

**Big Brains and Why Mining Needs Them – The Sequel**

**An Address to Minerals South**

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## **Introduction**

Good afternoon.

Before I begin, I would first like to thank the organizers of Minerals South for the opportunity to speak to you today.

Congratulations to the East Kootenay Chamber of Mines for organizing this excellent conference and trade show. Events such as these help our industry share the latest news, learn from each other and also connect with the broader community – the theme of this year’s conference.

Earlier this year, I gave a speech to the Vancouver Board of Trade that talked about the incredible talent our industry needs to succeed. I want to speak to you tonight about this, as well, with a bit more of a southern BC focus.

### **Big Brains and Why Mining Needs Them**

I will begin by making two general but important statements about the mining industry and then talk about them. The first is that for an activity seemingly as simple as digging something out of the ground, mining is a complex business that has to have a lot of sophisticated minds working for it. The second is that mining drives more public policy development and even debate than most sectors I can think of, largely because of the first statement.

#### **The Need for Big Brains**

The first thing that makes mining a complex business is the science of finding a mine. We have over 12000 mineral occurrences in BC and less than 20 major mines. It takes years just to locate, evaluate, permit and construct a mine. To succeed requires not only a certain temperament, but also use of the very best in technology and scientific analysis and the curiosity, intelligence and training of geologists to look and look again. All of this activity is highly regulated, which requires an in-depth understanding of government, its laws, policies and regulations and thus the best legal minds and policy experts a country has to offer.

A mine is where you find it, and today this typically means that it’ll be in the few remaining parts of the world that have not been exhaustively explored. This means you’ll be interacting with communities that have had little to no prior experience with mining, and the task of earning one’s social license becomes a complex business involving the best minds in sociology, anthropology, archeology and related disciplines. While training in theology may not seem like a core competency for a mining company, at times it proved invaluable for the former Placer Dome when engaging with faith-based NGOs critical of the company’s projects. And sometimes, I guess, our sector needs all the help it can get, including a little divine intervention.

It can mean you'll be looking to build in a pristine, untouched ecosystem with high conservation values that have to be understood and safeguarded, demanding scholars in biology and ecology. It can be in a jurisdiction like British Columbia, with evolving Aboriginal law and policy that adds new complexities to our business that few sectors of the economy ever experience.

Building a mine is a huge capital investment, often in the hundreds of millions if not billions of dollars. Major capital of this kind is not raised easily, and again some of the best legal, financial thinkers and accountants are required. Indeed, where would the industry be without PWC and KPMG?

The construction of a mine is itself no small engineering feat that has to take into account site-specific geography and chemistry so that environmental impacts are managed and properly mitigated. Terrane Metal's 9000 page environmental assessment report for its Mt. Milligan project gives you a pretty good indication of the complexity of mine design and the seriousness of the undertaking, to say nothing of the additional need for skilled writers. If the mine is in a remote location, as is often the case, new infrastructure may have to be built, adding more engineering complexity to this massive undertaking.

The construction of a tailings facility must be built, managed and maintained to the highest engineering standards because it must not fail. Canada's mining industry has led the world in the design, construction and management of tailings facilities, our best brains working at major engineering firms like Wardrop, SNC Lavalin, Knight Piesold, Hatch, Golder and Jacques Whitford, to just name a few – and to those in the audience from other firms I have failed to mention, let me apologize in advance.

New mines are high tech operations, using the very latest in remote technology to maximize extraction at the lowest cost and risk to human safety. The capital equipment is expensive and not always easy to replace, so needs to be handled with expertise. Labour is thus highly skilled, demanding investments in training and in HR personnel. This is one of the reasons why mining pays an average wage of over \$110,000/year, the highest of any industry in BC. These are also reasons why we are very supportive of and applaud the BC government's efforts over the past number of years to make the Province the most tax competitive environment for skilled workers in Canada. And why our sector strongly supports the HST, which will make ours a more competitive industry by reducing costs and paperwork.

Running a mine is no simple task. The years of experience and training behind your average mine manager is considerable. One former Teck Cominco mine manager, during a downturn, went on to run one of Vancouver's port terminals – no prior experience in ports or transportation, but he had the skills to run a complex operation where every minute of activity – indeed every second – has an impact on the bottom line.

And running a mining company – dealing with international markets, international politics and all the other brains you have to rely upon or interact with – requires smarts and intestinal fortitude, though maybe not in that order.

In short, we need a lot of talent to succeed.

Our province benefits from this in more ways than we can think. First, it has made Vancouver a global mining centre, with around 800 headquartered companies and home to some of the best and brightest minds in mining law, mine financing and exploration anywhere in the world. Supporting these minds are world class mining educational and training institutions at UBC, Simon Fraser, and BCIT.

Vancouver's strength, and its role as a global centre, benefits BC's regions in more ways than we think. BC has a mining supply sector active across the province, in communities like Cranbrook. Hundreds of companies, from Finning to BC Bearings, to Cummings and Caterpillar, are active across BC, supporting thousands of jobs.

All this cerebral capacity is needed to enable the industry to operate in a highly complex work environment that thrusts us into multiple areas of public policy. We have a huge stake in the decisions our province and our country make, whether it has to do with infrastructure, environmental protection, climate change, health and safety, First Nations, tax policy or transportation.

When you touch on or are exposed to so many issues, you care deeply about the decisions others may make about them. It is not uncommon to hear the term “whining miners”, partly because it's an easy rebuke, but also because there are few things we don't care about.

But we are not whiners. We are immensely practical. We have to be. In our business, as complex as it is, we have to be problem solvers, doers, pragmatic and not at all dogmatic. If a new idea will help us build and operate a mine, it doesn't matter how novel or far-fetched, we will consider it, we may champion it, we will find a way to make it happen.

### **Practical Approaches to Big Ideas**

To illustrate, I will touch on a few current examples here in BC.

The first is an example in northern BC: the electrification of Highway 37.

This is a big project. It's the kind of project we don't see so often in a modern, developed country like Canada, because a lot of the major infrastructure has already been built. It's a project that has been talked about, dreamed about, for decades but remains undone.

We're now on the cusp of building it, opening up the possibility of new economic activity in the north, new opportunities for northerners, new capacity for First Nations to seize and pursue their economic future.

The mining industry has stood out as a major proponent of this infrastructure project. But as we've pursued this vision for the province, we've done it in a way that's creative and inclusive. We've formed a broad-based coalition that includes First Nations, municipalities, power producers, suppliers and contractors and northern development agencies.

The potential benefits that would stem from the electrification of Highway 37 are staggering:

- It found that the power line has the potential to attract more than \$15 billion in investment, create 10,700 jobs and generate \$300 million in annual tax revenues to governments.
- It would provide access to green power for up to ten known mining projects.
- The northwest possesses the greatest new potential in hydro power development in the province, the study identifying 700MW of small hydro and up to 1,500MW of wind projects.

A more recent analysis also shows that the shutdown of current diesel generation combined with the estimated avoided emissions from the generation of green energy of approved and licensed run-of-river projects will reduce CO<sub>2</sub>e by almost 100,000 tonnes or the equivalent of taking over 17,000 cars off the road. If you add run-of-river projects in the application stage from Terrace to Bob Quinn, these numbers increase by one-third. If you factor in the potential new mines that would have access to the grid and avoid diesel generation, the numbers are much greater still.

Recently, with our support, the Province persuaded the federal government to help finance the line. Our dream is getting closer to reality. A dream that will open up new opportunities for mining, green power and tourism in BC. But more importantly, it will help secure a long term sustainable economic future for northern British Columbia.

A second example of our intense interest in public policy is closer to Cranbrook.

Governments across Canada are struggling to develop strategies to protect the mountain caribou, a species at risk. Here in BC, our industry has been working with the Province and other stakeholders to find a way forward that protects the caribou, supports their recovery, and at the same time enables economic activity to continue in a responsible way.

This is by no means a simple issue. Some believe the only way to protect the caribou is to prohibit all economic activity. Others believe there is little we can do for a species for which we have insufficient information and is spread across a wide area and so restrictions on economic activity would achieve little. We believe that there is a middle ground, one that embraces responsible economic activity and that respects wildlife values and makes our industry part of the solution. Let's let our people use of the tools we have developed to monitor wildlife activity and behavior while working on the land and help support and enhance existing biological data and information necessary to make informed decisions. This way we all win.

AME BC and MABC have recently put forward recommendations that would include daily reporting by exploration crews of any sightings of mountain caribou to regulatory officials during the calving period. This reporting would support collection of information regarding the behavior and distribution of the caribou. In the event of calving near an exploration property, the industry would cease activity until calving had concluded, so as not to disturb the species.

We believe these are serious and responsible measures the Province should consider, certainly as an alternative to more inflexible measures such as blanket prohibitions on exploration activity.

A final example of our proactive approach to public policy and responsible resource management has been our industry's work on selenium. The industry recognizes that its activity is having an impact on selenium levels in the Elk Valley. We are concerned about the potential effects this might have on aquatic life. Working with governments, academia and other stakeholders, we have been conducting research to better understand the effects of selenium and how to avoid and mitigate its release to the environment by mining activity.

We are not avoiding this issue nor denying its importance. We know that our ability to grow and to continue to enjoy the support of Elk Valley communities and the broader public will be earned by how we respond to this issue. We are accepting our responsibilities.

### **What Brains Can Do**

With all these brains put to work on so many issues, there must be a dividend that makes it all worthwhile.

As Robert Prescott-Allen wrote in "The Well-being of Nations", mining provides the highest and best use of land on the basis of the prosperity that can be created and the social utility and wellness that can be generated as a result.

Mining is a good use of the land. Sure, the land you use is altered, but the value derived relative to the amount of land affected is enormous. When done right – and we now know much better how to do it right – the land, once used, returns to useful, productive land – different, but productive. A mine is very unlike a shopping mall, condo, parking lot or some other urban development that a) takes place without an EA and b) remains a permanent, ecologically sterile part of the planet – but I digress.

To make it more real, I'd like to turn to some very current examples.

Over the next 2-4 years, six major mining projects can be built in BC. Two of them, Copper Mountain outside Princeton and New Afton near Kamloops, are both in construction and awaiting final permits. Add to this the Prosperity mine near Williams Lake, Mt. Milligan near Fort St. James, Red Chris near Iskut and South Central near Tumbler Ridge and you have six

projects worth almost \$4 billion in new capital investment and hundreds of millions of dollars in annual operating expenditures.

Together, these projects will create about 10,000 direct and indirect jobs, supporting our communities and stimulating significant opportunities for mining supply businesses all across BC.

At a time when BC is in dire financial circumstances, our industry is offering hope and opportunity.

### **Conclusion**

Mines are big business: a good business and a responsible business. The fact that there are under 20 major mines operating in BC right now underscores the fact that mines are scarce. They don't come along every day. But when they do, their contribution is substantial, as is all the work along the way to get you there. You need a lot of brains, both in number and quality, to bring one from discovery to operation and then to closure and reclamation. Mining produces much more than copper, gold, coal or zinc: it produces people.

Scarce though mines may be, here in BC we are blessed with, among other attributes, a rich geology and the brains to be a globally-significant mining jurisdiction. Vancouver is, as I've said, already a mining centre, but the city and the Province can be bigger players on the global scene than we are. Over the next few years, if we succeed and build these new mines of which I have spoken, we will take our rightful place in Canada and the world as a leader of the best and brightest.

Thank you.