, our salmon and waterways — the travel. People drink that water to cleanse their souls and the animals also. It also feeds the plants that we need for medicines. There's a lot of reasons — there is no end to our need for the land, and our people have taught us that. We believe in that. You believe in a creator, with our elders, and we are a very spiritual people about the creator and stuff. They are the ones who learned how to do it. They are professionals at it and they are teaching us.

My recommendations to fracking — and this is coming from my community of Mayo — I sure hope that you guys can come up and meet with the people, but I think you're pretty busy and I think you've heard quite a bit of, you know, thoughts about this fracking stuff in the Yukon — hydraulic fracking — whatever it may be — you know, it's totally exhausting.

Our elders are getting very sick — and why? Our animals are getting sick. I go from the Yukon to Alberta and I watch the animals. I watch the water. I see the animals are sick — skinny. You know, their hairs are falling off. There is all kinds of destruction happening. The land is drying up. There's destruction. Even here there is so much global warming, that our sloughs and stuff are all drying up and there's more pine beetles. There is more stuff coming in — diseases in our fish. You know, the loss of the fish has been a great loss to our elders. We are not going to buy fish from fish farmers, because they are full of disease. That's what is killing our elders off.

My recommendation to the Committee: please don't do fracking. It's too destructive. Thank you very much.

Chair: Thank you. We are going to break for 10 minutes. When we come back, Jimmy Johnny will be up. Thank you.

Recess

Chair: We are back. Jimmy Johnny, please.

Mr. Johnny: Mahsi' cho, thank you very much. I am Jimmy Johnny from Na Cho Nyäk Dun, Mayo, Yukon.

Personally, for me I don't want to see any fracking in the Yukon whatsoever — because, as far as what I see on TV about fracking in Alberta, B.C. and those areas, it is really an awful sight to see. But I don't want to see that happen here in the Yukon. Let's keep the Yukon as it is. Let's keep it clean for our future generations — your future generations and government's future generations. Let's keep Yukon clean. Let's keep it as it is. Let's not monkey around with Mother Nature any more. Let Mother Nature take its course.

People talk about climate change. Yes, the elders said hard times are coming. Warm weather will be here. We will be getting tornadoes and a lot of earthquakes like we did in the past. You have to learn by it, with it. No money in this world will ever, ever keep you safe from Mother Nature.

When elders say hard times are coming, I think about long time ago, way back in the past, when we used to use a stone axe to cut trees. I am wondering how many hours or days to cut down one tree with a stone axe? That's how tough they were. We were powerful people and we still are people of the land.

Keep our water clean. This water here I am drinking now — I can taste the difference from the spring water I get around the Mayo area. It's the tap water. You can smell the chemicals in this water. To me, it's not water.

When you're fracking, I believe that you use lots and lots of water — tonnes and tonnes of it. It doesn't matter whether you are the richest person or the poorest person in the world. I am going to tell you something right now: the poorest person in the world is going to outlive the richest person in the world. Money can't buy everything. Money can't buy your health. Money can't buy your happiness. All it does is bring disaster to this country.

It's not called Yukon Crown land any more. If you want to call Yukon Crown land and dig and mine it and blast it around, go to England. That's where Crown land is, not here in Canada — not in Yukon, Canada. I am saying that this is my teaching of elders when I talked to them a long time ago. I see that you have shown me that it's one minute — that's controlling. I'm sorry to say that, but that's how it is.

Thank you very much.

Chair: Bob Jickling, please.

Mr. Jickling: Thank you for being here. Thank you for listening to us and thank you for considering our deliberations. Five minutes isn't long, so I will just limit my concerns tonight for those related to climate change. We have heard a lot of this already but, just in summary, the process of fracking produces a fossil fuel, which is, again, a contributor to climate change. We have heard already that in the process of going through the fracking activity, that there is inevitably going to be methane that will be leaking into the atmosphere. We've heard already how it has a multiplying effect in terms of greenhouse gases and climate change, much greater than carbon dioxide, and we also know that, historically, the levels

of methane are actually increasing in our atmosphere. Despite the fact that it degrades relatively quickly, the levels still are increasing. So this is very much a climate change issue.

So I would like to ask each of you to consider a question: Do you believe that climate change in our present era is largely caused by human activity? You need to answer that question before you write your report. Do you believe in climate change? Do you believe it is caused by human activity, or are you a climate change denier? Answer that question first, and then write your report.

If you do believe in climate change and that it is a human-caused activity at the levels we are experiencing today, then what are you going to do about it? If you don't believe in climate change and that it is caused by human activities, then at least have the decency and honesty to state that in your report so we know what we are dealing with — every one of you, each and every one of you — I would like to see answers to those questions reflected in your report.

At its core, this is not a question really about economics. It's not a question about politics. It's a moral question that you have before you. It's really about your moral concern for future generations.

The effects of your decisions aren't much going to be felt by me and perhaps by most of you, except maybe for some of the youngest of you. The effects of the decisions you make when you write your report and the government makes its decision are going to be felt by the generations to come, those unborn. So far, we have yet to see those obligations taken seriously by Yukon governments. For example, in the lead up to the Kyoto discussions in Japan, the Yukon government — and our Hansard records show that the government of the day acknowledged the problems associated with increased snowfall, forest fires, permafrost melting, and so on — though in Hansard these concerns were tempered in this way. I quote: "Our position on climate change must be sensitive to the need to work toward legitimate economic, social and environmental goals. The Yukon's economy will continue to grow as our government works hard to develop new employment and economic opportunities." It goes on: "Yukon will contribute positively to the development of a realistic Canadian position that will help build an agreement at the international level." It goes on: "Our government believes that people in the territory who want to do all they reasonably can to help will recognize that less than one-tenth of one percent of Canada's greenhouse gases are generated within the territory."

Later, in response to a question: "There is a much debated question in the House of Commons. It's very much talked about all across Canada and in many countries. It's going to be a very hot topic, and one that we need to balance out here in the Yukon, in both looking at the economics of it and looking at the environmental side."

In reality, we are told that we must rightly be concerned with climate change, but it isn't really caused by Yukon residents and it mustn't compromise the economy. I don't see much rhetoric that is different coming from governments today. We need better leadership, and this leadership needs to

start with you. We have had lots of hyperbole about the power going out at minus 40 and not having the wind to generate electricity. Nobody is opposed to having a backup plan for producing electricity, but most people do not want the opening up of a whole new set of problems that will feed dependence on fossil fuels.

There are plenty of examples of projects that can dramatically reduce dependence on fossil fuels and place more emphasis on developing renewable sources of energy would provide a much better alternative. We must not punt, like the government did, in 1997.

Leadership means —

Chair: Excuse me.

Mr. Jickling: It's my last point.

Leadership means providing people with initiatives they can get behind. We need to start now by rejecting fracking and shifting attention to more sustainable sources of energy.

If this Committee — I trust this Committee will come to a good, sensible decision that reflects the kinds of concerns you have heard over and over and over again by Yukon people, but if it does devolve into a partisan exercise, then I think it becomes essential that there is a strong dissenting opinion written.

Thank you very much.

Chair: Thank you. JP Pinard, please.

Mr. Pinard: Good day. Thank you for holding these hearings. I really appreciate that you people have gotten this together to hear people out.

Last Sunday, there were protests all over the world, and there were over 300,000 people that took to the streets of New York, and there were many thousands more across many cities across Canada that took to the streets as well. Here in Whitehorse, we were a little delayed. The protest happened here on Monday. The main reason for these protests is because people are very, very concerned about climate change due to our fossil fuel addiction.

As you know — somebody has already repeated this — there's over 6,000 signatures, which is, I think, a record for the Yukon, of people who are against fracking in the Yukon, and there also were many signatures against the LNG project. As you know, there was a lot of opposition to that but it still went ahead anyway. There were 100 jurisdictions in the world that have banned or are asking for bans against fracking, so it's a pretty serious issue.

If it's not in the public interest — in the interest of the public, that is — to have this kind of activity, then it shouldn't be in the interest of business. Recently, and as recent as a few weeks ago, there was a group of investors representing well over \$1 trillion in investment that have got together to speak about their concerns about the fossil fuel industry. These investors are moving their money from the fossil fuel industry because they see it as a dead end.

In the Yukon, we depend on over 80 percent of our energy from fossil fuel, and that small portion that is renewable energy is hydro, and we have a lot of hydro potential and we also have a lot of wind energy potential as

well as solar. I think we, as the Yukon, can play a major role in building a renewable energy future. I really don't think we need to go down the fossil fuel path.

I know there are people who speak about jobs being created by fracking or the natural gas industry. I have this nice sheet here created by the University of Massachusetts that shows how many jobs are created from natural gas, and it's very interesting. It says here, for every \$1 million that is spent on natural gas, only five jobs are created — every \$1 million, only five jobs are created in the natural gas industry. When you look at these other energy industries, like smart grids, 12 jobs are created for every \$1 million spent. In the wind industry, 13 jobs for every \$1 million invested; solar industry, 14 jobs; in biomass, 16 jobs. To me, this is overwhelming. The fossil fuel industry doesn't really create that many jobs. It is much more beneficial to focus on renewable energy.

I am sure you are aware of Tony Ingraffea — Dr. Ingraffea. He is one of the authors of the initial papers that looked at fracking and the issues around it, and from their research, they found that fracking — unconventional gas creates more pollution than diesel. We know here that we do not need to go in that direction. He said also that if you don't have fracking — he talked about regulation for jurisdictions that do have fracking, and he said to be very strict with the industry — but he also said, if you don't have fracking in your jurisdictions, don't go there. That was his answer.

So as you are aware, my view is that we should not go down that road to fracking. Thank you for hearing me out.

Chair: Gerald Haase, please. I hope I got that right.

Mr. Haase: My name is Gerald Haase, and I really should be home in bed trying to get better, but I thought it incumbent on me to add my voice to the evening.

Good evening and thank you for the opportunity to present to the Committee. Thanks also to the Kwanlin Dun and the Ta'an Kwäch'an First Nations, on whose traditional land we're meeting.

My submission will be brief. Many others have spoken much more eloquently than I will speak on the topic, but I want to add my voice all the same.

I have learned about hydraulic fracturing from a variety of sources, as have many of us here, and it is clear that Yukon citizens are pretty well-informed. I would like to compliment the Committee on what seems to be a thorough approach. Inviting experts, such as Gilles Wendling, has been very informative to our Yukon process. I teach biology at Yukon College, and I form my views largely from the perspective of my training as an ecologist.

In brief, I oppose fracking in the Yukon on several grounds — and I won't go into detail, as many others have covered the same ground. (1) Fracking fluids cannot be proven to be safe to our water supply. Current fracking processes are nothing like the more benign fracking processes of 40 to 50 years ago. (2) Frack fields involve multiple drill pads with multiple horizontal drilling holes. Methane emissions from both active and inactive wells are a phenomenon that we really have inadequate control over and

certainly inadequate measurements. (3) The absolutely, obscenely excessive amounts of water required for current-day fracking processes preclude a safe environment for fish, wildlife and humans.

On any one of these points — and there are many others — the risks of fracking far outweigh any benefits. Taken together, I think that any jurisdiction that has an opportunity to put a hold, a moratorium or a ban on fracking would be crazy not to.

I commend the Committee's thorough approach and I urge you to continue doing the right thing and recommend against fracking in the Yukon. Thank you.

Chair: Thank you.

Astrid Vogt, please.

Ms. Vogt: Good evening, and thank you very much for this opportunity. I was in Carcross last night and didn't present because there were so many other wonderful presenters there. I got really inspired because there were a lot of wholehearted presentations. Yes, it smelled like there was a revolution in the air.

I am strongly opposed to hydraulic fracturing in the Yukon. I am indeed alarmed at how fast our government is moving ahead with this, already committing to regulatory alignment with B.C., trying to attract big oil and gas interests here in the Yukon. I am shocked that this is happening, even before the select committee hearings have wrapped up and recommendations have a chance to reach the House. What's the rush?

Our government has still not fulfilled the UFA commitment to finalize the high-level regional land use plans for the Yukon. Who would build a house without a blueprint? We all deserve finalized land use plans to ensure responsible land use and resource extraction in the Yukon before we are asked to contemplate yet another risky, non-renewable resource with a massive footprint on the land.

The risks that come with fracking are real, and many of us understand that science alone won't provide the answers. State-of-the-art scientific industrial resource extraction equally requires a state-of-the-art environmental assessment and regulatory process, and that is where our biggest risks emerge, long before anything happens out on the land. How can we have any confidence that fracking will be done in a safe and responsible manner, when current YESA board recommendations are not at all legally binding.

YESAB decision documents for fracking will be signed and can be varied by the regulator, the EMR oil and gas branch, which is also tasked with promoting oil and gas in the Yukon to generate royalties for government. Where is the arm's length in the process? When you need it most, where are the checks and balances for responsible resource extraction? Bill S-6 is huge but certainly only part of the problem. It is the non-binding recommendations that really corrupt the process.

So, who is going to protect the public's interest and purse in a devolved Yukon when we have an environmental disaster and maybe a bankrupt corporation? Forget about the security

deposits; they will be a drop in the bucket. It will be the taxpayer — the Yukon taxpayer alone — who is on the hook for the staggering financial liabilities of a cleanup.

We need to stop this insanity now. We owe it to our future generations and our magnificent home, the Yukon. Thank you.

Chair: Thank you.

Gary Bemis, please. Sir, in the interest of good-quality audio, we ask that you stay close to the table. Thank you.

Mr. Bemis: Just for the public record, could those of you who sit in front of me who support fracking the Yukon please raise your hand so that your hands can and will be counted and duly noted by the select committee on the risks and benefits of hydraulic fracturing. There is nobody here —

Chair: Excuse me, please. I believe that you are here to present to the Committee.

Mr. Bemis: Future generations of Yukoners need a voice. Yukon's animals and wildlife need a voice. Yukon's clean water needs a voice. Untold numbers of future tourists to the Yukon Territory need a voice. I have come here today to be that voice, or at least a voice.

Clean water is unquestionably the most valuable resource that the Yukon currently possesses, next to its relatively pristine environment. This commodity, water, can only increase in value in the future. Clean water will come to be far more valuable than all of the revenue that could ever possibly ever be generated by an oil and natural gas industry in the Yukon Territory. A bottle of water currently fetches over \$3 at the local golden arches restaurant in Whitehorse. The Government of Yukon owes a duty to every member of the Yukon's public to protect Yukon's water — the Yukon's most valuable resource — not only for the current generations but for any future generation that may also come find themselves in the territory in the future.

For the current Government of Yukon to be asking what are the benefits of hydraulic fracturing is like asking what the benefits are of Fukushima in Japan? For those still uninformed, Fukushima is the continuing uncontrolled radioactive life-extinction event which resulted from the tsunami that hit eastern Japan in 2011 and destroyed six nuclear power plants.

Allowing an oil and gas industry in the Yukon to use hydraulic fracturing in the Yukon's permafrost regions will be the equivalent of giving a death sentence to the various life forms currently found in the Yukon, including water, which is a vital life form that sustains all other life forms on the planet.

Another viable industry that the Yukon currently possesses — and the current Yukon government quite often boasts about — is the tourism industry. This industry will fold if and when oil and gas and extraction of natural gas with hydraulic fracturing is unleashed upon the Yukon Territory. There will be no fanfare of international tourists clamouring to board flights, only to see the prowess of the blight of oil and gas infrastructure upon the once-beautiful landscapes of the Yukon Territory.

Filmmaker Damien Gillis and First Nation resource management expert Caleb Behn gave a recent presentation at the Beringia Centre here in Whitehorse, informing their audience at the anticipated expected windfall from resource revenue —

Chair: One minute.

Mr. Bemis: — by the Province of British Columbia due to the extraction of natural gas by hydraulic fracturing of gas wells in the province fell far short of government predictions. They said the reasons for this was set to be due to low gas prices due to stiff competition amongst gas well developers and a glut of natural gas.

For non-economists, “glut” means there is no entrepreneurial profit in the natural gas well, and hence the product is not meeting any energy need of anybody. The gas industry in B.C. demanded a clawback of their investment from the B.C. government in order for gas companies to avoid bankruptcy of their respective firms. It is one thing to trash the environment and to line your own pocket; it’s another to trash the environment, make no money for anyone, and then apply for a billion-dollar corporate welfare from the state.

I would urge the select committee to make the right decision and to ban fracking in the Yukon Territory and to make Yukon frack-free.

Chair: Thank you.

Michele Genest, please.

Ms. Genest: Good evening, members of the committee. My name is Michele Genest, and I live in Whitehorse and have done so for the past 20 years. I have just a couple of things to say tonight. One is that recently, in a conversation, my husband pointed out to me that, in fact, water is not really a renewable resource. The more pressure there is on water as the human population on the Earth grows and as we are polluting our water more and more, the less it is going to become a renewable resource.

The second thing that I would like to say is that other private companies know, as we all do, that gas and oil are finite. Neither of those resources are going to last forever. Companies like Enbridge are investing in alternate technologies, as we speak. It’s not something we hear about every day, but it’s the truth. Major corporations who are heavily invested in oil and gas are diversifying their investments. They are interested in other forms of energy because they can see the writing on the wall.

I asked a friend of mine who works in the energy industry why it is, then, that projects like the pipeline that will end up in Kitimat is continuing, why it is that we are so interested in fracking. She said, “It’s simple. Maximum profit over the maximum period of time.” So, those corporations that are invested in gas and oil are, of course, hedging their bets, and of course their job — the reason they are where they are — is to make money. That’s their purpose.

I believe that responsible government should not follow industry. It should lead industry, and it should be looking — responsible government should be looking at alternative forms of energy because the writing is indeed on the wall, and gas

and oil are not going to last forever. We need to invest in other kinds of energy. So I strongly urge the committee to consider a frack-free Yukon, leading the pack in investing in and exploring alternative forms of energy that don’t have the devastating impact on the environment that we know fracking does. Thank you very much.

Chair: Thank you.

Davina Harker, please.

Ms. Harker: Good evening and thank you for this opportunity everybody. I won’t talk a long time. I am going to talk about a fact I know, no controversy to it at all. I have been knocking on doors for months, and I have to tell you — I’ll just give you the numbers of just my last two days. I knocked on 74 doors — 42 said yes, 10 said no, and 22 were not home. I have had this kind of success all the time, and in the break somebody asked me, “Have you ever had a night when you have had more noes than yeses?” No, I have always had more yeses than noes.

The other thing I would like to leave with everybody — if you would all visualize Lake Laberge. Everybody knows Lake Laberge. Lake Laberge — the volume of water would only support one well, and that was figured out a year and a half ago, and that figure is probably no longer viable because they are using greater volumes of water as we move forward.

So I ask the Committee to ban fracking in the Yukon and protect our Yukon for our future. Thank you.

Chair: Thank you.

Lee Mennell, please. You have five minutes.

Mr. Mennell: I should tell you my wife has got the five minutes right behind me, so if the song goes a little longer, we can still have some fun.

My name is Lee Mennell and I didn’t mean to be here. I was at Carcross last night but, due to popular request of my song, I want it to be sung again. My three quick points are: the world as we know it right now is being invaded by private empires run by people we don’t know, doing basically stuff that is pathological. Their only purpose is to grow, to have control, to monopolize. It’s not just fracking — it’s Monsanto — it’s you name it — it’s agribiz, it’s around the world — and around the world as well, there’s a huge popular resistance to all this on all different levels. There is in fact a revolution and it’s time that the Yukon caught up.

The second point is — and I think everybody has made a pretty good analysis of what fracking is going to look like — you don’t even have to go to the chemical analysis to know that a landscape that looks like the pictures you see is not right. A child could tell you that — that you do not want to have an industrialized landscape from here, the Carcross valley full of gas wells — imagine it.

Thirdly, in spite of what I consider the biggest popular movement I’ve ever seen in 40 years of living here — and I think the government should’ve got the message loud and clear a long time ago — two years ago, when they put the moratorium on — they still seem intent to do this project. I see the meeting here tonight, to me — I’ve written letters, I’ve been to the Legislature, I’ve done all the stuff — it’s time-

consuming. A person has to make a living. This is a waste of my time in a sense. I have to fight against my government.

This is a masquerade — or it feels to me like a masquerade — that we have to have an illusion of democracy in spite of the fact that we all know that the government wants to do this.

This is with apologies to Country Joe and the Fish. If you're over 60, you will have remembered this song, and you can join in when we hit the chorus.

Come on all of you big strong men,
The industrial machine needs your help again
It's gotta keep growing no matter what the cost
And if we don't feed it, all is lost
So put down your dreams and pick up a drill
It's got a big appetite to fill.

And it's one, two, three, what are we fracking for
Don't ask me, I don't give a damn
Big Oil has got the plan
And it's five, six, seven, people get out of their way
'Cause there ain't nothing that they won't trash to get at
that natural gas

Come on governments you better move fast
Your big chance has come at last
Time to go out and smuck those greens
'Cause they're getting in the way of all your schemes
You know the economy will only run
When we dig this thing to Kingdom come

And it's one, two, three, what are we fracking for
Don't ask me, I don't give a damn
Big Oil has got the plan
And it's five, six, seven, people get out of their way
'Cause there ain't nothing that they won't trash to get at
that natural gas

Now come on Wall Street, don't be slow
You know this is progress, go, go, go
Lots of good money to be made
Investing your money in the fracking trade
Now don't forget, you can get that wealth
And you can leave the mess for someone else

And it's one, two, three, what are we fracking for
Don't ask me, I don't give a damn
Big Oil has got the plan
And it's five, six, seven, people get out of their way
'Cause there ain't nothing that they won't trash to get at
that natural gas

Now come on mothers throughout the land
Don't you want an oil well on your land
Come on fathers, don't hesitate
Sign yourselves up before it's too late
You don't want to be the last one on the map

To have flames coming out of your tap

And it's one, two, three, what are we fracking for
Don't ask me, I don't give a damn

Big Oil has got the plan

And it's five, six, seven, people get out of their way

'Cause there ain't nothing that they won't trash to get at
that natural gas.

Chair: Daphne Mennell, you have four minutes.

Ms. Mennell: It won't take that long. I just want to say that, really, if we're in the interest of making money and we know that the things that become more rare, like diamonds and gold — the less there is of it, the more valuable they are, well, the Yukon is in the very good position to make a lot of money if they do nothing and they just let the water and wilderness and clean air alone. Thank you.

Chair: Thank you.

Sean Smith, please.

Mr. Smith: I just need to remove my councillor hat and I'll put on my Kwanlin Dun citizen hat — Günilshish.

[First Nation language spoken] ladies and gentlemen, Chair and select committee on hydraulic fracturing. As a citizen of Kwanlin Dun First Nation, I'm here to speak on my own and my community concerns regarding the process of hydraulic fracturing to extract natural gas, specifically here in the Whitehorse Trough, however, to make this legal for companies to do it here in the Yukon in general.

As a Tutchone Tlingit from the traditional territory of Kwanlin Dun First Nation, I am not in support to divert millions of litres of fresh natural water in a time of climate change to mix with toxic chemicals and to pump into the ground with everlasting effects on our hydraulic cycle. The impact of hydraulic fracturing will push our natural resources to the limit, where irreparable damage will occur, affecting the quality of water and geological ground formations forever.

Hydraulic fracturing will take out the foundation of which we all stand on and will affect our children and grandchildren. This ground is our foundation from which we came and will someday return and, as a future generation, is not here yet.

At a caribou conference this spring, I heard from experts what has occurred in Alberta to the wildlife populations affected by oil and gas developments. For First Nations and Yukoners alike, we value our ability to harvest food for our families, because it is our way — our traditional way and our modern way. It has been our way of life for First Nation people for thousands of years.

Learning about the impact of oil and gas activities throughout Canada and North America, much of what is said to protect land and water is not done. Near meaningless regulations are put in place with little to no reprimand to the oil and gas companies that cause damage to this water and land.

In many discussions with citizens of the Yukon and over all Canada, we enjoy a quality of living much higher than many other citizens from other countries. In many discussions with citizens of the Yukon, we agree we have a quality of

living greatly higher than other parts of North America. The cost of living here in the Yukon may be higher, but choice to live here to raise their children is a decision most people move here to stay. There may be other factors to this decision; however, people tell me they choose to raise their children here in the Yukon because of the cleanliness and purity of the natural environment. This is called natural capital.

I read the newspaper lately and I see what has been written by economists and capitalists in perspectives on introducing hydraulic fracturing to the Yukon. Their perspectives are based on figures of numbers and how those translate to profits. This is called capital.

I'd like to introduce you to the concept of natural capital, something they don't suggest when summing up their figures. Natural capital is the value of the whole when considering the impacts to the quality of human lives. It is our blanket to secure our future, our children's future and their children's future. These perspectives need to change or the Yukon won't be that place to raise our children in a healthy environment. Capitalists and economists tend to understand the world in numbers and a piece of information relating to projections of how much to make to ensure our GDP rises in percentages. The position of these numbers on a graph is a representation that a healthy economy is mounted on a rate of increase not natural, which goes against the order of how the Earth operates its base functions. If air, water or our food is compromised, then we are not promoting a healthy Earth, the natural capital we, all humans, and all living things rely on.

Climate change is a threat happening here in the north, but also an opportunity for adapting and advancing our communities to diversify away from fossil fuels in our northern climate. As we are planning and developing our communities, we need to understand that a focus is to create a sustainable economic base that encompasses our First Nation final agreements. As a basis to move forward, land claim negotiations is an agreement based on building this relationship — a relationship based on reconciliation, opportunity and trust to create a future together.

Hydraulic fracturing is not a sustainable way forward to develop this relationship. There will be action legally and on the ground if the Yukon government undermines First Nation and Yukon citizens' values and health. As a citizen of Yukon and a councillor the Kwanlin Dun First Nation, I put forward my thoughts to the select committee to make a recommendation to amend this legislation accordingly.

This is not a party; this is not a poker game; this is not Alberta or B.C.; this is putting Yukon and First Nation citizens at risk of polluting our water, our air and our food we harvest forever.

Nigha Shawnithan. Günilschish. Thank you for allowing me to speak to you.

Chair: Thank you.

Jim Boyde, please.

Mr. Boyde: Thank you very much for having me here to present my opinions. Thank you. I thank the Ta'an and Kwanlin Dun for their traditional territory and inviting us

here, but also behind me, any first peoples, Na Cho Nyäk Dun, Vuntut Gwitchin, Tetlit Gwich'in — the elders in my opinion who are able to observe natural phenomena in the Yukon that needs a great deal of weight to go forward from, and we must respect that. That resiliency that was expressed in the First Nation elders is changing and the current population that we have, myself included, are very, very, very dependent on energy slaves, unfortunately. We have depreciated the oceans; we have depreciated fresh water everywhere; we have depreciated the natural environment. We need to rethink our behaviours. We are overpopulating the world. We need time to make helpful changes. We need to respect our First Nation, first people, elders' thoughts and opinions and pay that tradition honourable definition. Thank you very much.

Chair: Thank you.

Jan Davies, please.

Mr. Davies: For the record, it's Jan Davies, Madam Chair and Committee.

Chair: Pardon — if I can get you to spell that please.

Mr. Davies: Yep, J-A-N — Davies, D-A-V-I-E-S.

Chair: I'm sorry, I called you —

Mr. Davies: Jan.

Chair: Jan. I'm sorry. It's down that way on the paper.

Mr. Davies: Happens all the time.

I'd like to just for a minute draw your attention to Charles Dickens, *A Christmas Carol*. I come to you as the ghost of potential regulatory future. I regulated fracking in the N.W.T. I was part of the process. Sorry, I'm a little nervous.

There are a lot of things that could be learned from the N.W.T. experience. Fracking was allowed to take place there without any kind of environmental assessment, especially cumulative impact assessment. That has to occur. You know, the way that things occurred there, they had an interesting situation where there was one that had an excellent project description and there was one that didn't, and it got bumped to an EA, the other one didn't. But it should be — any time that there is any kind of work like that, there has to be an assessment. Like, it doesn't matter, just hands down — and then to use a cumulative impact of what's going to happen. I mean gosh, you have the Casino mine that could take off here — how is that going to impact the roads? You know, a huge economy of the Yukon is tourism. Can you imagine how many hundreds of loads there are going to be of material going up and down to supply any kind of industrial development for fracking?

If they dispose of their waste — which they did in the N.W.T. — down south through injection wells, they're just moving stuff back and forth. The infrastructure was just laid waste, as far as the impact from vehicles and stuff. I think that's one of the things that's going to be a huge issue if they do that here. If they entertain any kind of fracturing, they have to process it on-site. They have to release on-site, so it minimizes the emissions, or else you're just going to have that extra traffic. Let's ask ourselves, where is the bigger economy coming from — oil and gas which here is nonexistent really

— or tourism? Do we want to scare those tourists away? Do we want those people in their trailers or RVs competing with these massive truckloads of equipment or waste going up and down the Klondike Highway, Dempster Highway or Alaska Highway?

So I think in this particular situation, those are things to consider, and I would want to draw your attention to that, because there are lots of things to be learned. Whitehorse is a jewel and a gem for the whole nation. Do we really want it to become a place — and I don't want to tick anybody off, but — like Fort McMurray? That could happen as a result of hydraulic fracturing. Is that what people are prepared to do?

I think the other thing that needs to be looked at as well is, in the N.W.T., there are not many groundwater well supplies for potable water. There's a lot of surface water. Here it's groundwater. You know, how many surface water withdrawals are there occurring? So for you, the risk of contamination of your groundwater supplies is a very real thing. Whether or not there's anything nearby where the hydraulic fracturing is occurring — okay, that might not be as much of a risk, but what about other areas that are? There's tonnes of traditional territory here for the First Nations. They need to be consulted. They need to be able to have the ability to say no, we don't support this, or yes, we do support this.

In the N.W.T., unfortunately, it came down to a business decision that overran a lot of the opinions of the public and concerns. It became, we want business, we want this, and so people — over their comments for the water boards or agencies that were soliciting opinions, it became a business choice. It didn't become, Is this the right decision for us from an environmental or energy development standpoint?

So for me, based on that experience, I'm not pro-development; I'm not anti-development. I'm just responsible development. Based on what I've seen so far from hydraulic fracturing, it doesn't look like it's very sustainable in its current form. There are a lot of things that need to happen.

The one gentleman here that said a 15-year moratorium, that's the kind of thing we have to look at. The resources aren't going anywhere, we have lots of time. Put it in the ground, let it get some more money, because the price of gas is going up. You know, let's wait to see what everybody else is doing. The regulations aren't there. The well construction isn't there. The emissions from vehicles going back and forth — we're not anywhere near where we should be, even to entertain this as a development process. So I think in its current form, there needs to be a moratorium for however long, and if this is something the Yukon wants to entertain developing, I'm sorry, but it should be a vote.

How many people here represent the entire Yukon? You know, we have a population of, what, 37,000 people? The whole Yukon should make this decision, not the key people that are here, that actually care to be here and take the time to be here. You know, I waited what, two hours to speak? That doesn't represent the whole Yukon.

I think the other thing that needs to be taken into consideration is just the First Nations and their ability to be part of the process. Thank you, Madam Chair.

Chair: Thank you.

Werner Rhein, please.

Mr. Rhein: Thank you for the chance to have an input on your decision-making. I'm absolutely and totally against any oil and gas development in Yukon. The whole world has to divest from fossil fuels before it is completely too late.

Ban fracking now. The main propaganda from the industry is geared to make us believe we need this energy source to sustain our lives through jobs and the energy for it provided, which is a straight-out lie. The jobs involved in the oil and gas industry in Canada are only about two percent of all jobs, and the energy could come from renewable, clean, non-destructive alternative energy and create five to 15 times more jobs per dollar spent.

We are made to believe oil and gas gives us a decent life. Actually, it is exactly the opposite. First, it enslaves us to work for wages, where governments could collect easy taxes from us, and the rest we mainly spend to have a vehicle, fill it with propellant, repair it, insure it and pay for the interest rates to replace it. Vehicle cost in an average family is in second place after providing a roof over our heads, but the worst evil is, it destroys our environment for all of us, rich or poor, vehicle owner or not.

So now we are at a very important crossroad. We can make the political decision to incrementally reduce this destructive energy and start building on an energy grid and system that would not destroy our Mother Earth — that would use new and old sustainable energy alternatives. Old energy sources are the water and wind. They were used for millennia. New energy sources are solar to convert free sunshine to electricity and hot water, biomass to create gases that could be burned for cooking, heating or propelling engines, and these gases can be stored exactly the same way as natural gas.

Why do we want to continue with a very destructive technology which profits only very few people who have the power over us because they enslaved us into using their technology but with our resources?

We provide them with the infrastructure and when things go wrong, we can pay for the cleanup too. We bear the costs for global warming and climate change. Why can't we stand up and tell those people, "Go to hell with your greed?" We can. We just saw it last weekend. There were 400,000 people on the streets of New York alone and millions more around the world demanding we divest from fossil fuels. Our ruler doesn't feel that it's necessary to attend the UN climate change conference in New York, which opened on Tuesday. This is an insult to every person who thinks about the future generations. We can do better on our own. We can take the sunshine and the wind for free. The fuel sources for biomass gases are local and will create local jobs. The profits won't go only to some yahoos in Texas and foreign countries. Profits won't go only to someone lying on a beach in the Bahamas who pays no taxes.

The cost for the hardware for alternative energy technology are now by far less than the cost of finite fossil fuels which will run out probably sooner rather than later. Then we have to switch eventually anyway — only then, we have to; now, we can.

The media spin from the industry is that natural gas is a cleaner energy source is a straight-out lie.

Chair: One minute, please.

Mr. Rhein: This is not just known in the last few years. There is more and more scientific information coming into the light of day about the resulting pollution and the dangers for our health. For years, fossil fuels have been spewing radioactivity into the environment, because the fuels are contaminated from deep underground existing radioactivity. Example: the coal-fired power plants in the U.S. are releasing 155 times the radioactivity every year than that was released during the Three Mile Island nuclear power plant accident on March 28, 1979 in the U.S. Yes, that's right, every year 155 times the radioactivity released into the atmosphere than from that accident just from coal.

Oil and gas contains radioactive materials too and the industry knows, but the information is kept in the bottom drawer in the industry.

Chair: Thank you, Mr. Rhein.

Mr. Rhein: I strongly recommend no fracking in the Yukon.

Chair: If we are very good time managers, we should be able to hear three more speakers.

Mr. Tremblay, please — Gerard Tremblay.

Mr. Tremblay: [*As interpreted from American Sign Language by Amanda Smith, registered sign language interpreter.*] Hello, my name is Gerard Tremblay. My son's name is Matthew and he couldn't make it here tonight, so I'm speaking on behalf of my son and on behalf of myself as well. I want to say thank you first for Currie Dixon enabling a sign language interpreter to be here. Without that, I wouldn't be able to speak out this evening, so I want to commend you for that choice.

Recently, my son and I went on a motorcycle trip. We went to Fort Nelson. We were driving around on our motorcycle and we saw loads of pollution everywhere. LNG was setting up their company and I told this to my son and we continued our trip, visiting all these communities across the north. We went right across Highway 43 south. We wanted to go to Jasper — that's where we were heading. On our way, we couldn't believe all the fracking that we saw across the country — all the bush that was cut down, all the traffic that was everywhere. On a motorcycle, it was terrible. We saw hardly any tourists on the road and the smell was incredible. The flames that we saw — my son was in shock.

When we were driving around here, it was kilometres and kilometres — setting up all of these things right in front of our faces. It wasn't even hidden. This large infrastructure was right in front of our faces. ATCO trailers were everywhere. I thought, "Oh yeah, ATCO trailers". We recognized that. Before, my son saw that too. We knew fracking was being set

up. It was shocking. My son, at that point, had the fear. He was born in the Yukon and he values what we have here. My son is 13 years old and he speaks against fracking in the Yukon here himself.

Now, on behalf of myself, I have seen things and I am sick of it. I am definitely scared. I am scared for my children and for everyone else's children. But your future children too will become sick. What are we doing about this too? We should not be supporting fracking at all in the Yukon.

Remember the earth has four forces, which means what? There is fire, air, wind and water. If one of those is gone, everything suffers. It puts off a chain of the Earth's natural process. We need that unity and that balance to have a proper life on the Earth. We need to care for those things that we are given. We need to watch the Yukon. The Yukon is a place of beauty — beautiful fresh air. We are the last one. People are coming to us because we are the ones left with clean air and the clean water. We want the Yukon. We want to be an example of what we have here and show them what we protected here.

No fracking — nothing like that; that's what I support. We want people to look up to the Yukon as a role model and be proud, not as the Yukon following all the mistakes of other people. We don't want fracking here at all in the Yukon. Please do not accept this. Thank you.

Chair: Thank you.

Annie Pellicano.

Ms. Pellicano: Good evening. Well, we've had a song. We have had a nice presence from so many people and a lot of information. I am going to read you a story now. This is a little book that I found really refreshing, really good, really important. This is my first read of David Suzuki. We have heard of him tonight. We have heard lots of things. Here is maybe a bit of a positive outlook.

It is called *The Legacy* and it's an elder's vision for our sustainable future. I just chose three little sections to share with you:

"Whether it's in the Amazon, the Serengeti, or the Australian outback, Aboriginal people speak of Earth as their mother and tell us we are created by the four sacred elements: Earth, Air, Fire, and Water. I realized that we had defined the problem incorrectly. I had pressed for laws and institutions to regulate our interaction with the environment when, in fact, there is no environment 'out there', separate from us; I came to realize that we *are* the environment."

"Leading science corroborates this ancient understanding that whatever we do to the environment or to anything else, we do directly to ourselves. The 'environmental' crisis is a 'human' crisis; we are at the centre of it as both the cause and the victims."

In this nice little section that he calls "Biophilia" — the love of life — I chose two excerpts that talk about water.

First: "Every person in the world is at least 60-percent water by weight. We are basically blobs of water with enough organic thickener mixed in to prevent us from dribbling away on the floor. The hydrologic cycle of evaporation,

condensation, and rain ensures that water cartwheels around the planet. We are part of the hydrologic process. Every drink we take has water molecules that evaporated from the canopies of every forest in the world, from all of the oceans and plains. Again, we say we are intelligent, but what intelligent creature, knowing that water is a sacred, life-giving element, would use water as a toxic dump? We are water, and whatever we do to water, we do to ourselves.”

This is about earth: “Every bit of the food we eat for our nutrition was once alive, and most of it comes from the soil. We take the carcasses of plants and animals, tear them apart, and incorporate them into our very being. We are earth.

“We say we are intelligent, but what intelligent creature, knowing the role the earth plays in constructing our very bodies, would then proceed to use the earth as a dump for our waste and toxic material? We are the earth, and whatever we do to the earth, we do to ourselves.”

Thank you. I do not support fracking in the Yukon.

Chair: Anne Smith, please. Just a reminder that Ms. Smith will be our last speaker tonight. Folks who don’t have an opportunity to participate tonight and may have trouble making it on Saturday are invited to submit in writing. Thank you.

Unidentified speaker: (inaudible)

Chair: Ms. Smith, please. Thank you.

Ms. Smith: My name is Anne Smith. I am an elder for the Kwanlin Dun First Nation.

I wanted to talk a little bit about myself and my family. I am a grandmother and I am also a great-grandmother. I wanted to say tonight that’s the reason why I am sitting before you — because of my grandchildren and my great-grandchildren and the ones that are not here yet. That is the reason why I’m here. They do not have a voice in this process. I almost feel as if I don’t have a voice, but I will talk anyway.

To me, it’s very important that we realize what we are doing today. You know, we have to live it, our children have to live it and our grandchildren have to live that. One of the biggest things that we talked about tonight, and this is what I hear — I tried to deal with the truth, the truth that is staring at us in the face today and the things that we have to think about for tomorrow and also into the future. Even after we are gone, there will be questions — questions that will come from our children and our great-grandchildren. This is what we have to think about today.

The greatest resource that we have — even though you say that it’s not a resource, it’s a resource to all life — and that is our water. If we do not have this water, nothing will grow and everything will slowly start to die off. We watched this through history. Through the past, what has happened here in the Yukon, we have watched Lake Laberge go down. We have watched pollution. We have seen our fish die in there. Coming up, the fish that we get are sick. This is what we have to live with today.

I know it sounds very negative, which is also the truth. It stares us right in the face. It stares us right in our eyes. You have to start using your mind along with your heart if you care

about the children. That’s the reason why I sit here with my little great-granddaughter, who is only three years old. When she talks to me, she’s like — she has a very tiny voice. This is why I sit here today.

We have to start thinking about the greatest resource that we have, which is our water. We think that we have a lot. It’s not true. We have only one chance in this life and we have to make the most of what we have to have a good, healthy life here. That’s for all people and all our children.

If we throw away our water, we have seen in the past what it has done to our fish. We still live it today. My family has not fished for many years. We used to go and dry salmon every year. That was part of who we were. As a people, that was part of our culture. That is how we did our harvesting every summer. We have not done that for many years now, because the quota for the Kwanlin Dun and Ta’an Kwäch’än — the quota for getting salmon on an annual basis is only 47 salmon. Is this what we bring to our children? If you think about it — but we know they are starting to come back.

If we allow this fracking to happen today, then we are killing all life. It is not our place to do that. I feel that the creator did not put us on Mother Earth to do this to our children. The onus will be on you to make sure that you listen to what the people are saying.

This is what we’re saying: no fracturing in the Yukon, period. For our children’s sake, this is what we ask of you and we beg you that you do this for our children. That way, they will survive. We have to think ahead of not just now, not just because of money, because money — we cannot eat it and we cannot drink it. You think about that.

Günilschish. Thank you.

Chair: Thank you very much. We’re going to run five minutes overtime so that we can hear from Winnifred Peterson, please.

Ms. Peterson: I didn’t mean to be rude earlier. I just feel strongly about what I have to say and I’m going to say it in the time that is allowed. Thank you very much, panel, for allowing me this.

[*Tlingit spoken*] In my Tlingit language, that means, “My name is Shkhinduyd in Tlingit.” My English name is Winnifred Peterson and I belong to the Kookhittaan clan, the raven children of the Teslin Tlingit people. I’m a very proud Tlingit because I had a very, very proud, strong, knowledgeable, traditional mother and the ancestors before that. My mother was my role model. She still is. She’s my hero; she’s my teacher; she’s my everything. She helps me, she teaches me to be who I am, for myself and for my children and my grandchildren. Some of you may not know this, but I am a great-grandmother. That’s why I feel so strongly about being here.

I’ve been speaking out for a number of years. I’ve been involved with the Yukon River Inter-Tribal Watershed Council — very, very powerful group they are. I’m proud to be part of that because 70 nations along that Yukon River on both sides get along, they cooperate, they clean up, they do things together. If there are any disputes or whatever — I

don't know them all, but they sort them out and they're cleaning up that river. Even the ones who didn't do anything to the river are taking part in cleaning it up. That's what I love about that inter-tribal watershed council. Jimmy Johnny is always there. We went to Ruby, Alaska and we danced every night, hey Johnny? They had old-time fiddle dance every night. We had a great time and a good meeting. It was raining all the time, but that's water.

Anyways, my mother is Carrie Jackson in Teslin. She had an arranged marriage and she left that arranged marriage. She was a rebel but she was a firm believer in whatever our traditions are. She really feels strongly about water — about keeping it clean. We never wasted water. We used every drop of it, whatever we had — because, you know, like in Fish Lake, when we spent summers there — I didn't grow up in Teslin. I went to residential school in Whitehorse and then to Fish Lake for the summers. That was my happy time, in Fish Lake. Beautiful place — cold lake, good fish — everything — all kinds of small game, berries. Mom was a single mom and she didn't need anybody when we were out there. She just needed some staples and we lived good every summer. Those were my happy times. The sad times were when it was fall time and it was time to go back to school. Even though she lived in Whitehorse, we had to go to school there.

Anyways, what she taught us about water is that you don't waste it, you don't abuse it, you don't dirty it and when you swim, you swim in an assigned area. You don't just play around with the water, like Pearl Keenan says — my mom never said it so much in words, but she had the utmost for water. It's life. I will say this now. I would usually like to say it at the end, but people say, you know, there's — if we don't have water, it's one of our most important resources. Well, I say it is life. Without water, there is nothing, no life. So why fool around with the rest of it? Just take care of the water. That's what you got to do. That's what we all could do.

I asked my elder Pearl Keenan. She was good friend to my mom — but she was like 25 years younger than mom but she had an utmost respect for my mother. When my mother passed, she happened to be there in a lodge with us. Since then, we became fast friends and she's my mentor, my teacher, my elder, my helper. She taught me about water ceremony. We did water ceremony down at Shipyards Park. I forget the year, but Carl Sidney was one of the panel — and I forget the other fellows. But she did the water ceremony there and she told me what we were going to do and I had to help her. I didn't know I was going to do it until the time came. She said, "Now here, you're going to do it. So this is what you're going to do."

I did that water ceremony and I tell you what, I turned around because I went down to the steep part. She said, "You got to go right there. You can't throw it." It's a mixture of an offering. "We don't worship the water," she said. She talked awhile before she did the ceremony. Then she told me to do it, but she said, "Go right down there," so where I had to go was really steep so my son and somebody else held me like this because she said, "You have to put your hands right in the

water," because guess what? The sage, the tobacco, the cedar and the eagle down — what a beautiful offering that was. Just saying thank you to the water and respecting it — the water is a spirit too. We don't worship it. We respect it and if you respect water, it'll respect you. You won't get sick.

Every time mom travelled later in life — she travelled to Williams Lake when I moved there and she went to Ottawa when Adeline was there for two years. She went to Calgary when our baby sister moved there. Well, guess what? Every time she went someplace strange, she drank the water and she'd always get sick. It always didn't agree with her. She was a firm believer in taking her own water sometimes on the airplane when she could, you know. I really believe strongly in it and I thank you very much for listening to my words.

I want to say one thing. My heritage on my father's side I know very little about, but I know he's Norwegian and he was about 25 years older than my mom. He came up on the Alaska Highway with two of his sons who were my mom's age. Anyway, that just tells another story.

One thing I want to encourage people to do is to ask your elders — because I'm European descent too. I don't know much about it, but I know that I think all cultures had water ceremony. That's what I firmly believe. I've seen some things on movies and that and I'm sure that we had to do this thing to show our respect because of the — we didn't have all the science that we have today. I encourage you, not only First Nations — I talked to my First Nations like that and I talked to the watershed council — a couple of times, they asked me to lead a water ceremony there. I encourage all people to ask your elders. I know that there's a water ceremony. You all have it. You know what happens? It stops people.

When we did that water ceremony down at the Shipyard, the people — when I said I was scared to stand there, but I did it and then put that offering in the water and Pearl at the top was saying a prayer — thank you and we're trying to clean this up. It was ironic right there where this was all this waste from the shipping, I guess — all this metal and dirty old things in the water, but that's the way it is.

So ask your elders about — what I want to say about that ceremony is when we finished, I wanted to get out of there right away because I felt like I was going to fall in, but I said, "Dan, I want to turn around real quick." But I watched that offering go out and it was beautiful. I wish I had a video camera to take a picture. I turned around and you know that place up there where people can stand by the river? Well, I looked up and — they were that close, I could see people had tears in their eyes — and I'm talking about non-First Nation people — because the ceremony makes you stop. It literally stops you in your tracks and makes you think about what it is we're talking about — why you have to do it.

So I encourage you all to ask your elders, revive the ceremony, because — I'm a great grandma, and I'm probably going to be a great, great, if not another great grandma. So look at all I have to look after. They say seven generations. Well, I might have them all anyway before I die. So I want to

look after things. I appreciate Anne Smith's words, and Sean, her son — powerful words — a politician now and elder.

Günilshish to Kwanlin Dun people for sharing this building with us for this kind of meeting. I feel more strong when I'm here. I can feel the elders. I can hear some of them. So please, let's all listen to them — what they represented — and your culture too, because you have it. I know it. Thank you. Günilshish.

Chair: Thank you. And I'd like to thank you all for attending tonight and I trust we will see some of you on Saturday at 1:00 right here. Thank you very much.

The Committee adjourned at 8:11 p.m.