

File No. 2016-03-02

VIA MAIL

March 8, 2017

The Honourable Christy Clark, Premier
Lieutenant Governor in Council
Parliament Buildings
Victoria, BC V8W 9E2

To the Honourable Premier Clark and Lieutenant Governor in Council:

**Re: Request for Establishment of a Judicial Commission of Public Inquiry
to Rectify and Improve BC Mining Regulation**

On behalf of the Fair Mining Collaborative we hereby request that the Lieutenant Governor in Council establish a Commission of Public Inquiry to:

- Investigate and report on the Province's regulation of the mining industry; and
- Make recommendations to rectify and improve BC mining regulation.

This request is made pursuant to section 2 of the *Public Inquiry Act*. We further request that you vest the Commission of Inquiry with all powers afforded under sections 20-23 of the *Public Inquiry Act*, and that a Superior Court Justice be appointed to preside over the Commission.¹ This matter is clearly of the highest "public interest," and thus meets the statutory prerequisite for establishment of a Commission of Public Inquiry.

The attached brief provides irrefutable evidence that the provincial mine regulatory system is in a state of profound dysfunction.² A series of major systemic failures demonstrate the need for wide-ranging reform. The systemic failures include:

- The Mount Polley Mine disaster;
- The Auditor General's devastating critique of provincial enforcement of mining laws;
- The recent official confirmation that taxpayers may be liable to pay more than a billion dollars for mine cleanups;

¹ See Appendix A for the provisions of the *Public Inquiry Act* relied upon.

² See below for the brief, *Fixing Systemic Failures in BC's Mining Regulation: The Urgent Need for a Judicial Inquiry*

- The discovery that Government failed to inspect a closed Jordan River mine for over 20 years, allowing the undetected destruction of a salmon river;
- Recent studies that document how BC's rules for environmental assessment fall far short of global best practices;
- New research showing that BC's placer mining rules endanger provincial rivers and streams; and
- Growing discontent with the 19th century Gold Rush law that still authorizes prospectors to stake mining claims on private land, First Nations land and environmentally sensitive areas.

All these things have combined to create a crisis in public confidence in the regulatory regime for mining.

In the past Public Inquiries have been established when the public had lost confidence in the regulation of important industries such as forestry and fishing. Fortunately, those Public Inquiries helped to improve regulatory systems and restore public confidence. Such Inquiries played a key role in modernizing industries such as forestry. It is time to similarly modernize British Columbia's mining regime.

Therefore, we ask that the Commission of Inquiry investigate and report on the following questions, and make appropriate recommendations for improvement:

1. Do current standards for tailings storage facilities fall short of the standard recommended by the Mount Polley Expert Panel?
2. Do other BC mining rules meet global standards for public safety and environmental protection?
3. Are the requirements for environmental assessment adequate to protect the environment?
4. Is enforcement of mining laws adequate, in light of the Auditor General's sweeping critique?
5. Should Government remove enforcement of mining laws from the Ministry of Energy and Mines to a more objective agency, as recommended by the Auditor General?
6. Are closed mines being adequately monitored and reclaimed? Or are the failures at Jordan River and Tulsequah Chief Mine symptomatic of a larger problem that threatens the health of watersheds across the Province?
7. Are mining companies cleaning up their own mess?

8. How can the Province best ensure that mining companies – not taxpayers – pay to reclaim mines? What is the best way to protect taxpayers and others from the current massive potential liability identified by the Auditor General?
9. Is placer mining being adequately regulated to protect British Columbia’s streams and rivers?
10. Should the 19th century “Free Entry” Mineral Tenure System be reformed to protect private landowners, First Nations and the environment?

Respectfully submitted,

Calvin Sandborn, Legal Director

Kirsty Broadhead, Law Student

cc: The Honourable Bill Bennett, Minister of Energy and Mines
The Honourable Mary Polak, Minister of Environment

Fixing Systemic Failures in BC's Mining Regulation: The Urgent Need for a Judicial Inquiry

Prepared for the Fair Mining Collaborative

March 2017



CONTENTS

Why Establish a Judicial Inquiry?	6
Environmental Threats.....	6
Economic Threats.....	10
The Pressing Need for Comprehensive Reform	11
Mount Polley Mine Disaster.....	16
Other Rules that Fall Short.....	20
Auditor General’s Report on Regulatory Enforcement.....	25
Two Inspection Case Studies.....	32
Case 1: Jordan River and the Failure to Monitor Old Mines	32
Case 2: Tulsequah Chief – Failing the Good Neighbour Test	37
Taxpayer Liability: the Lack of Adequate Security	40
Some Specific Examples of Taxpayer Liability.....	45
The Other Reason for Adequate Securities – Optimizing Industrial Practices.....	48
Additional Ways to Protect Taxpayers and Others	49
Lack of Proper Placer Mining Regulation	51
The Need to Reform Placer Mining Regulation	53
“Free Entry”: Should the Mineral Tenure System be Reformed?	57
Reasons for Reform.....	58
Conclusion.....	61
Appendices.....	613

WHY ESTABLISH A JUDICIAL INQUIRY?

Mining is a multi-billion dollar industry that creates great wealth and many jobs.³ But it can also create catastrophic and long-lasting threats to entire watersheds – and to critical public assets such as fish, clean water, wildlife and public health. Furthermore, it can impose massive economic liabilities for taxpayers. As a result, it is an industry that must be carefully regulated.

ENVIRONMENTAL THREATS

British Columbia's Auditor General recently pointed out that poor mining regulation not only threatens wildlife and culture, but also carries the "potential for deterioration of the province's water systems."⁴ One of mining's greatest risks is the creation of a form of perpetual pollution called "acid rock drainage." When mining exposes sulfide-laden rock and tailings to air and water, it can create sulfuric acid – and leach heavy metals and other toxins into the environment. Such "acid rock drainage" can kill off entire fish populations, and poison watersheds and habitats indefinitely.⁵ Indeed, European mines dug during the Roman Empire and Middle

³ The BC Ministry of Energy and Mines estimated the total value of provincial mine production (including coal, copper, industrial minerals, aggregate, gold, molybdenum, silver, zinc, and lead) at \$6.9 billion in 2015, \$7.4 billion for 2014, and \$8.6 billion in 2011. The Ministry estimated that in 2014 over 30,000 people were employed in mineral exploration, mining and related sectors. See Robyn Allan, *Toward Financial Responsibility in British Columbia's Mining Industry* (Union of BC Indian Chiefs, 2016) p. 10 online: https://d3n8a8pro7vhmx.cloudfront.net/ubcic/pages/1290/attachments/original/1463347826/Toward_Financial_Responsibility.pdf?1463347826 and see: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/2014_ci_annual_rpt.pdf.

⁴ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 8.

⁵ See below for examples (such as Tsolum River, Britannia Creek, Jordan River, etc.) of rivers that have had their fish populations destroyed. For more about acid rock drainage and mines, see BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and Water Pollution Issues in BC* (2006) online: <http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage-mining-and-water-pollution-issues> and J. Kuipers *Putting a Price on Pollution*, (Washington, D.C.: Mineral Policy Centre, March 2003) at 12 online: <https://www.earthworksaction.org/files/publications/PuttingAPriceOnPollution.pdf>.

Ages continue to release toxic acid drainage today.⁶ The Auditor General has warned about the scope of the water pollution problem:

*Once these processes begin, they can continue indefinitely. In some cases, the only solution is water treatment and monitoring – in perpetuity – which can cost millions of dollars a year.*⁷

Although acid rock drainage has long been recognized as the most serious problem, even mine drainage from neutral, non-acidic rock can leach out heavy metals and create toxic water pollution.⁸

Acid rock drainage from mining has already had devastating impacts in British Columbia. For example, scientists long identified the area around Britannia Mine as one of the most contaminated areas in North America.⁹ But acid rock drainage not only exterminated fish populations and shellfish at Britannia Creek – it also wiped out entire salmon populations in places like Tsolum River and Jordan River on Vancouver Island. At the Tsolum, a river that had seen runs of up to 200,000 pink salmon, 15,000 coho, 11,000 chum and 3,500 steelhead was, by 1985, down to a handful of fish – with none in some years.¹⁰ Mining played a key role in the total

⁶ For example, the *Global Acid Rock Drainage Guide* cites a mine in Spain created in the Roman era that still actively releases such drainage <http://www.gardguide.com/index.php?title=Summary>. Similarly, a mine in the UK that has been releasing such drainage for 2,000 years is described at: <http://sciencelearn.org.nz/News-Events/Latest-News/News-Archive/2009-News-archive/Environmental-best-practice-mining>. Ancient Scandinavian mines also continue to pollute ecosystems there. See, for example: Per Angelstam, “Learning About the History of Landscape Use for the Future: Consequences for Ecological and Social Systems in Swedish Bergslagen,” (*Ambio* March 10, 2013) online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3593034/>

⁷ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 5.

⁸ Neutral metal leaching occurs in a non-acid environment, and can release selenium, molybdenum, arsenic, cadmium, copper, nickel, mercury, zinc, uranium, antimony, chromium, manganese, iron and sulphate. Stantec Consulting Ltd., *Mine Effluent Neutral Drainage: Review of Water Quality Issues in Neutral pH Drainage: Examples and Emerging Priorities for the Mining Industry in Canada*. (MEND, Report 10.1., 2004) Executive Summary.

⁹ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 51.

¹⁰ Only extensive remediation done years later allowed return of salmon stocks to the Tsolum. Regarding Tsolum River, see Mark Hume, “How the Coho returned to the Tsolum River,” *Globe and Mail* (2011 March 6) online: <http://www.theglobeandmail.com/news/british-columbia/how-the-coho-returned-to-the-tsolum-river/article622852/>; regarding Britannia Creek, BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and Water Pollution Issues in BC* (2006 March 25) p. 19 online: <http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage->

disappearance of salmon runs at Jordan River as well.¹¹ Similarly, mine drainage has hiked the rates of reproductive failure, mortality and deformity of birds and fish and may threaten human health in the Elk River Valley – while creating what one government scientist has described as the “biggest ecological threat” to the US Northern Rockies downstream.¹² For nearly five decades the Tl'ast'en people of north-central BC have been unable to freely eat Pinchi Lake fish, because of mine-related toxic mercury.¹³ In the 1980s, elevated levels of toxic cadmium were detected in fish from Buttle Lake, likely due to the nearby mine.¹⁴ Aquatic organisms in Alice Arm were found to contain extremely high levels of heavy metals from old mining and smelting operations.¹⁵ Kamloops has also been exposed to mercury contamination from a former copper mine/smelter.¹⁶

The acid rock drainage problem in BC is widespread.¹⁷ Currently there are approximately 13 major coal and metal mines in operation, over 160 temporarily or

[mining-and-water-pollution-issues](#); regarding Jordan River, see Stephen Hume, “Jordan River salmon wiped out by copper tailings,” *Vancouver Sun* (2016 October 4) online:

<http://vancouversun.com/opinion/columnists/jordan-river-salmon-wiped-out-by-copper-tailings>

¹¹ See below for a more complete description of the disappearance of Jordan River salmon.

¹² See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) at pp. 9, 10, 96-97 and 100. This BC mine pollution has created the “biggest ecological threat facing the [US] Northern Rocky Mountain ecosystem” downstream, according to Aquatic Ecologist Clint Muhlfeld of the U.S. Geological Survey. online:

<http://flatheadbeacon.com/2014/11/17/concerns-renewed-b-c-coal-mining-pollutants-increase-montana-watershed/downstream>

¹³ Since 1969, government has warned people to limit fish consumption from Pinchi Lake because of mercury contamination. See George Young, “Nation Outraged over Mercury Contamination,” (2005) 1983-2015 The Aboriginal Multi-Media Society (AMMSA) online:

<http://www.ammsa.com/publications/ravens-eye/nation-outraged-over-mercury-contamination>.

Finally reacting to longstanding First Nations complaints, in 2010-2012 reclamation of the site was done to reduce mercury risks, at a cost of \$22 Million. See: “Restoring the Pinchi Lake Mine Site” (Teck Resources, June 30, 2013) online: <http://www.teck.com/news/stories/2013/restoring-the-pinchi-lake-mine-site>.

¹⁴ C. Garrett, *Pacific and Yukon Region Toxic Chemicals Profile* (Vancouver: Environment Canada, 1982) pp. 23-24.

¹⁵ C. Garrett, *Pacific and Yukon Region Toxic Chemicals Profile* (Vancouver: Environment Canada, 1982) p. 26

¹⁶ C. Garrett, *Pacific and Yukon Region Toxic Chemicals Profile* (Vancouver: Environment Canada, 1982) p. 18.

¹⁷ As of 2006, government identified that there were 25 BC mines (operating, closed and abandoned) that are acid- generating – while at least 17 other sites had been identified as potentially acid-generating – see MEI Acid Rock Drainage Policy, June 1997; Draft Guideline for Metal Leaching and ARD at Mine Sites in BC, BC Ministry of Employment and Investment, Reclamation Section; BC Minfile, BC Ministry of Employment and Investment, Geological Survey Branch, BC Wild and Environmental Mining Council of BC, as cited in BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and Water Pollution Issues in BC* (25 Mar 2006) pp. 5-7 and 13. Online:

permanently closed mines, and several mines moving through the permitting approvals process.¹⁸ Many of these mines will require long-term – or perpetual – water treatment to prevent serious and permanent environmental harm.¹⁹ Fourteen major mines currently have water treatment facilities. Government estimates that 45 additional mines have moderate to high Acid Rock Drainage/leaching potential – and estimates that 12 of these will require perpetual water treatment.²⁰

In addition, the Mount Polley Mine dam failure demonstrates the serious threat that failure of BC's 123 active mine tailings *dams* could pose. The BC First Nations Energy and Mining Council traced the potential paths of contaminants from dam failures at 35 active mine tailings ponds in northern BC. Thirty-three native communities and 208 additional cities and settlements could be affected. Eighty percent of the chinook and sockeye salmon in the region are downstream from a tailings facility, or migrate up a river that could be polluted.²¹ The potential damage to fish poses a threat to Indigenous social and cultural values – as exemplified by the major losses suffered by First Nations deprived of access to the salmon runs impacted by the Mount Polley dam failure.²²

Additional environmental risks are created by things such as toxic chemicals used in mining processes. For example, a cyanide escape from a heap leaching mine operation near Grand Forks led the Minister of Environment to declare the first formal “environmental emergency” in 1989.²³ Finally, placer mining causes

<http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage-mining-and-water-pollution-issues>.

¹⁸ There are also 30 industrial mineral mines in operation. See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), pp. 5 and 29.

¹⁹ Over 10% of BC major mines have or will likely require long-term or perpetual water treatment. Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), pp. 5, 37-38.

²⁰ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 38.

²¹ Robyn Allan, *Toward Financial Responsibility in British Columbia's Mining Industry* (Union of BC Indian Chiefs, 2016) p. 53.

²² Ellen L. Petticrew *et al.*, “The impact of a catastrophic mine tailings impoundment spill into one of North America’s largest fjord lakes: Quesnel Lake, British Columbia, Canada” (*Geophysical Research Letters*, June 19, 2015) online: <http://onlinelibrary.wiley.com/doi/10.1002/2015GL063345/pdf>. See the lawsuits filed by various First Nations for damage done to their fisheries and traditional uses, including *Tsilhqot'in National Government et al. v. Imperial Metals Corporation et al.*; *Chief Ann Louie and the Williams Lake Indian Band v. Mount Polley Mining Corporation et al.*; and *St'at'imc Chiefs Council et al. v. Mount Polley Mining Corporation et al.*

²³ The cyanide had contaminated local groundwater. See BC Ministry of Environment, News Release, June 12, 1989; and BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and*

widespread destruction of invaluable riparian areas and fish habitat, as will be detailed below.

ECONOMIC THREATS

The above environmental risks clearly pose a threat to industries that rely upon a clean environment – like fishing, tourism, guiding, agriculture, high-tech, *etc.* In addition, the current regulatory regime poses a very direct threat to the public purse.

Remediation of mines is required to protect the environment. However, preventing the “perpetual pollution” of acid rock drainage is often extremely costly, requiring perpetual ongoing expenditures. Indeed, such remediation can cost tens – or hundreds – of millions of dollars. The problem is that mining companies come and go. Fluctuating mineral markets create instability for companies, and they often become insolvent – and unable to pay for long-term cleanup.²⁴ But necessary remediation costs can go on for centuries.

This combination of perpetual pollution and temporary mining companies creates large cleanup costs for taxpayers. As discussed below, Canadian taxpayers have already paid hundreds of millions of dollars to reclaim mines. Indeed, in one instance a single mine will likely cost Canadian taxpayers *one billion* dollars – and to clean up another single mine, taxpayers are paying \$700 million.²⁵

Water Pollution Issues in BC pp. 19-21 for the major risks posed by such escapes. Online: <http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage-mining-and-water-pollution-issues>.

²⁴ In 2016, economist Robyn Allan described the current problem in BC: “Unable to survive the impact of falling commodity prices, a number of mining companies have become insolvent. They have turned to protection provided by legal proceedings in order to seek restructuring or asset sales.” Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 10.

²⁵ The Northwest Territory’s Giant Mine cleanup has been estimated to cost one billion dollars. See “Giant Headache: Canada’s taxpayers ante up billions to clean up the mistakes of the past” (*The Economist*, October 9, 2014) online: <http://www.economist.com/news/americas/21620280-canadas-taxpayers-ante-up-billions-clean-up-mistakes-past-giant-headache>. And Canadian taxpayers will pay \$700 million to clean up the Yukon’s Faro Mine. See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 37. More recent Faro cost estimates are even higher. See the discussion of the Faro and Giant Mine cleanups below.

Thus, it is imperative that Government require companies to set aside adequate funds (security) to cover the cost of mine remediation if the company defaults.²⁶ However, as we will see, Government has ignored the Auditor General's longstanding warning about the need for security – and has put taxpayers at massive financial risk for reclaiming mines.²⁷

THE PRESSING NEED FOR COMPREHENSIVE REFORM

In order to reduce the environmental, social and economic risks created by mining, Government needs to take rigorous measures to reduce environmental harms and reduce taxpayer liability.²⁸ However, a number of recent events and investigation reports have clearly demonstrated that the mining regulatory system – long touted by government as “world-leading” – is actually extraordinarily flawed and dysfunctional. It simply cannot be relied upon to safeguard our lakes and rivers from an industry that can permanently poison entire watersheds. It cannot be relied upon to protect taxpayers.

In recent years, a series of major systemic failures have demonstrated profound dysfunction in the regulation of mining – and demonstrated the need for wide-ranging reform. The following clearly demonstrate that British Columbia's ramshackle regulatory system must be comprehensively reformed:

(Note: The summaries below are followed by fully annotated discussions later.)

²⁶ Mine securities are a type of guarantee or damage deposit that the company provides to the provincial government to ensure that the costs of mine decommission and reclamation are borne by the mining company rather than by government and the public purse. Bonds are a type of security.

²⁷ Note that the loss of fish and wildlife creates another economic significant economic loss, in addition to reclamation costs. For example, it has been estimated that the loss of the Tsolum River fishery, combined with millions of taxpayer dollars spent for mine clean up, cost at least \$60 Million – and much of that would be ascribed to the loss of a rich fishery. See BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and Water Pollution Issues in BC* (March 25, 2006) at p. 18 online: <http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage-mining-and-water-pollution-issues>.

²⁸ See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 8.

The Mount Polley Mine Disaster

The muddy torrent that ripped down Mount Polley dam and turned gentle Hazeltine Creek into a toxic canyon also did something else: It swept away a decade of empty government boasts about environmental stewardship. Unfortunately, since that disaster government has not done much better. It has failed to really address the Mount Polley Expert Panel's most important recommendation – to move decisively to eliminate the tailings lakes that the Panel concluded pose an unacceptable danger to BC's environment. The rules on tailings facilities – and many other mining rules – remain archaic and ineffective. For example, the environmental assessment system falls far short of global best practices.

The Auditor General's Report on Inadequate Government Enforcement

Last year's Audit of Compliance and Enforcement of the Mining Sector could not have been more critical of Government. Citing a "decade of neglect" in compliance and enforcement, the Auditor General concluded government's enforcement efforts were inadequate to protect against significant environmental risks. Addressing Mount Polley specifically, the Auditor General concluded that required inspections had not been done there – and if they had been done, the disaster could have been avoided.

In general, the Auditor General found that the Ministry of Energy and Mines was in a conflict of interest and "at risk of regulatory capture" (of acting in industry's interest instead of the public interest). The conflict arises because the Ministry promotes mining at the same time as it regulates it. As a result, the Auditor General's highest priority "Overall Recommendation" was to move enforcement out of the Ministry to an independent agency that can enforce the law without being hindered by a conflict of interest.

However – as with the Mount Polley Expert Panel report – Government refused to implement the *central recommendation* of the Auditor General. Thus, both the Auditor General and the government's own Mount Polley Expert Panel specifically warned that "business as usual cannot continue", and both called for dramatic reform. Yet, Government has failed to fully heed their calls for reform.

Jordan River – The Failure to Inspect Closed Mines

The Auditor General's report concluded that Government was not adequately inspecting closed mines. And shortly after the AG report came out, this problem was highlighted when the case of the Sunro Mine on Jordan River became public. This case raises the live possibility that old mines may be destroying fish streams across the province because government is not monitoring old mines.

The Sunro Mine, which operated from 1950-1974, helped wipe out formerly healthy Jordan River salmon runs. And although the closed mine is still visibly polluting the river, government had never done anything to clean it up. It was only after a private citizen – concerned that the pollution made salmon restoration impossible – came to the Environmental Law Centre (ELC) that government finally ordered Teck Resources

to prepare a remediation plan. When questioned about government's decades of inaction, the Minister of Energy and Mines excused government's failure to identify the problem. He explained that 23 years ago government had signed off on the mine reclamation and stated: "After a site is deemed clean, no further inspections are typically conducted." This raises the question of how many other dead Jordan Rivers are out there, uninspected, unidentified, and un-remediated?

Massive Taxpayer Liability Exposed

The Auditor General report documented government's failure to require companies to post enough security to pay for future mine cleanups. This was further documented by a contemporaneous Union of BC Indian Chiefs report. The failure to take adequate security leaves taxpayers at risk to pay the bill (like the more than \$700 million that Canadian taxpayers are now paying at the Yukon's Faro Mine). Alaska and Quebec handle this better. They require companies to put up security for 100 per cent of potential cleanup costs. They believe that companies, not taxpayers, should clean up their own mess.

As a result, one Canadian mining company is bonded for the full \$560 million in reclamation costs at its Alaska mine, and Alaska taxpayers are protected. But B.C. doesn't require the same company to fully protect B.C. taxpayers – and that company's BC mines have unsecured reclamation costs of several hundred million dollars.

This policy flaw could cost taxpayers dearly. The Auditor General warned that unfunded taxpayer liability for mine cleanups now exceeds \$1.2 billion, and other experts estimate full potential liability is more than \$3 billion.

Worse, while some jurisdictions *ban* any mine that would require long-term water treatment, BC doesn't just allow such high-risk mines. BC routinely allows them to operate without full security – there's a \$730 million shortfall for these high risk operations alone.

Unrealistically low securities are bad for the environment too. By setting securities at artificially low levels, government has encouraged companies to not spend realistic amounts on environmental protection measures. Higher securities would lead to better mining practices.

Although the Auditor General recently called on government to increase securities to a realistic level, it is questionable whether that will happen, without further prodding. After all, the Auditor General also warned in 2003 about the risk of unfunded mining liability — and the province then responded by *quadrupling* the financial risk to taxpayers over the last decade.

Lack of Proper Placer Mining Regulation

The Fair Mining Collaborative has recently drafted an unpublished study that exposes the grievous under-regulation of placer mining across the province. Placer mining excavates ancient and current stream beds and disrupts riparian areas – nature's most

biologically productive terrestrial systems. Placer mining can seriously threaten streams, fish, wildlife, Indigenous rights and traditional hunting, fishing and gathering.

Yet BC placer mines are seriously under-regulated. Unlike the Yukon, BC placer mines are not subject to environmental assessment. They are seldom inspected or adequately reclaimed. Government does not protect riparian areas by enforcing an adequate “setback” from stream banks, and is allowing many placer mines to discharge their tailings directly into streams instead of sediment ponds. First Nations are routinely excluded from riparian zones by placer mines, and they are not given adequate notice of proposed mines or of proposed placer mining “zones”. These problems need to be addressed.

Protecting Landowners, First Nations and the Environment from “Free Entry” Mining Claims

For over 150 years, BC has operated under an archaic gold rush “free entry” law that allows prospectors to stake mining claims everywhere except for a few protected areas. Under “free entry”, prospectors can stake and *develop* mining claims over the vast majority of the province. They can trump the rights of private landowners, First Nations, local zoning, provincial land use plans, wildlife habitat areas, old growth management areas and drinking water protection areas. The law also forces taxpayers to pay millions when government must intervene to stop mining for environmental or social reasons. A number of jurisdictions have modernized their mineral tenure system to better protect private landowners, First Nations, and local communities from forced mining on their lands – and to protect environmentally sensitive areas from unchecked mining. It is time for BC to consider doing the same.

The above concerns are more fully documented below. Taken altogether, these concerns demonstrate that the outdated mining regulatory system is in need of a profound overhaul. A careful and thoughtful Commission of Inquiry is needed to mark the way forward to constructive reform that will better serve the broad public interest in the twenty-first century.

There are precedents for convening just such a Commission to modernize industrial regulation when an industry is rapidly changing – or public confidence in an industry has been shaken:

- The two Royal Commissions of Inquiry that Justice Gordon Sloan presided over in the 1940s and 1950s created modern forestry concepts of sustained yield, the statutory recognition of the forestry profession, and the shaping of the Tree Farm Licence system across the Province.
- The 1976 Pearse Royal Commission on Forest Resources further modernized the Province’s management of the forest land base. This

Commission provided the first formal acknowledgment of the “falldown effect” – i.e., that diminishing old growth forests necessitate reduced harvests over time. It also triggered government policies to emphasize forest land productivity, better management of environmental impacts, and reform of Annual Allowable Cut determinations. The Commission led to establishment of Timber Supply Areas across the province, and the establishment of the Small Business Forest Enterprise program.²⁹

- The Forest Resources Commission and its 1991 report, *The Future of Our Forests*, set the stage for resolving the “War in the Woods,” better protecting old growth and sensitive areas, doubling the area protected in provincial parks, establishing the *Forest Practices Code* and the Forest Practices Board, and other progressive changes.³⁰
- The federal *Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River* (chaired by Justice Cohen) carefully studied salmon management and conservation in British Columbia. The federal government is now committed to fully implementing the Commission’s recommendations.³¹

It is hoped that a Commission of Public Inquiry into Mining Regulation can similarly help resolve the profoundly troubling problems identified in this submission.

²⁹ See pp. 38 and 41 of Association of BC Forest Professionals, *2009 RPF Registration Exam*, pp. 38-41 online: https://abcfp.ca/web/Files/RPF_TH_Answers_09.pdf?WebsiteKey=4b6af123-da4f-4a97-a963-579ada9e5955&=404%3bhttps%3a%2f%2fabcfp.ca%3a443%2fWEB%2fabcfp%2fFiles%2fRPF_TH_Answers_09.pdf. Also see: Mauro Agnoletti, S. Anderson (editors) “Forestry in British Columbia” *Forest History: International Studies on Socioeconomic and Forest Ecosystem* (IUFRO Task Force on Environmental Change, 2000) at p. 344 and following online: https://books.google.ca/books?id=0znQhwyb6PAC&pg=PA344&lpg=PA344&dq=1956+Royal+Commission+on+Forestry+sloan&source=bl&ots=34yhrjMagr&sig=iF_FjhEt2pdvhf1-cx9mWoozl8o&hl=en&sa=X&ved=0ahUKewjw4r47_LRAhUI6mMKHS11Ce4Q6AEIiJAC#v=onepage&q=1956%20Royal%20Commission%20on%20Forestry%20sloan&f=false

³⁰ See Forest Resources Commission, *The Future of Our Forests*” (BC Government, 1991) <https://www.for.gov.bc.ca/hfd/pubs/Docs/Mr/Rc/Rc001/Rc001.pdf>

³¹ Global News, “Cohen Report on BC Sockeye Salmon May See Action” Canadian Press (2016 August 9) online: <http://globalnews.ca/news/2872438/cohen-report-on-b-c-sockeye-salmon-may-see-action/> and <http://news.gc.ca/web/article-en.do?nid=1109249>.

MOUNT POLLEY MINE DISASTER

In August 2014, in one of the greatest mining environmental disasters in Canadian history, the Mount Polley Mine tailings facility dam collapsed, abruptly draining a 4-km² lake of contaminated mining waste into Hazelton Creek and Quesnel Lake. Seventeen million cubic meters of wastewater and eight million cubic meters of tailings blasted the stream below from 5 meters to 100 meters in width and deposited the waste into the salmon-spawning Quesnel Lake.³² The incident forced a nine-day drinking water ban for area residents, and raised concerns about long-term impacts on fish and wildlife.³³ The Government-appointed Panel of independent expert engineers investigating the incident predicted that many similar events can be expected in future. Noting the 123 active tailings dams across the Province, the Panel stated:

*If the inventory of active tailings dams in the province remains unchanged, and performance in the future reflects that in the past, then on average there will be two failures every 10 years and six every 30. In the face of these prospects, the Panel firmly rejects any notion that business as usual can continue.*³⁴

*...The Panel does not accept the concept of a tolerable failure rate for tailings dams. To do so, no matter how small, would institutionalize failure. First Nations will not accept this, the public will not permit it, government will not allow it, and the mining industry will not survive it.*³⁵

³² Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 66.

³³ See Ian Bailey, "Mount Polley Mine Still at Risk for Future Tailings Breach," *Globe and Mail* (2016 August 4) online: <http://www.theglobeandmail.com/news/british-columbia/mount-polley-mine-still-at-risk-for-future-tailings-breach-analyst/article31269473/>.

³⁴ Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach* (Province of British Columbia, 2015) p. 118.

³⁵ Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach* (Province of British Columbia, 2015) p. 119.

The disaster showed how inadequate BC rules on mine dams are. In January 2015, the Panel issued a number of recommendations for change, many of which Government agreed to implement. However, the central, most important recommendation remains to be implemented. The Panel criticized construction of tailings water impoundments as “century old technology,” and noted that “Tailings dams...are unforgiving systems, in terms of the number of things that have to go right [for years]...Simply put, dam failures are reduced by reducing the number of dams that can fail.”³⁶ Therefore, the Panel recommended that the Province move to eliminate such water impoundments across the Province, in both new and closed mines.

The Expert Panel recommended that Government “reduce the number of tailings dams subject to failure” – and suggested a goal of reducing the number of active tailings dams by half – from 120 to 60. However, the new *Code*³⁷ revisions that Government responded with do not aim to achieve that goal.³⁸ There is no evidence that Government has a strategy to eliminate 60 of the existing dams. The Public Inquiry should consider, among other things, whether Government should adopt such a quantitative goal – and establish a plan to systematically retire 60 dams.

In addition, the Expert Panel called for the Province to move to the dry closure of tailings facilities at new mines and upon closure of existing mines. (See [Appendix B](#) for the Panel’s specific recommendations.) Yet the information in [Appendix C](#) demonstrates that industry continues to propose – and Government continues to approve – wet impoundments (tailings facilities that permanently impound water). Dry disposal facilities are not being required by Government, and seldom proposed by industry.³⁹

³⁶ Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach* (Province of British Columbia, 2015) pp. 119-120. See also online: <http://www.vancouversun.com/technology/Opinion+Bennett+must+ignore+expert+panel/10812104/story.html>.

³⁷ *Health, Safety and Reclamation Code for Mines in British Columbia, 2008.*

³⁸ See David Chambers, Ph.D., *Report on Seven Recommendations to the BC Government Resulting from the Mount Polley Tailings Dam Failure*, August 15, 2016, p.11; and Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach* (Province of British Columbia) 2015, Appendix I at p. 11 for the suggested goal of reducing the number of dams subject to failure (which is all of them) by half. This would mean eliminating 60 of the approximately 120 dams in the province.

³⁹ This is happening, in spite of the fact that the Panel stated that the Best Available Technology (BAT) could be accomplished through underground disposal, along with filtered (dry-stack) technology as a prime candidate for BAT. Note, however, that BruceJack Mine on the Unuk

For example, in Northwest BC the new Red Chris mine and the proposed Schaft Creek mine, KSM mine, and Galore Creek mine all continue to rely on the problematic tailings impoundment technology that the Expert Panel criticized. Furthermore, all four of those Northwest mines would be larger than Mount Polley in production and amount of waste generated – with 6-27 times the volume of mine waste tailings of Mount Polley. Worse still, much of the waste in these projects would be far more toxic, with more severe potential effects than Mount Polley because of the greater acid generation potential of the rock at those mines. This more toxic waste would mean that a Mount Polley-type failure could have more severe short and long-term effects.⁴⁰

A number of other proposed mines in the province are also proposing to use water impoundments.⁴¹

In response to the Expert Panel's recommendations, Government has changed some legislation (e.g., the *Code*⁴²), but the legislative changes fall short of what the Panel recommended.

As is pointed out in more detail in [Appendix C](#), mining and tailings storage facility expert Dr. David Chambers has stated:

watershed, under construction, is planning to backfill some of their tailings underground and cement pasting tailings to neutralize some of the acid. Online: www.pretivm.com/home/default.aspx. However, according to the permitted Schedule A Project Description, "The Project stores waste rock and tailings that exceed the capacity of underground voids underwater in Brucejack Lake" See the EAO documents online:

http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_project_home_395.html.

Brucejack is something of an exception in that as long as they do not enhance the capacity of the lake with a dam, there will be no dam to fail.

⁴⁰ See Appendix C. Note that under the Ministry's "Consequence of Failure Rating" Province's Mount Polley was not in the category of most dangerous tailings dams. It was rated as having a "significant" consequence of failure – not as serious as the facilities rated as having "extreme," "very high" or "high" consequence of failure. See Gordon Hoekstra "Little Impact was Expected from Mount Polley Dam Collapse: Failure Ranking," *Vancouver Sun* (2014 September 7) online:

http://www.vancouversun.com/Little+impact+expected+from+Mount+Polley+collapse+failure+ranking/10183146/story.html?_lsa=f2f1-f473.

⁴¹ For other examples of continuing water impoundment systems, see the proposed Blackwater and Underground Kemess mine projects. Both propose conventional tailings management. Although the Kemess project proposes tailings to be deposited in an existing pit, it still requires a 35m high dam, similar to Mount Polley's.

⁴² Part 10, Mine Health Safety and Reclamation Code for Mines in British Columbia.

The Code guidance does not go far enough to truly implement the expert panel recommendations for tailings dam stability.⁴³

Instead of moving to eliminate surface water impoundment, the new *Code* just requires companies to make ‘efforts’ to reduce water and to ‘consider’ progressive alternatives to water impoundments. Chambers comments:

This leaves the door wide open for site-specific considerations, which inevitably will include cost, to trump real change to present practices.

Dr. Chambers continued:

Other than the Code’s requirement for an ‘effort to reduce and remove water’ and to ‘consider’ alternatives to water covers, the discussion in the Code is on how to manage saturated tailings, not on how to eliminate saturation.⁴⁴

Dr. Chambers concludes that the rules fail to make safety – not short-term economic considerations – a paramount factor on deciding the tailings disposal system at a mine. Yet the Panel strongly recommended that safety – not costs – be a determinative factor.⁴⁵

Of the new mine and three proposed mines he analyzed in the Northwest, Dr. Chambers concluded that none of them met the recommendations of the Expert Panel to reduce the risk of tailings dam failure and prioritize public safety.

⁴³ Ian Bailey, “Mount Polley mine still at risk for future tailings breach: analyst” *Globe and Mail* (2016 August 3) online: <http://www.theglobeandmail.com/news/british-columbia/mount-polley-mine-still-at-risk-for-future-tailings-breach-analyst/article31269473/>

⁴⁴ David Chambers, Ph.D., *Report on Seven Recommendations to the BC Government Resulting from the Mount Polley Tailings Dam Failure*, August 15, 2016, p. 10.

⁴⁵ The Panel specifically stated: “Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor.” Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach* (Province of British Columbia, 2015) p. 125.

Thus, Government has failed to commit to the expert panel's most significant recommendation — that the province systematically transition from building large tailings ponds to the safer technology of putting tailings underground, with dry/filtered tailings on the surface. Despite the panel's warning that two tailings dams will likely fail every decade, Government has failed to follow through. It is clear that Government has failed to address the core systemic issues that led to the Mt. Polley disaster.

This raises the following key Question:

Question for the Public Inquiry

- **Do current standards for tailings storage facilities fall short of the standard recommended by the Mount Polley Expert Panel?**

OTHER RULES THAT FALL SHORT

There are numerous other ways in which BC mining rules fall short, as comprehensively described in *Fair Mining Practices: A New Mining Code for BC*. This *New Mining Code* details the stricter rules that many other jurisdictions apply to mining.⁴⁶ This blueprint for reform of mining rules has already been used by numerous First Nations looking for better mining rules, and the Public Inquiry should carefully consider the recommendations made in *Fair Mining Practices*.

One of the specific places where rules fall short is the regime for environmental assessment of mines. The deep flaws in the BC environmental assessment system were exposed a few years ago, when the Prosperity Mine plan to drain Fish Lake sailed through the provincial assessment process, gaining easy approval. Yet federal Environment Minister Jim Prentice came to the opposite conclusion, and rejected the project. Minister Prentice noted:

⁴⁶ See Maya Stano and Emma Lehrer, *Fair Mining Practices: A New Mining Code for BC* (Fair Mining Collaborative, Vancouver, 2013) online: <http://www.fairmining.ca/fair-mining-code/>.

Fish Lake would be drained, and there would be the loss of all the associated wetlands and a number of streams. Really, it was the loss of the whole ecosystem...

Prentice 's decision was based on a detailed analysis done by experts appointed under the federal environmental assessment law. Those federal experts concluded that the Prosperity Mine would create high magnitude and irreversible effects on fish, and significant effects on grizzly bears; destroy an important cultural and spiritual area of the Tsilhqot'in people, and create long-term impacts on the physical and mental health of the Tsilhqot'in.

This federal decision stood in marked contrast to the approach taken by BC's Environmental Assessment Office. The Provincial Office rejected expertise from its own Ministry of Environment and recommended approval of the project. This was consistent with the BC Office's record – it has seldom recommended that a project be rejected.⁴⁷

Another problem is that a mine is not generally required to undergo environmental assessment unless its production volume exceeds certain thresholds (e.g., 75,000 tonnes/year for mineral mines, 250,000 tonnes/year for coal mines).⁴⁸ These thresholds for environmental assessment are quite high – indeed, the mineral mine threshold is three times the 25,000 tonne threshold under the previous *Environmental Assessment Act*. This means that many mines are not assessed, when they should be.⁴⁹

The current thresholds allow small mines to receive approval without assessment – and then incrementally exceed the threshold without ever being properly assessed. In contrast, other jurisdictions require assessments for all mines. For example,

⁴⁷ See Mark Haddock, *Comparison of the British Columbia and Federal Environmental Assessments for the Prosperity Mine* (Northwest Institute for Bioregional Research, 2011) http://northwestinstitute.ca/images/uploads/NWI_EAreport_July2011.pdf. Also, see Mark Haddock and Chris Tollefson, "Environmental Assessment Act Needs to Be Revamped" *Vancouver Sun* (2010 November 16) <http://www.sqwalk.com/q/environmental-assessment-act-needs-be-revamped>. Note that the proposed mine was redesigned and again rejected, pursuant to a second federal environmental assessment.

⁴⁸ See Reviewable Projects Regulation, BC Reg. 370/2002, s. 8, Table 6.

⁴⁹ Mark Haddock, *Environmental Assessment in BC* (Victoria: University of Victoria Environmental Law Centre, 2010) at 18.

Washington State and Nova Scotia require environmental assessments for all metal mines, and Sweden requires such assessments for all mines.⁵⁰

A number of First Nations have called for mandatory environmental assessments for all mining activities. For example, the Fort Nelson First Nation has unsuccessfully sought an environmental assessment of fracking sand mining that threatens to damage its territory. Chief Liz Logan has stated:

*The developer has proposed six frack sand mines in our territory — four of them side-by-side...Each of these mines would be a significant development that harms our treaty rights and together would form a major industrial project, which would cause serious damage to our lands.*⁵¹

However, because the mining proposals were not considered as one project, none of them met the legal *threshold* for an environmental assessment, in spite of the high impact of the projects overall. No environmental assessment was done.

Similarly, the Gitxaala Nation has criticized the regulatory regime that failed to require an environmental assessment for a gold mine that fell slightly short of the assessment threshold. The unexamined mine went on to seriously pollute Banks Island water bodies with toxic metals. This was followed by a stop work order, charges against the mine, and the company filing for bankruptcy. Gitxaala Chief Clarence Innis stated:

⁵⁰ Maya Stano and Emma Lehrer (Fair Mining Collaborative), *Fair Mining Practices: A New Mining Code for British Columbia*, (Fair Mining Collaborative, 2013) at pp. 162, 179-180 online: <http://www.fairmining.ca/wp-content/uploads/2014/08/Fair-Mining-Practices-A-New-Mining-Code-for-BC-Web-Copy.pdf>.

⁵¹ Dwight Ford, "Fort Nelson FN wins legal challenge over frack sand mines", EnergeticCity.ca July 14, 2015. Online: <http://energeticcity.ca/2015/07/fort-nelson-fn-wins-legal-challenge-over-frack-sand-mines/>. Note that the Nation won their case seeking an environmental assessment at BC Supreme Court but have recently lost at the BC Court of Appeal. See *Fort Nelson First Nation v. BC (Environmental Assessment Office)* 2016 BCCA 500.

They basically made this mining outfit just big enough so that it didn't require a full [environmental assessment]...⁵² They have contaminated one of the most important food gathering areas within Gitxaala's traditional territory.⁵³

Another problem with current environmental assessments is that they fail to fully account for impacts of a new mine on health, social and cultural values. For example, the Nak'azdli First Nation documented health, social and cultural impacts to their community *after* the Mt. Milligan mine had been in construction for two years. Their study found that the health, cultural and social impacts had not been adequately predicted and planned for.⁵⁴

Yet another striking hole in the environmental assessment regime is the fact that – in contrast with the Yukon – BC does not conduct environmental assessments of placer mines.⁵⁵

It is past time for reform of BC's *Environmental Assessment Act*, a law that was severely weakened in 2002. In 2010, the ELC published *Environmental Assessment in British Columbia*. That report sets out a blueprint for reforming environmental assessment to make it more efficient and effective at protecting the environment and encouraging sustainable development.⁵⁶

⁵² Nelson Bennett, "Gold mine spill shines light on practice of avoiding environmental assessment" *Business in Vancouver* (2015 August 11) <https://www.biv.com/article/2015/8/spill-closes-bc-mine-had-avoided-full-environmenta/>.

⁵³ Personal communication with James Witzke, Gitxaala Nation. And see: Andrew Kurjata, "Mining company facing charges for alleged damage to Hecate Strait Island: First Nation says B.C. government failed to monitor mine as pollutants leaked into the wetland and waterways" CBC News (2016 August 15) <http://www.cbc.ca/news/canada/british-columbia/mining-company-facing-charges-for-alleged-damage-to-hecate-strait-island-1.3719194> and <http://www.thenorthernview.com/news/319493111.html?mobile=true>, <http://www.mining.com/gitxaala-nation-accuses-b-c-government-of-delaying-mining-site-clean-up/> and <https://www.biv.com/article/2015/8/spill-closes-bc-mine-had-avoided-full-environmenta/>

⁵⁴ Janice Shandro et al., *Ten Steps Ahead: Community Health and Safety in the Nak'al Bun/Stuart Lake Region During the Construction Phase of the Mount Milligan Mine* (University of Victoria et al., 2014) Online: bchealthycommunities.ca/res/download.php?id=1819

⁵⁵ See the Placer Mining section below.

⁵⁶ Mark Haddock, *Environmental Assessment in British Columbia* at (University of Victoria Environmental Law Centre, 2010) online: <http://www.elc.uvic.ca/publications/ea-report/?hilite=Environmental+Assessment>.

Questions for the Public Inquiry

- **Do other BC mining rules meet global standards for public safety and environmental protection?**
- **Are the requirements for environmental assessment adequate to protect the environment?**

AUDITOR GENERAL'S REPORT ON REGULATORY ENFORCEMENT

The Auditor General of British Columbia's May 2016 *Audit of Compliance and Enforcement of the Mining Sector* could not have been more damning of Government neglect and failure to enforce the law. The Auditor General stated:

*We found over a decade of neglect in compliance and enforcement program activities within the Ministry of Energy and Mines, and significant deficiencies within the Ministry of Environment's activities. Overall, we concluded that compliance and enforcement activities of the two ministries are inadequate to protect the province from significant environmental risks.*⁵⁷

*We found almost every one of our expectations for a robust compliance and enforcement program within the MEM and the MoE were not met. We found major gaps in resources, planning and tools. As a result, monitoring and inspections of mines were inadequate to ensure mine operators complied with requirements.*⁵⁸

The Auditor General reported that on several occasions in the past 10 years, ministry staff had warned higher-level management that inadequate monitoring and inspection was putting the province at risk.⁵⁹ The Auditor General stated that such risks became reality at Mount Polley⁶⁰ and also stated:

⁵⁷ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 11.

⁵⁸ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 3.

⁵⁹ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 54.

⁶⁰ The Auditor General stated: "*The impacts of an ineffective regulatory regime are increased risks to the environment...In recent years, this risk has become a reality and resulted in actual environmental damage, such as at the Mount Polley mine site and in the Elk Valley.*" Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 9.

*We noted the same issues in the Mount Polley file as we did throughout the [province-wide] audit — that is, too few resources, infrequent inspections and lack of enforcement.*⁶¹

Perhaps most important, the auditor general team concluded that at Mount Polley:

- Government failed to conduct the required geotechnical inspections of the dam every year, and
- If inspections had been done, inspectors could well have identified problems and avoided the disaster.⁶²

In addition, they noted that government had failed to enforce the dam's flatter slope – and if government had done that job, the accident would have been avoided.⁶³ The Auditor General found that the Ministry of Energy and Mines' general "Lack of Enforcement Culture" contributed to the Mount Polley disaster.⁶⁴

⁶¹Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 4.

⁶²Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), pp. 8, 9, 66 and 71. At p. 9 the Auditor General noted that the lack of proper inspections allowed the improper operation and planning to continue, eventually leading to the disaster: *"MEM performed no geotechnical inspections for a number of years, even though their policy requires a minimum of an annual inspection. Although these inspections would not have identified the weak foundation layer, staff could have identified that the operator was not actually building or operating the tailings dam to the prescribed design and was raising the dam without any long-term planning."*

⁶³ The Auditor General noted that MEM had allowed the dam to deviate dangerously from the engineers' original design, allowing it to be built too steeply, and without proper buttressing and protective internal beaches. The AG stated:

For many years before the breach happened, there were structural and operational deficiencies (beach, buttressing and slope) that contravened the permitted design, but MEM did not enforce the correction of those flaws. (p. 75)

This Government failure to enforce the prescribed design was fatal. The Auditor General pointed out that the expert engineering panel concluded :

Had the downstream slope in recent years been flattened...as proposed in the original design, failure would have been avoided... (p. 71)

But MEM had failed to ensure the critically important flattening of the dam slope:

As the regulator, it was MEM's responsibility to ensure that the dam was being built as designed, including with the intended embankment slope. This MEM did not do (p. 72.)

The Auditor General specifically found that MEM failed to require the tailings dam to complete the dam as designed and failed to operate it as intended. (p. 78) The Auditor General found the MEM allowed the company to build and maintain the dam at a steeper slope than designed, to not maintain an adequate protective tailings beach, and did not enforce the establishment of buttressing of the dam along the main embankment. (See pp.71- 78)

⁶⁴Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 9.

In perhaps its most telling finding on the province-wide enforcement system, the Auditor General recommended that enforcement of mining laws be moved out of the Ministry of Mines to a more independent agency, because the Ministry is “at risk of regulatory capture” —i.e. of acting in industry’s interest instead of the public interest. Indeed, the Auditor General’s highest priority recommendation, its “Overall Recommendation,” was:

*We recommend that the Government of British Columbia create an integrated and independent compliance and enforcement unit for mining activities, with a mandate to ensure the protection of the environment. Given that the Ministry of Energy and Mines (MEM) is at risk of regulatory capture, primarily because MEM’s mandate includes a responsibility to both promote and regulate mining, our expectation is that this new unit would not reside within this ministry.*⁶⁵

[emphasis added]

The Auditor General noted that the ministry can’t vigorously enforce the law because of the inherent conflict in its dual role of promoting and regulating industry. Among other things, she noted:

*MEM’s mandate to promote the mining industry conflicts with its role as a regulator...To meet the provincial goals for new mines and mine expansions, MEM and MoE are focusing on permit applications. As a result, there are few resources dedicated to the regulatory activities of monitoring, compliance and enforcement.*⁶⁶

Alarming, the Auditor General concluded that the ministry is “at risk of regulatory capture,” of serving industry interests instead of the public interest.⁶⁷ The Auditor

⁶⁵Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 11.

⁶⁶Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 6.

⁶⁷ The Auditor General noted: “Regulatory capture occurs when the regulator, created to act in the public interest, instead serves the interests of industry... MEM has not focused on developing a

General noted that MEM exhibits most of the signs of regulatory capture, the signs of which she specifically listed.⁶⁸

Nevertheless, Government refused to agree to this most important Auditor General recommendation of moving enforcement to an objective agency without conflicts issues.⁶⁹

The Auditor General made other important findings, including:

- The failed inspection regime that led to disaster at Mount Polley was not anomalous. The Ministry of Energy and Mines did not meet the minimum requirement of its policy to conduct reclamation inspections at all major mines at least annually. In fact, a survey of four mines over a three-year period found that only four reclamation inspections were done, out of the required 12. For example, the survey found that Gibraltar mine had no

compliance and enforcement program. Most of MEM's efforts are devoted to supporting the development of mining through processing permits for new and existing mines. This emphasis reflects MEM's mandate to promote the development of mining in BC. However, we found that this emphasis on mining promotion combined with a weak compliance and enforcement program creates the risk of regulatory capture for the ministry ... We found that MEM exhibits most of these signs which can give rise to a reasonable perception of, and increase the actual risk of, regulatory capture..." Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 44.

⁶⁸ According to the Auditor General, these signs of regulatory capture include: Housing enforcement in the same agency promoting the economic interests of industry; Agency publications list environmental protection as just one goal alongside others such as economic development; Low level of prosecution activity; Laws granting wide discretion to the regulator; Regulator's budget and resources not comparable with those in industry; Regulator shows marked preference for giving informal recommendations and advice, not properly recorded; High shift of enforcement officers from the agency to industry, where they earn more; Regulatory work often takes place in isolated communities, where there is frequent social collaboration between industry and regulator. Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 44.

⁶⁹ In reply to the Auditor General's call for an independent compliance and enforcement unit, the government promised to establish a Mining Compliance and Enforcement Board that will "address the need for greater integration between the ministries [MOE and MEM in regard to their shared Compliance & Enforcement mandate], as well as with the Environmental Assessment Office." What this response fails to respond to is the Auditor General's fundamental objection to MEM conducting enforcement -- that "MEM's role to promote mining development is diametrically opposed to compliance and enforcement." Therefore, MEM should not be enforcing, regardless of the creation of a new "integrating" body. (See pp. 22-24 in Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector*.) Note that Ontario apparently separates regulation of tailings dams from the Ministry promoting mining. Tailings dams are stringently regulated by the Ministry of Natural Resources and Forestry -- separate from the Ministry of Northern Development and Mines, which promotes mining. Personal conversation, Rina Freed, mining consultant.

reclamation inspection at all from 2008 until 2012 – and Myra Falls mine had not received a reclamation inspection from 2006 until 2014. Similarly, large numbers of policy-mandated annual geotechnical inspections were never carried out.⁷⁰

- The Auditor General found several instances where government allowed companies to be in “significant non-compliance” for years at a time. For example, government failed to compel the Myra Falls mine to address the issue of seismic safety for 14 years. The Auditor General commented:

*Had a major earthquake (Magnitude 7 or higher) occurred before 2013, there was a risk that the dam could have failed.*⁷¹

When the Auditor General focused on a particular area – the massive open-pit coal mines of the Elk River Valley – she again discovered the enormous cost of poor regulatory oversight. She pointed out that ineffective regulatory oversight has substantially damaged the Elk River Valley. She noted that mine-generated selenium pollution had hiked the rates of reproductive failure, mortality and deformity of birds and fish and may threaten human health in the Valley – while creating what one government scientist has described as the “biggest ecological threat” to the US Northern Rockies downstream.⁷² The Auditor General went on to conclude:

⁷⁰Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 56. Similarly, the Ministry Environment fell far short of policy requirements for inspections. That Ministry also failed to inspect numerous “high priority” mine sites annually. For example, the AG expressed “particular concern” that the Myra Falls mine site, which is in a provincial park and close to drinking water sources, was not inspected in *any* of the three years reviewed. (p. 89)

⁷¹Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), pp. 58-59.

⁷² See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), which states “As selenium accumulates up the food chain, it can affect the development and survival of birds and fish and may also pose health risks to humans.” (p. 9) “MoE monitoring data from 1996 to 2012 shows that selenium levels in the Fording River are increasing annually at a rate of approximately 13% within the Fording River, and 8% within the Elk River. These levels are well above B.C.’s guidelines for drinking water and aquatic life” (p. 97). The Ministry of Environment has documented the increased levels of Selenium in the Elk Valley and required timelines to establish water treatment plants – plants that will have to be monitored into perpetuity. Note that just one water treatment plant has been built, out of the six plants called for in Government’s Area Based Management Plan (see pp. 10, 96 and 100.) At the same time, this BC mining pollution has also created the “biggest ecological threat facing the [US] Northern Rocky Mountain ecosystem” downstream, according to Aquatic Ecologist Clint Muhlfeld of the US

*The lack of sufficient and effective regulatory oversight and action by the Ministry of Environment to address known environmental issues has allowed degradation of water quality in the Elk Valley.*⁷³

The Auditor General pointed out that the Ministry of Environment lagged two decades behind the US government in flagging selenium as a critical environmental issue, failing to identify it as an environmental issue until 1995.⁷⁴

In recent years, under intense pressure from Americans downstream, Government has taken some action, establishing an Area Based Management Plan and requiring some water treatment facilities. But according to the Auditor General, enforcement still fails to employ proper standards – allowing new mining that would produce selenium levels “not likely protective of the environment” and allowing five times the amount set in BC’s water quality guidelines for aquatic fish.⁷⁵ As the Auditor General noted:

*Ultimately, despite the addition of water treatment facilities, the current permit levels of selenium are above the water quality guidelines set by B.C. to protect aquatic life, and for human health and safety. Selenium from both historical mining activities and the ongoing expansion is likely to continue to impact the environment far into the future.*⁷⁶

The Auditor General also cited US EPA complaints to the BC Government that “the selenium levels contemplated by the BC government will result in an increase in

Geological Survey. Online: <http://flatheadbeacon.com/2014/11/17/concerns-renewed-b-c-coal-mining-pollutants-increase-montana-watershed/downstream>.

⁷³Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 95.

⁷⁴Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 97.

⁷⁵Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), pp. 95, 100.

⁷⁶Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 96.

selenium in the area, not a stabilization or reversal of levels, as was promised in the ministerial order issued in 2013.”⁷⁷

In light of all of the above, it is particularly troubling that the government has refused to embrace the central recommendations of both the expert engineering panel and the Auditor General:

Questions for the Public Inquiry

- **Is enforcement of mining laws adequate, in light of the Auditor General’s sweeping critique?**
- **Should Government remove enforcement of mining laws from the Ministry of Energy and Mines to a more objective agency, as recommended by the Auditor General?⁷⁸**

⁷⁷Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 102.

⁷⁸ In its deliberations, the Judicial Inquiry might consider whether an Independent Watchdog should be established to oversee mining, in the same way that the Forest Practices Board was established to watchdog forestry in the 1990s. The Forest Practices Board was set up to restore public confidence in forestry regulation, and there is now a similar crisis of confidence in mining. A cross-sectoral Environmental Commissioner could be established to watchdog all natural resource sectors, as the ELC has previously proposed. Similar to the Forest Practices Board, such an Environmental Commissioner could be mandated to: appeal government decisions; address and report on citizen complaints; conduct performance audits; make law and policy reform recommendations; and provide information to legislators and the public. See Murray Rankin, “The Case for a BC Environment Commissioner” (chapter 32) in *Maintaining Natural British Columbia for Our Children* (Environmental Law Centre, 2012) online: <http://www.elc.uvic.ca/publications/maintaining-natural-bc-for-our-children-selected-law-reform-proposals/?h1st=maintaining>].

TWO INSPECTION CASE STUDIES

CASE 1: JORDAN RIVER AND THE FAILURE TO MONITOR OLD MINES

Concerns arise from the mounting evidence that Government's monitoring of closed mine sites is profoundly deficient. Despite the fact that such mine sites can cause serious watershed-wide damage for centuries, the Province does not systematically monitor these sites. This is a problem, in a Province where Mining Watch has identified more than 1200 mine hazard sites (which contribute to unfunded reclamation liabilities for taxpayers of more than \$3 billion).⁷⁹

In her report on Compliance and Enforcement, the Auditor General highlighted this concern:

*...the number of inspections of closed major mines were inadequate, given the risks that are associated with these sites.*⁸⁰

In the AG's limited audit sample of four closed mines, only one reclamation inspection and five geotechnical inspections took place over a three-year period.⁸¹ The audit reviewed four closed mines –*only one of which had been inspected between 2012 and 2014*. The Auditor General was concerned to find that the Shasta-Baker mine received no inspections at all during the audit period examined – despite having a history of serious noncompliance issues.⁸²

⁷⁹ Stephen Hume, "BC's Failures on Mining Pollution Leaving Taxpayers on the Hook" *Vancouver Sun* (2016 October 17) online: <http://vancouversun.com/opinion/columnists/stephen-hume-provincial-failures-on-mining-pollution-leaving-taxpayers-on-the-hook>.

⁸⁰ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016), p. 56.

⁸¹ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p.56.

⁸² Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 89.

A Public Inquiry is necessary to determine the full scope of this failure to inspect closed mines – and the scope of the massive environmental damage that is likely occurring across the Province as a result.

Recent events at the Sunro Mine on Jordan River demonstrate what British Columbians stand to lose because closed mines are not being monitored. These events demonstrate a shocking level of Government negligence that sacrificed decades of salmon runs on Vancouver Island.⁸³

Historically, the Jordan River watershed was subject to mining, forestry and hydroelectric development. The Sunro Mine operated between 1950 and 1974, contributing to the decimation of the historically strong pink, chum and coho salmon, steelhead and sea-run cutthroat trout populations in the River.

As late as the 1950s and 1960s between 5,000 and 10,000 anadromous fish were still in the river.⁸⁴ However, copper mining contamination – exacerbated by hydro development and logging – eliminated anadromous fish production in the lower Jordan River. In the 1950s, mine waste was dumped along the river, and coho and chum salmon died out about 1957. In the 1960s, the mine was flooded, which exacerbated the pollution problem and closed operations. Abandoned mine shafts and seepages have continued to deliver copper contaminated water along the river bank, along with contamination from mine tailings, which periodically slump and

⁸³ See the following sources that document the facts laid out below: Amy Smart, “Old Copper Mine Still Fouling Jordan River” *Victoria Times Colonist* (2016 October 4) online: <https://search.yahoo.com/yhs/search?p=jordan+river+sandborn+amy+smart&ei=UTF-8&hspart=mozilla&hsimp=yhs-002>; Stephen Hume, “Jordan River Salmon Wiped Out by Copper Tailings” *Vancouver Sun* (2016 October 4) online: <http://www.vancouversun.com/stephen+hume+jordan+river+salmon+wiped+copper+tailings/12248722/story.html>; Mark Hume, “The rebirth of B.C.’s Jordan River is a victory for biological activism” *Globe and Mail* (2016 October 17) online: <http://www.theglobeandmail.com/news/british-columbia/the-rebirth-of-the-river-jordan-in-bc-is-a-victory-for-biologicalactivism/article32385234/>; Stephen Hume, “Provincial Failures on Mining Pollution Leaving Taxpayers on the Hook” *Vancouver Sun* (2016 October 16) online: <http://vancouversun.com/opinion/columnists/stephen-hume-provincial-failures-on-mining-pollution-leaving-taxpayers-on-the-hook>; editorial “Province Should Clean Up Mine Sites” *Victoria Times Colonist* (2016 October 11) online: <http://www.timescolonist.com/opinion/editorials/editorial-province-should-clean-up-mine-sites-1.2362178>.

⁸⁴ Anadromous fish are fish that migrate from salt water to spawn in fresh water. See M.C. Wright & Esther Guimond, *Jordan River Pink Salmon Incubation Study* (2003), online: BC Hydro http://www.bchydro.com/bcrp/projects/docs/vancouver_island/02JO64.pdf, cited in ELC letter from Matthew Nefstead and Calvin Sandborn to Dave Parker, Teck Resources, April 4, 2013, “Remediation of the former Sunro Mine at Jordan River.”

erode into the river. The last pink salmon spawning in the river were recorded in the 1970s.

The loss of fish was a great loss to people on south Vancouver Island, but especially to the Pacheedaht First Nation, who consider Jordan River to be their Garden of Eden. In 2008, prompted by a Pacheedaht Nation fish scientist, BC Hydro began to release more water to aid the fish. The BC Hydro Fish and Wildlife Compensation Program (Coastal) then attempted to restore fish runs in the River. However, the river was still too contaminated by heavy metals to support fish. In particular, the stretch of the river near the mine slag heap was “devoid of life” By early 2012 Ken Farquharson, a citizen Board member of the Fish and Wildlife Compensation Program, reports:

I had attended a meeting of parties interested in the future of the Jordan River to find that everyone was very pessimistic about its future due to the long term contamination by copper from the mine waste dump. More worryingly, nobody seemed interested in getting the situation corrected.⁸⁵

Government did not respond to requests to take action to address the matter. It was only when the ELC formally documented:

- the environmental values at stake in the area;
- the current evidence of contamination and its impact on fisheries restoration efforts;
- the operating history of the site, including all owners and operators of numerous properties;
- the current status of companies and individuals that had been owners and operators and thus might be deemed “responsible persons” for cleanup under the *Environmental Management Act*; and
- the reasons why Teck Resources was likely legally liable to clean up most of the site,

that the problem got addressed. After receiving the ELC research, Teck Resources cooperated with concerned conservationists and government. In summer 2016, the

⁸⁵ Amy Smart, “Old Copper Mine Still Fouling Jordan River” *Victoria Times Colonist* (2016 October 4) online: <https://search.yahoo.com/yhs/search?p=jordan+river+sandborn+amy+smart&ei=UTF-8&hspart=mozilla&hsimp=yhs-002>.

Ministry of Environment – which had previously been unaware of the contamination – finally designated the waste dump as a “High Risk” site.

On August 25, 2016, the Ministry finally ordered Teck Resources to file a remediation plan to address the mining pollution by June 1, 2017. A multi-stakeholder committee including Teck is now collaborating on cleanup plans.⁸⁶

This is a good news story, because now there is a chance that the Pacheedaht First Nation and the people of South Vancouver Island may again see the return of salmon to Jordan River. But it’s also a bad news story. And the bad news story is why government didn’t address this serious pollution problem decades ago.

In a surprising admission, Government claimed that until citizens brought this matter to its attention it did not know that this mine site – a mine site that was killing the river for decades – was still contaminated. For decades, the Ministry of Environment was unaware of the contamination that was killing fish runs.⁸⁷ Remarkably, even though this mine was impacting the river, the mine site was actually missing from Government maps of known potential and actual acid generating mines across the province.⁸⁸

⁸⁶ For more information about the account above, see: Amy Smart, “Old Copper Mine Still Fouling Jordan River” *Victoria Times Colonist* (2016 October 4) online: <https://search.yahoo.com/yhs/search?p=jordan+river+sandborn+amy+smart&ei=UTF-8&hspart=mozilla&hsimp=yhs-002>; Stephen Hume, “Jordan River Salmon Wiped Out by Copper Tailings” *Vancouver Sun* (2016 October 4) online: <http://www.vancouversun.com/stephen+hume+jordan+river+salmon+wiped+copper+tailings/12248722/story.html>; Mark Hume, “The rebirth of B.C.’s Jordan River is a victory for biological activism” *Globe and Mail* (2016 October 17) online: <http://www.theglobeandmail.com/news/british-columbia/the-rebirth-of-the-river-jordan-in-bc-is-a-victory-for-biologicalactivism/article32385234/>; Stephen Hume, “Provincial Failures on Mining Pollution Leaving Taxpayers on the Hook” *Vancouver Sun* (2016 October 16) online: <http://vancouversun.com/opinion/columnists/stephen-hume-provincial-failures-on-mining-pollution-leaving-taxpayers-on-the-hook>; editorial “Province Should Clean Up Mine Sites” *Victoria Times Colonist* (2016 October 11) online: <http://www.timescolonist.com/opinion/editorials/editorial-province-should-clean-up-mine-sites-1.2362178>.

⁸⁷ Amy Smart, “Old Copper Mine Still Fouling Jordan River” *Victoria Times Colonist* (2016 October 4) online: <https://search.yahoo.com/yhs/search?p=jordan+river+sandborn+amy+smart&ei=UTF-8&hspart=mozilla&hsimp=yhs-002>.

⁸⁸ BC Wild and Environmental Mining Council of BC, *Acid Mine Drainage: Mining and Water Pollution Issues in BC* (2006) at p. 13 online: <http://miningwatch.ca/publications/2006/3/25/acid-mine-drainage-mining-and-water-pollution-issues>.

How could this be? The mine site is not remote – a mere 70 km west of the Parliament Buildings in Victoria, and easily accessible. And the flow of copper into the river is immediately obvious to the most casual observer – indeed, last October the *Vancouver Sun* ran a photograph showing copper quite obviously leaching into the river. Indeed, the photo clearly showed the green copper on the surface of the tailings, and was captioned, “the face of the tailings dump of a long-abandoned mine near Jordan River is crusted with green scabs.”

The *Sun* reporter described what was immediately obvious to the casual observer at Jordan River:

*After clambering down a steep washout and spending several hours, I saw not one juvenile fish. There weren't even water insects. No waterfowl. The face of the tailings dump was crusted with green scabs. Scummy foam left intricate patterns on the pools. The river bottom was coated with a furry reddish brown.*⁸⁹

So how did the Province not note this problem and order a cleanup long ago? Why was it left to a citizen and a law student to get an order to stop the poisoning of a salmon river?

When questioned on this, the Minister of Energy and Mines Bill Bennett stated that in 1993 a provincial mine inspector had issued a letter stating “final reclamation carried out and found satisfactory.”⁹⁰ Then the mining company surrendered the Crown grants back to the Crown.

But here’s the nub of the issue. According to the *Times Colonist*, Minister Bennett gave the following explanation of why Government had not inspected the site and discovered the pollution problem that was quite obviously poisoning the river:

⁸⁹ See Stephen Hume, “Jordan River salmon wiped out by copper tailings” *Vancouver Sun* (2016 October 4) online: <http://vancouversun.com/opinion/columnists/jordan-river-salmon-wiped-out-by-copper-tailings>.

⁹⁰ Amy Smart, “Ministry doesn’t know why contaminated site was deemed clean,” *Victoria Times Colonist* (2016 October 8) online: <http://www.timescolonist.com/news/local/ministry-doesn-t-know-why-contaminated-site-was-deemed-clean-1.2361274>. The 1993 letter is cited in the SNC Lavalin Inc. report: “Supplemental Stage 1 and Limited Stage 2 Preliminary Site Investigation and Preliminary Risk Opinion, Sunro Mine, Jordan River, BC” at p. 10.

*After a site is deemed clean, no further inspections are typically conducted, Bennett said.*⁹¹

This indicates that there are likely many other rivers out there that are being poisoned by historic mine contamination. It is only by chance – and because of an assiduous citizen – that the Environmental Law Centre was able to provide the documentation that led to government action in this case. But why wasn't government monitoring this situation – a situation that was patently obvious, with copper obviously flowing from a slag heap into a dead river?

This raises the question of exactly how many other fish streams are currently being poisoned by the 1,100+ old mines across the Province?⁹² We don't have enough law students in the province to clean up all the rivers that need cleaning up. There is an urgent need for government to systematically address this issue. A Public Inquiry can make recommendations for ways that Government can best conduct a comprehensive review of *all* the salmon streams in the province that are downstream from old mines.

CASE 2: TULSEQUAH CHIEF – FAILING THE GOOD NEIGHBOUR TEST

Alaskans look at British Columbia's feeble regulatory effort at the Tulsequah Chief mine, and question why they should ever accept the many new Canadian mines being proposed near the US border.⁹³

⁹¹ Amy Smart, "Ministry doesn't know why contaminated site was deemed clean," *Victoria Times Colonist* (2016 October 8) online: <http://www.timescolonist.com/news/local/ministry-doesn-t-know-why-contaminated-site-was-deemed-clean-1.2361274>.

⁹² The BC Government's *Historic Mines Atlas* lists over 1100 past producing mines in British Columbia. See Government of BC, *The Map Place: Historic Mines Atlas* online:

<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/thematicmaps/Pages/HistoricMines.aspx>

⁹³ Thanks to Chris Zimmer and Will Patric of Rivers Without Borders for assistance with this Tulsequah Chief description. Also see: Robyn Allan, *Toward Financial Responsibility in British Columbia's Mining Industry* (Union of BC Indian Chiefs, 2016) pp. 17 and 75-78 and online:

<http://www.cbc.ca/news/canada/north/tulsequah-chief-mine-bankrupt-receivership-1.3758668> ;

<http://riverswithoutborders.org/blog/2016/09/chieftain-metals-is-bankrupt> ; and

<http://juneauempire.com/local/2016-05-04/tulsequah-chief-mine-owner-descends-further-financial-hole>; http://www.nytimes.com/2016/01/24/opinion/sunday/a-canadian-threat-to-alaskan-fishing.html?_r=0

Tulsequah Chief was an old underground mine in northwest BC on the Tulsequah River – which joins the Taku River shortly before the Taku runs through Alaska to the Pacific. The Taku is the top salmon watershed in the transboundary region, with robust runs of five salmon species. The Tulsequah Chief mine site is immediately above Flannigan Slough, the most important salmon spawning and rearing habitat for the entire Taku system.

The mine shut down in 1957, but it has continued to pollute the watershed. Proposed new mining at the same site has been controversial for the last two decades.

In recent years, two different companies have attempted to re-open the mine. But toxic acid mine drainage continues to escape from the mine into the Tulsequah River. BC first issued a pollution abatement order to the mine owners in 1989. And over the past 15 years the BC government has issued approvals for the new mine operation, as well as new remediation and pollution abatement orders. However, the pollution orders achieved little.

In 2011, the mine finally agreed to build a water treatment plant to address the ongoing acid mine drainage issue. However, after operating the treatment plant for less than a year, the company shut it down, saying it was costing too much. Since 2012, there has been no water treatment at the site, and the acid drainage continues.

In November 2015 the Ministry of Energy and Mines issued a new non-compliance order for the continuing pollution, but the acid mine drainage continued untreated. Finally, in September 2016 Chieftain Metals entered receivership, killing hopes that the new mine company might re-start the water treatment plant and stop the pollution.

Alaskans are furious that British Columbia has failed for decades to stop the pollution of their valuable salmon river. The failures at Tulsequah Chief, along with the Mount Polley disaster, have raised anxieties of Alaska Tribes and fishermen who are downstream of the numerous new and proposed BC mines that would drain into the Chilkat River, Stikine-Iskut River system, the Unuk River, as well as

the Taku River.⁹⁴ Concern is heightened by the fact that the new Red Chris Mine in the Stikine-Iskut area belongs to the same company as the ill-fated Mount Polley Mine. Alaska officials have called for action, with Governor Sarah Palin in 2009 calling unsuccessfully for BC to act “promptly” to stop the acid drainage that threatens the multi-million dollar fishery downstream.⁹⁵

(See below for a discussion of BC’s failure to obtain adequate security to protect BC taxpayers from liability in the Tulsequah Chief situation.)

Questions for the Public Inquiry

- **Are closed mines being adequately monitored and reclaimed? Or are the failures at Jordan River and Tulsequah Chief Mine symptomatic of a larger problem that threatens the health of watersheds across the Province?**

⁹⁴ River systems potentially threatened by new or proposed BC mines include: **Taku River:** proposal to re-open Chieftain Metals Corp. Tulsequah Chief and Big Bull mines; **Chilkat River:** Constantine Metal Resources Ltd, Palmer Mine proposal; **Stikine-Iskut River system:** Fortune Minerals Ltd. Arctos Anthracite coal mine proposal; Atrum Coal NL Groundhog coal mine proposal; Imperial Metals Corp. Red Chris Mine in development; Copper Fox Metals Inc. Schaft Creek Mine proposal; NovaGold Corp. Galore Creek Mine proposal, begun and on hold; Unuk River: Seabridge Gold Corp. Kerr-Sulphurets-Mitchell mine proposal undergoing environmental assessment; Pretivm Resources Corp. Bruce Jack gold mine proposal, bulk sampling in progress.

⁹⁵ See the July 1, 2009 letter from Governor Palin to Premier Campbell online: <https://thetyee.ca/Documents/2012/11/13/Palin%20and%20Irwin%20cleanup%20letters.pdf>.

TAXPAYER LIABILITY: THE LACK OF ADEQUATE SECURITY

Remediating mines can be extraordinarily expensive.⁹⁶ And too often it has fallen to taxpayers to pay for the ultimate cleanup bills –like the \$700-million bill that Canadian taxpayers are paying at the Yukon’s Faro Mine,⁹⁷ the billion dollar taxpayer bill for the Giant Mine in NWT,⁹⁸ and the \$46 million+ that BC taxpayers paid at Britannia mine.⁹⁹ If Government fails to get an adequate cleanup bond/security at the outset, taxpayers must pay for cleanups if the company becomes insolvent. And that creates problems in the volatile, boom-and-bust mining industry, where insolvency is relatively common.¹⁰⁰

Furthermore, if we want a green industry, it is essential that companies – not taxpayers – pay for the environmental damage caused by mines. The Polluter Pays Principle is a fundamental of good public policy. “Polluter Pays” encourages more careful industrial operations, incentivizes green practices and technologies, and encourages timely remediation.¹⁰¹

⁹⁶ The ELC is indebted to law student Brodie Quinton, who contributed a great deal of research on the issue of securities and taxpayer liability, in a project he did for the Wilderness Committee.

⁹⁷ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 37. Recently it was reported that the Faro cleanup may exceed the \$700 million estimate and cost more than a billion dollars. Justin Giovannetti, “Two decades after closure of Yukon’s Faro mine, a cleanup plan takes shape” *Globe and Mail* (2017 January 3) online: <http://www.theglobeandmail.com/news/national/two-decades-after-closure-of-yukons-faro-mine-a-cleanup-plan-takes-shape/article33484119/>.

⁹⁸ “Giant Headache: Canada’s Taxpayers Ante Up Billions to Clean Up the Mistakes of the Past”, *The Economist* (2014 October 9) online: <http://www.economist.com/news/americas/21620280-canadas-taxpayers-ante-up-billions-clean-up-mistakes-past-giant-headache>.

⁹⁹ The \$46 million capital cost and \$3 million annual cost is for the Britannia water treatment plant. See Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) pp. 37, 50.

¹⁰⁰ An example of industry volatility: Economist Robyn Allan reports that in 2012 there were 22 operating major coal and metal mines in the Province, but that number had dropped to 12 such mines by 2016. Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 9. Note that Dr. Dave Chambers with the Center for Science in Public Participation has published several documents on the need for and how to determine the adequacy of a bond. He has also reviewed the adequacy of bonds held by Alaskan mines. These documents are available on CSP2’s website (www.csp2.org.) Many US States place very prescriptive requirements into regulation on how to calculate adequate bonds.

¹⁰¹ There are compelling public policy reasons for ensuring that mine polluters pay for their own mess. That’s why most developed countries have adopted the Polluter Pays Principle. (For example,

Grand Chief Stewart Phillip of the Union of BC Indian Chiefs has pinpointed the problem with current BC policy that fails to implement “Polluters Pay” with adequate securities:

*This failure to hold companies responsible rewards risky behavior because when companies know they can escape being held financially responsible for reclamation, they are more likely to cut corners on safety measures, leading to more accidents and more severe consequences when they happen.*¹⁰²

As a Union of BC Indian Chiefs report on this issue puts it, if mining companies don’t pay for their own pollution:

*They have few inducements to invest in techniques like dry stacking that lower reclamation costs and reduce risk of spills, because there’s no incentive to use Best Available Technology when they may never be held accountable if disaster strikes.*¹⁰³

see the United Nations *Rio Accord*, *Canada’s Green Plan*, and the British Columbia *Land Use Charter*). Economist Robyn Allan has put it well:

“[W]hen a mining operator is unequivocally held financially responsible for its environmental impacts, positive outcomes result. These positive outcomes accrue to industry, the economy, government, society, and the environment. When companies are required before the fact to prove they can fully meet their obligations: these entities are incentivised to adopt best applicable practices and best available technologies; mine operators release less hazardous waste than when financial requirements are not in place and monitored; fewer accidents occur, and the consequence of those that happen are reduced; fewer bankruptcies and corporate reorganizations—costly to creditors, workers, communities, shareholders and the economy—occur; clean up, remediation, reclamation and compensation is undertaken in a timely manner which reduces ultimate harm and cost; and costs are borne by those responsible, not by those who are not.” – Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p.5 online: http://www.ubcic.bc.ca/bc_riskymining.

¹⁰² Union of BC Indian Chiefs, “BC encouraging environmentally risky mining and creating massive taxpayer liability,” backgrounder to Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (May 16, 2016) online: http://www.ubcic.bc.ca/bc_riskymining.

¹⁰³ Union of BC Indian Chiefs, “BC encouraging environmentally risky mining and creating massive taxpayer liability,” backgrounder to Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (May 16, 2016) online: http://www.ubcic.bc.ca/bc_riskymining.

It is worrisome that the Auditor General concluded that government:

- is not implementing the Polluter Pays Principle in mining, and
- is not taking enough security to pay for cleanup.

The Auditor General stated:

Neither ministry uses a permitting approach that reduces the likelihood taxpayers will have to pay costs associated with the environmental impacts of mining activities (known as the polluter-pays principle)...¹⁰⁴

MEM is not holding an adequate amount of security to cover the estimated environmental liabilities at major mines. The ministry has estimated the total liability for all mines at more than \$2.1 billion, yet has obtained financial securities for less than half that amount (\$0.9 billion).¹⁰⁵

Criticizing the Ministry's massive failure to protect taxpayers, the Auditor General also criticized government for keeping the shortfall secret. She stated:

Ministry of Energy and Mines has estimated its financial security deposits for major mines are under-secured by more than \$1.2 billion, yet the ministry has not disclosed this to the public or to legislators, or communicated the potential risk this poses.¹⁰⁶

In fact, as incredible as it may seem, the Minister in charge stated that he was unaware of the size of this shortfall of security. The Minister told the *Vancouver Sun*

¹⁰⁴ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 6.

¹⁰⁵ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 6. For an update on the increasing underfunding of securities, see online: <http://fnwarm.com/vancouver-sun-underfunding-for-mine-cleanups-rises-to-more-than-1-27-billion/>.

¹⁰⁶ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 41.

that he was surprised and probably “a little shocked” when he saw the figures for the security shortfall.¹⁰⁷

Unfortunately, however, there is serious reason to doubt that Government will fix the problem pointed out by the Auditor General. Indeed, the Auditor General warned in 2003 about the serious risk of unfunded mining liability — and the government responded by quadrupling the financial risk to taxpayers over the subsequent decade.¹⁰⁸

Alaska and Quebec handle this better. They require companies to put up security for 100 per cent of potential cleanup costs. They believe that companies — not taxpayers — should clean up their own mess.¹⁰⁹

As a result, the Teck Resources mine in northern Alaska is fully bonded for \$560 million in reclamation costs — and Alaska taxpayers are protected.¹¹⁰ But British Columbia does not require the same company to protect B.C. taxpayers. Across the province, Teck mines have unsecured reclamation costs of more than \$700 million.¹¹¹

This deeply flawed policy could cost taxpayers dearly — perhaps far more than the \$1.2 billion identified by the Auditor General. Mining Watch has estimated the unfunded reclamation liability for taxpayers is far more than the Auditor General estimated, when all potential liabilities are accounted for. They estimate the ultimate taxpayer liability at more than \$3 billion.¹¹² For example, the reclamation costs that

¹⁰⁷ Gordon Hoekstra, “BC List Details Underfunding for Cleanup after Mines Close” *Vancouver Sun* (2016 May 18) online: <http://vancouversun.com/business/local-business/b-c-list-details-underfunding-for-cleanup-after-mines-close>.

¹⁰⁸ In 2003, the Auditor General warned about the \$228 million shortfall in obtaining security to cover the cost of reclamation, stating: “Security now being taken under the Mines Act is inadequate to remediate the known mines sites in BC where contamination exists.” Auditor General of British Columbia, *2002/2003 Report 5: Managing Contaminated Sites on Provincial Lands* (2003), p. 43. See Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) pp. 50-51.

¹⁰⁹ See Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) pp. 35, 47 and 86-87.

¹¹⁰ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p.47.

¹¹¹ Gordon Hoekstra, “BC List Details Underfunding for Cleanup after Mines Close” *Vancouver Sun* (2016 May 18) online: <http://vancouversun.com/business/local-business/b-c-list-details-underfunding-for-cleanup-after-mines-close>.

¹¹² Stephen Hume, “BC’s Failures on Mining Pollution Leaving Taxpayers on the Hook” *Vancouver Sun* (2016 October 17) online: <http://vancouversun.com/opinion/columnists/stephen-hume-provincial-failures-on-mining-pollution-leaving-taxpayers-on-the-hook>.

government relies on tend to be lowball figures. They are the reclamation costs estimated by companies when they are negotiating security amounts that the companies will have to post – and those company estimates are frequently far too low. Studies have shown that such estimates can be a small fraction of the actual reclamation price tag.¹¹³

Another surprising failure to protect taxpayers was identified by the Auditor General. BC policy allows mines to be developed, even if they have acid rock drainage potential requiring perpetual water treatment.¹¹⁴ This policy is far less conservative than the Northwest Territories, Manitoba and Wisconsin – which protect their taxpayers by simply banning mining operations that require long-term treatment. They prohibit such mines “due to the increased risk that taxpayers will ultimately be left with the cost of remediation.”¹¹⁵

What is surprising is that BC not only approves mines that will require perpetual water treatment – it also fails to require such mines to post full security to ensure money for treatment. The Auditor General spoke out strongly about this reckless regulatory approach:

*We found that \$730 million of the total under-funded liability (\$1.2 billion) is for mines that will require water treatment. This is contrary to MEM’s policy requiring full security on mines that require long-term water treatment.*¹¹⁶

¹¹³ Experience shows that mining company estimates can be 50% to 10,000% lower than the actual price tag for reclamation. J. Kuipers, *Putting a Price on Pollution*, (Washington, D.C.: Mineral Policy Centre, March 2003) at 27 online: <https://www.earthworksaction.org/files/publications/PuttingAPriceOnPollution.pdf>. To ensure a realistic reclamation estimate, reclamation costs should be calculated based on independent contractor or government rates. See Stano, M. & Lehrer, E. (2013) *Fair Mining Practices: A New Mining Code for British Columbia*, (Canada: Fair Mining Collaborative, 2013) at 399 and 411 online: <http://www.fairmining.ca/wp-content/uploads/2015/07/Fair-Mining-Practices-A-New-Mining-Code-for-BC-Web-Copy.pdf>.

¹¹⁴ For explanation of acid rock drainage, see above, under “Environmental Threats.”

¹¹⁵ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 38.

¹¹⁶ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 50.

This should worry taxpayers. But it gets worse. In addition to the risk posed by the \$1.2 billion shortfall in inadequately secured mines, the province has also assumed responsibility for reclaiming abandoned mines, which will cost another \$275 million.¹¹⁷ Furthermore, this \$275-million figure is likely far too low an estimate. As Economist Robyn Allan has stated:

*There are many sites for which [Contaminated site] assessments have yet to be undertaken and thus the actual public liability is much greater.*¹¹⁸

SOME SPECIFIC EXAMPLES OF TAXPAYER LIABILITY

- If Teck Resources were to become insolvent, taxpayers could face massive liabilities for its \$700 million + shortfall in security. For example, the ongoing required water treatment in the Elk Valley is enormously expensive – costing Teck \$43 million in the fourth quarter of 2014 and \$31 million for 2016.¹¹⁹ If Teck were to default, taxpayers would be obligated to carry forward with such operations, perhaps indefinitely.¹²⁰ Yet, economist Allan states, “There is no indication that security has been required to support this mandated activity that, according to Teck, could continue indefinitely, and perhaps, in perpetuity.”¹²¹
- Tulsequah Chief Mine is another example where government failed to protect taxpayers. If Government had required security to operate water

¹¹⁷ According to economist Robyn Allan. See Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 4 and online: <http://www.desmog.ca/2016/05/18/b-c-taxpayers-hook-underfunded-mine-disaster-and-reclamation-costs>.

¹¹⁸ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 4.

¹¹⁹ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 48.

¹²⁰ As the Auditor General has pointed out: “*The Area-Based Management Plan commits industry to developing six water treatment facilities in the Elk Valley. This creates a future economic liability for government to monitor these facilities in perpetuity and ensure that they are maintained...*” *the provincial government has oversight of these activities and would accept additional responsibilities if the mine operator was to default on its obligations.*” Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) pp. 10 and 100.

¹²¹ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 48.

treatment as a pre-condition of issuing a permit for the new Tulsequah Chief Mine, the Province would be able to use the security to continue treatment of the water there.¹²² At Tulsequah Chief Mine, it now appears that taxpayers may well have to pay to treat the acid mine drainage problem – in perpetuity. Economist Robyn Allan has criticized Government’s failure to get security for water treatment before issuing the Chieftain a new mine permit:

*Had the Ministry required security to operate water treatment as a condition precedent to the permit, the Province would be in a position where it could order the water be treated, or liquidate the security and do it itself.*¹²³

- At the time of the Mount Polley Mine disaster, the \$14.5 million security that the company had posted was woefully inadequate. In fact, even before the accident Government had acknowledged the insufficiency of the security, estimating in 2013 that security to cover normal reclamation costs would amount to over \$38 million. It was just lucky for taxpayers that Imperial Metals had interests in another BC mine, and deep enough pockets to pay for cleanup of Mount Polley. Fortunately, government so far hasn’t had to pick up an enormous tab for an insolvent company.¹²⁴ Nevertheless, taxpayers still ended up paying for more than \$23 million of

¹²² Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 78.

¹²³ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 78. Also see pp. 17 and 75-77. And see online: <http://www.cbc.ca/news/canada/north/tulsequah-chief-mine-bankrupt-receivership-1.3758668> ; <http://riverswithoutborders.org/blog/2016/09/chieftain-metals-is-bankrupt>; <http://juneauempire.com/local/2016-05-04/tulsequah-chief-mine-owner-descends-further-financial-hole>; http://www.nytimes.com/2016/01/24/opinion/sunday/a-canadian-threat-to-alaskan-fishing.html?_r=0.

¹²⁴ Note that the company also held \$15 million in business interruption insurance and \$10 million in third party insurance. As of September 30, 2015, the company had already spent \$67.4 million on rehabilitation costs, and it is currently facing a number of major lawsuits. See J. Uechi, “Imperial Metals Mount Polley Disaster Could Cost \$500 Million, but Bonds Only a Fraction of This Amount” *The Vancouver Observer* (2014 August 20) online: <http://www.vancouverobserver.com/news/imperial-metals-mount-polley-disaster-could-cost-500-million-bonds-only-fraction-amount>; and Gordon Hoekstra, “Imperial Metals Insurance Likely Not Enough for Dam Collapse Cleanup” *Victoria Times Colonist* (2014 August 10) online: <http://www.timescolonist.com/news/b-c/imperial-metals-insurance-likely-not-enough-for-dam-collapse-cleanup-1.1305562>. Also see Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) pp. 49, 62.

the Mount Polley clean-up – because the company was able to write off cleanup activities against taxes.¹²⁵

- The Shasta Baker Mine dam is another small but telling example of what’s wrong. In 2013, the Ministry of Energy and Mines shut down the Shasta-Baker Mine because of dam safety concerns. In December 2014, MEM ordered the company to post a reclamation security bond of \$150,000 – but the company replied saying that it would be unable to pay the bond. The Auditor General pointed out:

*The reclamation security bond for this site is currently \$226,500, although MEM has estimated that the reclamation and closure costs are \$1.11 Million.*¹²⁶

- In the recent case of the Yellow Giant Mine pollution case on Banks Island in the Gitxaala territory, the company has filed for bankruptcy. The province holds \$450,000 in security from the company, but that will not cover the full remediation costs, according to the BC Chief Inspector of Mines’ presentation to a legislative committee in June 2016. Ministry staff did not yet have a final figure for cleanup and remediation at that point. However, it is clear that taxpayers will be stuck with the shortfall.¹²⁷ If there is not enough money to do a full cleanup, the Gitxaala Nation that gathers food from the area will be the first to suffer the consequences.
- Even where Government requires security, it is often not actually secured by adequate cash – but by buildings or mining equipment, a practice deemed “questionable” by the Auditor General. Buildings and equipment

¹²⁵ Economist Robyn Allan points out that in its Sept. 30, 2014 shareholder’s report, Imperial Metals said that for the Mount Polley breach the “company recorded costs of \$67.4 million (\$43.8 million net of tax).” Thus, as of that date, taxpayers were subsidizing clean-up costs to the tune of \$23.6 million, 35 cents of each dollar the company spent. See Robyn Allan, “Mount Polley cleanup heavily taxpayer subsidized” *Vancouver Sun* (2016 August 3) online: <http://vancouver.sun.com/opinion/columnists/opinion-mount-polley-cleanup-heavily-taxpayer-subsidized>.

¹²⁶ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 60.

¹²⁷ Gordon Hoekstra, “Main Creditor for Banks Island Gold Contemplates Reopening Yellow Giant Mine” *Vancouver Sun* (2016 June 28).

may be difficult to liquidate in a timely way, and they depreciate in value and may be subject to competing claims from other creditors.¹²⁸

THE OTHER REASON FOR ADEQUATE SECURITIES – OPTIMIZING INDUSTRIAL PRACTICES

Adequate securities not only protect taxpayers. They are also an essential element of sound environmental policy. Setting securities too low directly undermines environmental protection. Requiring low bonds means mining companies have less to lose – and may undertake riskier environmental mining practices than if bound to a significant security deposit.

Increasing securities to realistic levels will encourage mining companies to spend more money to protect the environment – in situations where they currently stint on precautions because they don't pay the real cost of environmental damage. As the Mount Polley Expert Panel stated, when considering why mines weren't using safer filtered (dry) tailings technology:

*The chief reason for the limited industry adoption of filtered tailings [the most advanced and safest form of storing tailings] to date is economic. Comparisons of capital and operating costs alone invariably favour conventional methods. But this takes a limited view. Cost estimates for conventional tailings dams do not include risk costs, either direct or indirect, associated with failure potential...Full consideration of life cycle costs including closure, environmental liabilities, and other externalities will provide a more complete economic picture.*¹²⁹

¹²⁸ Stano, M. & Lehrner, E. (2013) *Fair Mining Practices: A New Mining Code for British Columbia*, (Canada: Fair Mining Collaborative, 2013) at 403 online: <http://www.fairmining.ca/wp-content/uploads/2015/07/Fair-Mining-Practices-A-New-Mining-Code-for-BC-Web-Copy.pdf>. Economist Robyn Allan has cited other instances where Government is not requiring proper security for reclamation. See: Robyn Allan, *Toward Financial Responsibility in British Columbia's Mining Industry* (Union of BC Indian Chiefs, 2016) pp.74-75

¹²⁹ Independent Expert Engineering Investigation and Review Panel (2015) *Report on Mount Polley Tailings Storage Facility Breach*, (Government of British Columbia, January 2015) at p. 123 online:

The bottom line is that if security requirements were set high enough to reflect these true long-term costs, companies would be more likely to consider safer, more environmentally friendly technologies. A smart company would choose to spend the money to eliminate the risks associated with outmoded tailings pond technologies – and save the high security costs that such high-risk tailings management demands.¹³⁰

ADDITIONAL WAYS TO PROTECT TAXPAYERS AND OTHERS

The Auditor General pointed out that other jurisdictions are doing things that BC can learn from. The Public Inquiry should study other ways of protecting taxpayers and others, including measures such as:

- Setting up a general industry-funded rehabilitation fund, like Western Australia’s Mining Rehabilitation Fund or Canada’s oil industry spill funds; and

<https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf>.

¹³⁰ Similarly, if mine operators are on the hook for higher, more realistic security, they will more likely remediate their site in the most efficient way – by reclaiming as they operate the mine, which reduces both security cost and risk. “Financial assurance, which puts the onus on polluters to pay for hazardous releases, plays a preventative role that can save money for businesses and taxpayers while protecting human and environmental health.” [Earthworks. *Financial Assurance and Superfund*, Accessed on March 17, 2016 online:

https://www.earthworksaction.org/issues/detail/financial_assurance_bonding_and_cercla_108b#.Vudx1JMrJp9. The Ministry of Energy and Mines most recent Mine Reclamation Guide recognizes this by stating that; “reclamation done concurrently with mining enjoys several cost advantages.” Ministry of Energy and Mines (2015) *Mine Reclamation Costing and Spreadsheet*, (Victoria: Mines and Mineral Resources Division, Version 3.5.3, January 2015) at 6 online:

<http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/reclamation-and-closure/reclamationcostingmanualjan2015.pdf>. By increasing securities it is more likely that mining companies will conduct reclamation activities concurrently with mining because they will want to find the most efficient way to deal with the reclamation. This will decrease potential liabilities, decrease the likelihood that a mining company defaults on their security and increase the speed that mines are reclaimed. In contrast, with a low security the company has less incentive to clean up the site in the most economical way or even cleanup the site at all because the cost of the security is lower than even the most efficient cleanup cost.

Note that “concurrent reclamation” is endorsed by the Mining Association of Canada in their “Towards Sustainable Mining” initiative by the Initiative for Responsible Mining Assurance (IRMA) cross sector effort that is producing a standard for mine certification through verifying the use of best practices. See: <http://www.responsiblemining.net/>.

- Setting up mechanisms to ensure compensation for neighbours, First Nations and other victims of pollution, perhaps modelled on regimes established in Japan and elsewhere.

See [Appendix D](#) for more discussion of such protective measures.

The above information raises vital questions for the Commission of Inquiry. An important task for the Public Inquiry would be to consider the various ways in which taxpayers and others could be protected – while creating economic incentives for proper mining practices.

Questions for the Public Inquiry

- **Are mining companies cleaning up their own mess?**
- **How can the Province best ensure that mining companies – not taxpayers – pay to reclaim mines? What is the best way to protect taxpayers and others from the current massive potential liability identified by the Auditor General?**

LACK OF PROPER PLACER MINING REGULATION

The Commission of Inquiry needs to carefully consider how the regulation of placer mining can be modernized. Current regulations find their roots in 19th century gold rushes, and a recent comprehensive report has concluded that BC's regulation of placer mining is:

*...out of sync with modern values of environmental protection, reconciliation with First Nations, and concern about contamination of important food sources.*¹³¹

Placer mining involves the excavation of ancient and current stream beds to retrieve gold deposited in sand and gravel by water. It ranges from relatively non-intrusive hand panning, to more intrusive hand shoveling of sand and gravel into sluice boxes, to quite large operations using machinery to excavate sand and gravel.

The problem is that placer mining is typically located in riparian areas. And riparian areas are nature's most biologically productive terrestrial systems. For example, they harbor almost two thirds of all rare and endangered species. In addition, riparian areas form important corridors for animal movement and plant dispersal, and are absolutely essential to healthy streams. Riparian vegetation shades streams, cooling the water and preventing fish kills. Such vegetation provides food inputs for streams, and along with intact soils filters out water-borne pollutants. In sum, the quality and integrity of streams depends on the "ribbon of life" found in the riparian zone.¹³²

¹³¹ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia*, (Unpublished Draft, July 2016) p. 1.

¹³² Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities* (Commission on Resources and Environment, 1996, Victoria) p. 91. Almost two-thirds of Canada's rare and endangered species rely on riparian areas for at least part of their life cycle, according to *Biodiversity and Riparian Areas: Life in the Green Zone* <http://cowsandfish.org/pdfs/biodiversity.pdf>.

Yet placer mining clears riparian vegetation, disturbs soils and bankside integrity, and often damages the stream itself. It directly kills fish by introducing fish-killing sediments and metals.¹³³ In addition, fish spawning grounds can be destroyed by sediments, or by improper excavation and other activities in the streams themselves.¹³⁴

A Yukon River Panel study has concluded that historic placer mining increased stream sediments and caused “extensive changes to stream channel morphology and instability”.¹³⁵ The effects can be serious. A DFO study noted that un-mined creeks with low turbidity supported a standing stock of fish 40 times that of placer-mined streams with higher turbidity.¹³⁶

Modern placer mining can also re-introduce highly toxic mercury from historic placer mining operations into streams.¹³⁷ Massive amounts of mercury were

¹³³ Multiple studies reviewed by the Yukon Conservation Society showed even low levels of suspended sediments (up to 70 mg/L) had significant effects on fish health, including decreased fish movement into sediment laden streams, reduced egg survival, reduced numbers of fish, and impaired feeding activity and growth. Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 19.

¹³⁴ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 16-17, 21 and 33. The same study states at p. 13: “Historic gold rushes resulted in considerable changes to BC’s major watersheds. A study conducted in 2015, on the historic effects of placer mining on the Fraser River, estimated the addition of ‘110 million tonnes of tailings, half gravel and the rest finer, to the river’s natural sediment load’ between 1858 and 1909”. This historic activity reverberates through to the present day, as the increased sediment load also impacted (and may be still impacting) salmon spawning and rearing habitat and flow regimes.

¹³⁵ And too often, placer mining takes place in watersheds still suffering from gold rush mining operations from over a century ago. Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 13.

¹³⁶Seakem Group Ltd. 1992. Yukon Placer Mining Study. Volume 1 Executive Summary. Prepared for the Yukon Placer Mining Implementation Review Committee. Sidney, British Columbia, p 17, as cited in Birtwell, I.K. 1999. The effects of sediment on fish and their habitat. DFO Can. Pacific Science Advice and Review Committee Habitat Subcommittee Res. Doc. Canadian Stock Assessment Secretariat Research Document 99/139, p 24 online <http://www.dfo-mpo.gc.ca/Library/240698.pdf>.

¹³⁷ Mercury is used in mining to bond to fine particles of gold to form gold amalgam making these larger particles easier to find and recover. Mercury used historically may still affect the environment, when new placer mining disturbs the mercury. See p. 3 at Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016). The report comments further at p. 21: “Records from the Cariboo region report the extensive use of mercury during the gold rushes: as much as 25lb of mercury per sluice box per day during the mid-1800s, suggesting a significant quantity of mercury could remain in the region... The 2005 study estimates that 2090 kg of mercury flows out of the Fraser River each year, a portion which is likely attributable to historic placer mining...These small mercury particles are easily converted into methyl-mercury by bacteria and then enter the food chain.”

deposited by gold rush placer mining. For example, fish from Jack of Clubs Lake near Barkerville, a site of underground and placer mining, are still under a mercury health advisory, and it is well known that people still physically recover (old placer mining) mercury from Granite Creek near Princeton.¹³⁸

Furthermore, the environmental impacts of current placer mining can disproportionately impact Indigenous peoples, who rely upon traditional uses of fish, wildlife and plants. Placer mining reduces Indigenous access to traditional territories. In some parts of the province streams can host hundreds of active mine sites, each of which is required by law to control public access to the site. This blocked access interferes with traditional fishing, hunting and gathering activities. First Nations Women Advocating Responsible Mining have cited this interference with Indigenous rights as a major concern.¹³⁹

THE NEED TO REFORM PLACER MINING REGULATION

The Public Inquiry should address the following problems with provincial placer mining regulation:

- Unlike the Yukon, BC placer mines are not subject to Environmental Assessment. In fact, no placer mine has ever gone through an Environmental Assessment process under the current legislation.¹⁴⁰ This is shocking, in light of the fact that placer mines operate in riparian zones – in some of the most valuable and sensitive habitat in the province. The BC environmental assessment process needs to be reformed to ensure environmental assessment of high-impact placer mines.¹⁴¹ The Yukon’s active Environmental Assessment process for placer mining – which conducts 50 placer mine assessments per year – is an example of how this could be done.¹⁴²

¹³⁸ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 21-22.

¹³⁹ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 1 and 9-10.

¹⁴⁰ Email from Shelley Murphy, Executive Project Director, Environmental Assessment Office to Fair Mining Collaborative, February 3, 2017.

¹⁴¹ Note that before 2003 there was a requirement for environmental assessment of certain conversions from claims to leases. However, this provision (section 43 of the *Mineral Tenure Act*) was repealed in 2003. See Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 15.

¹⁴² The Yukon Environmental Assessment process covers mines, which, among other criteria, trench (bulk sample) more than 400 m³ per claim, or establish, modify or re-commission a road. See Fair

- According to recent research, the majority of placer mine sites may never be inspected.¹⁴³ It has been estimated that only 1 in 5 placer mines is visited by a mines inspector within the mine’s stated operating periods. Fair Mining Collaborative was unable to find any government records of inspections of placer hand mining operations at all. This needs to be addressed, to ensure annual inspection of all placer mines.¹⁴⁴
- Few placer mines are adequately reclaimed, leaving areas subject to ongoing erosion, sedimentation and loss of critical riparian habitat. Yet proper reclamation is critical to ensure that exposed areas aren’t endlessly eroded, and to re-establish critical riparian vegetation and stable banks. It is particularly troubling that the Ministry of Environment 2010 Placer Audit found only one of the 26 mines examined was carrying out the reclamation work stated in their Notice of Work permit.¹⁴⁵ Reclamation standards consistent with global best practices need to be implemented, along with bonding requirements that ensure reclamation actually takes place.¹⁴⁶
- Government rules requiring placer mines to observe a “setback” from streams are highly inadequate. Government claims they have a 10-metre setback requirement, but its legal status is in doubt.¹⁴⁷ Furthermore, the setback is widely ignored, as evidenced by a Ministry of Environment Audit that found that less than half of mines actually respected the 10-metre setback. The limited audit actually discovered that three mines

Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 26.

¹⁴³ According to the Collaborative study’s analysis of regulatory enforcement and Ministry of Energy and Mines data. See Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 3.

¹⁴⁴ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 1 and 4.

¹⁴⁵ British Columbia, Ministry of Environment, *2010 Placer Mining Audit*, July & August 2010 online: <https://cariboominingassociation.com/2012/11/19/b-c-ministry-of-environment-does-clandestine-audit-of-cariboo-placer-miners/> as quoted in the Fair Mining Collaborative *Stirring up the Sentiment* report on p. 20. Also see p. 3 of the same report.

¹⁴⁶ The Fair Mining Collaborative found that government’s reclamation requirements fall short of global best practices. Current reclamation bond requirements appear insufficient to motivate proper reclamation. Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 3, 4 and 20.

¹⁴⁷ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia*, (Unpublished Draft, July 2016) pp.17-18

operating in ‘critical fish habitat areas’ were actually mining *in the stream itself*.¹⁴⁸

- In any case, the 10 metre setback for placer mining is quite inadequate compared to much bigger setbacks legislated for hard-rock exploration sites (10-70 metres) , and for the Riparian Areas Regulation (30 metres) governing much development. Indeed, scientific studies support a setback of at least 30 metres from streams.¹⁴⁹
- Government is failing to protect streams from placer sediments in other ways. The 2010 Ministry of Environment audit of placer mines found that 30% of the placer mines discharged their tailings directly and illegally into nearby streams, instead of into settling ponds.¹⁵⁰
- Although placer mining has been growing dramatically over recent years because of rising gold prices, the above problems persist, and there is a lack of assessment and monitoring of placer mining’s cumulative effects across the province.¹⁵¹
- Placer mining laws need to be reformed to bring them into line with the Constitutional duty to consult First Nations. Among other things, Nations must be given more adequate notice of placer mining proposals than the current 30-day notice.¹⁵²
- Unlike jurisdictions like New Zealand, the Province has proceeded to designate ‘placer mining zones’ without adequately consulting First

¹⁴⁸ British Columbia, Ministry of Environment, *2010 Placer Mining Audit*, July & August 2010, s 4.1; online: <https://cariboominingassociation.com/2012/11/19/b-c-ministry-of-environment-does-clandestine-audit-of-cariboo-placer-miners/>. Also, see the Fair Mining Collaborative *Stirring up the Sentiment* report at pp. 17-18.

¹⁴⁹ Seth Wenger, “A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation” (Athens: University of Georgia Institute of Ecology, March, 1999) at 3 online: http://www.memphremagog.org/FCKeditor/ckfinder/userfiles/files/Centre_de_documents/EN/Review-scientific-literature.pdf.

¹⁵⁰ British Columbia, Ministry of Environment, *2010 Placer Mining Audit*, July and August 2010, s 4.1; online: <https://cariboominingassociation.com/2012/11/19/b-c-ministry-of-environment-does-clandestine-audit-of-cariboo-placer-miners/>.

¹⁵¹ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 1, 4, 23-24.

¹⁵² With the volume of placer mining applications and the strained administrative capacity, it is difficult for a First Nation to respond to applications in the 30 day time period, while also responding to referrals from the forestry, oil and gas, and other resource sectors. See Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 4 and 9.

Nations.¹⁵³ Yet the impacts on ecologically sensitive and productive riparian areas, wildlife and fish are felt most keenly by First Nations. Additionally, First Nations' access to critical areas of traditional territory is significantly hampered when the mines exclude them from the riparian area.¹⁵⁴ Serious questions arise about whether current placer mining regulation adequately protects Aboriginal rights and title.

Questions for the Public Inquiry

- **Is placer mining being adequately regulated to protect British Columbia's streams and rivers?**

¹⁵³ Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) pp. 7 and 10.

¹⁵⁴ The mine manager controls entry to the site, and mines are required to post notices to this effect at all mine entrances. See Fair Mining Collaborative, *Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia* (Unpublished Draft, July 2016) p. 9.

“FREE ENTRY”: SHOULD THE MINERAL TENURE SYSTEM BE REFORMED?

British Columbia mineral tenure laws are built on the principle of “free-entry” that governed 19th century gold rushes. These “free-entry” laws authorize mineral exploration and development across the entire province – except for a few protected areas. Miners can stake and develop claims in valuable ecological areas, on First Nations’ traditional territories – and even on other people’s private property. Miners are not governed by zoning bylaws and provincial land use plans that apply to other industries. As a result, mines are often proposed in areas where they may have negative environmental, cultural, social and economic impacts – and undue impact on other land users and industries such as tourism and fishing.¹⁵⁵

As resource lawyer Karen Campbell has noted:

*Free entry thwarts sensible land use planning and elevates miners to a form of extraordinary privilege. It has negative fiscal implications for governments, it interferes with the exercise of Aboriginal Title and Rights, and the exercise of private property rights. While free entry may have been viable in the 19th century, when there were relatively few other uses for land, when mining occurred far away from human settlement, and when it did not occur in the large scale industrial manner in which it is now conducted, it is clearly anachronistic in the 21st century.*¹⁵⁶

A resolution overwhelmingly passed by the Union of BC Municipalities in 2013 recognized the same problem, declaring:

¹⁵⁵ Jessica Clogg, *Modernizing BC’s Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law)

http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf

¹⁵⁶ Karen Campbell, *Undermining Our Future - A Discussion Paper on the Need to Reform Mineral Tenure Law in Canada* (Vancouver: West Coast Environmental Law, 2004), online: West Coast Environmental Law.

British Columbia's Mineral Tenure Act has remained substantially unchanged since the 1800's and is not suited to our current land base and the demands of legitimate competing interests and values.

The UBCM Resolution went on to declare that the Province should:

...determine how best to modernize the Mineral Tenure Act and related legislation in a way that ensures the full range of interests - including social, cultural, ecological and economic - are given fair consideration on BC's land base.¹⁵⁷

REASONS FOR REFORM

In BC's archaic system a miner who stakes a claim has a right to enter the land and explore for minerals and develop a mine – even on private property. The property owner can get compensation, but cannot stop the mining of their property. This has caused property owners (on the Gulf Islands, Kamloops, Tofino, and elsewhere) great concern. In sharp contrast, Alberta requires landowner consent to mining on their land.¹⁵⁸ Ontario has amended its mining laws to bar the staking of private lands without landowner consent.¹⁵⁹ New Brunswick and Newfoundland and Labrador require landowner consent before mining activities take place, as do places like Germany and Victoria State, Australia.¹⁶⁰

Under current BC law, mining claims were staked on ecologically important Pender Island land that the owners had protected with conservation covenants. These

¹⁵⁷ Resolution B80, 2013 Union of BC Municipalities Convention.

¹⁵⁸ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online: http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf pp. 2-5

¹⁵⁹ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online: http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p.14.

¹⁶⁰ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online: http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 19.

landowners had no inherent right to stop a mining claim – even on their private, conservation-dedicated land. In BC, it is legal to file such unwanted mining claims on conservation-dedicated land, but it would not be in Alberta.¹⁶¹ BC laws need to change to prevent mining developments on privately owned conservation lands.

Furthermore, in BC, miners are free to stake and develop mining claims in watersheds that are important for drinking water and fisheries. In contrast, in Nova Scotia no mining is permitted in protected water areas.¹⁶²

In BC, areas that municipal, provincial or First Nations land use plans have zoned as incompatible with mining are still open to mining claims and development. Even provincial old growth management areas and wildlife habitat areas are not protected from mining.¹⁶³

In contrast, the Yukon requires that all proposed mining be evaluated to determine conformity with land use plans. In the Northwest Territories, no prospecting or mineral claims can be staked in areas where an approved land use plan prohibits such activities. Various US laws give force to land use plans that restrict mining.¹⁶⁴ Ontario has passed legislation to establish “community based land use plans” that will identify areas that are “off-limits” for mining and other industrial activity.¹⁶⁵ It only makes sense in a modern BC that land use plans should apply to mining as well as other industries. Otherwise, random claims can undermine rational management of the landscape for *optimal use for all values*.

¹⁶¹ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:
http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 9.

¹⁶² Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:
http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 8.

¹⁶³ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:
http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 11.

¹⁶⁴ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:
http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 13.

¹⁶⁵ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:
http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 15.

In addition, there is a need to modernize mineral tenure legislation to require First Nations consent to mining activities. For example, such Indigenous consent is required for mining activities in the Philippines, Guyana, New Zealand, and a number of Australian states. Alberta requires consent from the Metis settlement council before mining exploration can take place on Metis settlements.¹⁶⁶ In light of the *Tsilhqot'in* decision and Canada's commitment to implement the *UN Declaration on the Rights of Indigenous Peoples*, BC laws need to acknowledge Aboriginal rights and title in new legislation, and require consultation and consent from First Nations before mining activities begin.

A review of the mineral tenure system should also address the extent to which Government should have to pay compensation for mineral claims when it acts to stop mining in an area, in order to protect the environment. For example, Cline Mining sued the province for half a billion dollars compensation for the claim they lost for a mountaintop removal coalmine in the Flathead River Valley (near a World Heritage Site). And BC paid \$30 million to a uranium company that staked a claim in the Interior before BC's decision to ban uranium mining.¹⁶⁷

Questions for the Public Inquiry

- **Should the 19th century "Free Entry" Mineral Tenure System be reformed to protect private land owners, First Nations and the environment?**

¹⁶⁶ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:

http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf p. 18.

¹⁶⁷ Jessica Clogg, *Modernizing BC's Free Entry Mining Laws for a Vibrant, Sustainable Mining Sector* (Vancouver, West Coast Environmental Law) online:

http://wcel.org/sites/default/files/publications/WCEL_Mining_report_web.pdf pp. 24-26.

CONCLUSION

The problems described above have created a profound crisis in public confidence in the provincial mine regulatory system. In the past Public Inquiries have been established when the public had lost confidence in the regulation of an important BC industry – and those Public Inquiries have helped to improve regulatory systems and restore public confidence.

Therefore, pursuant to sections 2 and 20-23 of the *Public Inquiry Act*, we ask that the Lieutenant Governor in Council establish a judicial Commission of Public Inquiry to investigate and report on the Province’s regulation of the mining industry; and make recommendations to rectify and improve BC mining regulation. This topic is clearly of the highest “public interest,” and thus meets the statutory prerequisite for establishment of a Commission of Public Inquiry.

We ask that the Commission of Inquiry investigate and report on the following specific questions, and make appropriate recommendations for improvement:

- Do current standards for tailings storage facilities fall short of the standard recommended by the Mount Polley Expert Panel?
- Do other BC mining rules meet global standards for public safety and environmental protection?
- Are the requirements for environmental assessment adequate to protect the environment?
- Is enforcement of mining laws adequate, in light of the Auditor General’s sweeping critique?
- Should Government remove enforcement of mining laws from the Ministry of Energy and Mines to a more objective agency, as recommended by the Auditor General?
- Are closed mines being adequately monitored and reclaimed? Or are the failures at Jordan River and Tulsequah Chief Mine symptomatic of a larger problem that threatens the health of watersheds across the Province?

- Are mining companies cleaning up their own mess?
- How can the Province best ensure that mining companies – not taxpayers – pay to reclaim mines? What is the best way to protect taxpayers and others from the current massive potential liability identified by the Auditor General?
- Is placer mining being adequately regulated to protect British Columbia's streams and rivers?
- Should the 19th century "Free Entry" Mineral Tenure System be reformed to protect private landowners, First Nations and the environment?

Appendix A

Public Inquiry Act

Establishing a commission

- 2 (1) The Lieutenant Governor in Council may, by order, establish a commission to inquire into and report on a matter that the Lieutenant Governor in Council considers to be of public interest.
- (2) In an order made under subsection (1), the Lieutenant Governor in Council must do the following:
- (a) define the purposes of the commission;
 - (b) set the terms of reference of the inquiry;
 - (c) designate the commission as a study commission, hearing commission or both;
 - (d) appoint one or more commissioners in accordance with Division 2 [*Appointment of Commissioners and Staff*];
 - (e) subject to any directives of Treasury Board, set the remuneration of the commissioners and compensation for expenses, if any.

Division 2 – Study Commissions

Powers of study commissions

- 20 (1) Subject to this Act and the commission's terms of reference, a study commission may engage in any activity necessary to effectively and efficiently fulfill the duties of the commission, including doing any of the following:
- (a) conducting research, including interviews and surveys;
 - (b) consulting with participants, privately or in a manner that is open to the public, either in person or through broadcast proceedings;
 - (c) consulting with the public generally and, for that purpose, issuing directives respecting any of the matters set out in subsection (2).
- (2) Without limiting the powers of a commission set out in Division 1, a study commission may make directives respecting any of the following:
- (a) the notification of participants and the public regarding a consultation under this section;
 - (b) the holding of public meetings, including the places and times at which public meetings will be held and the frequency of public meetings;
 - (c) the conduct of, and the maintenance of order at, public meetings;

(d) the receipt of oral and written submissions.

(3) A study commission must not exercise the powers of a hearing commission as set out in sections 21 (1), 22 and 23, unless the study commission is also designated as a hearing commission.

Division 3 – Hearing Commissions

General powers of hearing commissions

21 (1) Subject to this Act and the commission's terms of reference, a hearing commission may engage in any activity necessary to effectively and efficiently fulfill the duties of the commission, including doing any of the following:

- (a) issuing directives respecting any of the matters set out in subsection (2);
- (b) holding written, oral and electronic hearings;
- (c) receiving submissions and evidence under oath or affirmation;
- (d) making a finding of misconduct against a person, or making a report that alleges misconduct by a person.

(2) Without limiting the powers of a commission set out in Division 1, a hearing commission may make directives respecting any of the following:

- (a) the holding of pre-hearing conferences, including confidential pre-hearing conferences, and the requiring of one or more participants to attend a pre-hearing conference;
- (b) procedures for preliminary or interim matters;
- (c) the receipt and disclosure of information, including but not limited to pre-hearing receipt and disclosure and pre-hearing examination of a participant or witness on oath, on affirmation or by affidavit;
- (d) the exchange of records by participants;
- (e) the filing of admissions and written submissions by participants;
- (f) the service and filing of notices, records and orders, including substituted service and the requiring of participants to provide an address for service;
- (g) without limiting any other power of the commission, the effect of a participant's non-compliance with the commission's directives.

(3) A hearing commission must not exercise the powers of a study commission as set out in section 20 (1), unless the hearing commission is also designated as a study commission.

Power to compel witnesses and order disclosure

22 (1) At any time before making its final report, a hearing commission may serve a summons requiring a person to do either or both of the following:

- (a) attend, in person or by electronic means, a meeting or hearing to give evidence on oath or affirmation, or in any other manner;
 - (b) produce for the commission or a participant information or a thing in the person's possession or control.
- (2) A person cannot be compelled to disclose to a hearing commission anything that, in any court, would be privileged under the law of evidence.
- (3) A hearing commission may,
 - (a) if a person was summoned to appear before the commission at the request of a participant, order the participant to pay appearance fees and expenses reasonably and necessarily incurred by the person summoned, other than fees and expenses incurred by the person in respect of legal representation or advice, and
 - (b) in any case, pay appearance fees and expenses reasonably and necessarily incurred by a person summoned to appear before the commission, other than fees and expenses incurred by the person in respect of legal representation or advice.
- (4) A hearing commission may apportion fees and expenses under subsection (3) between 2 or more participants, and between one or more participants and the commission.
- (5) Subject to this Act and the hearing commission's terms of reference, a hearing commission may make directives respecting appearance fees and expenses reasonably and necessarily incurred by a person summoned to appear before the commission.

Power to apply to court

23 A hearing commission may apply to the court for any of the following:

- (a) an order directing a person to comply with a summons served by the commission under section 22;
- (b) an order directing any directors and officers of a person to cause the person to comply with a summons served by the commission under section 22;
- (c) a warrant authorizing the commission to conduct an inspection of a private place, including copying any records found in that place;
- (d) an order finding a person to be in contempt, as if in breach of an order or a judgment of the court, for failing or refusing to comply with a summons to
 - (i) attend a meeting or hearing before the commission,
 - (ii) take an oath or make an affirmation,
 - (iii) answer questions, or
 - (iv) produce information or things in the person's possession or control;

(e) an order finding a person to be in contempt, as if in breach of an order or a judgment of the court, for failing or refusing to comply with an order or a directive of the commission;

(f) an order finding a person to be in contempt, as if in breach of an order or a judgment of the court, for a reason other than as set out in paragraph (d) or (e) of this section.

APPENDIX B

Expert Panel Recommendations on Eliminating Water Impoundments

The Panel called for implementation of Best Available Technology (BAT), the goal of which is to leave a tailings impoundment that does not require the support of a dam, as is noted below:

Best Available Technology Principles

“The goal of BAT for tailings management is to assure physical stability of the tailings deposit. This is achieved by preventing release of impoundment contents, independent of the integrity of any containment structures. In accomplishing this objective, BAT has three components that derive from first principles of soil mechanics:

1. Eliminate surface water from the impoundment.
2. Promote unsaturated conditions in the tailings with drainage provisions.
3. Achieve dilatant conditions throughout the tailings deposit by compaction.” (p. 121)

The Panel also stated: “The overarching goal of BAT is to reduce the number of tailings dams subject to failure. This can be achieved most directly by storing the majority of the tailings below ground...Apart from this, surface storage using filtered [dry-stack] tailings technology is a prime candidate for BAT.” (p. 122)

In specifying the Best Available Technology that should be followed, the Panel made the following specific recommendations:

“**BAT RECOMMENDATIONS:** Implementation of BAT is best carried out using a phased approach that applies differently to tailings impoundments in various stages of their life cycle.

- **For existing tailings impoundments.** Constructing filtered tailings facilities on existing conventional impoundments poses several technical hurdles. Chief among them is undrained shear failure in the underlying saturated tailings, similar to what caused the Mount Polley incident. Attempting to retrofit existing conventional tailings

impoundments is therefore not recommended, with reliance instead on best practices during their remaining active life.

- **For new tailings facilities.** BAT should be actively encouraged for new tailings facilities at existing and proposed mines. Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor.

- **For closure.** BAT principles should be applied to closure of active impoundments so that they are progressively removed from the inventory by attrition. Where applicable, alternatives to water covers should be aggressively pursued. (p125)

See Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach*, (Province of British Columbia, 2015) pp. 121-122 and 125

In its final recommendations on p. 139, the BAT recommendations formed the first Recommendation of the Panel. Recommendation 1 states that the Panel recommends:

To implement BAT using a phased approach:

a. **For existing tailings impoundments.** Rely on best practices for the remaining active life.

b. **For new tailings facilities.** BAT should be actively encouraged for new tailings facilities at existing and proposed mines.

c. **For closure.** BAT principles should be applied to closure of active impoundments so that they are progressively removed from the inventory by attrition.

APPENDIX C

The Failure of Government to Respond Adequately to the Expert Panel Report

In July 2016 Government acted on its promise to respond to the Mount Polley Independent Expert Engineering Panel recommendations by amending Part 10 (Reclamation and Closure) of the *Health, Safety and Reclamation Code for Mines in British Columbia*. The new *Code* provisions simply require a new project to provide an alternatives assessment that considers Best Available Technology (under a much weaker definition of Best Available Technology than the Panel recommended). As part of this assessment, alternatives to water covers should be considered. But instead of citing the Panel's "first principle" – i.e., to "eliminate surface water from impoundment", (p. 121 of the Panel Report), the *Code's* Guidance Document is comparatively vague and non-enforceable. The Guidance Document 3.1 **Alternatives Assessment** merely calls for "consideration" of the following: "Effort to reduce and remove water from containment within tailings facilities should be made" and "Alternatives to water covers should be considered in planning stages."

In careful analyses of the new *Code* provisions, David Chambers, Ph.D., an expert in mining and tailings dam safety,¹⁶⁸ has detailed how Government has failed to implement the Expert Panel recommendations. Dr. Chambers has concluded, "The *Code* guidance does not go far enough to truly implement the expert panel recommendations for tailings dam stability."¹⁶⁹

Dr. Chambers stated:

¹⁶⁸ David Chambers Ph.D., President of the Center for Science in Public Participation, has an Engineering degree from Colorado School of Mines, a Master's in Geophysics and a PhD. in Environmental Planning from the University of California, Berkeley. Dr. Chambers has worked extensively throughout the North America for over 20 years, and recently published a major report on tailings dam safety internationally, *Risk-Public Liability-Economics of Tailings Storage Facility Failures*, Lindsay Newland Bowker & David M Chambers, July 2015.

¹⁶⁹ See: Ian Bailey, "Mount Polley Mine Still at Risk for Future Tailings Breach", *Globe and Mail* (August 4, 2016). Online: <http://www.theglobeandmail.com/news/british-columbia/mount-polley-mine-still-at-risk-for-future-tailings-breach-analyst/article31269473/>

The Expert Panel recommendation is clear – ‘eliminating surface water from the impoundment’. The Part 10 Revisions...do not address this issue/recommendation of the Expert Panel. As written, the Code will not only allow business as usual, it will continue to countenance it.¹⁷⁰...

Instead of “eliminate(ing) water from the impoundment” as recommended by the Mt Polley Expert Panel, the Code requires only that an “effort to reduce and remove water from containment within tailings facilities should be made” and that “alternatives to water covers should be considered in planning stages.” This leaves the door wide open for site-specific considerations, which inevitably will include cost, to trump real change to present practices. ... The Code is particularly weak on the Expert Panel’s recommendation to “eliminate surface water from the impoundment.” Other than the Code’s requirement for an ‘effort to reduce and remove water’ and to ‘consider’ alternatives to water covers, the discussion in the Code is on how to manage saturated tailings, not on how to eliminate saturation.¹⁷¹

Chambers has analysed four mine projects in Northwest BC – Red Chris, Schaft Creek, KSM, and Galore Creek – and concluded that Government continues to ignore the Expert Panel’s key recommendations. Little has changed in BC’s reliance on the problematic tailings impoundment technology that the Expert Panel criticized. Red Chris is now operating, and the others are proposed. All four are larger than Mount Polley in terms of production and the amount of waste that would be generated. Unlike Mount Polley, much of the waste in these transboundary projects will be potentially acid generating. This would make the waste from these projects much more toxic than that released at Mount Polley, so a Mount Polley-type failure could have more severe short and long-term effects. He compared the tailings dam facilities at those four BC mines with the Mount Polley expert panel recommendations. Dr. Chambers concluded that:

- All four of these [projects'] tailings dams involve substantially taller tailings dams (2-6 times the height) storing significantly greater volumes of mine waste tailings (6-27 times the volume) than the Mount Polley tailings dam that failed.

¹⁷⁰ David Chambers, Ph.D., *Report on Seven Recommendations to the BC Government Resulting from the Mount Polley Tailings Dam Failure*, August 15, 2016, p. 10.

¹⁷¹ David Chambers, Ph.D., *Report on Seven Recommendations to the BC Government Resulting from the Mount Polley Tailings Dam Failure*, August 15, 2016, p. 10.

- None of these four mines meet the recommendations of the Mount Polley expert panel to reduce the risk of tailings dam failure and prioritize public safety.
- All four mines plan to use same technologies that failed at Mount Polley: wet tailings at closure, rather than the dry tailings at closure recommended by the panel, and the centerline tailings dam design, rather than the safer downstream design.
- With the exception of the Red Chris Mine, which is already operating, there is still ample time to make changes at all four of the others mines to conform to best practices to better protect public safety and downstream resources.¹⁷²

Of equal concern is the failure of the new provincial rules to implement the Panel’s crucial recommendation that safety – not *short-term cost considerations* – must be the determinative factor on the type of tailings disposal used. The Panel noted that the main reason industry had not adopted dry-stacking/filtered tailings is economic. Such drier technology is costlier than water impoundments to begin with – but creates fewer costs for the environment and taxpayers in the long run. Therefore the Panel recommended that financial feasibility studies include externalities [including environmental impacts] and full life-cycle costs. The Panel clearly said that **safety** should be the paramount consideration.¹⁷³

¹⁷² Dr. David Chambers, *Post-Mount Polley Tailings Dam Safety in Transboundary British Columbia* (on behalf of Earthworks, Rivers Without Borders, MiningWatch Canada, Southeast Alaska Conservation Council, Inland Passage Waterkeepers, Friends of the Stikine Society, David Suzuki Foundation, Sierra Club BC, Pacific Wild, Skeena Wild, Watershed Watch Salmon Society, Canadian Parks and Wilderness Society, Clayoquot Action, and the Wilderness Committee, March 2016) at *precis* and p. 8. Online: https://www.earthworksaction.org/library/detail/post_mount_polley_tailings_dam_safety_in_british_columbia#.WC-YWX3-ok9

¹⁷³ The Panel wrote: “*The chief reason for the limited industry adoption of filtered tailings to date is economic. Comparisons of capital and operating costs alone invariably favour conventional methods. But this takes a limited view. Cost estimates for conventional tailings dams do not include the risk costs, either direct or indirect, associated with failure potential. The Mount Polley case underscores the magnitude of direct costs for cleanup, but indirect losses—notably in market capitalization—can be even larger. Nor do standard costing procedures consider externalities, like added costs that accrue to the industry as a whole, some of them difficult or impossible to quantify. Full consideration of life cycle costs including closure, environmental liabilities and other externalities will provide a more complete economic picture. While economic factors cannot be neglected, neither can they continue to pre-empt best technology...*

BAT RECOMMENDATIONS: For new tailings facilities. *BAT should be actively encouraged for new tailings facilities at existing and proposed mines. Safety attributes should be evaluated separately from economic considerations and cost should not be the determining factor.”*

Independent Expert Engineering Investigation and Review Panel, *Report on Mount Polley Tailings Storage Facility Breach*, Province of British Columbia, 2015, pp. 123-125.

Yet Government has failed to reflect that Panel priority in its legislative and policy changes. Dr. Chambers points out that under the new regime, economics continues to drive alternative assessment – and government has failed to adopt the Panel’s recommendation that financial feasibility should include existing externalities (like environmental impact) and full life-cycle costs.¹⁷⁴ This is worrisome, as are other flaws in Government’s responses to the Expert Panel Report, such as the lack of both authority and transparency of the new independent tailings review boards.¹⁷⁵

In sum, it is clear that government has so far failed to address the core systemic issues that led to the Mt. Polley disaster.

¹⁷⁴ David Chambers, Ph.D., *Report on Seven Recommendations to the BC Government Resulting from the Mount Polley Tailings Dam Failure*, August 15, 2016, p. 4.

¹⁷⁵ For example, Dr. Chambers points out the shortcomings in Government’s new requirement for Independent Tailings Review Boards, pointing out that the new regime “*provides non-binding advice and guidance, but does not direct the work or perform the role of the Engineer of Record.*” Furthermore, there is no requirement to publicly disclose any ITRB recommendation that is altered, or not implemented, by either the mine or regulators. This lack of both accountability and transparency significantly reduces the value of an independent body to ensure that that dam safety is being taken seriously. See “*Comments on the Code Review Changes to Part 10, Mine Health Safety and Reclamation Code for Mines in British Columbia*” by David Chambers, September 30, 2016, at p. 15.

APPENDIX D

Some Alternative Ways to Protect Taxpayers, Neighbours and Victims

- The Auditor General suggested consideration of Western Australia’s approach – i.e., setting up a Mining Rehabilitation Fund to pay for clean-up when industry is unable to pay for the clean-up:

Moreover, if an environmental disaster occurred and industry was unable to pay for the clean-up, MEM has no funding mechanism to cover the costs of taking action. Western Australia recently adopted a mandatory Mining Rehabilitation Fund that covers the rehabilitations of existing sites. The interest earned on the monies (paid by industry) is used to rehabilitate historical or abandoned sites. Such interest could, perhaps, also be used to offset the cost of environmental emergencies where a company does not have the ability to pay.¹⁷⁶

- Similarly, a Union of BC Indian Chiefs report has suggested a possible levy on mine production to create an industry-wide fund to finance clean-up of accidents and other unauthorized environmental harm events, when the mine operator cannot carry it out.¹⁷⁷ The UBCIC report cited a number of such schemes, such as the Canadian Ship-Source Oil Pollution Liability and Compensation Framework, which sets asides funds raised by a charge on oil shipped.¹⁷⁸ Under the new federal *Pipeline Safety Act* regime, pipeline companies will have to show that they can readily access \$1 billion to clean up a spill – and a backup industry fund will be created to further protect taxpayers from liability.¹⁷⁹
- The Union of BC Indian Chiefs report also recommended requiring companies to hold sufficient financial assurances to meet the full costs of environmental damage and third-party losses from mine accidents – with companies annually providing

¹⁷⁶ Auditor General of British Columbia, *An Audit of Compliance and Enforcement of the Mining Sector* (May 2016) p. 52.

¹⁷⁷ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p. 55.

¹⁷⁸ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p.79 and following.

¹⁷⁹ Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016) p.24.

proof of those financial assurances — and creation of an industry-funded pool to cover catastrophic events if a polluter is unable to pay.¹⁸⁰

- In addition to protecting taxpayers, the law needs to better protect third parties hurt by mine pollution. Currently, there is a lack of victim compensation coverage under the BC mine securities regime. This is problematic for all of the neighbours of mines who may be hurt by mine pollution – for those who rely upon traditional hunting and gathering activities, tourism activities,, the fishing industry, etc.
- There are numerous examples of laws that provide for victim compensation. For instance, one of the first victim compensation regimes to be implemented was the Japan 1973 *Law for the Compensation of Pollution-Related Health Injury*. This law establishes levies on polluters to distribute funds to victims of pollution-caused diseases such as Minimata disease, itai-itai disease, bronchitis, and asthma.¹⁸¹ Closer to home, the environmental assessment panel for the ferrochromium smelter at Port Hardy called for the proponent to post a security to “provide for any clean-up operations that can be anticipated in a ‘worst case scenario’ and to provide compensation to parties who might be adversely affected”.¹⁸²

¹⁸⁰ <http://www.desmog.ca/2016/05/18/b-c-taxpayers-hook-underfunded-mine-disaster-and-reclamation-costs>

The full report is at: Robyn Allan, *Toward Financial Responsibility in British Columbia’s Mining Industry* (Union of BC Indian Chiefs, 2016). Also, note that under the *New Zealand Resource Management Act*, security may be required to address “adverse effects on the environment that become apparent during or after the expiry” of the permit. This ensures that costs for unexpected occurrences that are not considered at the initial permit application stage will also be covered by the company rather than by government. [New Zealand *Resource Management Act 1991*, s.108A(2)(d), online: <<http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM234838.html>>.]

¹⁸¹ Kōgai Kenkō Higai Hoshō Hō [Pollution-Related Health Damage Compensation Law], Law No. 111 of 1973.

¹⁸² B. Williams, P. West & G. Davies, *Port Hardy Ferrochromium Review Panel: Final Report* (Vancouver: Federal Environment and Review Office, 1991) at 106-108.