The Critical Question:

How Can Canada Build More Mines Faster?

Address to the Greater Vancouver Board of Trade

Pierre Gratton, President and CEO

Mining Association of Canada

September 12th, 2023

The Hotel Vancouver

*check against delivery

Good morning. It is great to be back in Vancouver and here with all of you to discuss the most critical issues facing our sector.

I want to begin by recognizing that we are gathered today on the unceded traditional territories of the Musqueam, Squamish and Tsleil-Waututh nations. I would also like to acknowledge the hundreds of Indigenous nations across Canada on whose traditional lands our industry operates and with whom we have strong partnerships.

Last year, I observed that no sector is as inextricably linked to humanity's evolution as mining. Indeed, entire ages are named after our sector's products. Today, our sector is being called upon to help address the greatest crisis of our time — climate change — because of the essential role many minerals and metals play in the energy transition. Without mining, there are no electric vehicles, no wind farms, solar panels or nuclear energy, and no transmission lines.

We face this challenge with an unnerving backdrop of record forest fires, hurricanes, flooding and other alarming signs of an overheating planet. This month, Politico reported that 40.5 million acres of Canada have burned during this year's wildfire season, or the equivalent of 4 Switzerland's. The over 6,100 fires, resulting in over 3,000 Environment Canada air-quality alerts, have officially made this year's wildfire season 10 times worse on average than what Canada has experienced in the past. Flooding has devastated communities from coast to coast to coast. Heatwaves have been oppressive, and it was sobering to learn that, according to data from the US National Centers for Environmental Prediction, July 3rd was the hottest day ever recorded globally.

With the effects from climate change being felt across the globe on an ever-increasing scale, greater pressure is being put on our industry to deliver the inputs essential to a lower carbon future.

There are many reasons why Canada in particular is feeling the pressure to deliver these critical materials. Customer interest in Canada's metals and minerals is high due in large part to our clean energy grid, strong regulatory system and leadership in ESG. Customers buying mining products from Canada can have every confidence that they were mined responsibly, to the world's highest standards, and with fewer greenhouse gas emissions than anywhere else in the world.

I travel around the world meeting with Ambassadors, senior government officials, mining chambers, other industries, including the auto sector, and and am proud to say that our mining sector is widely considered to be a global leader in its commitment to ESG, particularly via MAC's made-in-Canada standards like *Towards Sustainable Mining* or TSM.

Not only is our sector playing a key role in sustainably producing low carbon technologies, but it is also one of the most important economic contributors in the country.

In 2022, the minerals sector directly and indirectly contributed $148 billion, or roughly 6%, to Canada's total nominal GDP and employed close to 700,000 workers across the country in mining, smelting, fabrication and manufacturing. Proportionally, the mining industry continues to be amongst the largest employers of Indigenous peoples, who account for 11% of the labour force.

Our presence in BC is particularly significant. Home to over 1,000 exploration and mining companies, most of which are in the greater Vancouver area, BC is one of the top three mining provinces in the country with a production value of $18.2 billion in 2022.

This province is home to innovative companies that are doing important work in lowering their own carbon footprint to ensure mining is being done responsibly via standards like TSM.

Take New Gold's New Afton Mine, recipient of the 2022 TSM Award of Excellence for its work in using innovative low-carbon technologies and battery electric loaders and trucks to enhance its energy performance.

Or Teck, another TSM implementing company, that recently announced a $5 million donation to the BC Parks Foundation to grow the province's world-class parks and protected areas. Part of Teck's efforts to become a nature positive company by 2030, Teck's actions reflect its commitment to go beyond stewardship of their operations through investments in conservation, protection and restoration beyond the mine gate.

Far from just being focused on the environment, TSM also encompasses globally recognized standards in community engagement and energy efficiency. And investors, customers and the public are taking notice of how TSM is leading to better mining practices. In fact, our latest public polling results indicate that, after finding out that our sector is pioneering rigorous ESG standards through the TSM initiative, 88% of Canadians have an improved perception of Canadian mining. Furthermore, companies that are implementing TSM show an 81% approval rating, compared to only 48% approval for non-Canadian mining conducted elsewhere in the world.

Not only are TSM's protocols regularly updated to reach ever higher benchmarks but new elements are also added to the standard when rights holders, stakeholders, customers and investors voice their interest in seeing data on how mines are performing in specific areas. A recent example is in the area of equity, diversity and inclusion, though in this case one of the greatest advocates was our industry itself.

To meet the increased global demand for minerals and metals, the mining industry needs a highly skilled and diverse workforce, an area our sector, which continues to be predominantly white and male, has historically struggled with. As the sector enjoys a generally favourable price environment, the demand for people is once again increasing — and we are paying the price for our demographically homogeneous work force.

While Canada's mining sector may stand out for the progress it has made in Indigenous inclusion, women, individuals of diverse racial, ethnocultural, national backgrounds, sexual orientations and gender identities, continue to be underrepresented.

As I put this to you, are some of you thinking — has Pierre gone "woke"? For those who know me, I have spent my entire mining career focused on how to make the mining sector better. If that's woke, then I embrace it. However, the benefits of a more diverse workforce are vast. According to EY's recent report on the importance of greater inclusion of women in mining in particular, greater emphasis on EDI at the corporate and mine-site levels leads to many benefits, including enhanced economic results, better environmental performance, greater innovation, improved safety outcomes, and strengthened community relationships.

But it's more than that. Frankly, Canada's mining sector is facing a people crisis. While our nation has an abundance of the minerals and metals required for the world's transition to a low carbon, clean economy and is uniquely positioned to mine responsibly, safely and sustainably, long-term social and demographic challenges undermine the sector's labour supply and its ability to respond to industry growth. Among the challenges we face are:

- An ageing workforce with rising retirements while fewer young people enter the industry.
- Decreasing enrollment in post-secondary mining programs.
- A historically low mining unemployment rate (under 1% in July 2023) while total employment has grown over 40% since January 2022.
- Continued challenges to attract and retain underrepresented groups.
- To laser in on what I'm talking about, while undergraduate enrolment across all other engineering programs is increasing, mining engineering enrolment decreased by over 50% from 2014 to 2022. Geological engineering enrolment was down 36%, and other mining-related programs are experiencing similar declines – highlighting a bottleneck for attracting new talent.

What these alarming statistics tell me is that we're not only failing to attract a more diverse work force, we're even failing to attract our traditional work force. We have to do more and do better and do it quickly if we are to make the most of the opportunities at hand.

It is with these goals in mind that we launched a new TSM protocol focused on improving performance in EDI, and enhanced our Safety and Health protocol to address psychological

safety and respectful workplaces. TSM has a proven track record of driving change — and performance improvement — across the areas it tackles, whether they be Indigenous and community relationships, biodiversity, tailings management or climate change. The hope — and the goal — is that these new TSM elements will help drive the change we so desperately need to address our acute work force challenges by making our sector a more attractive employer to a wider range of Canadians.

And we know it can be done. We need only look at BHP, the world's largest mining company building the largest mining project in the history of Canada — the Jansen potash mine — on track to have 50 percent of its workforce female by the time the mine starts operating. BHP's commitment to diversity several years ago was met with a lot of skepticism — or worse — by their peers. Today, the skepticism is gone, replaced by imitation.

All of this data predates the anticipated surge in mining to meet the demand for new materials I was talking about earlier. Let me remind you of the sheer quantities of minerals and metals that that are needed for the energy transition alone: a potential 500% increase in the production of minerals according the the World Bank, with EVs and battery storage driving about half of the mineral demand growth from clean energy technologies until 2040, primarily due to soaring battery materials demand.

Earlier this year, the International Energy Agency reported that, in Europe alone, EV sales increased by over 15% in 2022. Last month, however, it was further reported that year-over-year EV sales in Europe in 2023 increased over 50 %; in Belgium, over 200%. Growth of EV sales in North America is slower but at just under 50% not insignificant.

And this matters for mining, because the average EV battery contains roughly 185 kilograms of minerals including lithium, cobalt, nickel, manganese, graphite, copper, iron and aluminum.

Canada not only already produces all these metals, we also have vast and untapped reserves. With our electricity grid among the world's cleanest, with 82% coming from renewable or non-emitting sources, domestic production of critical minerals in Canada results in lower carbon-intensive finished products compared to global alternatives. Even if extracted from off-grid mines powered primarily by diesel, minerals and metals processed in Canada have some of the lowest carbon intensity on the planet.

Several global automotive and battery manufacturers, like Volkswagen, Ford and General Motors are choosing Canada for their factory sites and material suppliers. These companies are setting up shop in places like St. Thomas, Ontario or Becancour, Quebec, close to where many of the metals are sourced from and taking advantage of subsidies for material sourcing and production in North America.

What this means, of course, is that we're going to have to grow our mining sector. In a big way. We need more mines, smelters and refineries to feed the needs of battery plants, the EV value chain and many other sectors. Our most widely reported hurdle, and one increasingly recognized by politicians from all parties and now frequently referenced in the media, is Canada's inability to efficiently get mines permitted and into production. I'd add to this, however, the HR challenge I just spoke about. I don't know how many of you recall the example during the super cycle of the 2000s of an Australian mine unable to open because it didn't have enough people. Could we face a similar problem in the future? I think we could.

At present, from initial discovery to first breaking ground, a mining project in Canada takes on average 10 to 15 years before production can even commence, a massive impediment to our ability to be the mining powerhouse the world needs. Reducing the time it takes for a project to be approved in Canada is essential.

We've been talking about this problem for years. I've spoken many times to this audience about the steps needed to improve efficiencies. At the risk of sounding like a broken record, let me reiterate them:

- We must improve coordination and alignment between the multiple provincial and federal approval processes to which mining projects are subject. Our governments have to stop talking about one project/one review. Make it so. The federal government, in particular, has to be more cooperative in enabling the provinces — the primary regulator of mines — and Indigenous authorities — to run impact assessments.
- Improve coordination within the federal family to materially shorten post-Impact Assessment project permitting timelines and reduce the consultation burden imposed on Indigenous communities.
- Tailor assessments to material issues and avoid mountains of information requests that no one reads and that do not inform project decisions.
- Scope Indigenous consultation appropriately to focus on directly impacted communities.
- Improve the capacity of officials charged with Indigenous consultation in an UNDRIP context.

- Re-examine the *Impact Assessment Act* Project List with a view to what future mines will look like. Do fully-electric underground mines — with zero emissions, less waste, safer working conditions and a smaller footprint — need to undergo both federal and provincial assessments? Can we not, as Canadians, have trust in our provincial and Indigenous governments to carry out these evaluations on their own?

Unless we do better, mines will not be built in time to meet our shared climate change, supply chain security or critical minerals goals. If we do better, we will definitely have to invest more in attracting, recruiting and developing a highly skilled, safe and diverse Canadian mining workforce. But I would welcome this challenge.

These are the kinds of actions we need to see, and quickly.

The good news is that there has been some progress. After a shaky start, the Impact Assessment Agency has begun to tailor project assessments and improved its approach to Indigenous consultation. Of course, BC and the federal government have long been the only example of federal/provincial utilization of substitution, an underused lever in federal project assessment that has been available since 2012 that ensures that there is just one assessment and not two. There is evidence that federal regulatory departments are engaging earlier in the assessment process, hopefully with a view to faster post-IA permitting — time will tell.

Meanwhile, the federal government has taken many positive steps on the fiscal front to stimulate new mining activity, particularly in critical minerals.

The 2022 Fall Economic Statement and 2023 Budget both contained measures, the latter including a re-allocation of $1.5 billion within the Strategic Innovation Fund to support projects

in sectors including clean tech, critical minerals and industrial transformation and a Clean Technology Manufacturing Tax Credit for new machinery and equipment used to extract, process or recycle critical minerals essential for supply chains, that I am confident will help attract new private sector investment into our mining, smelting and refining industry.

Many provinces, most notably Quebec, Ontario (recently), Manitoba and Saskatchewan, have done the same, with Quebec many years ahead of the others and reaping the benefits of extensive EV-related investments. BC, I'm afraid, has been missing the boat, with scant attention to critical minerals. This is surprising as BC is home to one of the world's largest lead/zinc and specialty metal smelters, is Canada's largest copper producer, sole producer of molybdenum and home to much more potential. Moreover, I'm told, BC risks doing the opposite, with a reform to its carbon pricing system that will weaken BC's competitiveness relative to other major Canadian mining jurisdictions. In my view, BC should be aggressively building upon its existing strengths — such as its Trail and Kitimat smelters — to position itself as a hub in western North America for critical mineral production and recycling. Trail, in particular, is uniquely positioned to be a western hub for battery metal production and recycling, but for this to happen it has to be a partnership between Teck and the federal and provincial governments. For a province that often prides itself on its green credentials, it surprises me that it is not aggressively pursuing this opportunity.

To date, most of the government's attention — and success — has been downstream, attracting new investments in EVs and battery manufacturing. Canada needs to attract more investment into the mining sector, or our position in the race for advanced technology manufacturing — and the benefits that flow from that — will be significantly diminished.

The legislation to implement the Clean Technology Manufacturing Tax Credit, announced in Budget 2023, is needed urgently if we are to maintain an active position in the critical minerals race.

There are several projects on the near to medium term horizon. The Casino project in the Yukon, Crawford Nickel, Galore Creek, Eagle's Nest in the Ring of Fire, and multiple mine life extensions including Highland Valley, in the Sudbury and Manitoba nickel belts, at Raglan and Voisey's Bay. We need to make these happen.

These challenges notwithstanding, let me finish with some optimism.

We all know that everybody in the world is trying to seize this moment and rise to the significant challenges that the world faces, and Canada has some obvious strengths. We have a very established mining, mineral processing, smelting and manufacturing sector. We have a significant mining supply business, the third largest in the world.

We have the TSX and TSXV, the world's top mining and exploration listing venues. Our clean and reliable electricity network is the envy of many and our political system is stable. We may not be recruiting enough people to work in our sector, but we do boast some of the best mining schools in the world including, of course, the Norman B. Keevil Institute of Mining Engineering here at UBC. If the HR crisis hits us as hard as the evidence leads us to believe, I know what our industry will do. It will rise to the challenge as it always has and double down on its efforts to attract new talent to our sector, working from an institutional base that is second to none.

And, perhaps most importantly, we embraced strong ESG policies through standards like TSM before it was fashionable to do so, years ahead of most other mining jurisdictions, and the

value of this cannot be overstated as businesses rightly feel the pressure to deliver premium products with respect for the environment. It's important to remember that these are all head starts, and not insignificant ones. Now let's go win this race. Humanity is counting on us.

Thank you.