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From: [redacted]
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Please find attached my written submission to the Public Bills Committee (formerly Law Amendments) regarding Bill 6—The Act Respecting Agriculture, Energy and Natural Resources.
Respectfully submitted,

Gillian Thomas
[redacted]

Although I am unable to travel to Halifax to present in person, I am glad to have the opportunity to make a submission regarding Bill 6. Regrettably, I do so with considerable skepticism arising from the posture of the current government towards public consultation.

That this committee (formerly Law Amendments), now renamed "Public Bills" and deprived of the power to propose amendments, seems particularly ominous given Premier Houston's incorrect claim (February 28th) that presentations to Law Amendments have never resulted in changes to proposed Legislation.
Even more disquieting is the fact that radical changes to land use, unmentioned in the party's election programme, are now incorporated in Bill 6 with a direct impact on Mi'kmaq rights according to Section 35 of the 1982 Constitution Act without any consultation with Mi'kmaq leaders and representatives.

It is expecially worth noting that past Nova Scotia governments formed by each of the 3 parties have approached major decisions concerning resource extraction by initiating public consultation.
The Buchanan government responded to the concerns of (primarily rural) Nova Scotians about uranium exploration by setting up the McCleave Inquiry which received 244 briefs and presentations. 211 of those submissions were from private citizens or small local groups and all but one opposed further uranium exploration.
A more sophisticated model of public consultation was the inquiry about fracking headed by David Wheeler which reported to Stephen MacNeil's Liberal government in 2014. The final report is a comprehensive examination of scientific and technical evidence which incorporates and respects the concerns raised by members of the public.
These 2 inquiries have one important feature in common. Both were established **before** a decision regarding resource extraction was made. This is in sharp contrast to the approach of the current government. Communications from government MLA's offices refer to the proposed legislation as a means to "pave the way" for a dialogue once the "blanket ban" is lifted. A letter from the Department of Natural Resources states "We are lifting the ban on uranium to start the conversation [my emphasis]about how to take advantage of this natural resource."
With respect, the analogy that comes to mind with this approach would be a municipality that gives out building permits only after house construction is completed.

It appears that the current government's enthusiastic embrace of resource extraction pertaining to uranium comes from the following 4 main assumptions:
1.That banning uranium mining hampers the search for other minerals
2.That Nova Scotia can use Saskatchewan as a model for uranium exploitation
3.That modern mining technology eliminates environmental risks
4.That uranium exploitation would be an economic boon for Nova Scotia

I will address each of these as briefly as I can:

1.That a ban on uranium hampers the search for other minerals

This was the repeated claim of many industry advocates in 2009 when the original moratorium was being formalized into a legislative ban. Frequently the language used was highly emotional and alarmist, for example, suggesting that it "will shut down mining in this province." Or, more specifically, "A company will not explore for any non-uranium base metal or gold targets as long as their project is subject to closure due to inadvertent discovery of uranium." John O'Sullivan, November 2, 2009. Clearly exploration for and mining development of "gold targets" has been unhindered by the uranium ban as the existence of subsequent gold mines shows.

It is striking that only one of the many assertions to Law Amendments that mineral exploration was impeded by the uranium ban cited an actual case where work was stopped because of the amount of uranium found in samples. Tellingly, this sole example came from Cappella Uranium—a company that repeatedly assured the public that, despite its name, it was really "looking for other minerals." Aside from the company's name, some skepticism might have been triggered by the fact that Capella had staked claims to 60,000 hectares adjacent to Millet Brook in Hants County—the proposed site in the 1980s of the uranium mine planned by Aquitaine (later Kidd Creek). An examination of Cappella's company reports suggests that the company estimated that the moratorium was sufficiently porous to merit going ahead with uranium exploration.[1]

It is also of interest that mining proponents were prepared to argue that mineral extraction should replace traditionally established rural industries. For example, John Wightman suggested that, "Agriculture, forestry and the fishery are in decline," and should be replaced by, "A rural based mineral industry." November2, 2009.

2.That Nova Scotia can use Saskatchewan as a model for uranium development

The Mining Association's "End the Uranium Ban" presentation relies heavily on photographs and other material to illustrate what it refers to as "The Saskatchewan Example."

They fail to mention that all of Saskatchewan's mines in the sparsely populated Athabasca region are more than 600 kms away from the nearest town of any size—Prince Albert, which is approximately twice the size of Glace Bay. By contrast, Millet Brook in Hants County where Aquitaine (later Kidd Creek) proposed to mine uranium in the 1980s is about 60 kms from HRM and closer still to communities like Windsor and Wolfville. Nova Scotia is Canada's second most densely populated province with its most valuable farmland located in the Annapolis Valley—the same area where uranium claims were most extensively staked before the moratorium and subsequent legislative ban.

A more relevant comparison to Nova Scotia's situation is one geographically much closer than Saskatchewan.

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[1] Cappella considers the holdings in **Nova Scotia** to host the most significant mineralized occurrences and, coupled with Nova Scotia's excellent infrastructure, reducing the cost of mineral exploration; it is poised to invest there into the brunt of exploration activities. Most held properties are large enough to support mining activities, but because of the light, but generally pervasive cultural influence, discretion would have to be exercised in the location of any processing facility. CAPELLA RESOURCES LTD. MANAGEMENT DISCUSSION & ANALYSIS

The State of Virginia has the largest unmined uranium deposit in the US. Like the deposits found in Nova Scotia, Virginia's are rated as "low grade." Despite its long history in mining, Virginia has had a ban on uranium mining dating back to 1982 and upheld by the US Supreme Court in 2019.

The main reason, summed up below, bears close comparison with Nova Scotia

According to the Environmental Protection Agency's TENORM Report,[2] "Water is perhaps the most significant means of dispersal of uranium and related [radioactive materials] in the environment from mines and mine wastes...Uranium is very soluble in acidic and alkaline waters and can be transported easily from a mine site." This is of great concern. If Virginia allows uranium mining, it would be the first state to do so in the United States in a climate where rainfall exceeds evaporation.
The identical concern was stated in Environment Canada's submission to the McCleave Inquiry in the 1980's. "In Nova Scotia, the wet climate, generally high water table, and generally acidic waters, may pose special problems to radioactive waste management."[3]
Virginia's Piedmont Environmental Council also states:
"Uranium has never been mined in the eastern United States. In Virginia severe risks posed by the state's high rainfall, intense storms, and natural events such as hurricanes and earthquakes, make it particularly unsuitable for mining and milling. In the United States, uranium has only been mined in arid areas, where the low rainfall makes it more feasible to contain the radioactive and toxic mine wastes and mill tailings." They add:
"Not only does the Virginia Piedmont have greater annual rainfall than other uranium mining communities, it also has greater acute rainfall events."
Like Virginia, Nova Scotia has an annual precipitation that exceeds evaporation. It also has a higher precipitation than Virginia (1300 mm a year as opposed to 1000) and has had extreme rainfall events (notably 860 mm in July 2023) far exceeding those recorded in Virginia. Nova Scotia government's own studies warn that extreme rainfall events are likely to become more common because of climate change.
.https://climatechange.novascotia.ca/sites/default/files/uploads/climate-change-risk-report.pdf Nova Scotia's annual precipitation also massively exceeds that of Northern Saskatchewan (1300mm as opposed to 400mm)

The vast differences geographically and climatically rule out the relevance of the Saskatchewan mines as an "example" for Nova Scotia, quite aside from the fact that the Athabasca Basin holds a vast reserve of exceptionally high grade uranium bearing no comparison to the low grade ores found here.

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[2] https://www.epa.gov/radiation/tenorm-resources

[3] https://novascotia.ca/natr/meb/data/pubs/ofr/ofr_me_612.pdf

3.That modern mining technology eliminates environmental risks

The Mining Association's "Not Your Grandfather's Mining Industry" site extolls new mining methods and repeats some of this in its uranium promotion. It would be astonishing if mining methods had NOT evolved over the decades. However, regardless of the specific mining technology adopted, uranium mining poses particular problems—summed up in this statement from a recent US Environmental Protection Agency Document:
"Regardless of how uranium is extracted from rock, [my emphasis] the processes leave behind radioactive waste. These processes separate uranium from its decay products which are also radioactive and actually contain most (80-90%) of the radioactivity in the rock (ore). The solid radioactive wastes that are left over from the milling processes are called tailings and the liquid wastes are called raffinates. Mill tailings and raffinates are stored in specially designed ponds called impoundments. The tailings remain radioactive and contain hazardous chemicals from the recovery process." US EPA January 29, 2025[4]
The Mining Association's PR publications and interviews with media make much of the intent to use in situ leaching to mine uranium deposits in Nova Scotia, giving the impression that this is a new mining technology. In fact, it has been used in mining uranium and various other minerals since the middle of the last century, initially in the Soviet Union, and later in the 5 remaining uranium mines in the US—all of which are in comparatively arid zones. While it is an attractive option to the mining industry because it is significantly cheaper than either open pit or underground mining, it poses its own hazards. As the World Nuclear News noted in November 2023, "it requires suitable geology: the orebody needs to be permeable to the liquids used, and located so that groundwater away from the orebody cannot become contaminated." The potential for groundwater contamination is also noted in the Nuclear Regulatory Commission's study of in situ leaching uranium mining operations quoted below:

"ISL operations may affect the groundwater quality near the well fields when lixiviant [i.e. the leachate solution] moves from the production zone and beyond the boundaries of the well field. This unintended spread, either horizontally or vertically, of recovery solutions beyond the production zone is known as an 'excursion.' [i.e. a leak]" The NRC notes that leaks ("excursions") can be caused by a number of factors, among them, undetected high permeability strata or geologic faults, improperly abandoned exploration drill holes, poor well integrity, such as a cracked well casing or leaking joints between casing sections, or hydrofracturing [fracking]of the ore zone.

Since ISL's impact on groundwater is regarded as more or less inevitable, US legislation requires

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[4] https://www.epa.gov/radtown/radioactive-waste-uranium-mining-and-milling?fbclid=IwY2xjawIsWLVleHRuA2FlbQIxMAABHTtZ4Mf_oKp4tVJnKuRqN7D3Vt7naNLIQFWEu8WY8lObz6c7UWVMcTQdUA_aem_BfgOi93lA6kkGGMM6bVM-g

that: "Before ISL operations can begin, the portion of the aquifer designated for uranium recovery must be exempted as an underground source of drinking water, in accordance with the Safe Drinking Water Act"[5]

This provision of exempting aquifers adjacent to in situ uranium mining operations speaks clearly to the expectation that the process will inevitably involve leakage or "excursions" of hazardous liquid. While the state-by-state licensing process restricts the ability to assemble a complete picture of the frequency of such leakages nationwide, it's worth noting that Wyoming recorded over a hundred "spills" over a 6 year period. One such spill in August, 2017 put over 200,000 gallons of contaminated water into the water table and was followed a few days later by a second spill that forced a temporary mine shutdown.[6]

4. That uranium mining generates many jobs and contributes to prosperity

Mining is notorious for its boom and bust cycles and uranium mining mirrors this. Even the companies exploiting the vast high grade ore body in Northern Saskatchewan temporarily step down production in response to falling uranium prices. For example, the Rabbit Lake mine has been put on hold since 2016 because of low prices.

As a Province, Saskatchewan also incurs significant costs to support the industry. Saskatchewan tax payers have already paid $220 million to clean up "unconfined tailings" from older mines. Currently, the Saskatchewan Energy and Resources Department are only asking the Orano company to leave about $390,000 total as (1) financial assurance and (2) for dealing with "future unforeseen events" associated with the tailings from the 1980-2002 operation at Cluff Lake. Since the tailings contain Radium -226 with a half-life of 1600 years, it seems that Orano's pledged money will be nowhere near sufficient for long term waste containment.

The Mining Association's most recent PR praises the current Nova Scotia government "for acknowledging the industry's potential to create more jobs and opportunity for Nova Scotians" but provides no details about patterns of employment in mining. It's worth noting that the specialized nature of uranium mining and its particular hazards would need to rely on people with experience in that industry. It's notable that few, if any, of Nova Scotia's DNR employees have direct experience of uranium mining which, in itself, raises concerns about the capacity for responsible oversight. The only Nova Scotian I've come across who's worked in a uranium mine is an older man who worked as a labourer for a few years, carrying bags of yellowcake, at the mine in Uranium city –the mine closed in 1982. Uranium "City" has now been reclassified as a "settlement" and lists its population number as 73.

The Mining Association's favorite and endlessly reposted picture of a Saskatchewan mine is of the underground mine at Cigar Lake, displaying the shiny clean conditions—a necessity for safety reasons in a mine with such a phenomenally high grade ore. MANS does not mention that 50% of the ore from Cigar Lake is extracted by automation, controlled by artificial

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5 https://www.nrc.gov/docs/ML1509/ML15093A360.pdf

6 https://apnews.com/general-news-c73ae2a2b2ca4abe942e30dd1f4d95bd

intelligence. For light relief check this Youtube example of clueless business reporting where the reporter is giddy about being able to use wifi in Cigar Lake's deep underground mine in its remote Northern location. : https://www.youtube.com/watch?v=ztNMW1Qlsds
"Safe" uranium mining will increasingly rely on automation in order to protect workers which will also drastically limit the number of jobs on offer.
Anyone who needs to understand the economic realities of resource extraction in Nova Scotia needs go no further than the highly readable and well-informed article by retired geologist, Dr. Elizabeth Kosters in the Halifax Examiner
https://www.halifaxexaminer.ca/commentary/premier-is-pushing-extractive-industries-but-is-anyone-even-interested-in-nova-scotias-uranium-lithium-and-fracking/

Conclusion:

All sections of this submission have necessarily mentioned the impact of reckless resource exploitation on the water supply. Rather than supplying yet more technical reasons for why the current government's approach to resource extraction is so rash and unwise, I will offer a quotation from W.H. Auden's poem "First Things First,"

". . . putting first things first:
Thousands have lived without love, not one without water."

Gillian Thomas,
[redacted]