



Toward Financial Responsibility in British Columbia's Mining Industry

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UNION OF BRITISH COLUMBIA INDIAN CHIEFS



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1. Introduction

The financial assurances regime for mine site reclamation in British Columbia is woefully inadequate, while a regime to ensure mine owners have sufficient financial resources to pay for environmental damage and third party losses from unintended mine accidents is non-existent.

The magnitude of the BC public's exposure to risk and cost is extensive:

- 1. Contaminated orphaned and abandoned mining sites:** BC has a legacy of contaminated sites for which no responsible party can be found, and the liability for remediating these sites is growing. The estimated cost to clean up mining sites that the province has assumed responsibility for, and undertaken assessment of, is \$275 million. This is a direct burden on the public treasury. There are many sites for which assessments have yet to be undertaken and thus the actual public liability is much greater.
- 2. Operating and closed mine sites the province does not own but that require reclamation, many with recognized contamination:** As at March 31, 2014, the Ministry of Energy and Mines had an unfunded liability for site reclamation of \$1.3 billion. The unfunded liability has increased since, but the figures are no longer made publicly available. Further, the province relies on reclamation estimates prepared by mine operators and thus the estimates may not accurately reflect reasonable reclamation costs.
- 3. Environmental risk of unexpected events:** The number and growing size of tailings storage facilities throughout the province presents an increasing risk and cost to the public and the environment. There is no requirement in BC that mining companies undertake an environmental risk assessment that examines the risk and related environmental cost of possible accidents at their mine sites. Neither is there a requirement that companies provide proof to regulators that access to sufficient financial resources, including insurance, exists to meet obligations if an environmental harm event occurs.

Although the Province of BC ascribes to the Polluter Pay Principle, without an effective system of financial assurances that fully holds parties liable for the costs they create, British Columbian residents, First Nations and the environment will continue to bear an undue—and growing—burden for mining related environmental risk and its resulting harm.

The province's failure to ensure that whenever polluters pollute, polluters pay, represents an obvious cost to taxpayers because taxpayers end up bearing the burden instead. If the cost does not fall to taxpayers then it falls to society along with much of the clean up, compensation, remediation and/or reclamation going unattended.

There are hidden risks and costs to the Provincial government's unwillingness to ensure that its legislative and regulatory regime guarantees that those who cause the harm efficiently and effectively bear its costs. Best practices reduce long-run environmental costs but generally require greater upfront investment. Mining companies, by definition, are focused on delivering short-term returns to shareholders. So although mining companies benefit from the certainty of a strong regulatory regime based on the Polluter Pay Principle as it assists them in making better investment decisions, when they understand they can avoid all, or part, of the financial accountability enacted in legislation—when they know that the Polluter Pay Principle will not be enforced—the absence of precautionary regulatory requirements makes it unlikely that operators embrace best practices since there is little incentive to do so. This creates systemic risk and leads to delays or avoidance of reclamation and an increased frequency and increased overall cost of unanticipated environmental harm events.

In contrast, when 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:

1. these entities are incentivised to adopt best applicable practices and best available technologies;
2. mine operators release less hazardous waste than when financial requirements are not in place and monitored;
3. fewer accidents occur, and the consequence of those that happen are reduced;
4. fewer bankruptcies and corporate reorganizations—costly to creditors, workers, communities, shareholders and the economy—occur;
5. clean up, remediation, reclamation and compensation is undertaken in a timely manner which reduces ultimate harm and cost; and
6. costs are borne by those responsible, not by those who are not.

The purpose of this report is to identify the weaknesses in British Columbia's Environmental Financial Assurances regime as it relates to the mining industry and recommend an approach which would address these serious shortcomings. The report offers features for a system in BC that, if adopted, would ensure the environment is protected from harm to the greatest extent possible while supporting industrial development. When environmental harm does occur, the proposed features ensure it is the mine owner—not the public or the environment—that bears the cost and responsibility for returning the natural environment to its pre-disturbed, or acceptable alternative use, state.

Summary of Recommendations

1. Require Full Security for Mine Site Reclamation Costs

Require that mining companies post full security for mine site reclamation costs. For new mines full security to be posted at time of permit issuance; for mines that are operating, under care and maintenance or are closed, the province should require that companies post full security within three to five years.

2. Introduce Financial Assurances for Unexpected Environmental Harm Events

Require companies to hold sufficient financial assurances to meet the costs of likely environmental damage and third-party losses that arise due to mine related accidents. Establish a limit of liability where fault does not need to be proven, and require unlimited liability above the liability limit when fault or negligence exists. The level of sufficient financial assurances to be determined through risk assessment and to include insurance and other hard security instruments such as bonds or cash. Companies should provide proof on an annual basis that required financial resources are available.

3. Establish an Industry-Funded Pool

Levy a charge against volume of production from operating mines and make the fund available:

- a. at a fee for smaller mining companies that cannot access financial assurances through the banking sector;
- b. if actual reclamation costs at a mine site exceed estimated costs and a mine owner was unable to pay; and/or
- c. if an unexpected event, such as a tailings pond breach, exceeds the financial assurances required for such a loss (exceeds the limits of liability), no party were found to be at fault, or the polluter is unable to pay.

4. Establish a Claims Settlement Process

Create a claims process for compensable damage which is arms length from the mine operator and includes a process for review of disputes regarding claims adjudication which is outside the courts.

5. Introduce Transparency and Accountability

Require, on an annual basis, that site reclamation plans, reclamation cost estimates, and related security, by mine and in aggregate be publically reported. Make publicly available on an annual basis proof of security provided for unexpected environmental harm events by mine.



Photo © iStock.com/davemantel



Photo © Chris Miller

Top: Old copper mining structure in northern British Columbia.
Bottom: Acid mine drainage upstream of the Tulsequah River.

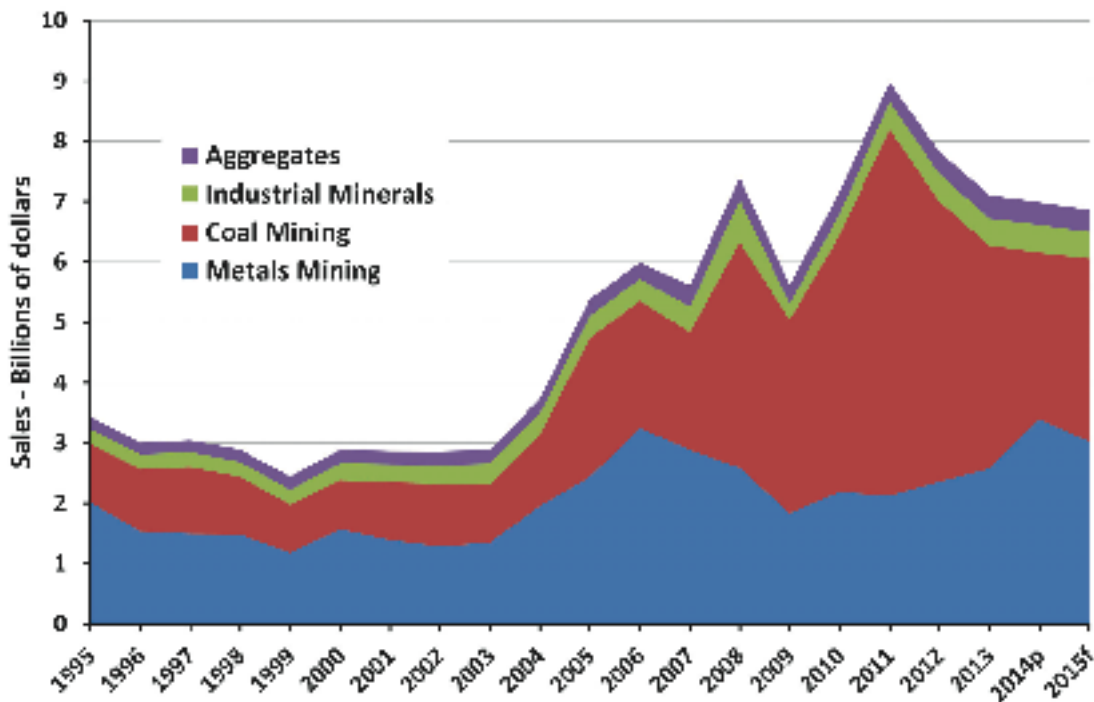
2. Overview of the Mining Industry

2.1 Coal and Copper Dominate

British Columbia is a producer and exporter of coal, copper, gold, silver, lead, molybdenum, zinc, and industrial minerals. The value of mining output in the province increased significantly from 2003 to 2011 primarily as a result of increased demand from Asian economies for coal and copper. As graph 1 illustrates, increased demand for coal and copper stimulated BC's mining sector for much of the past decade. This significantly increased the number of active mines in operation and the number of projects seeking approval.

Graph 1

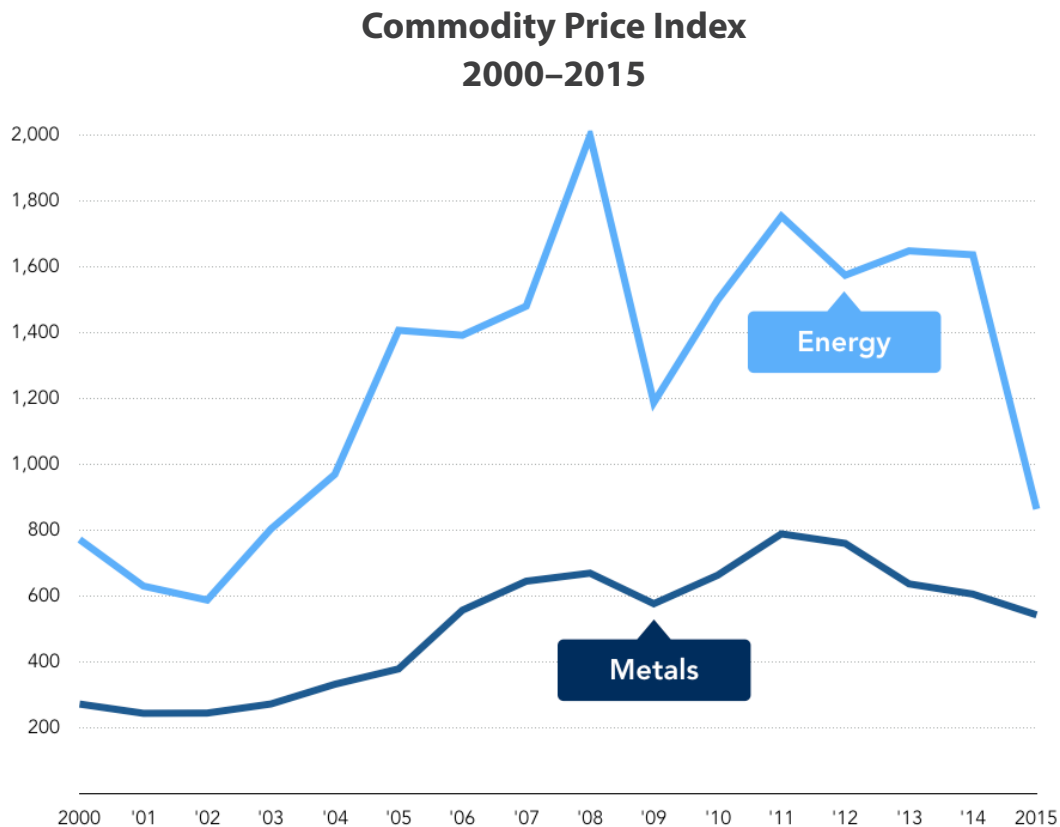
**Value of British Columbia Mineral Production
1995–2015**



Source: Exploration and Mining in British Columbia, 2015 Information Circular 2016-1 Figure 4

Since 2012, excess world supply, coupled with slower demand growth, particularly in China, saw commodity prices fall. Lower prices have seriously impacted mining profits and their future operating prospects. Graph 2 illustrates commodity price trends as reflected in the Bank of Canada commodity price index for energy (which includes coal) and metals.

Graph 2



Source: Bank of Canada. Metals include Potash, Aluminum, Gold, Nickel, Iron, Copper, Silver, Zinc, Lead. Energy includes Crude Oil, Natural Gas and Coal

A number of proposed mining projects have been put on hold, and a number of operating mines have ceased production. In 2012 there were 22 operating mines in the province¹. By 2016 there were 12—five coal mines and seven copper.

World-wide, the advent of low commodity prices are leading mining companies to aggressively seek ways to cut costs through downsizing, layoffs, and asset sales. Weak commodity prices are impacting both small producers and diversified global giants such as Anglo American PLC², BHP Billiton Ltd.³, Rio Tinto Group⁴, Glencore PLC⁵ and Vale SA⁶. Canadian company, Barrick Gold Corp., relied on asset sales in 2015 to assist in debt reduction and in 2016 is continuing to seek additional asset sales⁷.

1 Provincial Summary, [Exploration and Mining in British Columbia](#), 2012, Ministry of Energy, Mines and Natural Gas

2 Anglo American Investor Day, December 8, 2015, [Press Release](#).

3 BHP Billiton, [Financial Results](#), First Half of the Year Ended December 2015.

4 Rio Tinto Full Year Results, 2015, [Presentation](#)

5 [Glencore, Battered Mining Giant, Retreats](#), Wall Street Journal, September 7, 2015.

6 [Brazil's Vale looks to sell \\$10 billion of assets after massive loss](#), Reuters, February 25, 2016.

7 Barrick Gold, [2015 Fourth Quarter Report](#), Notes to Financial Statements, page 151.

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. International coal producer Walter Energy Inc., the parent of Walter Energy Canada which owns three coal mines in Northeast BC, filed for Chapter 11 bankruptcy protection in the US on July 15, 2015. On December 7, 2015 Walter Energy Canada sought relief under the *Companies' Creditors Arrangement Act (CCAA)* "so that they can develop and implement an independent sales process to maximize value for their stakeholders in consultation with various governmental authorities."⁸

The volatility and cyclical nature of commodity pricing has long been recognized. The current downturn however, is different. It is likely longer and more painful than past cycles for a variety of reasons including a structural shift in the demand for coal, copper and other base metals. When Moody's Investor's Service downgraded Teck Resources Limited's rating to B3 on February 23, 2016 it noted that, "[T]his rating action reflect (sic) Moody's view that there has been a fundamental downward shift in the mining sector with the downturn being deeper and the recovery longer than previously expected, resulting in increased credit risk and weaker metrics for Teck as well as the global mining sector."⁹

Coal and copper producers world-wide borrowed extensively and expanded aggressively during the last uptick in prices only to witness supply significantly exceed demand. Gains made during the last boom have been erased. A significant factor contributing to the bust is the slowdown in the Chinese economy and its shift in emphasis toward consumerism. China's industrial expansion was the primary driver of higher commodity prices during the most recent boom. A turnaround in commodity demand, and concomitant higher prices, are not anticipated in the near term.

BC is Canada's largest exporter of metallurgical coal used for steel production, largest copper producer, and Canada's only producer of molybdenum; a product used to strengthen steel. In 2015 the value of BC's coal exports were \$3.1 billion, copper \$3 billion, zinc \$860 million, and molybdenum \$52 million.¹⁰

BC's Ministry of Energy and Mines estimates total value of mine production for 2015 at \$6.9 billion¹¹, including coal, copper, industrial minerals, aggregate, gold, molybdenum, silver, zinc, and lead, as compared to \$7.4 billion for 2014¹²—a decline in value of 7.3 percent. The value of mining production in BC is down 25 percent from the record value of \$8.6 billion in 2011.¹³

8 [First Affidavit of William G Harvey Sworn December 4 2015](#), page 3.

9 Moody's Investors Service, Rating Action: [Moody's Downgrades Teck's ratings to B3; outlook remains negative](#), February 23, 2016.

10 BC Stats, [Annual BC Origin Exports](#), February 5, 2016.

11 BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2015, January 2016, page 1.

12 BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2014, January 2015, page 1.

13 BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2011, January 2012, page 2.

For 2015, coal remained the highest value mine product from British Columbia, comprising about 44 percent of total output, followed by copper at 35 percent.¹⁴ The mining industry in BC is dominated by coal and copper production. These two products represent almost 80 percent of the value of output from the mining sector.

Although economic conditions and market realities have caused a number of mines to close and a number of projects to be put on hold, there are a few projects under construction, or in active promotion, throughout the province. These include:

1. Petrium Resources Inc.—Brucejack Gold mine. Petrium raised \$540 million US in construction financing in 2015. The mine is located approximately 65 km from Stewart in Northern BC. In service is expected in 2017.
2. JDS Energy and Mining Inc. subsidiary JDS Silver—Silvertip silver-lead-zinc mine located near Watson Lake, adjacent to the Yukon border.
3. Atrium Coal NL—Groundhog project to develop anthracite coal near Stewart BC. The project is in the feasibility phase and is intending to use dry tailings.
4. KGHM International—Ajax copper and gold mine near Kamloops. The \$795 million project has been submitted for environmental review but will not be using the dry stacking method as planned in its initial design, or as recommended by the Mount Polley Engineering Panel Report.
5. Seabridge Gold Inc.—Kerr-Sulphurets-Mitchell (KSM) property located in the Iskut-Stikine region located approximately 5 km Northwest of Stewart BC and roughly 35 km Northeast of the Alaska border. The \$5.3 billion open-pit and underground copper, gold, silver and molybdenum project is continuing to be promoted by its owner.

In February 2016, the Provincial government announced that it would allow coal and metal mines operating in BC to defer paying 75 percent of their electricity costs to BC Hydro for up to two years. The Ministry of Energy and Mines estimated that if all companies elected to take advantage of the program it would result in approximately \$330 million in deferred payments. The companies would later be required to repay the amounts plus interest at between 8 and 12 percent per annum. The Minister, Bill Bennett, stated that if “there was a company that could not repay the deferred amount with interest to BC Hydro, the arrangement that we have is that the government and BC Hydro will sit down and figure out a way for BC Hydro to be repaid for that amount.”¹⁵ If the company is unable to pay, the arrangement Mr. Bennett is effectively suggesting is that either the BC taxpayer or the BC ratepayer will subsidize the electricity costs of operating coal and metal mines in BC.

¹⁴ BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2015, January 2016, page 1.

¹⁵ Tyee, [BC Hydro Pledge Saves Mining Jobs? Not So Fast, Says Union](#), Andrew MacLeod, February 6, 2016.

Recent mine site closures and mining company failures have increased the degree of concentration in an already concentrated mining industry. There remain only six companies controlling the twelve operating mines in the province; with one company—Teck Resources Ltd.—exercising monopoly control over all operating coal mines.

2.2 Coal Production Controlled by Teck Resources Ltd.

Table 1

Operating Coal Mines in British Columbia 2016

Mine	Ownership
Fording River	Teck Coal Ltd. 100%
Greenhills	Teck Coal Ltd. 80% POSCAN 20%
Line Creek	Teck Coal Ltd. 100%
Elkview	Teck Coal Ltd. 95% POSCAN 2.5% Nippon Steel & Sumimoto Metal Corp 2.5%
Coal Mountain	Teck Coal Ltd. 100%
Coal Mountain	Teck Coal Ltd. 100%

Source: BC Energy and Mines. POSCAN is POSCO Canada Ltd., owned by Korean steel maker POSCO. Nippon Steel & Sumimoto Metal Corporation is a Japanese steel maker.

Coal is not only BC’s largest mining export commodity, it is the province’s largest single export commodity. At the end of 2015 there were six producing mines—five metallurgical and one thermal.¹⁶ In January 2016, Swiss multinational Vitol Anker International B.V.,¹⁷ closed its Hillsborough Resources Ltd., Quinsam thermal coal mine on Vancouver Island citing low coal prices. Existing stockpiles will meet Quinsam’s 2016 sales commitments.¹⁸

The closure of Quinsam means coal mining in BC is operated as a monopoly. All coal extracted in the province now comes from five metallurgical coal mines located in the Kootenay-Boundary Region of the province. These five mines are operated by Vancouver based multinational, Teck Resources Ltd.

Teck wholly owns Fording River, Line Creek, and Coal Mountain, controls 95 percent of Elkview, and 80 percent of Greenhills.¹⁹ In order to reduce its inventories because of weak market conditions Teck

16 BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2015, January 2016, page 1.

17 Marketwire, [Vitol Acquisition of Hillsborough Completed](#), December 21, 2009.

18 Canadian Mining Journal, [Coal Hard Facts](#), January 18, 2016, Marilyn Scales.

19 BC Energy and Mines, [Provincial Overview of Exploration and Mining in British Columbia](#), 2015, January 2016, Table 3, page 7.

shut down operations at each of its coal mines for approximately three weeks during the summer of 2015.²⁰

Teck Resources has experienced a deterioration in its financial performance in recent years primarily due to declining revenues from falling commodity prices, growing concerns about its capital requirements in support of the Fort Hills oil sands project in Alberta and its debt leverage. Teck is a 20 percent owner in Fort Hills with partners Suncor and Total SA.

Table 2

**Teck Bond Rating
As at March 17, 2016**

	S&P	Moody's	Fitch	DBRS
Investment Grade	BBB	Baa2	BBB	BBB
	BBB-	Baa3	BBB-	BBB (low)
Non-Investment Grade	BB+	Ba1	BB+	BB (high) negative
	BB	Ba2	BB	BB
	BB-	Ba3	BB-	BB (low)
	B+ negative	B1	B+ negative	B (high)
	B	B2	B	B
	B-	B3 negative	B-	B (low)

All four credit rating agencies downgraded Teck to non-investment grade—junk bond status—during 3rd quarter 2015.²¹ In February 2016, Moody's further downgraded Teck to B3 negative, while Fitch Ratings downgraded the issuer's default rating to B+ negative on March 16, 2016.²²

Teck's ownership is held in Class A and Class B subordinate shares. Class A shares carry the right to 100 votes per share, while Class B carry one vote per share. Temagami Mining Company Ltd., owned 51 percent by Keevil Holding Corporation and 49 percent by SMM Resources Incorporated (a

²⁰ May 28, 2015, [Press Release](#), Teck Responds to Steelmaking Coal Market Conditions.

²¹ [Teck Third Quarter Earnings Call Transcript](#), October 22, 2015, page 5. [Fitch Ratings Report](#), [Moody's Rating Report](#)

²² [Moody's Downgrades Teck's ratings to B3; outlook remains negative](#), Amended press release, March 1, 2016 and [Fitch Downgrades Teck's IDR to B+, outlook negative](#), March 16, 2016.

wholly owned subsidiary of Japan’s Sumitomo Metal Mining Co. Ltd.), has 28.68 percent of all voting rights. SMM holds a further 9.8 percent of the voting rights through direct ownership of both Class A and Class B shares.²³ As a result of a \$1.74 billion share purchase made by the China Investment Corporation in July 2009, the Chinese government owns 17.9 percent of Teck’s class B shares which represents 6.74 percent of all voting rights.²⁴ Since 2011, Teck’s shareholders have suffered significant devaluation of their holdings.

Graph 3

**Teck Resources Ltd. Class B Share Price
1998–2016**



Source: MSN Money, Google Finance

The reduction in Teck’s share value and non-investment grade credit rating makes it increasingly difficult for Teck to raise capital and arrange credit facilities.

Teck Metals Ltd. is a wholly owned subsidiary of Teck Resources Limited, and owner of Teck’s lead-zinc smelter operations in Trail BC. The company has been fined \$3.4 million—\$3 million by the federal government and \$400,000 under provincial legislation—for 13 discharges of heavy metals and other pollutants into the Columbia River between November 2013 and February 2015.²⁵ This is the largest environmental penalty in BC’s history.

²³ Tech Resources Ltd., 2016 Management Proxy Circular, page 1.
²⁴ Marketwire, China Investment Corporation Announces Investment in Teck Resources Limited, July 3, 2009.
²⁵ Globe and Mail, Teck Metals fined \$3.4 million for polluting BC’s Columbia River, Mark Hume, February 29, 2016.

In 2011 Teck was fined for leaching mercury into Stanley Creek and in 2013 it was fined for discharging sodium hydroxide into the Columbia River. In 2012, a US federal court found Teck's smelter to have polluted the Columbia River in Washington state with effluent discharges dating back to 1896. The "cost of cleaning up the contamination has been pegged as high as \$1 billion (US), and the State wants Teck to bear that cost."²⁶

The deterioration of Teck's financial performance has implications for environmental stewardship. Teck has obligations related to its operating and closed mine sites under the *Mines Act (MA)* and *Environmental Management Act (EMA)* for site reclamation and contamination in BC. Teck also has environmental obligations in other jurisdictions such as Alberta, and Alaska.

Should the company face continuing difficulty with its financial performance, its ability to service its debt and renew letters of credit could be compromised. This could lead to Teck's inability to meet its obligations under BC's legislated environmental protection and reclamation requirements.

Teck's financial stress will not affect the flow of corporate tax revenue to the federal and provincial treasuries however, because **Teck pays no corporate income tax**. According to Teck, even under a scenario of strong earnings, the company will not pay corporate income tax for the foreseeable future.

"In Canada in particular, we have a lot of net operating loss carry forward, or non-capital loss carry forwards, and Canadian Development Expense, that are available on our tax books for immediate write-off if we have the income...we have a NOL (net operating loss) of \$5 billion and Canadian Development Expenses of \$1.2 billion that's there that we could use to shelter operating cash flow from tax should the operating cash flow arise. So if we have a big boost in coal prices for a couple of years and an extra \$5 billion of cash flow...from a flooding in Queensland, that cash flow would come, we'd accrue a tax liability on it at the 26 percent rate, but we wouldn't pay cash tax on it 'cause we have the deductions available. They don't expire until 2027 - 2034...that's a long term substantial asset. **So we're not paying Canadian cash income tax and we won't for the foreseeable future.**"²⁷

2.3 Metal Mines Controlled by Six Companies

Metal mines in BC accounted for an estimated \$3.02 billion of mine production in 2015, representing about 44 percent of all mine production in the province. Metals mined are primarily copper with gold, silver, and molybdenum in smaller quantities.

²⁶ Globe and Mail, [Teck admits operations polluted U.S. waters](#), Dene Moore, September 10, 2012.

²⁷ Teck Modelling Workshop, November 4, 2015, [Income and Resource Taxes](#), Doug Powrie, VP Tax, Teck, Audio Transcript at Minute 23:00.

There are seven operating mines in BC, owned by six companies, including Copper Valley owned by Teck Resources Ltd. The remaining five companies are Imperial Metals Corporation, Taseko Mines Ltd., Thompson Creek Metals Company Inc., New Gold Inc., and Copper Mountain/Mitsubishi Materials.

The major markets for BC’s mining production are located in Japan, South Korea and China. BC’s port facilities provide direct access to Asian markets where 54 percent of BC’s mining exports were destined in 2015.²⁸

Numerous mining ventures attract foreign direct investment particularly from Japan and China, as purchasers of BC’s mining resources are intent on gaining secure supply along with ownership rights to BC’s non-renewable resources. The majority of BC’s mining resources are transported overseas for smelting into metals in Asian facilities.²⁹

Table 3

**Operating Metal Mines in British Columbia
2016**

Mine	Ownership
Mount Polley	Imperial Metals Corporation
Red Chris	Imperial Metals Corporation
Highland Valley Copper	Teck Highland Valley Copper Partnership
Copper Mountain	Copper Mountain Mining Corp. 75% Mitsubishi Materials Corporation 25%
Gibraltar	Taseko Mines Ltd.
New Afton	New Gold Inc.
Mt. Milligan	Thompson Creek Metals Company Inc.

Source: BC Energy and Mines

Red Chris 100% owned by Imperial Metals through Red Chris Development Company Ltd.

Copper Mountain production is guaranteed 100% through an off-take agreement to Mitsubishi Materials³⁰

²⁸ BC Stats, Annual BC Origin Exports, op. cit.

²⁹ The Canadian Trade Commissioner Service, [Mining Sector Market Overview—2015](#), May 2015.

³⁰ [Copper Mountain Annual Report 2014](#), page 2, and [The Resurrection of Copper Mountain](#), Tyee, Christopher Pollon, March 24, 2014.

2.4 Alaska and BC Mining

Many of the above noted underground and open pit copper and gold mining projects, including Red Chris and KSM, straddle the border with British Columbia at the head waters of the State of Alaska's major salmon runs—the Stikine, Unuk and Taku.

In August 2014, in a letter to the Canadian Environmental Assessment Agency (CEAA), the State of Alaska took a rare step and formally asked the Canadian government for greater involvement in the approval and regulation of the KSM gold and copper mine. In the letter State officials requested that the State “be included in the development of binding mitigation measures, monitoring and enforcement provisions for the KSM Project.”³¹ It informed the Canadian government that the State plans to review the detailed designs for the tailings management facilities, the waste treatment and discharge systems and the associated bonding.

Alaskans fear the developments near the border. The projects will generate billions of tons of toxic mine tailings which threaten water quality, habitat and fishing grounds relied upon by thousands of Alaskan fishing families and businesses. This concern is based on recent events like the Mount Polley tailings storage facility breach in 2014, as well as the threat of continuous leaching from other mine facilities.

The Tulsequah Chief mine in British Columbia has not been in operation for more than fifty years. For decades, rusty, acidic water has drained from an old tunnel into the Tulsequah River, a tributary of the Taku River. That salmon-rich waterway empties into an ocean inlet about 40 kilometres northeast of Juneau.

Over the past 15 years there have been numerous remediation and pollution abatement orders related to Tulsequah Chief mine from the BC Ministry of Energy and Mines without effect. Last year, the Ministry inspected the acid mine drainage flowing into the Tulsequah River. The current mine owner, Chieftain Metals Corp., stated it could not stop the pollution unless it starts up production to gain the needed revenue for doing so. The Ministry of Energy and Mines granted the company the necessary permit for development.³²

In late November 2015, BC Premier Christy Clark and Governor of Alaska, Bill Walker, signed a memorandum of understanding (MOU) that is intended to protect trans-boundary rivers, watersheds and fisheries from proposed mining projects in BC. The agreement establishes plans for a bilateral Working Group on the protection of trans-boundary waters and the development of joint water

³¹ State of Alaska, Departments of Natural Resources, Fish and Game, & Environmental Conservation, [Letter](#), August 20, 2014, page 2

³² A more detailed discussion of the issues surrounding Tulsequah Chief and Chieftain Metals is provided in Section 6.1.3.

quality monitoring. It provides for the data to be made publicly available. A framework has also been established to enable government and scientists to be involved in each jurisdiction's assessing and permitting processes for mining projects.

The Working Group's terms of reference includes "alternative public or private sector funding of costs and other needed resources that are in addition to those normally covered by existing state or provincial operating budgets."³³ However there is no clear indication that the agreement will accommodate the long-term maintenance and stability of tailings dams or a mechanism for determining compensation of people living downstream in the event their livelihoods are impacted by mining development and pollution. At the very least, the Working Group will need to explore ways and means of:

1. supporting mining companies in applying best practices throughout the life-cycle of mine development to mitigate the likelihood of authorized or unauthorized harm; and
2. ensuring financial assurances assist in the adoption of best practices and provide guaranteed financial resources to respond to, clean up, remediate and compensate for any losses that may arise from environmental harm due to mining operations.

The talks and MOU were spurred by the Mount Polley tailings pond breach. Energy and Mines Minister, Bill Bennett, acknowledged while visiting the State of Alaska in August 2015 that compensation to Alaskans is one of the ways the BC government may get involved "should the unthinkable happen."³⁴

2.5 History

The history of mining in BC is one of unbridled boom and bust; rush and retreat. The mining sector is volatile. Commodity prices, investment, production and export volumes change significantly, and relatively quickly, because of international forces of supply and demand.

Provincial and federal governments have not implemented adequate policy measures to ensure that the cyclical nature and the negative impacts of mining's boom and bust character are mitigated. Neither have they ensured that the labour force, communities and environment negatively impacted by the rapid rush and inevitable retreat, do not bear a disproportionate share of the burden.

Throughout the history of commercial mining in BC the mining sector has benefited from an attitudinal bias that cloaks an exploitive intent in a romantic notion. Mining interests extensively

³³ Memorandum of Understanding and Cooperation between the State of Alaska and the Province of British Columbia, November 25, 2015.

³⁴ Juneau Empire, [BC Alaska to draft MOU for mine processes](#), Mary Catherine Martin, August 26, 2015.

benefit from the idea that the right to prospect and extract hidden things takes precedence over the right to live on and take care of the land and watercourses that hide them.

Whether it's ease of access for staking prospecting claims, expedited permitting, favourable tax laws and royalty charges, relatively lax environmental assessment processes, poorly monitored operating standards, or reclamation requirements ineffectively backed by financial assurances, mining companies have consistently been able to capture a disproportionate share of the benefits from non-renewable resources. As well, these companies have been able to avoid bearing their appropriate share of the economic, social and environmental costs from their mining activities. This disconnect between who benefits and who bears the burden means mining in BC is not resource development, it is resource exploitation.

The attitudinal bias that favours prospecting and mining has led to a design of BC's legislative and regulatory framework that is pro-cyclical. The framework sends the wrong market signals and exacerbates the worst features of the mining industry's inherent boom and bust vulnerabilities.

It is not only the legislative and regulatory framework of the mining sector that exhibits a bias towards protecting mining interests. The policies of the provincial and federal government in relation to constitutional and legislative requirements imbedded in regimes outside those directly related to the authority exercised by BC's Ministry of Energy and Mines and Ministry of the Environment are illustrative of a pro-industry preference.

The failure of elected governments to protect the public interest of British Columbians and First Nations from what is effectively unfettered activity of mining interests is increasingly unacceptable. First Nations, local communities, non-governmental agencies, and many individuals are becoming increasingly aware of the costs and consequences of the failed legislative and regulatory environment. This regime enables mining interests to exploit the province's non-renewable resources without proper consultation, review, assessment, transparency, accountability, or adequate underlying financial resources that guarantee mining operators will meet legislated obligations.

2.6 First Nations and Early Mining

Conflict between the commercial interests of those who exploit BC's non-renewable resources and the rights of those who depend on the land where the resources lie—and therefore have a vested interest in protecting a way of life and the surrounding environment—has existed since commercial mining began more than a century and a half ago.

Early coal and gold exploitation—the first minerals aggressively pursued for financial gain in the mid-1800s—had a direct impact on the local community, which at the time consisted of First Nations

people. Aboriginal peoples historically mined flint, ochre, obsidian, copper and silver for tools and as artifacts for their personal use and trade.³⁵ Their practices were modest and their approach sustainable. It was integrated with their way of life and ownership of the land meant ownership of the minerals that lay within it.

The discovery of coal at Beaver Harbour on the northeast coast of Vancouver Island and the potential for commercial gain from selling coal as an energy source for the growing shipping trade, prompted the Hudson Bay Company (HBC) to seek a way of securing ownership of these resources. First Nations considered mineral resource rights as part of land rights, so when a treaty was negotiated and entered into to sell the land to the HBC, coal mining rights were considered to be included as part of the sale.

In 1849 the Hudson Bay built Fort Rupert to house and protect Scottish coal miners brought in to mine the resource. There was a concern that the numerous and well armed local tribe members would continue to resist exploitation of their resources by HBC. On August 23, 1850, HBC Chief Factor, James Douglas, was informed by letter that the Governor and Committee of the company had determined that in order to secure the rights over the coal “no time should be lost in purchasing from the natives, the land in the neighbourhood of Fort Rupert.”³⁶ The treaty was negotiated and the rights transferred.

By the late 1850s thousands of foreign gold prospectors advanced on indigenous territories on what is now mainland BC. The rapid influx of miners had significant environmental, social and health impacts on First Nations peoples’ way of life which was facilitated by, not mitigated by, the actions of local authority.

The first gold rush actually impacted Haida Gwaii in 1852 when American miners landed on the island. They were successfully rebuffed by the Haida, but discoveries on the mainland soon followed leading to the Fraser River Gold Rush in 1858 when an estimated 30,000 prospectors descended on the Fraser and Thompson Rivers. Ill-equipped for the gold quest, the Sto:lo of the Fraser are said to have referred to the prospectors as the “Hungry People”.

The Fraser River Gold Rush precipitated the establishment of the region as a British colony bringing with it regulations and infrastructure. Britain wanted to ensure that the influx of American miners did not lead to a challenge of British sovereignty.

35 Association for Mineral Exploration British Columbia, *A Century of Discovery*, 1912 - 2012, page 11.

36 *British Columbia Indian Treaties in Historical Perspective*, Denis F.K. Madill, prepared for the Research Branch, Corporate Policy, Department of Indian and Northern Affairs, 1981, footnote 24.

As the Fraser Gold Rush dwindled, news of gold further north set off the Cariboo Gold Rush of 1860–1863. A continuation of the treaty process initiated on Vancouver Island was stalled. It was perceived by James Douglas' replacement that a lack of treaty rights would facilitate prospecting activities and settlement interests.³⁷ It is this absence of treaties that assists in serving present day First Nations in asserting their land claim rights and the protection of the environment.

The Klondike Gold Rush began in 1896. Treaty negotiations were reintroduced as prospectors faced resistance from local First Nations. The signing of Treaty 8 was in no small way related to the desire by the authorities for miners' resource interests to be secured ahead of First Nations' land interests.

In order to better understand how federal and provincial governments have dealt with the ongoing conflict between the commercial interests behind natural resource extraction and the commercial, environmental, and social interests of neighbouring communities, particularly those of First Nations, it is necessary to have an understanding of the basic concepts of Canadian and provincial law relating to environmental protection, mineral extraction and First Nations' rights.

What we find is that commercial interests have historically, and pretty much consistently, taken precedence over the social, cultural and environmental rights of First Nations and British Columbians when it comes to legislation, regulation and administration of mining activities.

First Nation resistance to the encroachment of Europeans in the mid 1880s were met with harsh laws and excessive attempts to indoctrinate Aboriginal people into western culture by regulating and administering their day to day lives. The *Indian Act* of 1876 was a consolidation of the *Gradual Civilization Act* of 1857 and the *Gradual Enfranchisement Act* of 1869. In 1884, the *Indian Act* was amended to make the potlatch ceremony a criminal offence as it was thought this would assist in stifling protests. The residential school system was introduced.

The early purpose of legislation was explained by John A. Macdonald in a memo January 3, 1887. He wrote, "The great aim of our legislation has been to do away with the tribal system and assimilate the Indian people in all respects with the other inhabitants of the Dominion as speedily as they are fit for the change."³⁸

As noted by the Truth and Reconciliation Commission of Canada, "Canada asserted control over Aboriginal land. In some locations, Canada negotiated Treaties with First Nations; in others, the land was simply occupied or seized. The negotiation of Treaties, while seemingly honourable and legal, was often marked by fraud and coercion, and Canada was, and remains, slow to implement their provisions and intent. On occasion, Canada forced First Nations to relocate their reserves from

³⁷ BC Treaty Commission, [What's the deal with treaties? A lay person's guide to treaty making in British Columbia](#)

³⁸ Sessional Papers Volume 16, 20 (b), Victoria, January 3, 1887.

agriculturally valuable or resource-rich land onto remote and economically marginal reserves. Without legal authority or foundation, in the 1880s Canada instituted a “pass system” that was intended to confine First Nations people to their reserves.”³⁹

As settlement progressed, legislation and regulations continued to be developed and relied upon without due recognition of the rights of First Nations, the protection of the environment or the priorities of local communities. For over a century legislation and regulations respecting exploration, permit approval, operation, and closure of mines in British Columbia has been undertaken from a policy perspective, and within a legal framework, that favours resource companies and their shareholders’ interests. The economic, social and environmental cost of lax governmental oversight is ongoing and extensive.

2.7 Current Situation

The provincial and federal government remain reticent to undertake their full obligations as defined in mining and environmental statutes, and as required by the Constitution.

Notwithstanding *Mines Act (MA)* requirements having been introduced in 1969 that British Columbians not bear the cost of mine reclamation, estimates of unfunded mine reclamation liabilities since that time put BC taxpayers potentially on the hook for more than \$1.3 billion.⁴⁰

The most recent publicly available figure for the difference between the estimated reclamation liability of permit holders compared to the security permit holders have provided to the province was identified in the Public Accounts 2014. “[T]he Ministry of Energy and Mines has determined possible net liabilities of approximately \$1,278 million (2013: \$789 million) for sites the province does not own.”⁴¹

The unfunded liability figure increased in 2015 but the Province elected to no longer provide the figure in the Public Accounts citing its new Public Service accounting standard PS3260 as the reason for not disclosing this information. British Columbians are left without an estimate of the unfunded reclamation liability mining company activities have exposed them to.

The more than \$1.3 billion of unfunded liability assumes that \$723 million in security is posted with the Chief Inspector of Mines. This means the estimated costs of reclamation required at mine sites owned by the private sector is more than \$2 billion. Federal insolvency legislation is very flexible in meeting the cash flow needs of the company seeking its protection while attempting to restructure.

³⁹ [Honouring the Truth, Reconciling for the Future](#), Summary of the Final Report of the Truth and Reconciliation Commission of Canada, 2015, page 1.

⁴⁰ See Section 4 for a full discussion of reclamation liability and taxpayer burden.

⁴¹ Province of BC, [Public Accounts 2013/2014](#), page 74.

If mining companies face financial difficulties and seek restructuring under the *Companies' Creditors Arrangement Act (CCAA)*, or otherwise avoid meeting their obligations, even the security the government believes it has access to may not be available.

Provincial and federal legislation is historically reactive to the needs of First Nations, the environment, communities and tax payers. It took public outcry against Enbridge's dysfunctional corporate culture and the risk of the proposed Northern Gateway pipeline to prompt the Clark government to address its substandard hazardous substances spill preparedness and response regime for terrestrial based accidents. The Province acted initially by introducing its five conditions for considering approval for heavy oil pipelines.⁴²

It took the Mount Polley tailings breach for the Province to review its mining related spill risk, set up a committee to evaluate the Mining Code and examine the status of the 123 tailings dams for which the Ministry of Energy and Mines is the responsible regulator.

The Province is also remiss in meeting its obligations under the *Environmental Assessment Act (EAA)* and its duty to consult First Nations regarding proposed resource projects. The BC Supreme Court recently found that the Province cannot waive its right to issue an environmental assessment certificate as required under the EAA, as it attempted to do when it agreed to accept the National Energy Board's review process for the Northern Gateway proposal as equivalent to its own. The court has ruled that that the Province must first issue an EA certificate if Enbridge's Northern Gateway project is to proceed any further. The Court also found that the Province did not fulfill its duty to consult with First Nations when it failed to terminate the Equivalency Agreement that the Environmental Assessment Office (EAO) and the National Energy Board (NEB) had entered into regarding Northern Gateway's environmental assessment.⁴³

On February 29, 2016 the Provincial government introduced amendments to the *Environmental Management Act (EMA)*. These are intended to enhance its responsibility regime for terrestrial spill preparedness and response. The amendments are intended to expand the application of the Polluter Pay Principal by incorporating features that apply in advance of an environmental hazardous release taking place.⁴⁴

However, the *EMA* amendments do not include any mechanism by which responsible parties will have to prove that they are capable of fulfilling the financial liability obligations under the *EMA*. That is, there are no financial assurances required as part of the proposed regime to ensure companies can and will pay for clean up, remediation or compensation, nor is there a fund established through

42 Technical Analysis, [Requirements for British Columbia to Consider Support for Heavy Oil Pipelines](#), July 20, 2012.

43 *Coastal First Nations v. British Columbia (Environment)*, 2016 BCSC 34

44 Bill 21—2016, [Environmental Management Amendment Act, 2016](#)

a levy on industry to provide financial resources in the event the responsible party is unable, or unwilling, to do so.

Therefore, even though the proposed amendments move toward a greater preparedness and response regime for unauthorized environmental harm events, they do not include one of the major features of a sound prevention and response regime—that is, ensuring the financial consequences of an unexpected or unauthorized environmental harm event are internalized to the company that causes them.

EMA amendments took years to design, incorporated public discussion and input from various interest groups, identified the need for financial assurances and funding mechanisms, and yet fall woefully short of what is actually needed.⁴⁵ Not only do the proposed amendments pale in comparison to those that would be “world-leading”, they pale in comparison to recent amendments to federal programs for hazardous discharge such as exist in the *Pipeline Safety Act (PSA)*. It is inconsistent with the facts for BC to refer to its spill preparedness and response regime as “world-leading” when it is not even “nation-leading”.

The federal government’s concern of a lack of social licence for diluted bitumen pipeline projects caused it to introduce the *Pipeline Safety Act (PSA)*. Under the new legislation, by June 2016 federally regulated pipeline companies will be required to prove they are capable of readily accessing financial resources in the amount of \$1 billion to clean up, remediate and compensate losses related to an unauthorized pipeline related spill event.⁴⁶ If, for any reason, a pipeline company is unable to provide adequate financial resources a fund will be created to provide an additional backstop against the public incurring any of the costs. The fund will be financed from industry contributions based on volume of oil shipped.

The discrepancy between existing federal and planned provincial standards gives rise to a huge gap. It would have been quite simple to include in the *EMA* amendments authority to develop a meaningful financial assurances regime for any hazardous discharge event not covered under federal legislation, including a tailings storage facility discharge. The Province has chosen not to.

An oil spill into the BC natural environment from a federally regulated pipeline has a substantially different standard for ensuring the polluter is financially able to respond to the costs of a hazardous substances released into the environment than a similar release of hazardous substances from a provincially regulated facility.

It appears, that unless public pressure is applied to the provincial government to force it to introduce a

⁴⁵ A more detailed discussion is provided in Section 3.4 Current Legislative and Regulatory Developments

⁴⁶ Pipeline Safety Act, [Summary of Purpose](#), Assented to 2015-06-18.

financial assurances mechanism related to hazardous spill events before they happen, that it will take a major or catastrophic tailings pond breach, or similar incident, for which the responsible party is unable or unwilling to pay, before the Province is motivated to act.

Certainly, this is what it took for the Harper government to respond to the inadequacies of liability and compensation regime for railways. The social and environmental tragedy of the rail car explosion in Lac-Mégantic in 2013 exposed Canada's ineffective and underfunded hazardous spill regime for train transport accidents. The polluter was supposed to pay, but mechanisms were not securely established to ensure they could, or would.

Federally regulated railways, like the now-bankrupt Montreal Maine and Atlantic Railroad, were required to carry adequate third party liability as a condition precedent to receiving a certificate of fitness which allowed them to operate. However a railway's insurance was determined on a case-by-case basis as to whether it was adequate in accordance with the Railway Third Party Liability Insurance Coverage Regulations administered by the Federal Ministry of Transport.

Montreal Maine and Atlantic Railroad had inadequate insurance to provide compensation for the Lac-Mégantic tragedy where exploding rail cars led to the deaths of 47 people. The disaster gave rise to more than 4,000 claimants with 25 companies agreeing to contribute \$450 million to a settlement fund. Public funds provided so far by the government of Canada have amounted to more than \$155 million.⁴⁷ Clearly the regime, which was said to have ensured adequate insurance as a condition of operation, failed Canadians.

On June 18, 2015 the *Safe and Accountable Rail Act* received Royal Assent. The legislation makes amendments to the *Canada Transportation Act* designed to create a new liability and compensation regime for federally regulated railways hauling crude oil and related fuels. These amendments impose mandatory compensation for rail accidents.⁴⁸ The requirements come into force in June 2016. The new regime makes liability for rail accidents a shared responsibility between railways and the companies who ship dangerous goods along them.

The amendments "set new minimum insurance requirements, create a compensation fund financed by levies on crude oil shippers, increase information-sharing provisions, and provide stronger oversight powers for the Minister and Transport Canada inspectors. In particular, shippers of crude oil will be required to pay a levy per tonne of crude oil shipped to build up a supplementary fund to pay for damages that may exceed a railway's minimum insurance level, should an accident involving crude oil occur (i.e. a pre-incident levy)".⁴⁹

47 Transport Canada, [Support for the people of Lac-Mégantic](#)

48 [Liability and compensation regime under the Safe and Accountable Rail Act](#), Transport Canada

49 [Pathways: Connecting Canada's Transportation System to the World, Volume 1](#), Canada Transportation Act Review, page 138.

The legislative and regulatory regime in Canada, as well as in BC, has been aggressively pro-industry and unacceptably re-active. Only when serious events occur—bringing with them significant costs, including loss of life, livelihood, and the environment—are legislators moved to take action. Often the action they take is insufficient to effectively deal with the underlying problems or the risk to the public interest.⁵⁰

While the new approach imbedded in the *Canadian Transportation Act* addresses risks associated with oil by rail transport, it fails to provide the same requirements for other dangerous goods. This inconsistency in spill preparedness and response regimes leaves a gap in protection and prevention.

The transport of all dangerous goods require a similar regime, otherwise differing standards of practice in moving oil versus chlorine or ammonia will develop and lead to different levels of risk and consequence. These shortcomings in the new legislation were identified in the Canada Transportation Act Review released February 25, 2016.⁵¹ Refreshingly, Transport Minister Marc Garneau has promised to move quickly on the report's recommendations and introduce measures that would expand the scope of the regime and establish a group insurance system to ease the burden on short-line railways.⁵²

The expert engineers report commissioned by the provincial government on the causes of the failure at Mount Polley has warned that two tailings facility breaches can be expected every ten years with an 87 percent probability of at least one failure in the next decade.⁵³ Even this dire warning has failed to prompt BC policy makers to ensure that when those events happen, responsible parties can, and will, pay.

Provincial policy makers seem unable to recognize that a robust financial assurances model for unanticipated events leads to fewer such events. If accident prevention and the protection of people and the environment were the priority the government claims it to be, a financial assurances model would have accompanied recent amendments to the *EMA*.

The absence of a meaningful financial assurances mechanism that internalizes potential costs onto polluters so polluters actually pay, increases the risk of spill events such as Mount Polley's tailings breach. The absence of such a mechanism also provides mining operators who cause unexpected occurrences an opportunity to avoid legislated obligations when their financial resources prove insufficient. The revised regime in BC is not a reflection of "world-leading" requirements based on the Polluter Pay Principle—it is not even "nation-leading". The polluter ends up paying only if they are willing and able to do so.

50 [Pathways: Connecting Canada's Transportation System to the World, Volume 1 and 2](#), Canada Transportation Act Review

51 *Ibid*, Volume 1, page 138

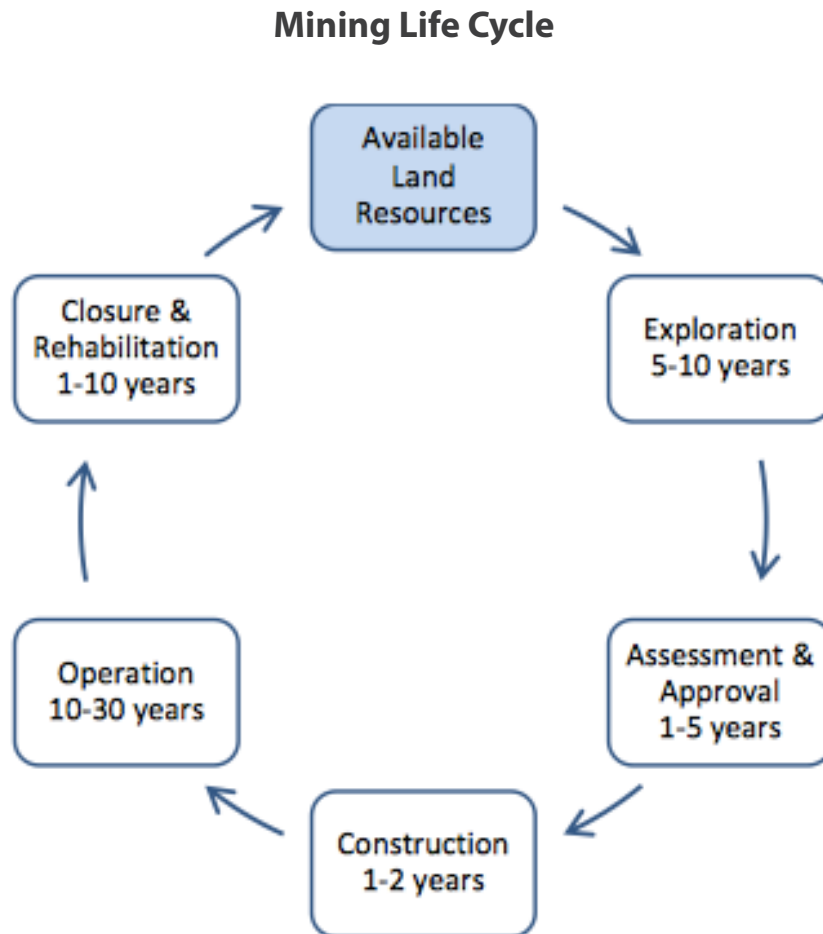
52 [Toughen rules for moving dangerous goods by rail, federal government told](#), *Globe and Mail*, Eric Atkins, February 25, 2016.

53 Independent Expert Engineering Investigation and Review Panel Report on Mount Polley Tailings Storage Facility Breach, [Appendix I: B.C. Tailings Dam Failure Frequency and Portfolio Risk](#), page 10.

3. Legislative and Regulatory Framework

The legislative and regulatory framework for mining projects in BC encompasses the mine’s life cycle including the prospecting/exploration phase through assessment and approval of mine development, onto construction, operation and closure.

Figure 1

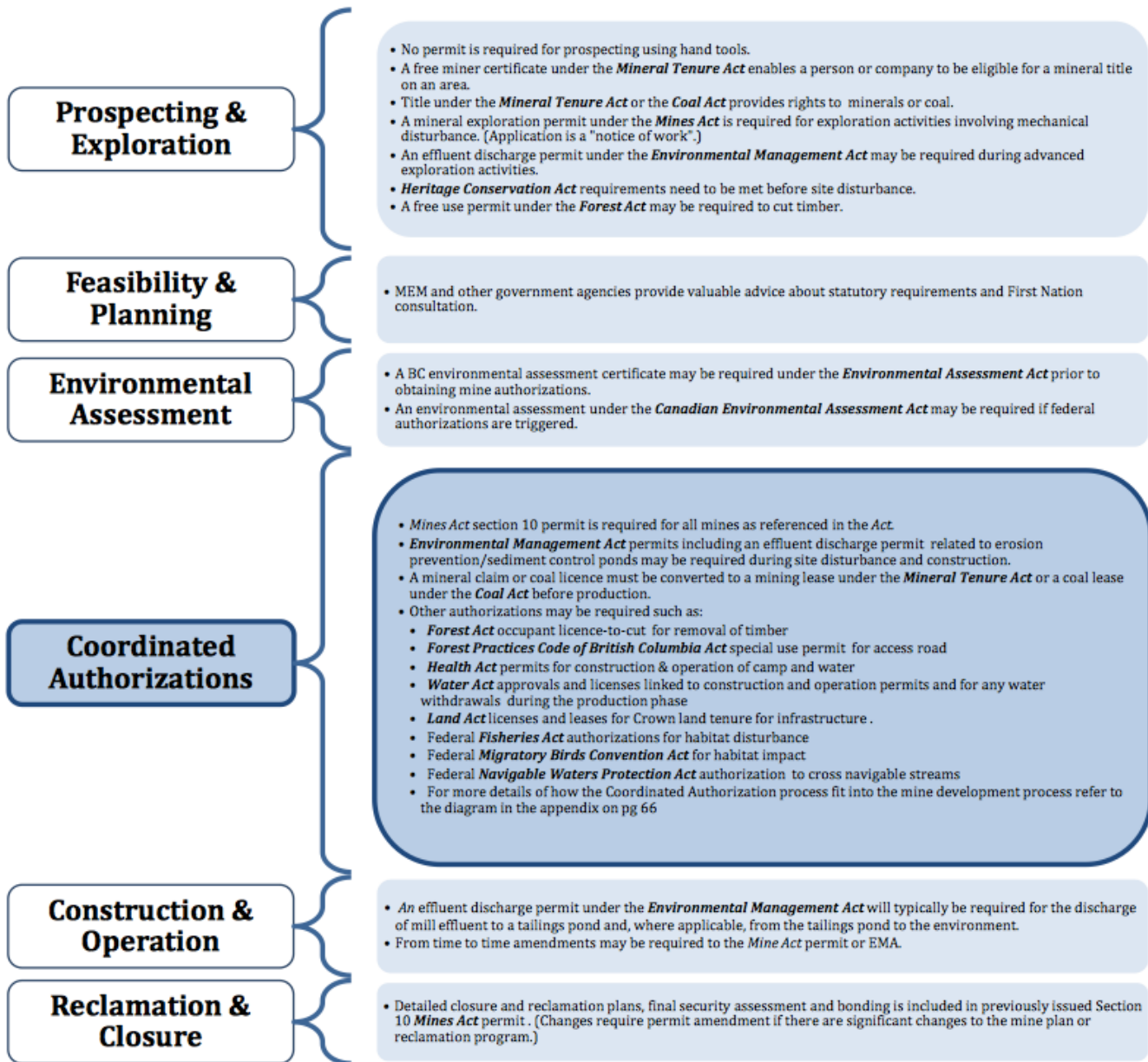


Source: Ministry of Energy and Mines

In theory, and under ideal circumstances, a mining project will end with the land being returned to its pre-mined state or acceptable alternative use state, with all the costs of authorized, and unauthorized, environmental harm borne by the mine operator. There are a myriad of enactments falling under the authority of various federal and provincial ministries which are designed to facilitate this process, as illustrated in Table 4 below.

Table 4

Life Cycle Regulatory Framework for Major Mines in BC



Source: Ministry of Energy and Mines

Mining practices in BC are regulated by three main provincial statutes:

1. the ***Environmental Assessment Act (EAA)***⁵⁴ sets out the rules for approving mine development and provides a mechanism for reviewing major mine projects to assess their potential impact. The Environmental Assessment Office (EAO) manages the assessment process under the Act. The assessment process examines for potentially adverse environmental, economic, social, heritage and health effects that may occur during the life cycle of mining projects;
2. the ***Environmental Management Act (EMA)***⁵⁵ sets out general environmental protection standards and controls the handling, disposal and release of wastes from industrial, provincial and municipal sources. The *EMA* was brought into force on July 8, 2004. The Act replaces the old *Waste Management Act* and the *Environment Management Act* and brings provisions from both of those acts into one statute. *EMA* also enables the use of administrative penalties, informational orders and economic instruments to assist in achieving compliance with new provisions for spill preparedness and response introduced in February 2016; and
3. the ***Mines Act (MA)***⁵⁶ regulates the construction, operation and closure of mines along with health and safety. The regulations and orders under this Act, including the Health Safety & Reclamation Code for Mines in British Columbia (Mine Code), prescribe most aspects of mine design and operation, such as the stability of mine openings, dams and enclosures. The legislation also addresses the prevention of pollution, such as from acid rock drainage (ARD). Requirements under the *MA* are intended to prevent and ensure polluter funding to remediate ADR at BC mines.

Mining regulation can also involve the federal government. Depending upon the nature of the mining project, or its environmental impact, the *Canadian Environmental Assessment Act (CEAA)*, *Canadian Environmental Protection Act (CEPA)*, *Fisheries Act*, *Navigable Waters Protection Act* and *Migratory Birds Act* can be engaged.

The Mineral Titles Branch of the Ministry of Energy and Mines administers legislation governing the acquisition, exploration and development of mineral, placer mineral and coal rights in the Province. The Branch maintains the coal and mineral titles registries under the *Mineral Tenure Act*, *Coal Act* and regulations under these Acts.

In 1969 mine reclamation legislation was introduced in an attempt to ensure that the cost and remediation of environmental disturbance during the mining life cycle would be borne by the mine

54 [Environmental Assessment Act](#)

55 [Environmental Management Act](#)

56 [Mines Act](#), [Mines Act Permit Regulation](#), [Mineral Tenure Act](#), [Mineral Tenure Act Regulation](#), [Coal Act](#)

operator. Prior to that time, there was no requirement that the lands disturbed by mining activity be returned to their pre-existing state or that they be required to be turned into an acceptable, alternative-use, state.

3.1 Orphaned and Abandoned Contaminated Sites

Today the cost and consequence for unregulated disturbance from early mining activity is being borne by BC taxpayers, local communities, and the environment. The Province has accepted liability for a number of the orphaned or abandoned mine sites that exist in the province through the Crown Contaminated Sites Program (CCSP) administrated by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO). CCSP considers mine sites, landfills, pulp mills, highways yards, oil and gas sites, and other industrial sites, but 90 percent of the program's focus is on the identification and remediation of historic mine sites.⁵⁷ There are approximately 2000 historic mine sites in the province.⁵⁸

The Crown Contaminated Sites Program was the result of the Province responding to a Report of the Auditor General in 2002.⁵⁹ The Auditor General recommended that a lead agency be identified to oversee development and implementation of a contaminated sites program, a prioritization process be developed for site identification, and an accountability framework be established to disclose environmental liabilities, expenditures and information about decontamination accomplishments.

CCSP was introduced in 2003. For more than a decade, with a relatively small staff complement, and relatively limited funding, CCSP has been addressing the myriad of orphaned or abandoned contaminated sites throughout the province. These sites are a result of primarily mining activity. The program is subject to the requirements of the *EMA* and Contaminated Sites Regulation.

Properties are introduced into the CCSP only when no responsible person can be found and the site, in many instances, has been inherited by the Crown. Among the sites CCSP has addressed are Britannia copper mine, Howard gold-silver-lead mine, Midway lead-zinc mine and Bralorne Takla mercury mine.⁶⁰

The Crown Contaminated Sites Program is funded by general revenues. In 2014 the liability estimate for future site costs was \$110 million.⁶¹ The program issues a biennial report with its next report expected for release in April 2016. An updated figure regarding the Province's future liabilities and

57 [British Columbia Crown Contaminated Sites Program](#), Managing Mining Legacies Forum, July 16, 2012.

58 [Jurisdictional Update](#), British Columbia Ministry of Agriculture and Lands, NOAMI Workshop on Best Practices for Orphaned and Abandoned Mines October 26-27, 2006

59 Office of the Auditor General, [Follow-up of 2002/2003 Report 5](#), Managing Contaminated Sites on Provincial Land, page 11.

60 Crown Contaminated Sites Program, [Biennial Report 2014](#).

61 *Ibid.*, page 6.

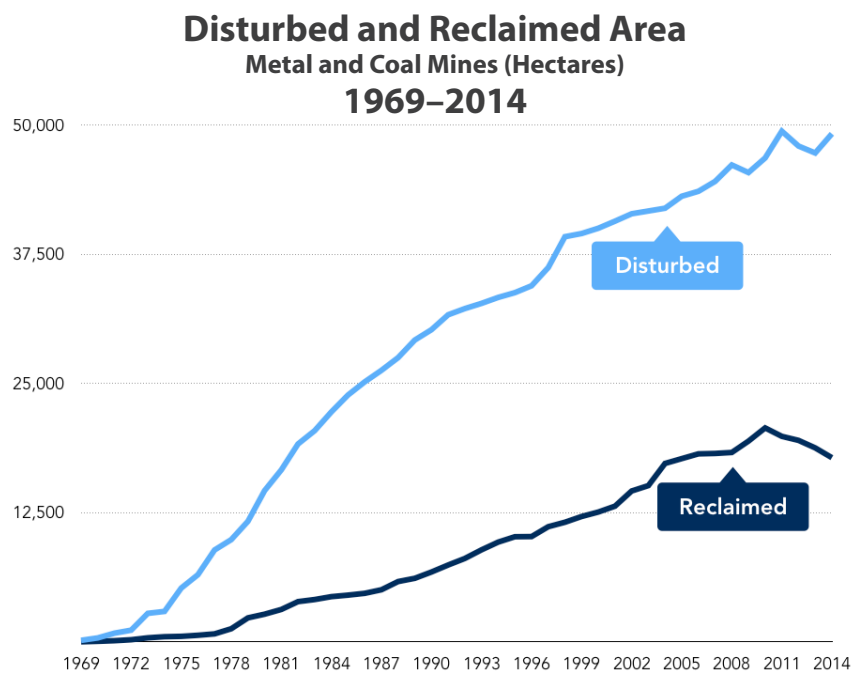
program spending should be available in the report.

Mining sites represent 75 percent of future clean up costs estimated to date for all sites the government owns, or has responsibility for, including sites under the CCPS. In 2015, the Public Accounts provided an estimate for future clean up cost of all contaminated mine sites of \$275 million.⁶² The provision for future costs is an estimate of the “minimum remediation costs for known sites where an assessment has been conducted, or where available information on sites is sufficient to estimate costs.”⁶³ Numerous other sites the Province is responsible for exist, but have not been assessed and remediation costs have not been estimated. Taxpayer liability is for much more than the reported figures.

3.2 Mine Reclamation

In addition to environmental clean up responsibility for contaminated sites the Province owns, the Province potentially has responsibility for sites it does not own. The *MA* and the Mining Code, Section 10, require all mining operations to carry out a program of environmental protection and reclamation. The intent is to ensure that upon closure, land watercourses and cultural heritage resources can, and will be, returned to a safe and environmentally sound state.

Graph 4



Source: Ministry of Energy and Mines

62 Province of British Columbia, [Public Accounts 2014/2015](#), Ministry of Finance, Office of the Comptroller

63 Province of British Columbia, [Public Accounts 2014/2015](#), Notes to Consolidated Financial Statements, Note 27, Contingencies and Contractual Obligations, page 75.

Major BC coal and metal mines occupied less than 1,000 hectares of land in 1969. A hectare is 100 metres by 100 metres—or about 2.5 acres—the size of an international rugby field. By 2014, fully 49,165 hectares had been disturbed by mining activity with 17,810 hectares reclaimed—or 35 percent. Reclamation is defined by the Ministry of Energy and Mines as revegetation being successfully established for more than a year.⁶⁴

The Ministry has authority, at the discretion of the Chief Inspector of Mines, to require reasonable assurance that the Province will not have to contribute to the costs of reclamation if the mining company defaults on its reclamation obligations. The Chief Inspector can require that the permit holder post financial security in an amount, and in a form, acceptable to the Chief Inspector. This security is held by the government until reclamation requirements for the operation have been fulfilled.

The assessment of financial security—its form and amount—is done on a site-by-site basis. The Chief Inspector of Mines states the following forms of reclamation security are acceptable: cash, certified cheques, bank drafts, term deposits (i.e., GICs), Government of Canada bonds and irrevocable standby letters of credit (ISLOCs).⁶⁵ However, other sources show the Chief Inspector will accept surety bonds and mining equipment as acceptable forms of assurance.⁶⁶

Companies are required to estimate reclamation costs for the remediation of lands disturbed through their mining activities. This responsibility is documented as part of the permitting process. Once operating, companies are required to file a revised reclamation estimate along with a reclamation report on an annual basis with the Ministry of Energy and Mines.

The Mine Code expands on the requirements of Section 10 of the *MA* where financial assurances are authorized. The Mine Code, Section 10 (4) states that:

*“The chief inspector **may**, as a condition of issuing a permit under subsection (3), require that the owner, agent, manager or permittee give security in the amount and form, and subject to conditions, specified by the chief inspector*

(a) for mine reclamation, and

(b) to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine.” (emphasis added)

Section (5) provides discretion for the Chief Inspector to add to the security through the life of the mine and specifically states that it is for the purpose of ensuring there will be money available to perform reclamation.

⁶⁴ [Annual Report of the Chief Inspector of Mines](#), 2014, Ministry of Energy and Mines, page 29.

⁶⁵ Ministry of Energy and Mines, [Reclamation, Costing and Security](#)

⁶⁶ See Section 5 for further discussion of hard and soft security.

*“(5) **If required** by the chief inspector, the owner, agent, manager or permittee, in each year, must deposit security in an amount and form satisfactory to the chief inspector so that, together with the deposit under subsection (4) and calculated over the estimated life of the mine, **there will be money necessary** to perform and carry out properly*

(a) all the conditions of the permit relating to the matters referred to in subsection (4) at the proper time, and

(b) all the orders and directions of the chief inspector or an inspector respecting the fulfillment of the conditions relating to the matters referred to in subsection (4).”
(emphasis added)

The discretion afforded the Chief Inspector to determine the amount and form of security for reclamation and damage mitigation is a serious weakness in the regime and has resulted in an inability for the Province to make good on effecting the principle that the polluter pay.

Although the Mine Code says there will be money necessary to carry out the conditions of the permit, mine reclamation, and to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine, this is not the case in far too many instances. The mechanism is not working. Public liability is growing.

Mining reclamation activity on property the BC government does not own, but for which there is an obligation to remediate, is a potential financial burden for the public. The MA provides that in the event a site is abandoned—where mineral claims have reverted to the Province—the cost of reclamation is to be borne by the consolidated revenue fund.⁶⁷ There is no charge levied on the industry to create a fund for mines permitted after 1969 such that in the event a mine operator is unable or unwilling to pay for reclamation of its site, the industry, and not the public, bears the cost.

When legislation was introduced in 1969 the maximum bonding was \$500 per acre. In 1975, the limit was raised to \$1000 per acre. In 1989, the limit was removed. In 1992 Cassiar Mine went into receivership and the Province held \$60,000 in security. The liability was \$5 million. Westar Mines went into receivership and the Province held \$600,000 in security. The liability was estimated to be \$20 to \$30 million.⁶⁸

These corporate failures and potential burden on public funding led to a policy decision by the Province to reduce the reclamation risk to British Columbians. In 1996 it was estimated that the Province held \$140 million in bonds against a liability of \$400 million. The Province set a policy to

⁶⁷ Mine Code, Section 17 (2).

⁶⁸ Fourth International Conference on Acid Rock Drainage, [Short Course for Bonding and Security for Mines with ARD](#), June 1, 1997

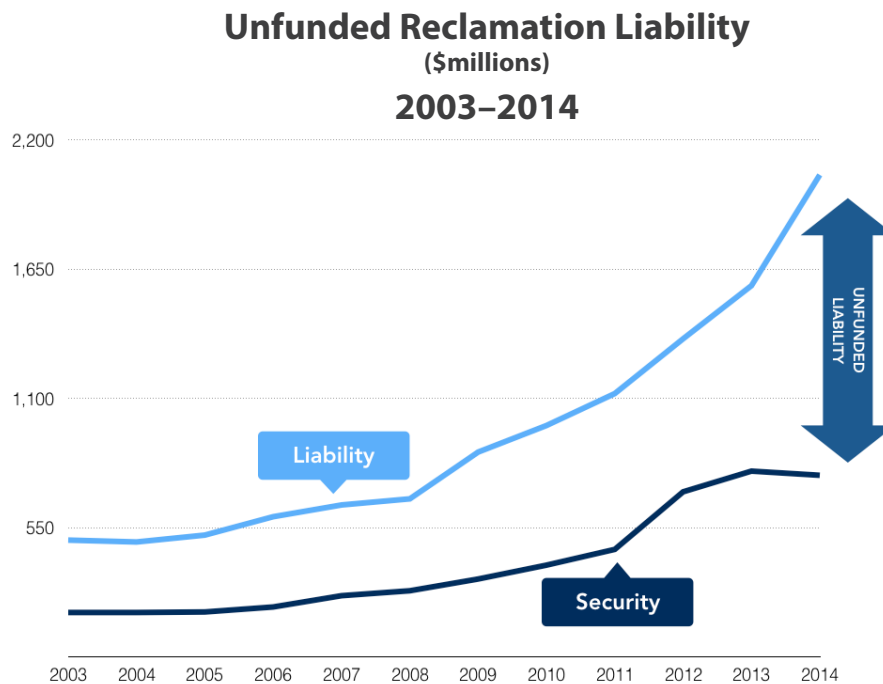
have full security in place by 1997.⁶⁹ “A policy of full security (equals hard security) minimizes the province’s financial exposure. It also provides mining companies with the right incentives to do progressive, efficient reclamation work and to seek out innovative technologies and reclamation methods.”⁷⁰

This goal of full funding was not reached; instead the unfunded reclamation liability continued to grow. In 2014, it is estimated the Province held \$723 million in security against a liability in excess of \$2 billion.⁷¹

The Ministry knows that mining is cyclical and that the fortunes of mining companies are volatile and unpredictable. The power afforded the Chief Inspector in the *MA* should have been relied upon to ensure companies posted sufficient funds. It has not. The time to make use of the power afforded the Chief Inspector’s Office is when mining returns are robust. An increase in security requirements is more difficult when the industry is in a significant downturn, as is currently the case.

The Ministry of Energy and Mines has not protected British Columbians from a huge contingent liability for mine reclamation costs related to mines that began operating post 1969, as was intended in the legislation and through regulations.

Graph 5



Source: Public Accounts and Chief Inspector of Mines Annual Report

69 Mine Reclamation Security Policy in British Columbia, A Paper for Discussion, February 1995, page 27

70 Ibid., page 26.

71 Security held by the Province \$723 million plus unfunded liability \$1,278 million = \$2,001 million for 2014. The obligation is larger in 2015, but figures are not publicly available.

The spate of mining closures in recent years promises a marked increase in mandated reclamation activity since the majority of reclamation takes place after a mine has ceased operations. It is expected that with the recent increased incidence of mine closures, and mine company failures, that the unwillingness, or inability, of mine operators to make good on their reclamation obligations will also increase.

Information regarding mine reclamation obligations, the cost of these obligations, and the security posted to honour them, is not made publicly available by the Chief Inspector's Office and therefore it is not possible to properly assess the magnitude of the liability the public actually faces in 2015, or will face into the future. The Ministry of Energy and Mines should be required to disclose this information.

In 2013 the Province of Quebec made amendments to its mining legislation and regulations to significantly reduce the risk that the Province will inherit mine sites in need of reclamation and remediation without having the funds to do so. Quebec requires full funding of the estimated reclamation work for the entire mine site. The total amount of guarantee must be deposited over a two year period once a mine reclamation plan is approved. Mining companies that were already active when the requirements were introduced were granted a three year period to provide full security.

In addition, the Quebec Ministry of Natural Resources is required to publish the annual rehabilitation and restoration plans approved by the Minister for mining companies and the total amount of the financial guarantee required and provided.⁷²

In the Province of Ontario, the Ontario Auditor General's report on the growing environmental liability of mine sites in that province recommended that the public be informed on the potential liabilities related to mine close-out costs. The report states that the Ontario Ministry of Northern Development and Mines should annually publish the approved mine closure plans for rehabilitation and restoration including the estimated closure cost associated with financial assurances held by the Ministry. In response, the Ministry has stated that it is "committed to Open Government and will consider the Auditor General's recommendation and explore approaches for informing the public about potential liabilities."⁷³

72 Quebec Ministry of Natural Resources Report on Mineral Activities in Quebec 2014, Chapter 7, [Mine Site Rehabilitation](#), February 2015.

73 Auditor General of Ontario, 2015 Annual Report, Chapter 3, [Ministry of Northern Development and Mines, Mines and Minerals Program](#), page 460.

3.3 Environmental Pollution from Active Mines

Another type of environmental harm that can, and does, occur in and around mine sites is related to environmental pollution or contamination as defined by the *EMA*. Examples of these events include the discharge from the recent breach of the Mount Polley tailings facility owned by Imperial Metals and the ongoing problems with selenium leaching at Brule coal mine owned by Walter Energy Canada.⁷⁴ These occurrences fall under the purview of the *EMA*, but the Ministry of Energy and Mines takes the lead.

The *EMA* defines “remediation” as meaning “action to eliminate, limit, correct, counteract, mitigate or remove any contaminant or the adverse effects on the environment or human health of any contaminant...”⁷⁵

Under the *EMA*, Section 47 (1), a person responsible for remediation of a contaminated site is absolutely, retroactively and jointly and separately liable to any person or government body for reasonably incurred costs of remediation to the contaminated site, whether incurred on or off the contaminated site.

However, there is no requirement for a party to satisfy the regulators that they have the capacity to pay for unintended environmental harm their actions may cause prior to causing it. So although a responsible party is required to pay for the damage they cause they may not be willing or able to cover the cost of responding to, cleaning up and remediating that harm. Even if the party were to be taken before the courts and a judgement made in favour of the Crown, the judgement becomes meaningless if it is a “dry judgement”—an order to pay, but no financial resources to do so.

3.4 Current Legislative and Regulatory Developments

In July 2012, the Province released a position paper with five conditions it said must be met for it to consider approval of heavy oil pipelines. The technical analysis paper was a response to environmental spill risk concerns related to heavy oil pipeline proposals.⁷⁶ The conditions include:

1. Successful completion of the environmental review process;
2. World-leading marine oil spill response, prevention and recovery systems for B.C.’s coastline and ocean to manage and mitigate the risks and costs of heavy oil pipelines and shipments;
3. World-leading practices for land oil spill prevention, response and recovery systems to manage and mitigate the risks and costs of heavy oil pipelines;

⁷⁴ [First Affidavit of William G Harvey](#), Sworn December 4 2015, Proceedings under the CCAA, paragraphs 57 and 58.

⁷⁵ [Environmental Management Act](#), Definitions

⁷⁶ Technical Analysis, [Requirements for British Columbia to Consider Support for Heavy Oil Pipelines](#), July 20, 2012.

4. Legal requirements regarding aboriginal and treaty rights are addressed and First Nations are provided with the opportunities, information and resources necessary to participate in and benefit from a heavy oil project; and
5. British Columbia receives a fair share of the fiscal and economic benefits of a proposed heavy oil project that reflects the level, degree and nature of the risk borne by the province, the environment and taxpayers.

The technical paper laid bare the Province's weak terrestrial spill preparedness and response regime—not only for pipeline related releases, but for all potential sources of hazardous materials spills, including those that occur at mine sites. The technical paper served as an initial outline of needed policy direction.

In November 2012, the Province released a policy intentions paper for public consultation and sought comment on a proposed general framework for a “world-leading” land based spill preparedness and response regime that would extend to hazardous substances beyond the transport of heavy oil.⁷⁷

In March 2013 the Province held a three day policy symposium to identify and evaluate spill preparedness and response regimes and practices.⁷⁸

In April 2014, the Province released a second policy intentions paper. The paper sought comment on a more defined proposal built around three key features: implementing new preparedness, response and restoration requirements, creating a provincially regulated and industry funded “provincial response organization” (“PRO”), and enhancements to the existing Provincial Environmental Emergency Program.⁷⁹

The June 12, 2015 mandate letter from the Premier to the Minister of Environment directed the Minister to complete the land-based spill studies and consultations and make a recommendation to Cabinet as to how to implement a new land based spill regime.⁸⁰

On June 15, 2015, the Minister of Environment announced the Province's intention to implement a new land-based spill regime. Legislation was expected for the spring 2016, with the new regime becoming operational in 2017.⁸¹ The Ministry identified the key principles upon which the regime would be based:

77 [Land Based Spill Preparedness and Response in British Columbia](#), Policy Intentions Paper for Discussion, Ministry of the Environment.

78 2013 Land-Based Spill Preparedness and Response Symposium, March 25 - 27, 2013.

79 BC, Past Spill Regime Consultation, Second Intentions Paper—Land-Based Spill Preparedness and Response in BC 2014.

80 [Mandate letter](#), Clark to Polak, June 12, 2015

81 BC Government News, [BC to move ahead on world-leading spill response](#)

1. Polluter pays - this principle is already in effect in B.C. and will not change. Companies that spill or pose the risk of having a spill should be responsible for the costs associated with preparing for and responding to a spill.
2. Risk-based requirements - all spillers will be required to meet new response requirements. The requirements for planning and preparedness will be based on a defined risk threshold which will consider toxicity and volume.
3. Avoids unnecessary duplication - recognizing there are some effective and collaborative spill response procedures in place in certain sectors, supplementation is still required to ensure environmental protection and also ensure British Columbia's system can be considered world-leading.
4. Fair and transparent process - government has committed to continued dialogue through consultation on the development of new legislation and regulations.
5. Opportunities for First Nations and communities in preparedness, response and recovery - active engagement by First Nations and communities on all aspects of a world-leading system are considered key to the successful design, implementation and operations.
6. Strong government oversight - new requirements will provide both clarity and certainty for spillers, meet public and First Nations expectations and maximize the protection of the environment.
7. Continuous improvement - government is committed to continuous improvement ensuring a sustainable world-leading system by applying lessons learned from exercises, incidents and other jurisdictions. Additionally, any technological innovations will continue to be adopted.⁸²

On January 22, 2016, a third round of public consultations was announced. They are slated to begin once a third intentions paper is completed.

On February 29, 2016 Environment Minister Polak introduced Bill-21—amendments to the EMA—for first reading.⁸³ The amendments are intended to impose:

- i. obligations for the preparation, review, updating and testing of spill contingency plans;
- ii. obligations for responsible parties to take necessary actions to clean up and recover from the spill;
- iii. requires compensation if the damage cannot reasonably be mitigated at the locations affected by a spill;

⁸² Ibid.

⁸³ Bill 21—2016 Environmental Management Amendment Act.

- iv. requires a certificate of recovery when recovery of a spill is complete;
- v. allows the government to respond to a spill if the person responsible does not take the appropriate actions;
- vi. allows certification of organizations that can provide spill preparedness and response services; and
- vii. requires the minister to make reports to the Legislative Assembly on the effectiveness of the spill response program.

The Ministry has clarified that the third intentions paper will summarize the legislation and there will be an opportunity for public comments. As well, a two-day consultation workshop is planned for April 2016 along side a series of regional meetings with First Nations. It is intended that this process will inform the development of regulations. Technical working groups will be formed to further review specific content areas.⁸⁴

Notwithstanding the significant need to introduce a more robust spill preparedness and response regime, the Ministry has not met its first stated design principle—that the polluter pays. There is nothing in the proposed amendments that suggest responsible parties will be required to prove they can live up to their obligations to clean up and remediate from a spill, or pay compensation to third parties who may suffer losses as a result of a spill. There is nothing in the proposed amendments to suggest that a fund will be available to cover costs, including legitimate claims, in the event a company is unable or unwilling to do so. The Province is ignoring the important role a financial assurances mechanism plays in supporting prevention of, and response to, unintended environmental harm. It is leaving taxpayers on the hook.

On August 4, 2014 the largest tailings breach in BC's history occurred at the tailings storage facility at the Mount Polley mine near the town of Likely.

Three separate provincial and a federal investigation into this incident were launched: an independent expert engineering panel was established to determine the root cause of the breach, the Chief Inspector of Mines undertook an investigation as authorized under the MA, and the Ministry of Environment British Columbia Conservation Officer Service is conducting investigations. Federally the Department of Fisheries is investigating over potential violations of environmental laws.

The two reports released to date—the expert engineers' and Chief Inspector's—have identified significant problems in the prevention, preparedness and response regime which a financial assurances mechanism would help solve. However, there appears to be no political will within the follow-up initiatives to establish a financial assurances mechanism as part of the remedy.

⁸⁴ BC, [Current Spill Regime Consultation](#)

The independent expert engineering panel delivered its report and recommendations on January 30, 2015 to the British Columbia Minister of Energy and Mines, the Williams Lake Indian Band and the Soda Creek Indian Band.⁸⁵ The Panel concluded that business as usual cannot continue and a path to zero failures must be pursued. It made seven recommendations.

“Recognizing that the path to zero failures involves a combination of best available technology (BAT) and best applicable practices (BAP), the Panel recommends the following:

1. 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.
2. To improve corporate governance: Corporations proposing to operate a tailings storage facility (TSF) should be required to be a member of the Mining Association of Canada (MAC) or be obliged to commit to an equivalent program for tailings management, including the audit function.
3. To expand corporate design commitments: Future permit applications for a new TSF should be based on a bankable feasibility that would have considered all technical, environmental, social and economic aspects of the project in sufficient detail to support an investment decision, which might have an accuracy of $\pm 10\%$ – 15% . More explicitly, it should contain the following:
 - a. A detailed evaluation of all potential failure modes and a management scheme for all residual risk .
 - b. Detailed cost/benefit analyses of BAT tailings and closure options so that economic effects can be understood, recognizing that the results of the cost/benefit analyses should not supersede BAT safety considerations.
 - c. A detailed declaration of Quantitative Performance Objectives (QPOs).
4. To enhance validation of safety and regulation of all phases of a TSF increase utilization of Independent Tailings Review Boards.
5. To strengthen current regulatory operations:

⁸⁵ Mount Polley Independent Expert Investigation and Review Report, [The Panel Report](#)

- a. Utilize the recent inspections of TSFs in the province to ascertain whether they may be at risk due to the following potential failure modes and take appropriate actions:
 - I. Undrained shear failure of silt and clay foundations
 - II. Water balance adequacy
 - III. Filter adequacy
 - b. Utilize the concept of QPOs to improve Regulator evaluation of ongoing facilities.
6. To improve professional practice: Encourage the APEGBC to develop guidelines that would lead to improved site characterization for tailings dams with respect to the geological, geomorphological, hydrogeological and possibly seismotectonic characteristics.
 7. To improve dam safety guidelines: Recognizing the limitations of the current Canadian Dam Association (CDA) Guidelines incorporated as a statutory requirement, develop improved guidelines that are tailored to the conditions encountered with TSFs in British Columbia and that emphasize protecting public safety.”⁸⁶

The Minister, Energy and Mines, appointed a Code Review Committee to implement the recommendations.⁸⁷ The Committee is chaired by the Chief Inspector of Mines and includes representation from First Nations, mine labour unions and industry. Representation from environmental groups and communities was rejected. A public comment period was included which closed October 16, 2015. The review consists of three separate committees: an overarching Code Review Committee and two sub-committees that will provide technical reviews for the TSF and the Health and Safety sections of the code. A financial assurances mechanism does not appear to be incorporated into the Code Review Committee’s agenda.

The Chief Inspector of Mines report was issued on December 17, 2015 and included 19 recommendations including designation of a dam safety manager, that mines be required to appoint independent review boards for dam designs and operation, and that a dedicated investigation and enforcement team, led by a newly-created position of deputy chief inspector of mines, be established.⁸⁸

Although the report found that there were poor administrative practices that contributed to the breach, and that Mount Polley Mining Corporation did not meet its responsibility to maintain a safe structure, the Chief Inspector decided not to forward charges to the Crown as he could find

86 [Mount Polley Independent Expert Investigation and Review Report](#), page 139-140

87 [Government appoints Mining Code Review Committee members](#), Press Release, June 24, 2015

88 [Mount Polley Mine Tailings Storage Facility Breach Investigation](#), [Report of the Chief Inspector of Mines](#), November 30, 2015

no evidence of non-compliance with the Act. The Minister has confirmed support for the Chief Inspector's recommendations.

On February 25, 2016 Minister Bennett introduced Bill 8—*Mines Amendment Act 2016*. It received second reading on March 3, 2016. The amendments authorize the “chief inspector to impose administrative penalties on a person after giving that person an opportunity to be heard and grants a person the right to appeal to an appeal tribunal the imposition of an administrative penalty.”⁸⁹ Had the amendments been in place prior to the Mount Polley disaster, Imperial Metals might have been faced with administrative penalties.

None of legislative amendments in Bill 8 speak to a requirement for mining operators to put up full security commensurate with the risk to the environment and communities that they pose.

A financial assurances mechanism that increases requirements to post security in advance of a violation of the *MA* would assist in achieving the goals imbedded in both reports—that a Mount Polley type of event “never happens again”. Financial assurances related to risk would incentivize best practices and technologies and result in fewer events. However, none of the initiatives that would implement the 26 recommendations suggest that the creation of a financial assurances mechanism is being contemplated.⁹⁰

⁸⁹ Bill 8—*Mines Amendment Act 2016*

⁹⁰ Update on Implementation of Recommendations from the Expert Panel Report and the Chief Inspector of Mines Investigation Report

4. Risks to our Economy, Society and the Environment

Effectively there are two types of environmental harm events that occur from mining exploration and extraction: authorized and unauthorized.

In the case of Imperial Metal's Mount Polley Mining Corporation, the reclamation plan approved by the Ministry of Energy for the mine's tailings pond is authorized environmental harm, whereas Mount Polley's tailings facility breach was an unauthorized environmental harm event.

The appropriate policy solution to prepare for, mitigate and respond to, both these types of environmental impacts are related, particularly when it comes to ensuring that adequate financial resources are available to pay for the associated costs.

It is now generally accepted by many legislative authorities throughout the world that the cost of repairing damage done to the natural environment should be fully covered by the party that causes the harm whether they are authorized or unauthorized environmental impacts. That is, the operator should be required to respond to, clean up, remediate, restore and compensate environmental harm regardless of why, or how, it is caused. In order to do so, the operator must have sufficient financial resources such that these costs are not borne by taxpayers or left unaddressed, and thus borne by the environment and surrounding community.

Originally expressed in the 1992 Rio Declaration as a set of broader principles to guide sustainable development, the Polluter Pay Principle is an environmental policy that requires the costs of pollution be borne by those who cause it.⁹¹ In effect, the Polluter Pay Principle assists in determining how the costs of pollution, its prevention, and control, must be allocated. Simply put, it is the polluter who should pay.

The Polluter Pay Principle has, to a limited extent, been incorporated into BC's resource development and environmental protection framework. The stated intent of BC's legislation and regulations is that the polluter pay for intended or unintended environmental harm caused as a result of its activities.

Despite assurances by the Province that BC adheres to the Polluter Pay Principle for mining related environmental harm, the principle is only adhered to if the polluter actually pays. If the mining operator is unable or unwilling to pay for authorized or unauthorized environmental damage then taxpayers are left to pick up the tab, and/or the environment and local community are saddled with the un-remediated consequences.

⁹¹ United Nations, [Report of the United Nations Conference on Environment and Development](#), Principle 16 of the Rio Declaration 1992 states: "National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment."

The intent of the Polluter Pay Principle may be present in BC's legislation, but an effective regime to ensure it is successfully upheld, is not. BC's regime falls woefully short in two major ways:

i. Unfunded Liability for Reclamation and Contamination Means the Polluter May not Pay:

Although legislative authority exists for the Ministry of Energy and Mines through the Chief Inspector of Mines to require security commensurate with mine reclamation cost over the life-cycle of the mine, mine operators have been required to post security that is much lower than their obligations. This has created a significant unfunded liability of \$1.3 billion in 2014; and

ii. Absence of a Financial Assurances Mechanism for Accidents Means the Polluter May not Pay: The absence of any financial assurances mechanism that would guarantee that each permitted mining operator is able to pay for the costs of any, and all, unauthorized environmental harm events that may arise as a result of their operations, exposes the public to the risk of paying for unexpected environmental harm events.

If the current regime continues, BC taxpayers can expect an increasing obligation for the authorized and unauthorized environmental harm caused by mining companies while their shareholders continue to benefit from the Province's lax regime. Not only is this in direct contrast to the intent of the Polluter Pay Principle that seeks to internalize environmental externalities, it sends the wrong market signals to the mining industry, is pro-cyclical, and undermines the achievement of sustainable, long-term, industrial development.

4.1 Authorized Environmental Harm—Unfunded Liability

Mining, by definition, represents the extraction of millions of tons of material over the course of a mine's operation, most of which is stored at the mine site as waste rock and tailings. When exposed to air and water, these wastes can create acid and cause leaching of metals into surface and ground water.

In the normal course of business, mining is expected to cause significant environmental impacts, such as contamination of soil, groundwater and surface water, erosion, and loss of biodiversity. These impacts may be foreseen, estimated and authorized as part of a permitting process. Their costs, along with their mitigation, can be built into a reclamation strategy funded by the mining operator as part of the mine's life cycle.

When environmental harm is anticipated and estimated as part of permitting, as is the case with British Columbia's process, a significant amount of the environmental harm resulting from mining activity becomes authorized—or sanctioned—by the regulator.

To ensure funds are available, when and as required, for reclamation and remediation of authorized harm, many regulatory regimes require mining operators to provide security such as letters of credit, bonds, and/or cash deposits that can only be drawn upon to fund restoration and remediation of their authorized harm. Some regimes allow for soft security, such as equipment, or performance related assurances that the company has sufficient financial strength to fund part, or all, of its expected environmental impact costs.

Financial assurances provided by individual companies can be complemented by an industry wide fund established to provide financial resources in the event the mine operator is unable, or unwilling, to finance all or part of its unfunded reclamation liabilities. That is, even if full security is provided, sometimes, the actual costs exceed expected costs, and the operator may not be able to fund the gap. With an industry funded pool to draw on, taxpayers are not left on the hook and the required work can be undertaken in a timely and fulsome manner.

The BC Ministry of Energy and Mines has a requirement that all reclamation costs be borne by the mine owner, however the government has not introduced a regime that ensures this is guaranteed. The Chief Inspector of Mines determines on a case by case basis whether or not the mine operator must irrevocably fund any, a portion, or all of the anticipated reclamation costs. A gap between anticipated reclamation costs, and secured funding to support these costs, creates an unfunded liability that has an unacceptable likelihood that it will be borne by BC taxpayers or, worse, the reclamation and remediation work will go unattended.

The size and anticipated long-term impacts from modern mining operations means reclamation and remediation activities can take place during operations, not only when operations cease and the mine is closed. Proper reclamation can take decades and cost hundreds of millions of dollars, with the majority of work taking place after operations no longer generate revenue for the mining company. For example, between 1969 and 2010, Teck reclaimed 5,700 hectares at its operating and closed coal mine sites in BC, representing a quarter of the total coal mining land the company had disturbed, and about two-thirds of reclaimed coal mining lands disturbed in the province.⁹² The expected future cost of this work has not been made publicly available by the BC regulator, nor is the security Teck has posted to support this obligation made public. However, the State of Alaska provides this information to the public for Teck's Red Dog zinc producing mine. Teck estimates that the remaining reclamation at Red Dog will require \$423.6 million USD, with water treatment required in perpetuity.⁹³

92 Teck Coal Limited, [Reclamation Research Summary 1969-2010](#), Response to Supplemental Information Request No. 3, Frontier Oil Sands Mine Project, October 2014, page viii.

93 State of Alaska, Department of Natural Resources, Division Mining, Land and Water, Mining, [Reclamation Bond](#), (Personal Bond), Teck, Red Dog Mine, November 25, 2015

In BC, work that must be done to reclaim disturbed land is identified by each mining company and approved by the Chief Inspector of Mines. Permit holders are required to submit annual reclamation reports in compliance with the MA and the Mine Code and include with the report an estimate of the total expected costs of outstanding reclamation obligations over the planned life of the mine.⁹⁴ It would greatly assist the BC public if this information were made available on a site-by-site basis as it is in other jurisdictions such as Quebec⁹⁵ and Alaska.⁹⁶

Reclamation security in BC continues to be determined at the discretion of the Chief Inspector of mines on a site specific basis and there is no requirement that the Chief Inspector require any security in support of reclamation costs. This discretionary power puts the Chief Inspector in a compromised position.

The Province has an aggressive strategy for new mine openings and existing mine expansions as part of its “jobs plan”.⁹⁷ The Clark government’s election platform promised eight new mines and the expansion of nine existing ones by 2015. Instead there have been numerous mine closures and many expansion plans have been put on hold.

The jobs plan failure becomes a tool upon which mining operators can rely for leverage to obtain favourable terms under discretionary administrative frameworks such as exists with BC’s current mining reclamation financial assurances model.

While being pressured by government to assist in the creation of new mines and expansion of existing ones the Chief Inspector is also expected to ensure adequate security exists to fund known and expected future reclamation costs. Posting security costs money; it affects working capital.

When security is discretionary it becomes a negotiating point. Companies that pose the greatest risk have the greatest incentive to plead financial constraints and push for a lessor security requirement, and/or softer security types. Just when deteriorating financial performance should be a red flag suggesting to the Chief Inspector to increase requirements and demand more secure forms of financial assurances, weakened financial performance and bleak prospects appear to have led to a reduction in security required. As graph 4 and 5 illustrate, the amount of disturbed land has increased in recent years, as has the liability for reclaiming it, while the security posted to assure the obligations has fallen. Public exposure has increased significantly.

It is not possible to determine the success particular companies are experiencing with reducing the financial assurances they are required to post as the Ministry of Energy and Mines does not make the

94 Ministry of Energy and Mines, [Annual Reclamation Reports](#)

95 Quebec, [Mines Act](#), Section 215.

96 State of Alaska, [Large Mine Permitting](#).

97 [The BC Jobs Plan](#), Canada Starts Here, page 19

information public. It must be occurring, however, as reclamation security in 2014 was less than that provided in 2013, while liability increased.⁹⁸ If full guarantee of obligations were mandated, as it is in Quebec and the State of Alaska, public exposure would not be on the rise.⁹⁹

4.1.1 Teck's Unfunded Reclamation Liability

Teck operates mines in both Alaska and BC, so although it is not possible to know the amount of Teck's reclamation cost estimates for each of Teck's mines in the province, or what security the Chief Inspector has required that it post to ensure it will fulfill its reclamation obligations, the reclamation cost estimates and bonding requirements for Teck's Red Dog mine in Alaska are available.

The Alaska regulator requires Teck post a bond backed by letters of credit for its full estimated amount of the net present value of the Red Dog zinc mine reclamation costs— \$423.6 million USD (approx. \$560 million CDN at a 75 cent dollar).¹⁰⁰ This amount could increase this year as a revised reclamation plan and cost estimate is under review.¹⁰¹ The anticipated closure date of the mine is 2031. In addition to a seven year mine closure, earthwork and maintenance plan, Teck estimates that Red Dog will require water treatment costs of approximately \$16 million USD, in perpetuity, hence this need is reflected in the reclamation bond.

Although information on the estimated cost for Teck's mine reclamation obligations in BC is not available, the required security for Teck's mine sites in the province can be roughly estimated from the company's financial statements and information provided in other jurisdictions. This proxy approach for evaluating the exposure to the BC public suggests that the amount of security that has been required in BC for numerous Teck owned mine sites is extremely low.

Unless information to the contrary is forthcoming from the Ministry, or the company, the BC public is at significant risk from Teck's operating and closed mine sites. It appears the Chief Inspector has not required Teck to sufficiently fund its obligations. This is particularly disconcerting given the significant deterioration in Teck's financial strength in recent years.

Teck has told its shareholders in its Annual Information Form 2016 that as at "December 31, 2015, we had letters of credit and other bonding in place to secure our reclamation obligations in the aggregate amount of approximately \$1.34 billion" (CDN). Teck has full and partial ownership in 12

98 See Graph 5, section 3.2.

99 State of Alaska, [Large Mine Permitting](#). Alaska requires "sufficient financial assurance (bonding) to accomplish full mine closure if the mine operator were – for whatever reason – unable to meet this critical, future responsibility." Quebec, [Mine Act](#), Section 232.4.

100 State of Alaska, Department of Natural Resources, Division of Mining, Land and Water, [Mining Reclamation Bond](#), November 30, 2015.

101 [Extension of Red Dog Mine Reclamation Plan Approval \(F20099958\)](#), letter dated September 30, 2015.

operating mine sites—two in Chile, one in Peru, two in the US, one in Alberta, and six in BC, including five coal mines in the Elk Valley. Teck also owns sites in care and maintenance such as Quintette near Tumbler Ridge, and closed sites, such as Duck Pond in Newfoundland.

The Province of Alberta releases the security requirements it has determined for individual sites and lists Cardinal River Coals Ltd., a Teck subsidiary and operator of the Cardinal River coal mine, as having posted \$98 million in security.¹⁰² Alberta's method for determining requirements is based on an asset versus liability formula and thus results in significant under-funding of reclamation costs.¹⁰³ Given that the letter of credit required for Red Dog is approximately \$560 million CDN, this means that about \$680 million has been posted for Teck's 10 operating mines, sites under care and maintenance and closed sites in Canada, US, Chile, and Peru.¹⁰⁴

Teck has water treatment obligations as defined in the Elk Valley Water Quality Plan approved by the Minister of Environment in the fourth quarter 2014 which cost \$43 million in 2015 and \$31 million is expected for 2016. "We expect that, in order to maintain water quality, water treatment will need to continue for an indefinite period after mining operations end. The plan contemplates ongoing monitoring of the regional environment to ensure that the water quality targets set out in the plan are in fact protective of the environment and human health, and provides for adjustments if warranted by monitoring results. This ongoing monitoring, as well as our continued research into treatment technologies, could reveal unexpected environmental impacts or technical issues or advances associated with potential treatment technologies that could substantially increase or decrease both capital and operating costs associated with water quality management."¹⁰⁵ 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.

4.1.2 Walter Energy's Unfunded Reclamation Liability

Another example of where BC's Chief Inspector appears to have failed to protect the BC public interest exists with US based Walter Energy Inc. and its three coal mine sites in Northern BC. Walter put each of the sites on care and maintenance in 2014 and filed for Chapter 11 protection in the US for its US based operations. On December 7, 2015, Walter Energy Canada filed for protection under the federal *Companies' Creditors Arrangement Act (CCAA)*.¹⁰⁶

102 Annual Mine Financial Security Program Submissions, [Mine Financial Security Program—2015](#), Cardinal River Coals Ltd., page 2

103 [Report of the Auditor General of Alberta, July 2015](#), page 25, As at December 31, 2014, \$1.57 billion of security is held in comparison to reclamation liabilities of \$20.8 billion due to the asset to liability approach.

104 Given the form of Teck's ownership stake in facilities in Peru and Chile, it is not clear if the company would be directly responsible for providing letters of credit for reclamation of these facilities. Teck was requested to confirm its reclamation requirements by jurisdiction but elected not to disclose the information.

105 Teck Resources Limited, [Annual Information Form 2015](#), March 1, 2016, page 30.

106 Walter Energy Canada Holdings Inc., [Court Proceedings under CCAA](#)

Walter Energy's weakened financial situation was apparent in 2012. The Province did not seek to sufficiently increase the security it required to reflect Walter Energy's deteriorating financial position. According to court documents, the secured liability for Walter Energy's estimated reclamation was only 30 percent of its estimated obligations when Walter Energy sought protection from creditors through the Canadian court system.

As of October 31, 2015, Walter Energy Canada "accrued US\$57.4 million (about \$75 million CDN) in respect of its asset retirement obligations for all of the Walter Canada Group's mining operations until the end of the lives of each mine using a net present value calculation" and had posted letters of credit "for post-mining reclamation, as required by its Mines Act permits, totaling approximately \$22.6 (CDN) million."¹⁰⁷ That is, the Chief Inspector of Mines allowed Walter Energy to carry an unfunded liability of 70 percent despite its looming insolvency.

If the BC coal mines are not reopened under a restructured arrangement, Walter Energy has estimated its reclamation costs will be lower than if each of the mines continued to operate to the end of their life cycle. The company estimates the costs to be between \$36-\$42 million, however there is contamination problem at the Brule site from selenium leaching. Costs related to the remediation of this discharge could significantly increase estimated mining closure costs once fully evaluated.

Court proceedings are underway. Walter Energy Canada is protected from creditors, including the Province, while it seeks a restructuring arrangement or sale of its assets.¹⁰⁸ The full extent of the negative impact on the public will not be fully known until CCAA proceedings are complete. For now, Walter Energy Canada has a stay until April 5, 2016, but it could request the court provide an extension.

4.1.3 Imperial Metals' Unfunded Liability

Details of Mount Polley owner Imperial Metals' reclamation costs for its individual mine sites are not publicly available, nor are the Chief Inspector of Mines security requirements related to them. However, part of a document is publicly available that shows the provincial government's security requirement for Imperial Metals in 2013.¹⁰⁹

The Chief Inspector determined in 2013 that the security required for reclamation was \$38.4 million (suggesting the reclamation costs are much higher since the Ministry does not generally require full funding of reclamation obligations) while Imperial Metals had deposited, as at that date, only \$7.05 million.

¹⁰⁷ [First Affidavit of William G Harvey](#), Sworn December 4 2015, Proceedings under the CCAA, paragraphs 91 and 92.

¹⁰⁸ [Walter Energy Canada Inc., Court Documents](#). CCAA Proceedings

¹⁰⁹ [Reclamation Security, Screenshot](#), Ministry of Mines Document, Vancouver Observer, August 20, 2014.

Imperial Metals was granted a decade to reach the required level, with no increased security to be provided between the years 2019 to 2022. Based on a review of Imperial Metal’s financial statements since 2013, it appears the Chief Inspector of Mines has since modified the timing and amount of the requirements.¹¹⁰ Why this would be the case is unclear since Imperial Metals has increased its reclamation liability provision for accounting purposes to a total of \$53 million.¹¹¹

Staging security requirements over such an extended period of time places increased risk on the public and the environment, particularly when the mining industry business cycle is in a downturn. When the Province of Quebec determined that 100 percent security was required for reclamation obligations, it granted a two year time horizon for meeting the requirement for new mine permits, and three years for existing permits.

4.1.4 Aggregate Unfunded Liability in BC

The Ministry of Energy and Mines has been aware since at least 2002 that the security it has required under the “Mines Act is inadequate to remediate the known mine sites in British Columbia where contamination exists”¹¹² and reclaim lands as required as part of the permitting process.

The BC Auditor General found in its 2002 Report that, “the ministry accepts less secure forms of securities from large mining companies that are viewed as financially strong compared to what it accepts from smaller companies. For example, from one large company, the ministry accepted charges on equipment and buildings as security—a value that would reduce over time as the equipment and buildings depreciate. This alone makes it a questionable practice in our view. However, given the long time horizon necessary to address metal leaching and acid rock drainage problems, we think the practice is doubly problematic. Even the fortunes of large companies can change, as illustrated by the recent failures of many notable American corporations.”¹¹³

For 2000, reclamation liability for mine sites the Ministry of Energy and Mines has regulatory responsibility for was estimated to be \$400 million with the security backing the obligations totalling \$172 million. This left an unfunded liability of \$228 million. The Auditor General noted that the, “ministry’s annual report does not refer to these issues. We believe it should so legislators can fully understand the level of risk being borne by the Province for contaminated sites remediation.”¹¹⁴ The Annual Report of the Chief Inspector of Mines has yet to discuss these issues.

110 Imperial Metals, [Third Quarter Report](#), September 30, 2015, page 24.

111 Accounting rules allow for a net present value calculation on reclamation obligations which results in a figure much lower than the actual dollar cost expected for reclamation.

112 Office of the Auditor General, [Managing Contaminated Sites on Provincial Lands](#), 2002/2003 Report 5, page 43.

113 Ibid

114 Ibid

From 2003 - 2014 an estimate of the Ministry's unfunded liability is provided in the Public Accounts. It's tucked away in the notes to the Financial Statements titled *Contingent Liabilities and Contractual Obligations*. The Office of the Comptroller confirmed that the figure represents the "difference between the "estimated" reclamation liability of the permit holders compared to the bond the permit holders have provided to the Province".¹¹⁵

By 2003 the \$228 million unfunded liability identified in 2000 had grown to \$308 million. By 2014 it reached \$1.3 billion. In 2015 the province ceased the practice of identifying the unfunded liability in its Public Accounts citing the adoption of new public service accounting standards which require only the estimation of "non-producing" sites. The aggregate unfunded liability for reclamation and remediation housed in the Ministry of Energy and Mines is no longer publicly available.¹¹⁶

In March 2016 the BC Auditor General released a report reviewing the Public Accounts and identified the implications of the new Public Sector Accounting Standards (PSAS) for the remediation of contaminated sites.¹¹⁷ The report notes that the definition of whether a site is in "productive use" determines whether estimates of the liability for them needs to be recorded in the Public Accounts.

Productive use has been defined as whether or not the Province has assumed responsibility for the site, not whether or not the mine is closed or in care and maintenance. That is, if a private sector operation is no longer in production it is considered acceptable to exclude it from the Public Accounts estimate of contaminated sites as long as the government has not accepted responsibility for the site.¹¹⁸

This definition of productive use has a built-in incentive for the Province to avoid compelling companies to undertake reclamation on non-operating mines for fear the Province may be forced to take over the obligation and include this as a liability in the Public Accounts. Accounting standards motivating administrative decisions is a perverse outcome, and likely an unintended result. The obligations for reclamation as required under the MA should be publicly reported to avoid such a situation from arising.

The Auditor General's report states that, "Previously, the environmental clean-up financial statement note stated: "the Ministry of Energy and Mines has determined possible net liabilities of approximately \$1.3 billion for sites the province does not own." Under the new standard, government is not required to disclose this information, as these are outside of the government reporting entity and are still deemed in productive use."¹¹⁹

115 Written confirmation from Comptroller staff respecting the figures in the Public Account footnotes, February 29, 2016.

116 The rationale for not providing the estimate of possible net liabilities provided by the Comptroller General's Office is because of the province adopting Standard PS3260 for the 2014/2015 fiscal year.

117 BC Auditor General, *The 2014/2015 Public Accounts and the Auditor General's Findings*, March 2016

118 Ibid., page 38.

119 Ibid.

Whether or not the accounting standard requires the Ministry of Energy and Mines estimate of unfunded liability be reported is not a sufficient reason for ceasing to report it, particularly when it is the only source of information available to the public of its exposure to these potential costs. If the Ministry of Energy responded to the Auditor General's concerns in the 2002 report and provided a fulsome reporting of site-by-site reclamation estimates, and security required by amount and type, this would solve the problem and provide the public with information it deserves.

British Columbians and First Nations have a right to know the exposure to reclamation and contamination costs related to ongoing and former mining activities, by mine site, mine owner and in aggregate. Notwithstanding the Auditor General's identification that these issues should be fully addressed in the annual reporting of the ministry's activities more than a decade ago, the Ministry has not responded. The Auditor General now appears to accept the removal of a minimum level of disclosure as was available in the Public Accounts prior to 2014/2015. This is in direct contrast to the informational needs of the public, and as noted above, has an incentive for the Ministry of Energy and Mines not to compel companies to fulfill their obligations on closed sites for fear of the Province inheriting them and having to report the costs for the first time in the Public Accounts.

4.2 Unauthorized Environmental Harm

Environmental impacts from mining operations can also arise from unauthorized events such as a tailings pond breach, mine explosion, or an un-permitted slow release of contaminants into the environment. These unauthorized events can be caused unintentionally—as accidents—or they can result from intentional behaviour such as negligence or fraud.

The most recent example of an unauthorized event is the catastrophic tailings pond breach at Mount Polley that occurred on the night of August 3-4, 2014. The "dam enclosing the tailings storage facility (TSF) at Mount Polley Mine, a copper and gold mine in interior British Columbia, failed. Over the next 16 hours, the failure led to a progressive breach of the Perimeter Embankment of the dam, releasing over 21 million cubic metres of water and mine tailings into the surrounding environment and watercourses."¹²⁰

Mount Polley is a glaring example of a sudden incident of unauthorized environmental harm, which the expert engineer's report has estimated has a very high probability of occurring twice every ten years. "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."¹²¹

¹²⁰ [Mount Polley Mine Tailings Storage Facility Breach](#), Chief Inspector of Mines Report, Ministry of Energy and Mines, November 30, 2015, page 1.

¹²¹ Independent Expert Engineering Investigation and Review Panel, [Report on Mount Polley Tailings Storage Facility Breach](#), January 30, 2015, page 118.

The BC First Nations Energy and Mining Council mapped out 35 active mine tailings ponds in 26 mine locations in the northern half of the province and traced the potential paths of contaminants from dam failures at any of those sites.¹²² 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 would migrate up a river that could be polluted. The provinces 123 tailings dams pose serious risk to BC's watersheds.

Worldwide, the financial threat of major and catastrophic mining pollution spill events is rising as a result of structural factors internal to mining operations such as greater mining production of lower grades of ore, with larger and deeper tailings storage facilities as well as external factors such as erosion, weathering, sedimentation, precipitation and climate change.¹²³

The "mega trends that squeeze cash flows for all miners at all locations, and this indisputably clear trend toward failures of ever greater environmental consequence" means that a "continuation of the present Mining Metric is not environmentally or economically sustainable, and that regulatory systems must begin to understand and address financial capacity of the miner, and the financial feasibility of mining itself, both in permitting criteria and in oversight of mine water management over the life of the mine."¹²⁴

BC has not undertaken appropriate evaluation of the risk unauthorized spill events pose to the public and therefore is not able to address whether companies, who have responsibility for operating and/or closed mines, are capable of fulfilling the legislated obligations they face. The Ministry of Energy and Mines has under its authority 60 permitted mine sites with 98 storage facilities housing 123 tailings dams. With only 12 operating mines in the Province, this means that the majority of the risk BC faces is for tailings storage facilities that are not attached to producing mines—that are not contributing to the revenue base of the company responsible for reclamation and remediation.

The *Environmental Management Act (EMA)* and the Contaminated Site Regulation (CSR) address unauthorized environmental harm and seek to ensure the Polluter Pays but there are no financial assurances required in BC to ensure funding is available to cover all the clean up and remediation costs related to unauthorized environmental harm events in advance of the events occurring. If the mine is forced into insolvency or becomes bankrupt as a result of an unauthorized pollution event,

122 Uncertainty Upstream, [Potential Treats from Tailings Facility Failures in Northern British Columbia](#), June 2015. By way of comparison there are 60 permitted mine sites in the province, with 98 storage facilities housing 123 tailings dams.

123 [The Risk, Public Liability & Economics of Tailings Storage Facility Failures](#), Lindsay Newland Bowker & David M. Chambers, July 21, 2015. and [Mine Waste Management in the 21st Century Challenges & Solutions Beyond Incremental Changes](#), Andrew MacGregor Robertson, Tailings and Mine Wastes, Vancouver 2011.

124 [The Risk, Public Liability & Economics of Tailings Storage Facility Failures](#), Lindsay Newland Bowker & David M. Chambers, July 21, 2015, page 18.

the public pays. Non-producing mines are at greater threat of seeking insolvency proceedings to address spill costs than producing mines.

Even if a company is able to pay, the sudden and unexpected impact on its finances can put undue pressure on regulators to accommodate budget constraints, pulling focus from cleaning up, remediating and compensating damages. The regulator's focus is directed toward getting the company back up and running, instead.

Without a mechanism within the legislative framework that puts the financial burden squarely on the mine operator in advance of an unanticipated pollution event, British Columbians and First Nations are exposed to unnecessary and unwarranted risk. If the polluter is to pay, then a mechanism to ensure this occurs must be put in motion during the permitting process, and properly monitored during the mine life cycle. Adequate recourse to financial resources for unauthorized events should not be left to chance.

The failure of BC's regulatory regime to ensure the Polluter Pay Principle is upheld provides mine operators with an incentive to behave with less due care and attention than they would if an effective regime were in place. This increases the risk of environmental harm incidents. It also increases the incentive for firms to walk away from accidents if the cost of the accident, combined with unfunded obligations, outweigh the business returns for honouring the obligations. In contrast, if there is sufficient money at stake, companies have a greater incentive to do the right thing.

Taxpayers are lucky that Imperial Metals was able to secure funding from the deep pockets represented by its relatively few number of large shareholders. Had the breach occurred at any number of the 123 tailings dams where the owners' access to financial resources are more limited, and the trade-off between paying for clean up or going bankrupt is tipped in favour of the latter, the public may have ended up footing more of the bill than it has.¹²⁵

BC does not require mine operators to undertake cost benefit analysis of the unauthorized pollution risk posed as part of its permitting process under the *EA* or the *MA*. Certainly a risk assessment of possible accidental occurrences, along with their quantification, could form part of the mine permitting process. For existing mines, it could be built into the requirements of the annual reclamation reporting.

To ensure funds are available, when, and as, required to fund clean up, remediate and compensate for unauthorized environmental harm, mining operators could be required to carry appropriate liability and other insurance, post bonds, letters of credit and/or cash deposits. This would prove they have sufficient funds from their operations, on a site by site basis, before an accident occurs.

¹²⁵ Imperial Metals has spent financial resources on responding to the event, but these expenses are charged against income. Taxes are lower than what would otherwise be payable had the facilities failure not occurred. In this way, the public underwrites part of the cost of the spill equivalent to Imperial Metals effective tax rate.

An industry wide fund created by a levy on production could also be established as a complement to site by site financial assurances. The fund would provide financial resources in the event the mine operator is unable, or unwilling, to finance all, or part, of its unauthorized environmental harm event.

Finally, the claims process related to environmental spill events such as Mount Polley's tailings pond breach is very unsatisfactory. Parties who suffer financial losses are required to present their claims to the company who decides whether the claims for commercial losses are legitimate. If the company refuses to pay, claimants are left to seek settlement through the courts. This is a very expensive and timely proposition. A regime that seeks to be "world-leading" would consider a more efficient, effective and fair claims settlement process than what currently takes place.

The Province of BC recognizes that its spill preparedness and response regime is woefully inadequate. It is for this reason that the province has been actively engaged in pursuing a significant overhaul of the terrestrial spill preparedness and response regime. However, the new regime does not intend to introduce a funding model that requires proof that financial resources are readily available at the company level and, in the event that the polluter is unable or unwilling to pay, a method by which taxpayers can be protected from assuming the obligation. The new regime does not address commercial losses or the claims process.

Section 7 provides a selected summary of models of financial assurances in other jurisdictions as a backdrop for the discussion in Section 8 where features that could be incorporated in BC's environmental harm regime are offered.

If BC is to have a robustly effective regime that protects the environment, protects communities, First Nations lands, and our neighbours to the north and south, while permitting resource extraction activity, it must include a financial assurances mechanism that ensures financial resources are available to meet the clean up, remediation, reclamation and compensation needs when authorized and unauthorized environmental harm occurs.

5. Financial Assurances

Terms and Definitions

5.1 Hard Security and Soft Security

There are two basic categories of security for financial assurances depending upon how liquid the financial instrument is and how certain its value when liquidated.

Hard Security is reasonably liquid and its value relatively certain. These types of security would include letters of credit, or cash. Soft Security is less liquid and its value less certain, such as parental guarantees or a pledge of assets. Soft Security generally falls in value as the need for security rises.

Hard Security gives greater assurance that funds will be available when, and as, needed. It assists the government in limiting the public's financial exposure in the event a mining company defaults on its obligations. Requiring Hard Security to wholly fund an estimated obligation means the financial assurances policy is transparent and consistent across companies. However, Hard Security is generally funded from a company's working capital impacting project economics and posing a greater challenge during mine start-up. The burden can be particularly evident on smaller mining companies—juniors—which are relatively significant in BC's mining industry structure.

Discretionary mine reclamation securities are attached as a condition of mine permits. The "permittee must post financial security in an amount and form acceptable to the Chief Inspector of Mines. This security is held by the government until the Chief Inspector is satisfied that all reclamation requirements for the operation have been fulfilled."¹²⁶ The Chief Inspector of Mines accepts Hard Security including cash, certified cheques, bank drafts, term deposits such as Guaranteed Income Certificates (GICs), Government of Canada bonds, and irrevocable standby letters of credit (ISLOCs).¹²⁷

The list provided by the Chief Inspector is not exhaustive. The Marsh Report on mining insurance states that BC has accepted surety bonds as security for financial assurances. "There are approximately 15 surety markets with capabilities in this space. Quebec, the Northwest Territories, and **British Columbia have all recently agreed to accept a surety bond as financial assurance for reclamation obligations** and Marsh Canada has been an integral part of these changes."¹²⁸ (emphasis added) As well, SnipGold states in its most recent annual report that the province has accepted mining equipment as partial security for its Johnny Mountain mine.¹²⁹ Imperial Metals also has mining equipment pledged as security.¹³⁰ Mining equipment is soft security.

126 Ministry of Energy and Mines, [Reclamation Costing and Security](#).

127 Ibid.

128 [Mining Market Update](#), Marsh, February 2016, page 14. The Chief Inspector of Mines was requested to confirm Marsh's statement but at time of this report's release had not responded.

129 SnipGold Corp., Annual Report 2015, Notes to Financial Statements, note 9, [Provision for Reclamation Obligations](#).

130 [Imperial Metals Annual Report 2014](#), page 54.

The Ministry explains that term deposits and bonds “may be held in a Safekeeping Agreement where the interest accrues on the deposit.¹³¹ Pursuant to section 12 of the *MA*, funds may be deposited to the Mine Reclamation Fund or within a Qualified Environmental Trust. These funds allow interest to accrue to the credit of the account. Reclamation securities can only be released by the authority of the Chief Inspector of Mines.

Pursuant to Section 10 (4) and (5), the *MA* gives the Chief Inspector of Mines discretion over what form of security to accept.

10 (4) The chief inspector may, as a condition of issuing a permit under subsection (3), require that the owner, agent, manager or permittee give security in the amount and form, and subject to conditions, specified by the chief inspector

- (a) for mine reclamation, and
- (b) to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine.

(5) If required by the chief inspector, the owner, agent, manager or permittee, in each year, must deposit security in an amount and form satisfactory to the chief inspector so that, together with the deposit under subsection (4) and calculated over the estimated life of the mine, there will be money necessary to perform and carry out properly

- (a) all the conditions of the permit relating to the matters referred to in subsection (4) at the proper time, and
- (b) all the orders and directions of the chief inspector or an inspector respecting the fulfillment of the conditions relating to the matters referred to in subsection (4).

If site contamination is determined to exist, the Ministry of the Environment may require financial security. Section 48 (4) and (5) of the *Environmental Management Act*, Contaminated Sites Regulation¹³² states:

- (4) A director may require financial security if
 - (a) a significant risk could arise from conditions at a contaminated site because
 - (i) the site is left in an unremediated or partially remediated state, or
 - (ii) the site is remediated but requires ongoing management and monitoring because contamination is left at the site, and

131 [Safekeeping Agreement](#)

132 [Contaminated Sites Regulation](#)

(b) a covenant under section 219 of the *Land Title Act* is, in the opinion of the director, unlikely to be an effective means to ensure that necessary remediation is carried out at the site.

(5) The financial security required by a director under subsection (4) may be for the purpose of any or all of the following:

- (a) ensuring that a responsible person completes remediation or guarantees performance to the satisfaction of the director;
- (b) providing funds to further treat, remove or otherwise manage contamination;
- (c) complying with the applicable legislation and financial management and operating policies of British Columbia.

[am. B.C. Regs. 322/2004 and 324/2004, s. 48.]

However, Part 5 of the *EMA* does not permit the Ministry of Environment to take the lead role on the remediation of “core” areas on mine sites. This is led by the Ministry of Energy and Mines unless the Chief Inspector requests the Ministry of Environment to take the lead. As well, Section 68 (3) of the *EMA* prohibits the director from requiring security for remediation of a producing or past producing mine site. Therefore, the Ministry of Environment does not have security posted for long-term management of remediation systems on mine sites.

In 2003 the Ministry of Environment (then Ministry of Water, Land and Air Protection) commissioned a report on security policy guidance for contaminated sites.¹³³ The report included in Appendix B, Draft 10 of the Province’s intended approach to security requirements for contaminated sites. This report served as the basis for Protocol 8—Security for Contaminated Sites—adopted in 2007.¹³⁴

The financial security acceptable to the Ministry of Environment includes both hard and soft security:

“financial security” means one, or a combination, of the following in the amount and under terms as specified by the Director:

- irrevocable letters of credit,
- security deposits including short-term deposits,
- registered bonds,
- treasury bill notes,
- bank drafts,
- money orders,
- certified cheques, and
- any other type of security acceptable to the Director under this Protocol.¹³⁵

¹³³ [Security Policy Guidance for Contaminated Sites](#), May 23, 2003, Grant Thornton

¹³⁴ Protocol 8, [Security for Contaminated Sites](#), Ministry of Environment, November 19, 2007

¹³⁵ *Ibid.*, 1.0 Definitions, page 2.

5.2 Government of Canada Bonds

The federal government issues bonds—a debt security—with various terms to maturity. When a company buys a bond it lends its money to the government—the issuer—for a set period of time—the term. The term can be anywhere from a year or less to as long as 30 years. In return, the issuer pays interest. On the date the bond becomes due—the maturity date—the government pays back the face value of the bond, in full.

Government of Canada Bonds are “negotiable” securities with relatively little repayment risk because they are backed by the taxing powers of the federal government. As a result there is an active and liquid secondary market for them, such that the Government of Canada Bonds can be readily sold, if necessary, prior to their maturity date. They are liquid instruments and retain their value.

5.3 Irrevocable Standby Letters of Credit

An irrevocable standby letter of credit (ISLOC) is an agreement between a bank and a company whereby the bank provides cash funds to a third party under specific terms contained in the letter of credit. The third party—the provincial government—is the beneficiary of the ISLOC. When the letter of credit is irrevocable, the issuing bank must honour all claims in compliance with the terms of the letter of credit.

Any changes in the terms must be agreed to by all the parties to the transaction. Normally Letters of Credit are issued for a term of one year. Since reclamation and remediation obligations generally extend beyond a year, it is normal for an ISLOC to be issued for a one year term with an automatic extension each year. The extension is generally granted based on an annual financial review by the bank of the company. If the bank undertakes a review and elects not to extend the ISLOC then the Province is notified and has the option of drawing down the full value of the letter of credit, thereby ensuring the funds will be available.

The cost to establish a letter of credit is negotiable and a function of the credit risk of the company. The cost would likely range at less than 1 percent to 2 percent of the face value of the required funding. ISLOC will generally be backed by a guarantee from the company and in this sense the company bears a further cost. Letters of credit are considered a tax deductible expense.

The availability of a letter of credit may be restricted by a company’s credit or debt load. Companies can be required to place the full value of the letter of credit on deposit with the financial institution to ensure funds will be available. Even if the company’s credit rating is adequate to obtain a letter of credit, the borrowing power of the company could be correspondingly reduced. It is generally

more difficult and expensive for a mining company with a single mine to obtain an ISLOC than for a company with a number of sites.

Unlike other hard security financial assurances such as cash, GICs, or Government of Canada Bonds, ISLOCs have a role to play in disciplining—regulating—financial behaviour of the mining company. Since access to letters of credit, and their resulting cost, is related to the financial health of a company, there is an incentive for the mining operator to maintain its financial performance tied directly to regular review by the bank. The bank's annual review is a private sector form of regulatory review over the financial strength and stability of the company.

Increased fees for a given letter of credit, or notice of termination of a letter of credit, provides an early warning signal to the regulator that financial performance of the company is deteriorating and risk of non-performance on reclamation and/or contamination obligations is increasing.

5.4 Surety Bonds

A surety bond is like a letter of credit but issued by an insurance company rather than a bank. As such, it is a contract among at least three parties—the company is the “principle”, the “obligee” is the provincial government and the “surety”—the party who assures the obligee that the principle can perform the task, is the insurance company.

Performance bonds—the promise that the company can perform on its obligations—are a type of surety bond.

BC has recently accepted surety bonds as a qualified form of financial assurances.

5.5 Trust Funds

A trust fund can be set up by a company in an amount that is determined to be sufficient to cover specific reclamation costs which are contained in the decommissioning plan not unlike a pension fund where monies are deposited, managed and accrue returns to meet anticipated future obligations. Trust funds allow interest to accrue to the credit of the account.

The Ministry of Energy and Mines allows for Qualified Environmental Trusts (QET) which are specifically intended to fulfill the requirements of financial security for mine reclamation purposes. Under the *Canadian Income Tax Act*, contributions to the QET are deductible in the year the contributions are made. Although the program was introduced in the 1990s, this vehicle has not been very successful, notwithstanding that a QET is the only vehicle that enables a corporation to claim a tax deduction in the year amounts set aside for future reclamation.

5.6 Insurance

The purpose of insurance is to provide financial resources in the event of an accident—that is, for an incident that is an unintentional occurrence, but has a probability of occurring and, should it occur, brings with it financial consequence.

Any prudent business management approach should include an understanding of the suite of risks a business faces, and include a recognition of the risk the company is able to tolerate. Insurance is concerned with managing risk and providing financial compensation in the event of an unexpected loss. Insurance companies issue policies that promise to provide financial support for such losses.

Some insurance coverages have become mandatory. It is a legal requirement in BC that motorists carry a minimum level of auto insurance, while many lenders require property and casualty house insurance as a pre-condition for obtaining a mortgage. Most insurance coverage, however, is elective. The insured party makes the decision based on a trade-off between the perceived risk, their tolerance for that risk, and, if it is an insurable risk, the insurance premium.

Insurance is the art of managing risk, where risk is equal to probability times consequence. (Risk = Probability x Consequence)

The traditional insurance mechanism can be divided into four phases:

- risk assessment
- risk transfer
- risk pooling
- risk allocation (premium setting)

There is an important role for insurance to play in the management of environmental risk as it relates to unauthorized, or unintended, environmental harm events. However, since BC does not have a requirement for financial assurances related to unintended events before they happen, the reliance by mining operators on insurance policies to protect them from environmental damage losses is entirely discretionary. Information that is available regarding the propensity of mining companies in BC to insure against environmental risks suggests very little reliance on the insurance industry for financial protection.

Prudent business operators will develop an insurance program to protect their operations and shareholders from unintended events, including pollution events. Not only can adequate insurance provide financial resources to fund related costs, it can assist in preventing expensive court actions such as shareholder class action suits.¹³⁶ The main goal of putting a comprehensive program in place is to allow the entity to continue as a going concern if an unexpected event happens.

¹³⁶ During the third quarter of 2014, a securities class action lawsuit was filed against Imperial Metals Inc. and certain of its directors, officers and others in the Ontario Superior Court of Justice.

The need for mining companies to seek enhanced access to greater insurance limits and broader coverage for pollution related events is increasing. In recent years there have been a number of major incidents including Mount Polley's tailings facility breach, Grupo Mexico's sulphuric acid spill into the Bacanuchi River,¹³⁷ Sherritt International's Coal Valley Resources tailings pond spill contaminating two tributaries of the Athabasca River¹³⁸ and Samarco's mine spill in Brazil that led to the deaths of 19 people and more than \$5 billion (US) over 15 years for damages. Seven executives have been charged with murder related to the tragedy.¹³⁹

Tailings storage facility failures show a significant trend since 1960 toward a higher incidence of serious and very serious failures where their frequency and cost is increasing.¹⁴⁰ Companies do not appear to be taking steps on their own accord to incorporate the higher risk of failures into their risk management programs.

Mount Polley mine owner, Imperial Metals Inc., did not elect to hold insurance coverage sufficient to protect it from the financial consequences of its tailings pond breach. Rather, the risk Imperial Metals perceived to protect itself against was business interruption insurance in the amount of \$15 million and \$10 million in third party liability coverage. To September 30, 2015 an aggregate of \$62.4 million has been spent on rehabilitation. The September 30, 2015 third quarter financial statements include a provision for rehabilitation costs to be incurred in the future of \$5.0 million, bringing the estimated cost for the failure to \$67.4 million. As at September 30, 2015 the Company had received insurance recoveries to the limit of its coverage of \$25.0 million.¹⁴¹

Part of the response and remediation cost for the failure has been borne by the public. Imperial Metals recorded a loss due to the cessation of its operations because it failed to have sufficient insurance coverage or other financial security. This reported loss resulted in income and mining tax recoveries. "Income and mining tax recoveries have also been recorded in connection with these costs"¹⁴² (in the amount of \$67.4 million minus insurance recoveries of \$25 million resulting in tax recoveries related to a loss of \$42.4 million). Had Imperial Metals had adequate insurance coverage, and/or other forms of financial assurances, to fund its tailings facility failure, the public treasury would not have contributed to the remediation of the tailings facility breach through cash tax refunds.

137 [Mexico's Sonora State reports new mine spill](#), BBC, September 22, 2014

138 [Charges laid regarding October 2013 Obed Mountain Coal Mine spill](#), Alberta Energy Regulator, Press Release, October 16, 2015.

139 [Brazil police seek charges against Samarco officials for dam collapse](#), Wall Street Journal, February 23, 2016.

140 [The Risk, Public Liability & Economics of Tailings Storage Facility Failures](#), Lindsay Newland Bowker & David M. Chambers, July 21, 2015.

141 Imperial Metals, [Third Quarter Report, 2015](#), page 1.

142 *Ibid.*, page 2

Many Property Damage and Business Interruption policies have sub-limits for tailings dam coverage which are likely inadequate to cover both the repair of the berm and the impact of the resulting loss of revenue. As well, insurers will explicitly exclude tailings dams and the resulting business interruption from these policies so mining operators must take care that such exclusions have not been made in their specific policies.

Some mining companies have a form of sudden and accidental pollution coverage built within the commercial general liability program as an extension which will address third party damage costs. However, the increasing costs of these events are showing that the adequacy of the limit needs to be reconsidered and examined by companies that anticipate they have purchased this coverage. A Commercial General Liability policy is not intended to be the safeguard for all environmental exposures. Costs for onsite clean up, claims related to gradual pollution conditions, as well as costs related to government fines and penalties are not typically covered in this policy.¹⁴³ Other coverages need to be included in a prudent insurance program, however, not all losses can be insured. The lack of coverage for all losses is a primary driver behind the need for companies to hold compulsory insurance backstopped by a supplementary fund financed by industry contributions. The industry financed fund will then be available to cover costs when an individual company program fails to do so.

It is difficult to obtain information on insurance programs held by operating mining companies in BC since they do not typically reveal the information. Walter Energy Inc. filed its insurance program as part of its bankruptcy proceedings.¹⁴⁴ Walter Energy Canada held a pollution liability policy for its three mine sites in the amount of \$10 million for the period June 30, 2014 to June 30, 2016 at a premium cost of \$301,000—about 3 percent of the policy value—or 1.5 percent per year.¹⁴⁵

The role of insurance in an environmental liability regime can achieve two important and interrelated policy goals. Insurance provides:

1. guaranteed compensation for environmental harm which protects the public from bearing costs; and
2. deterrence of inefficient corporate activities and decision-making which protects the environment from pollution generating events.

The risk assessment performed by the insurance underwriter during the policy approval process has a disciplining affect which results in fewer accidents with lessor consequence when they do happen.

143 Marsh Insights, Mining Practice, [Major Spills in British Columbia, Alberta and Mexico Highlight the potentially Catastrophic Environmental Risks of Mining](#), September 2014.

144 US Securities and Exchange Commission, 8-K, February 19, 2016, BA-05, [Insurance Policies](#).

145 It is unclear whether the policy would also cover third party liability at the UK coal mine Walter Energy Canada owned, or be restricted to claims related to the Canadian entities.

Companies have a financial incentive to demonstrate their culture is in line with best practices and that they incorporate best technologies, otherwise their premiums increase, and/or their coverages become restricted. Best practices and best technologies represent lower risk, and lower risk is reflected in relative premiums and/or access to coverage. In this way, insurance products can have a positive regulatory impact on mining operations.

6. Mining Corporate Culture and Business Law

Companies have a responsibility to their shareholders to seek legal ways and means by which to limit their liability and externalize capital and operating costs. They build these strategies into their decision making and corporate structure design. They engage in active lobbying to impress upon legislators the need to reduce “red tape” and “expedite” permitting. The concern of job losses to needy communities if environmental standards negatively impact revenues keep legislators at bay.

Mining companies in BC have had a significant degree of success in convincing legislators that their role is to be a facilitator of mining activity, not a regulator of it. This is regrettable. Not only does it send the wrong signals and result in an inefficient mining industry focussed on inappropriate means by which to reduce their costs—ultimately undermining the industry’s ability to compete internationally—it shifts costs that should be internalized to the mine site onto the public and the environment, instead.

When government buckles to industry pressure it reduces responsibility and accountability. Lenient regulations reinforce a belief within corporate cultures that the regulator is weak and incapable of staying ahead of the mine operator’s strategies to internalize benefits while externalizing costs. Through ineffective legislation and downsizing its administration, the Province of BC telegraphs to the industry that it is not serious about protecting the environment and BC residents, or ensuring the Polluter Pay Principle is effectively and extensively enforced.

The public—generally uninformed because the Province refuses to disclose important information—lacks a necessary understanding of the intricate legislative and regulatory framework. The public is bombarded with government communications that pretend protection of people and the environment is paramount and the Polluter Pay Principle is effectively enforced when there exist huge gaps in this purported protection.

The latest attempt to delude the public with a false sense of security is the Province’s announced “world-leading” spill preparedness and response regime. The regime is far from “world-leading” because it provides no financial assurances mechanism by which to effectively discipline corporate decision making behaviour, nor does it help to remove the systemic risk factors in companies that lead to major and catastrophic losses.

Without a financial assurances component that requires each mine site to hold adequate financial security to meet all authorized and unauthorized environmental harm events, the public will continue to be exposed to intolerable risk and continue to be required to bear costs they were promised by politicians they would not face.

Direct cash costs incurred up front is what business responds to. A financial assurances system that facilitates “world-leading” decision making behaviour by mining company executives is required if BC is to have an adequate regime for protecting people and the environment. In the unfortunate event an incident happens, such as a tailings facility breach, or a corporate bankruptcy rendering the owner incapable of paying for required reclamation, the public should not be left on the hook. *If the Polluter Pay Principle is to work, then the polluter **must** pay.*

Most, if not all, environmental harm from mining activity that occurs in our society is because a company and its shareholders benefit financially from that harm—at least in the short-run. Depending upon when the costs come in, they may avoid paying them altogether.

When it comes to environmental harm, the risk the public bears is asymmetric. Unless the regulator addresses this imbalance under a meaningful financial assurances regime, companies will successfully maximize the asymmetry.

For example, if security posted for reclamation exceeds the cost of reclamation, the Province refunds the surplus to the mining company. If however, the security is less than the costs and the company is unwilling or unable to provide the financial resources to fund its requirements, then the Province—the taxpaying public—must make up the difference. The risk of the burden is “asymmetric”.

If Company A has four mine sites and operates under a simple corporate structure, then the obligations of one mine site become the obligations of all mine sites because the revenues and expenses, as well as the assets and liabilities, are pooled under one corporate entity. Company law, however, incentivizes the creation of four or more separate entities, such as partnerships, general partners, operating companies, and unlimited liability companies, so that when the assets of the individual entity are exhausted, the liability of the shareholders in that entity are effectively limited to that amount. The corporate structure ensures the earning potential from the assets flow to the parent while providing a limitation against the cost potential of liabilities flowing to the parent.

Thus, the first indication of a corporate culture that deviates from legislated standards can be observed in the corporate structure it creates. If the structure seeks to maximize returns by externalizing costs it sets the standard for future decisions and behaviours. Early decisions by corporate executives that attempt to avoid the Polluter Pay Principle cultivates an operating culture in which not adhering to environmental requirements becomes the norm. Decisions made thereafter make it easier to continue this behaviour. It is the deviation from standards over time becoming imbedded in a corporate culture that lead to the majority of major or catastrophic accidents.

If authorized environmental harm is to be mitigated and adequately redressed by the party that causes it, and unauthorized environmental harm is to be “on the path to zero” as the Province has

set, it is necessary to understand the root cause of deviations from these objectives and design a regulatory regime that addresses them.

It is necessary to look beyond the immediate causes of an accident to the underlying or “systemic” factors that come together to create the conditions that make an accident a likely event.

The systemic approach to understanding deviant behaviour “concentrates on the conditions under which individuals work and tries to build defences to avert errors or mitigate their effects.”¹⁴⁶ As well, major or catastrophic accidents occur through the concentration of multiple small failures. “Each of these failures is necessary; however, each is insufficient to cause the failure unless it occurs in combination with other failures. Often these small failures have roots that extend well back from the moment when the accident is triggered.”¹⁴⁷

In addition, there needs to be a distinction between the people who trigger an incident “at the sharp end” and the managers and regulators who often create the latent conditions for a failure “at the blunt end.” Managerial and regulatory problems make it possible for combinations of minor failures to build up over time and hence create the preconditions for failure.”¹⁴⁸

The US National Transportation Safety Board examined the root causes of the Enbridge Line 6B diluted bitumen spill into the Kalamazoo River. The Board concluded that Enbridge had developed “a culture of deviance from procedural adherence” that had “become the norm.”¹⁴⁹

The Board also found that the Pipeline and Hazardous Materials Safety Administration’s (PHMSA) weak regulation for assessing and repairing crack indications, as well as PHMSA’s ineffective oversight of pipeline integrity management programs, control center procedures, and public awareness contributed to the accident, while Enbridge’s failure to ensure well-trained emergency responders, and PHMSA’s lack of regulatory guidance for response planning and lack of oversight for preparedness, contributed to its severity.

The NTSB’s report also noted that “research into the Space Shuttle Challenger accident demonstrated that, in complex systems, technical personnel can allow a “culture of deviance” to develop. A researcher observed in that accident that an early decision to continue shuttle operations in violation of requirements cultivated an operating culture in which not adhering to requirements became the norm. Decisions made thereafter made it easier for shuttle personnel to avoid adhering to other requirements, thus “normalizing” the deviation from technical requirements. Ultimately, a culture of deviance from technical requirements became the operating culture of shuttle personnel.”¹⁵⁰

146 J. Reason. [Human Error: Models and Management](#) British Medical Journal, 320 (2000):768-770.

147 [Distribution of Causes in Selected U.S. Aviation Accident Reports Between 1996 and 2003](#), C. M. Holloway; NASA Langley Research Center; Hampton, Virginia, USA, C. W. Johnson; University of Glasgow; Glasgow, Scotland, UK

148 Ibid., page 1.

149 [Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release](#), Marshall, Michigan July 25, 2010

150 Ibid, page xii.

The majority of major and catastrophic events have their root cause in systemic failures—a series of decisions often based on aggressive or short-sighted cost cutting measures—that pile up and result in a pollution event facilitated by a substandard regulatory regime.

It is the role of an effective regulator, operating for the benefit of the public interest, to provide the discipline necessary to assist corporations in making better decisions that reflect best practices and best available technology. If companies know the rules are strong, and all players must abide by them, there is an incentive for each company to not only do so, but seek ways and means by which to be the best of the best. If, in contrast, companies know the regulators are complicit in delivering a substandard regime replete with mixed messages and inadequate oversight, each company has a vested interest in rushing to the bottom—playing the angles and positioning themselves to avoid responsibility, accountability and transparency.

If the actual costs of mining are internalized at each stage of the mine's life cycle then the company can make a decision based on the principles of prudent capital budget analysis (internal rate of return and discounted cash flow methodologies) as to whether or not the project makes business sense. If a proper and full internalization of the costs—as reflected in the intent of the Polluter Pay Principle—renders the project uneconomic, then the project should not proceed, not because of environmental concerns, but because the project does not make economic or business sense. Internalizing costs also removes the incentive for companies to seek ways to maximize the benefits from the inherent asymmetric risk.

The purpose of this section is to illustrate how companies play the asymmetry. How they become unwilling or unable to make good on their obligations by way of corporate design, insufficient financial depth, and recourse through the courts. They seek out these corporate structure complexities in part because regulators do not require wholly funded, irrevocable, financial assurances that are secured even when corporations and/or their subsidiaries face financial challenges or seek refuge from creditors through insolvency.

It is important that the “escape from responsibility” options afforded companies be understood because it is these opportunities that companies rely upon even in advance of the permitting process. If companies are going to be able to continue to access these outs—because the Province allows them to engage in corporate structures that facilitate them, financial performance standards are not high enough, or because Canada's bankruptcy laws remain unchanged—then it is even more critical that companies be required to post full security against authorized, and potentially unauthorized, environmental harm before the harm occurs.

6.1. How Companies Avoid Costs

Corporations engage in complex and sophisticated corporate structures to maximize and protect earnings. They also design corporate structures to minimize transparency and/or avoid liability, including tax liability.

Despite legal requirements that polluters pay for harm their operations cause, this may be thwarted when companies engage in pre-emptive corporate structures to avoid doing so.

Corporations can also rely on their relative degree of financial weakness to defer, or avoid, meeting their obligations. If a company is granted a permit without being required to provide full financial assurance and then is unable to fulfill its obligations, a regulator wishing to compel compliance may be deterred by the spectre of the company's insolvency.

Corporations rely on bankruptcy protection to circumvent the Polluter Pay Principle. Reliance on the courts to provide protection while companies restructure and re-arrange ownership as a way of avoiding environmental liabilities has led "counsel for MOEs (to suggest) the CCAA is in danger of becoming a "regulatory car wash," arbitrarily cleansing debtors of environmental obligations and leaving taxpayers to pick up the tab."¹⁵¹

Often many of the same executives—and assets—reappear under a fresh corporate structure, while past liabilities, whether environmental or not, have been reduced or shed altogether.

6.1.1 Coal Mine Owner Walter Energy Puts Taxpayers at Risk

Walter Energy Inc. was the US parent of a conglomerate that engaged in exports of metallurgical coal for the steel industry. Its mines operated in the US, Canada and the UK. The Canadian coal mine assets were acquired from Western Coal Corp. in 2011. The acquisition was undertaken during the height of the recent coal export boom. The purchase was facilitated by a complicated leverage buyout where Walter Energy incurred significant debt in order to purchase the Canadian assets.¹⁵²

Walter Energy relied on a complex web of Canadian partnerships and unlimited liability corporations (ULCs) in the structure of its operation. This structure was designed to facilitate an outflow of cash to its US parent in support of fees and charges related to management services and debt servicing provided by the US parent, as well as to avoid tax.¹⁵³

The complex set of transactions resulted in huge Canadian tax savings according to Walter Energy in a report to its US lender, Morgan Stanley.¹⁵⁴ Walter Energy's corporate culture was steeped in the

151 Lexpert Business of Law, [The difficult tightrope courts must walk in insolvencies](#), April 1, 2014.

152 [Deals and Developments](#), Lawson and Lundell

153 [First Affidavit of William G Harvey](#) Sworn December 4 2015, paragraph 129 and 130.

154 [Exhibit M](#), Second Part to the First Affidavit of William G Harvey Sworn December 4, 2015.

aggressive pursuit of ways and means to avoid its fair share of the protection of, and contribution to, the system and the society that allowed it to purchase coal mine assets and operate coal mine sites. Not only did Walter Energy aggressively structure itself to avoid contributing to federal and provincial treasuries in Canada with the assistance of provincially empowered ULCs, it appears its financial insolvency will leave the British Columbian public on the hook for much of its mess.

Unlimited liability corporations are unique corporate entities sanctioned in BC, Alberta and Nova Scotia. They provide an unfair advantage to US owners of Canadian entities in that they facilitate a lower level of corporate tax obligation and provide cross border incentives to siphon cash flow away from domestic operations to the US parent.¹⁵⁵

The BC government should review the costs and benefits of the ULC form of corporate entity as this structure introduces significant lost tax revenue to the provincial economy without a corresponding level of benefit. If necessary the BC government should work with Alberta and Nova Scotia—the only other jurisdictions that allow ULCs—to agree to phase out this inefficient corporate structure vehicle.

Walter Energy's Canadian coal mining operations consist of the Brule and Willow Creek coal mines, located near Chetwynd, BC, and the Wolverine coal mine, near Tumbler Ridge, BC.

The three mines were placed in care and maintenance between April 2013 and June 2014. Walter Energy filed for bankruptcy protection in the US in July 2015 and successfully hived away from its operations any responsibility for its Canadian and UK entities. There is no ongoing financial obligation of the US parent—the company that reaped the benefits of significant cash flows between 2011 - 2015—to its Canadian and UK subsidiaries.

Walter Energy US recently sold a number of its US non-core assets to affiliates of ERP Compliant Fuels and Virginia Conservation Legacy Fund who assumed certain liabilities related the assets it acquired.¹⁵⁶ The US company continues to pursue the sale of its core Alabama coal operations to its senior lender group.¹⁵⁷

The three BC mines remain in care and maintenance at an estimated annual cost in excess of \$16 million. Walter Energy Canada Holdings, Inc., incorporated under the laws of BC, filed for protection under the *Companies' Creditors Arrangement Act (CCAA)* in December 2015—Canada's version of Chapter 11 bankruptcy protection.

Walter Energy Canada was granted a stay of proceedings until April 5, 2016 under the CCAA by the Supreme Court of British Columbia.¹⁵⁸ This allows the company protection from potential law suits

155 Tyee, [How Trans Mountain Project Will Pump Profits to its Texas Owners](#), Robyn Allan, January 12, 2015.

156 Birmingham Business Journal, [Walter Energy Strikes Deal to Sell Remaining US Assets](#), February 1, 2016.

157 Bankruptcy Company News, [Walter Energy Extension Approved](#), March 3, 2016

158 Walter Energy Canada Holdings, Inc. (Re), 2016 BCSC 107, [Reasons for Judgement](#), February 26, 2016.

launched by creditors and gives it time to determine whether it can be restructured as a going concern.

Walter Energy Canada wishes to seek potential purchasers who would continue to operate the Canadian mines, otherwise, it will be forced to wind up its operations and liquidate its assets. In the current commodity price environment and medium term outlook, it is unlikely a purchaser willing to restart operations and take on the company's obligations, including its environmental reclamation and contamination liabilities, will be secured.

Walter Energy estimated its reclamation liabilities at \$57.4 (US) million, net present value, as at October 31, 2015.¹⁵⁹ With operations ceased before the end of their useful life, reclamation costs have been estimated by Walter Energy to be between \$36 - \$42 (CDN) million, net present value.¹⁶⁰ The reduced requirement, according to Walter Energy, is a function of the sites being reclaimed before their life cycle is complete. The Brule mine has an expected remaining life of 8 years, Willow Creek 10 years, and Wolverine 4 years.

The Chief Inspector of Mines required Walter Energy Canada to provide a letter of credit in the amount of \$22.6 CDN million. Although the letter of credit has been cash collateralized, it is not clear when, or if, the funds will be advanced to the Province for the purposes for which they are intended. If the cash is not secured, and a purchaser willing to take on the environmental liabilities for all the sites is not found, taxpayers will be on the hook for the full amount of the closure costs, otherwise they will go unattended.

Walter Energy's corporate structure as it relates to Canadian entities was provided to the court and is reproduced as Figure 2, below. The court was informed that it was a "simplified" organizational chart, which means a number of entities have been excluded. A more fulsome description of the corporate structure, and the liability avoidance motivation behind it, is provided in court exhibit M.¹⁶¹

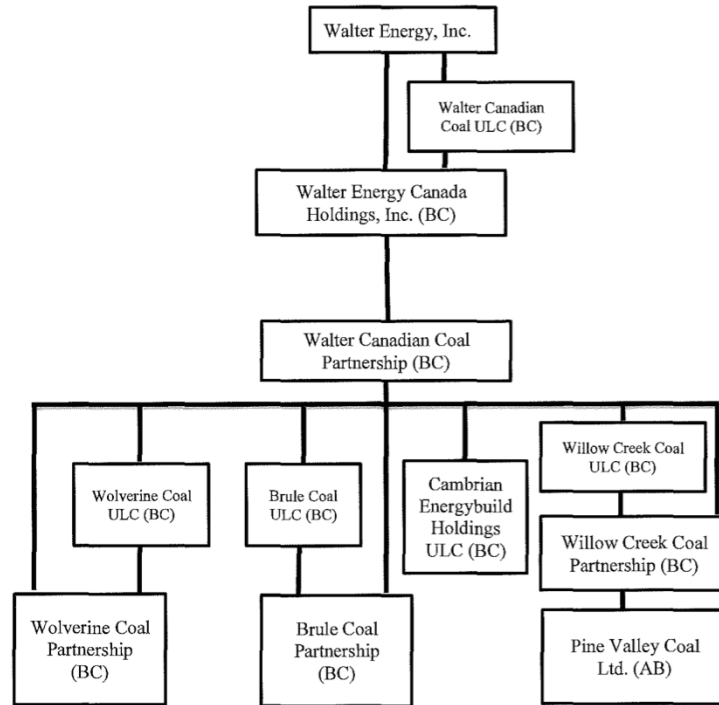
159 [First Affidavit of William G Harvey](#) Sworn December 4 2015, paragraph 90.

160 Net present value examines the expected cash flows over the life of the requirements and discounts them to the present by relying on a discount rate. Net Present Value is lower than the sum of the nominal cash flows.

161 [Exhibit M](#), Second Part to the First Affidavit of William G Harvey Sworn December 4, 2015.

Figure 2

Walter Energy Canada Simplified Corporate Structure



Source: First Affidavit CCAA Proceeding

Walter Energy, Inc. was the US parent, however under the court proceedings, the relationship no longer exists. Cambrian Energybuild Holdings ULC (BC) owns the UK coal mine. The principal operating entity is Walter Canadian Coal Partnership, a B.C. general partnership. Its partners are Walter Energy Canada and Walter Canadian Coal ULC, a BC unlimited liability company formed on June 28, 2012. All of the issued and outstanding shares of Walter Canadian Coal ULC are held by Walter Energy Canada.

As the organizational chart indicates, Walter Canadian Coal Partnership is a partner of each of the three BC partnerships that operate the Canadian mines: Wolverine Coal Partnership, Brule Coal Partnership and Willow Creek Coal Partnership. Each of the partnerships has a separate BC unlimited liability company as its other partner.¹⁶² Walter Energy Canada also owns a 50 percent interest in the Belcourt Saxon Coal Limited Partnership, but this relationship is not identified in the chart.

Shareholders of Unlimited Liability Companies (ULC) are supposed to become liable for the actions of the company, however, when a partnership is placed between a ULC and its parent, the unlimited liability feature of the structure is effectively avoided.

¹⁶² First Affidavit of William G Harvey Sworn December 4 2015, paragraph 13.

Walter Energy has participated in initial meetings and follow-up discussions with representatives of the Ministry of Energy and Mines and the Ministry of Environment “to review the background information leading up to the CCAA Proceedings, the current status of the mines and assets, and the Petitioners’ (Walter Energy Canada) plans to undertake a SISP (Walter Energy Canada’s proposed Sale and Investor Solicitation Process) to sell the assets and operations as a going concern.”¹⁶³

6.1.2 SnipGold Corp and Johnny Mountain

Johnny Mountain was a relatively short-lived gold mine that operated in the late 1980s, owned and operated by International Skyline Gold Corporation restructured into SnipGold Corp. The mine site is south of the Iskut River and east of the Alaska Panhandle and the Craig River in the Coast Mountains in the northern half of BC.

When the mine was operating supplies were brought in by air, using the airstrip at the site, or by boat from the coast up the Iskut River to the Snip mine and along the adjoining road. There is no road access to the mine and since it closed no one lives at the site.

Underground exploration and mine development began in 1986 and milling commenced in November 1988. Mining ceased in September 1990 due to high operating costs and low gold prices.¹⁶⁴

During the short life of the mine, “the company extracted 4.3 tonnes of silver, 2.8 tonnes of gold, 1008 tonnes of copper, and 153,000 tonnes of waste rock ... developed 3.5 kilometres of underground workings, an 11.5 hectare tailings pond, a warehouse, milling facility and offices, several roads and an airstrip—all of which exist today.”¹⁶⁵

No closure plan for the mine was established until 1999. Among other things the mine’s closure plan was intended to:

1. Develop a closure scenario that prevents potential impacts to surface and groundwater resources;
2. Restore the natural appearance of the area after mining ceases through the re-contouring and re-vegetation of disturbed lands and anthropogenic landforms;
3. Ensure that disturbances and re-developed landforms are stable from a long- term geotechnical and geochemical perspective;
4. Re-vegetate the site through the development of self sustaining natural succession processes; and

¹⁶³ [First Report of the Monitor KPMG Inc.](#), December 31, 2015, paragraph 67 and 68.

¹⁶⁴ Snip Gold Corp. (formerly International Skyline Gold Corp.), [Johnny Mountain](#).

¹⁶⁵ Johnny Mountain, [Mining’s Promise for Northeast BC?](#), Wild Border Watersheds.

5. Develop landforms and vegetative cover that provide a stable and productive wildlife habitat for resident and transient species utilizing the area.¹⁶⁶

The closure plan would dispose of the structures on site and return the disturbed lands to their original land use and compatibility with an alpine tundra wildlife habitat. However, twenty-five years after mine closure, there has been no remediation or rehabilitation. The abandoned buildings and equipment remain. More significantly metal leaching and acid rock drainage are a concern for ground and surface water protection. The Ministry of Energy and Mines has neglected to enforce the closure plan.

Johnny Mountain mine represents another failure in the legislated reclamation framework. It is an environmental hazard and public health risk. The lack of monitoring and enforcement by the Ministry of Energy and Mines and the Ministry of Environment has allowed a deplorable situation to transpire. SnipGold has insufficient financial resources to undertake its required reclamation of the site as a review of its financial statements clearly reveal. The company does not need to seek bankruptcy protection to avoid its obligations—the regulator is not requiring that the company fulfill them.

SnipGold's 2015 annual report explains that reclamation obligations of \$1,234,374 "are to be funded from operating cash flows, reclamation deposits or cash on hand...secured by restricted reclamation deposits and mining equipment which have carrying values at October 31, 2015 of \$395,303 (October 31, 2014: \$394,454) and \$63,394 (October 31, 2014: \$77,831), respectively. At October 31, 2015, restricted reclamation deposits include Chartered Bank guaranteed investment certificates and cash owned by the Company which are held jointly in the name of the Company and either the British Columbia Government's Minister of Finance or Minister of Agriculture."¹⁶⁷

The Province has less than 35 percent of SnipGold's obligations for reclamation secured as hard security, with mining equipment also pledged, yet no work is being undertaken to implement the decades old reclamation plan. SnipGold has cash on hand of less than \$56,000 and a reported loss for the year of \$500,000. The reclamation liability has existed for a number of years and yet the Province does not enforce its authority and require SnipGold to fulfill its reclamation requirements, or liquidate the security and undertake the work itself. SnipGold is avoiding its obligations yet the exploration company continues to operate.

As a result of the Mount Polley tailings storage breach the Chief Inspector of Mines issued orders to all mine sites with tailing facilities on August 18, 2014 that required:

1. The deadline for 2014 DSIs (dam safety inspections) be accelerated from March 31, 2015 to December 1, 2014;

¹⁶⁶ Ibid.

¹⁶⁷ SnipGold Corp., Annual Report 2015, Notes to Financial Statements, note 9, [Provision for Reclamation Obligations](#).

2. Those inspections be reviewed by an independent, qualified, third-party professional engineer from a firm not associated with the tailings storage facility;
3. The dam's consequence classification be reviewed by a third party; and,
4. For dams with a consequence classification of high, very high or extreme: the Emergency Preparedness and Response Plans (EPRP) be reviewed, tested and updated as required.

Johnny Mountain failed to properly heed the Chief Inspector's requirements. On January 25, 2015, in correspondence with the mine manager, deficiencies and lack of compliance were outlined with specific deadlines given by which a response was required.¹⁶⁸

The Chief Inspector of Mines was requested to comment on whether SnipGold had fulfilled his latest request, but has not responded to the written query.

6.1.3 Chieftain Metals and Tulsequah Chief

The Tulsequah Chief, located approximately 100 kilometres south of Atlin, BC and 65 kilometres northeast of Juneau, Alaska, has not been in operation for more than 50 years. This small underground zinc-gold-copper mine operated for about 20 years until it was closed by its then owner, and predecessor of Teck Resources Ltd., Cominco, in 1957 without acid mine drainage clean up or site reclamation.¹⁶⁹

Despite numerous remediation and pollution abatement orders over the years from the Ministry of Energy and Mines and Ministry of Environment, subsequent owners failed to clean up the mine site and stop acid discharge into the Tulsequah River that flows into the Taku River. Taku hosts salmon runs caught by British Columbian, First Nation and Alaskan fishers.

Redfern Resources purchased Tulsequah and in 2007 received a BC government permit to restart the Tulsequah Chief mine. The permit required security to be posted as part of the permit process. By March 2009 Redcorp Ventures Ltd. (the parent that funded the advances for the mine purchase), and Redfern Resources Ltd., filed for protection under the CCAA.¹⁷⁰

Redfern had posted \$1.2 million under the MA for reclamation with a further \$500,000 under the Mineral Exploration code requirements.¹⁷¹ During the CCAA proceeding, Redfern was required to pay \$1 million in the normal course of business to the Ministry of Energy and Mines under the MA, as related to Tulsequah's permit, which the company intended to do. After pressure from Redfern's

168 Letter from Chief Inspector of Mines to Johnny Mountain Mine Manager, January 27, 2015.

169 Chieftain Metals Inc., Tulsequah Project Information.

170 Initial Court Order Issued March 4, 2009.

171 Affidavit #4, Terence Chandler, May 21, 2009.

note holders, however, the company entered into discussions with the Chief Inspector to defer the payment.¹⁷² The Chief Inspector granted a “revised instalment schedule for payment of security monies for reclamation for the Tuslequah Chief mine”.¹⁷³

Redfern ex-president Terence Chandler teamed up with new partners to create Chieftain Metals Corp. which purchased the mine in 2010.¹⁷⁴ Chieftain’s capital cost plan to initiate mining activities is estimated at nearly \$200 million.

Chieftain was required to post an interest bearing bond in the amount of \$2,022,000 for closure reclamation costs anticipated to begin in 2025; discounted using a 6 percent discount rate. As well, Chieftain has \$45,000 on deposit with the Province related to its permit.¹⁷⁵ “The Corporation’s obligation consists of costs related to two distinct activities; the installation of a water treatment plant and decommissioning of the mineral property and related assets after its expected closure”.¹⁷⁶ There does not appear to be any security required related to the company’s current water treatment obligations as the security posted is for post-closure reclamation.

Since the mine had no tailings pond, the treated legacy was temporarily stored in sludge pits. To deal with the acid drainage flowing from the abandoned mine works, Chieftain agreed to build a water treatment plant to address its drainage issues. However, after the treatment plant was in operation for less than a year the company unilaterally shut it down because it was costing too much to operate.

Chieftain explained its failure to meet its permitted obligations in a press release. “The IWTP (interim water treatment plant) has been operating since December 2011, and treatment of the mine-impacted water thus far has shown significant improvement in discharge water quality, with test results showing a reduction of greater than 98% of the metals load compared with un-treated mine waters. Although the effluent has been meeting guidelines, the plant has been operating below designed levels of efficiency, with higher than budgeted operating costs. **The Company has advised authorities of its plan to suspend operations at the plant** while the Company implements mitigation measures and reviews plans for operational efficiencies.”¹⁷⁷ (emphasis added) Chieftain has not been required by the regulator to restart water treatment.

Recent inspections by the Ministry of Energy and Mines, Ministry of Environment and the Environmental Assessment Office revealed numerous instances of non-compliance with the Acts,

172 Affidavit of Paul Liebovitz, May 20, 2009, paragraph 45.

173 Letter from the Chief Inspector, April 30, 2009, Exhibit L.

174 Mr. Chandler left Chieftain in 2012.

175 Chieftain Metals Corp., Consolidated Financial Statements, Year Ended September 30, 2015, page 16

176 Chieftain Metals Corp., Consolidated Financial Statements, Year Ended September 30, 2015, page 18

177 Chieftain Metals Updates Progress on Tulsequah Chief Project, Press Release, June 29, 2012.

particularly with respect to violations of tailings management.¹⁷⁸ These included acidic runoff that was being directly discharged into Tulsequah River without the approval of the Ministry of Environment, a sludge pond built without proper approval, need for ongoing monitoring and maintenance of a drainage pipe that is prone to be crushed by falling rock, causing leaks, and build up that nearly caused a sludge containment pit to overflow.

On November 5, 2015 a Ministry of Energy and Mines non-compliance advisory letter was issued¹⁷⁹ followed by an EAO non-compliance order as Chieftain is not in compliance with its environmental assessment certificate, and a joint agencies letter.¹⁸⁰ The agencies' letter requires a compliance plan be submitted within 90 days of the letter.

However, according Energy and Mines Minister, Bill Bennett, the Province is not insisting on the restart of the water treatment plant while the mine is still in care and maintenance. He believes forcing that to happen could push Chieftain toward bankruptcy. This effectively lets the company—a company that knowingly accepted the reclamation and contamination obligations—off the hook. “We have asked them for a plan showing us how they would make some changes there that would alleviate some of the issues such as the spilled oil and in some cases some water going directly into the river. There are ways that they can divert that water. They can put it through settling ponds. There’s a number of things they can do... We want this company to be able to build a mine there so that they can operate this water treatment plant and pay for the improvements that are necessary.”¹⁸¹

There is no indication from Mr. Bennett why a company that has failed to live up to its promises and engages in serious non-compliance would begin to do so once they are in operation. Mine start-up, based on Cheiftain’s past practice, means more contamination and burden on the environment.

Chieftain filed its Compliance Plan to the BC Ministries of Energy and Mines and Environment “on February 8th, 2016. It included applications to amend the EMA Permit #105719 and Mines Act Permit M-232 to reflect the site being on care and maintenance.”¹⁸² Presumably, it does not include treatment of the mine impacted water although the treatment plant has been built at a capital cost of \$5 million. The capital sits idle, and the water is untreated.

Teck Resources—the site’s previous owner—lent Chieftain the funds to build the water treatment facility. The *EMA* Section 45 provides authority to require remediation of contaminated sites be

178 [MEM Inspection Report](#), October 15, 2015, [MoE Inspection Record](#), October 15, 2015, and [EAO Inspection Record](#), July 14, 2015.

179 Ministry of Environment, [Non-Compliance Advisory Letter](#), November 5, 2015.

180 [EAO Non-compliance Order](#), November 10, 2015

181 Alaska Public Media, [Tulsequah mine won’t have to restart water-treatment](#), November 25, 2015.

182 Chieftain Metals Corp. Interim Management’s Discussion and Analysis, Quarterly Highlights for the Three Months Ended December 31, 2015, page 6, [Sedar Filing](#) February 26, 2016.

undertaken by previous owners and operators. Perhaps the government should be examining ways and means of undertaking the requisite water quality treatment from Tulsequah's previous owner if the current owner is unable to do so.

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. Instead, the Province appears unwilling to ensure the requisite water treatment is undertaken. It is hoping Chieftain can raise enough capital to take the mine out of care and maintenance, and then hoping the company will use operating cash flow to undertake water quality treatment it should be undertaking today.

Tulsequah is another example of the Ministry's failure to uphold the Polluter Pay Principle.

7. Financial Assurances Models

Mandatory environmental financial assurances are the most explicit representation of the Polluter Pay Principle in action "since the project proponent or operator is expected at the outset to cover all costs associated with environmental protection, site reclamation, longer-term protection of closed sites, and damages from accidents".¹⁸³

Financial assurance models exist in a number of jurisdictions to ensure those entities responsible for the release of hazardous substances, or who disturb the land as a result of their commercial activity, have the necessary financial resources for clean up, remediation, compensation, and/or reclamation.

Federally in Canada there have been a number of regimes recently introduced that explicitly require companies provide proof of financial assurances to finance the cost of responding to unauthorized releases of hazardous substances from pipeline transport, rail transport, offshore drilling and nuclear accidents. These regimes include those introduced through the *Pipeline Safety Act*, *Safe and Accountable Rail Act*, and the *Nuclear Liability and Compensation Act*.¹⁸⁴

Canada is a signatory to the International Oil Pollution Fund (IOPF) for spill liability related to the marine transport of hazardous substances.

Although none of the provincial governments in Canada have developed financial assurance models for environmental damage in advance of accidents at mine sites, financial assurance models related to reclamation and after-the-fact contamination are commonplace.

A review of a number of provincial, national and international financial assurance models are provided below.

7.1 Ship-source Oil Pollution Liability and Compensation Framework

The Canadian government aims to prevent and respond to marine oil spills through regulatory oversight, inspections, and enforcement measures supported by a domestic and international liability and compensation framework that attempts to provide adequate financial resources from industry when there is a spill event. Marine oil spill risk is addressed through three avenues:

1. incident prevention;
2. incident preparedness and response; and
3. liability and guaranteed industry funded compensation.

The marine spill regime recognizes that liability standards and guaranteed access to financial

¹⁸³ 2012 Fall Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, [Financial Assurances for Environmental Risks](#).

¹⁸⁴ [The Nuclear Liability and Compensation Act](#), February 2015.

resources (compensation) are an important part of any prevention and response regime. Financial assurances reduce the frequency and consequence of spill events, and assist in timely recovery when they happen, which ultimately reduces impact.

Transport Canada's regulations and standards fall under the *Canada Shipping Act (CSA) 2001* and the *Arctic Waters Pollution Protection Act (ABPPA)*, combined with international regulations established by the International Maritime Organization (IMO) and related federal legislation through the *Marine Liability Act (MLA)*.

The federal government also has a defined regime for response to oil spill events governed primarily under the CSA 2001. The original Act was amended in 1993 as a result of the Public Review Panel on Tanker Safety and Marine Spills Response Capability findings—the Brander-Smith Report.¹⁸⁵ This panel was established to review Canada's preparedness for a major spill such as the March 24, 1989 Exxon Valdez spill in Prince William Sound and the December 23, 1988 Nestucca spill off the coast of Washington that migrated and affected BC's coast. The Brander-Smith Panel identified significant deficiencies in Canada's oil spill preparedness regime and made numerous recommendations.

Canada's Ship-source Oil Spill Preparedness and Response Regime is complemented by a liability and compensation framework set out in Part 6 of the *Marine Liability Act (MLA)*. The Act implements a number of international conventions and establishes different liability and compensation regimes depending on the type of oil and type of ship involved in an incident. Canada has been a member of the international liability and compensation regime for oil tankers since April 24, 1989.

Tanker owners face liability for a spill of persistent oil capped at a limit of about \$160 million CDN. They are required to hold insurance to cover this potential liability. The insurance is provided through thirteen P&I Clubs.¹⁸⁶ Above the capped amount provided through tanker insurance issued by the P&I Clubs, funding for additional financial resources is provided by those who ship the oil based on volume shipped submitted to a fund—International Oil Pollution Compensation Fund (IOPC Fund), supplementary fund, and Ship-source Oil Pollution Fund (SOPF).

There are four layers, or tiers, of financial assurances for spills of persistent oils in a marine environment available through the regime—the first three required as part of the international regime, with the final tier provided as a national top-up of financial assurances:

- 1. 1992 CLC:** Each tanker owner is required to carry mandatory insurance to a certain limit as part of the 1992 Civil Liability Convention (CLC), this insurance is made available to tanker owners who belong to one of 13 insurance clubs;

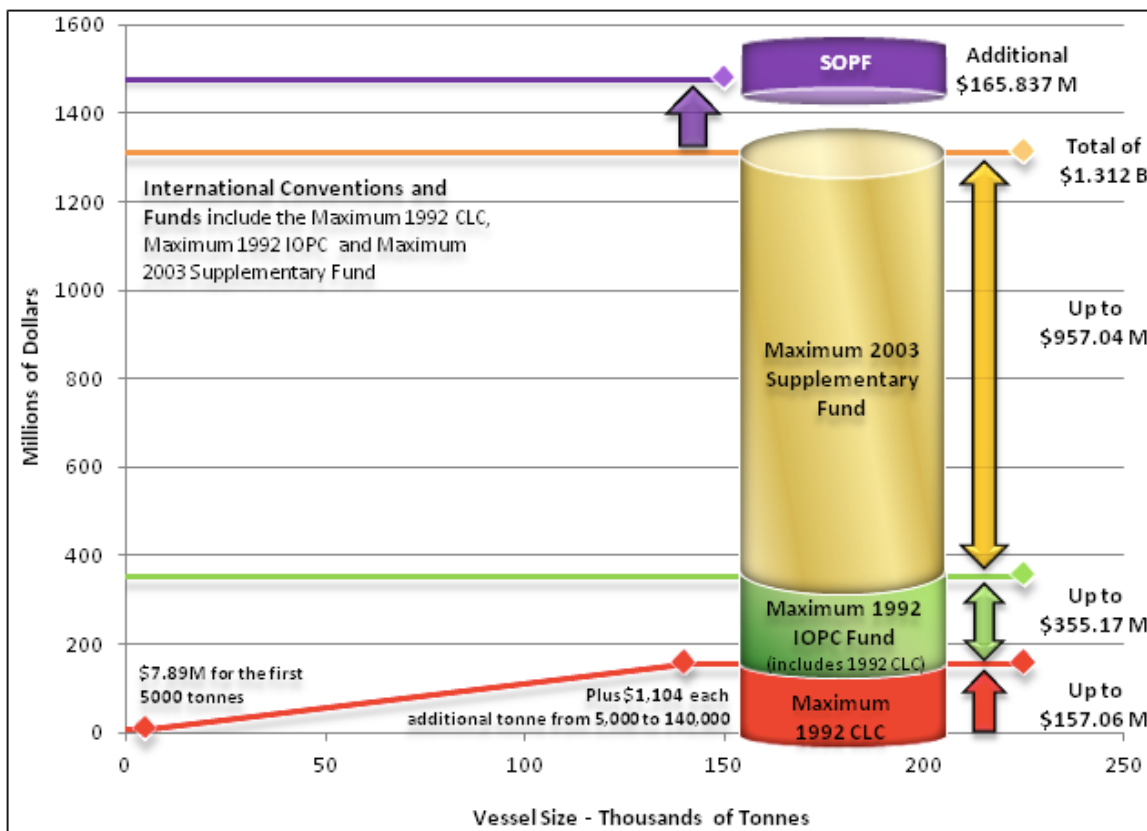
185 Public Review Panel on Tanker Safety and Marine Spills Response Capability, [Final Report](#), September 1990.

186 [International Group of Protection and Indemnity Clubs](#)

2. **1992 IOPC Fund:** Additional compensation is made available through the 1992 IOPC Fund when claimants do not obtain full compensation under the first tier of protection—the 1992 CLC. This can happen when the damage exceeds the limits of the shipowner’s liability, or if the shipowner is financially incapable of meeting their obligations;
3. **2003 Supplementary Fund:** The Supplementary Fund makes additional compensation available. The total amount payable for any one incident for damage in a State that is a member of this Fund is approximately \$957 million.
4. **SOPF:** The Ship-source Oil Pollution Fund is a domestic fund that provides up to \$166 million in additional resources.

Graph 6

Maximum Compensation for Oil Spills from Tankers



Source: Ship-source Oil Pollution Fund
 Based on the value of the SDR (\$1.74961) on April 1, 2015

The financial resources are set at a maximum amount based on Special Drawing Rights (SDRs)—the supplementary foreign exchange reserve assets defined and maintained by the International

Monetary fund. Based on the value of the SDR (\$1.74961) on April 1, 2015, the maximum financial compensation provided under the international regime, with the domestic top up was approximately \$1.5 billion CDN. This means that if an oil spill results in clean up, remediation and compensation costs above this amount, legitimate losses will not be compensated. The regime provides for a pro-rata share of claims settlement if costs exceed resources.

One of the major weaknesses of the regime is that the amount of compensation available is too low to fund a major or catastrophic loss. Increases to the compensation levels require agreement between all signatories to the international protocol. This is a very extensive process. There are currently 114 States Parties to the 1992 Fund Convention and 31 States Parties to the Supplementary Fund Protocol.

Any effective compensation program needs to be designed with the ability to increase the compensation limits in line with risk of damage and loss.

7.2 Canada's Amended Pipeline Safety Act

On June 18, 2015 the *Pipeline Safety Act (PSA—Bill C-46)* received Royal Assent and amended the *National Energy Board Act (NEB Act)*, and, to a lesser extent, the *Canada Oil and Gas Operations Act (COGOA)*. The *PSA* comes into effect on June 19, 2016.¹⁸⁷ Supporting regulations are currently being drafted.

The stated goal of the amendments is to “strengthen the safety and security of pipelines regulated by those Acts. The federal government has recognized that a regime requires three elements:

1. incident prevention;
2. incident preparedness and response; and
3. liability and guaranteed industry funded compensation.¹⁸⁸

Strengthening safety and security of federally regulated pipelines means essentially a mandatory requirement that pipeline operators have on hand \$1 billion in financial assurances for pipelines capable of transporting at least 250,000 barrels a day of oil, gas, or other commodity. The federal regime has codified the important role financial capacity, and proof of financial capacity, plays in enforcing the Polluter Pay Principle.

¹⁸⁷ [Pipeline Safety Act, Bill C-46](#)

¹⁸⁸ Backgrounder, [Pipeline Safety](#), Natural Resources Canada

The purpose of the amendments are summarized in the legislation and are reproduced below as each of the elements are an important part of a workable regime.¹⁸⁹ Specifically, the enactment of the *PSA*:

- (a) reinforces the “polluter pays” principle;
- (b) confirms that the liability of companies that operate pipelines is unlimited if an unintended or uncontrolled release of oil, gas or any other commodity from a pipeline that they operate is the result of their fault or negligence;
- (c) establishes the limit of liability without proof of fault or negligence at no less than one billion dollars for companies that operate pipelines that have the capacity to transport at least 250,000 barrels of oil per day and at an amount prescribed by regulation for companies that operate any other pipelines;
- (d) requires that companies that operate pipelines maintain the financial resources necessary to pay the amount of the limit of liability that applies to them;
- (e) authorizes the National Energy Board to order any company that operates a pipeline from which an unintended or uncontrolled release of oil, gas or any other commodity occurs to reimburse any government institution the costs it incurred in taking any action or measure in relation to that release;
- (f) requires that companies that operate pipelines remain responsible for their abandoned pipelines;
- (g) authorizes the National Energy Board to order companies that operate pipelines to maintain funds to pay for the abandonment of their pipelines or for their abandoned pipelines;
- (h) allows the Governor in Council to authorize the National Energy Board to take, in certain circumstances, any action or measure that the National Energy Board considers necessary in relation to an unintended or uncontrolled release of oil, gas or any other commodity from a pipeline;
- (i) allows the Governor in Council to establish, in certain circumstances, a pipeline claims tribunal whose purpose is to examine and adjudicate the claims for compensation for compensable damage caused by an unintended or uncontrolled release of oil, gas or any other commodity from a pipeline;
- (j) authorizes, in certain circumstances, that funds may be paid out of the Consolidated Revenue Fund to pay the costs of taking the actions or measures that the National Energy Board

189 Bill C-46, [An Act to amend the National Energy Board Act and the Canada Oil and Gas Operations Act Summary](#).

considers necessary in relation to an unintended or uncontrolled release of oil, gas or any other commodity from a pipeline, to pay the costs related to establishing a pipeline claims tribunal and to pay any amount of compensation that such a tribunal awards; and

- (k) authorizes the National Energy Board to recover those funds from the company that operates the pipeline from which the release occurred and from companies that operate pipelines that transport a commodity of the same class as the one that was released.

Under section 48.13(2), the National Energy Board may order types of financial resources a company must hold, and the amount under each type, to meet its requirements. Under section 48.13(7), the acceptable types of financial assurances may be defined in the regulations.

The proposed types of financial instruments being considered are:

- Promissory note
- Insurance policy or certificate of insurance
- Escrow agreement
- Letter of credit
- Line of credit
- Participation in an approved pooled fund
- Parental guarantees
- Security bond or pledge, or indemnity bond or suretyship
- Cash and cash equivalents

The amount proposed for the minimum portion of readily accessible financial resources is 10 percent of the financial resource requirements.

“Pipeline operators have a duty to provide evidence of financial resources, *if so requested* by the NEB, and maintain these financial resources as per section 48.13 (3) and (6).”¹⁹⁰ (emphasis added)

The “proof on request” element is the weakest feature of the regime. Companies only need respond to a request to prove they have sufficient financial resources to meet the requirements of the Act. It is the companies that pose the greatest risk that will be tempted to skirt compliance if compliance is not regularly and rigorously enforced. Proof of financial resources on a regular basis should be a mandatory feature of the program, not a function of requests at the discretion of the regulator.

190 Library of Parliament, Research Publications, [Legislative Summary of Bill C-46: An Act to amend the National Energy Board Act and the Canada Oil and Gas Operations Act](#), Penny Becklumb, Mohamed Zakzouk, Economics, Resources and International Affairs Division, 15 January 2015, Revised 21 May 2015, 2.1.3.3 Duty to Provide Evidence of Financial Resources and to Maintain Financial Resources

7.3 Alberta—Mine Financial Security Program for Reclamation

In 2011, the Province of Alberta revamped its reclamation program related to oil sands and coal mines. The Mine Financial Security Program (MFSP) is administered by the Alberta Energy Regulator (AER). MFSP collects financial security from oil sands and coal mines in an effort to protect the Alberta public from paying for end-of-life project closure costs. The main principle of the MFSP is that the approval holder, under the *Environmental Protection and Enhancement Act*, is supposed to have sufficient financial resources for carrying out suspension, abandonment, remediation and surface reclamation work to the standards maintained by the Province.

The MFSP requires considerable accountability and transparency through consistent reporting requirements for industry and clear rules on audits. The Province requires sign-off by financial officers on any liability estimates and requires these estimates be audited by accounting professionals. The Mine Financial Security Program Standard (March 2014) sets out the definitions, calculation methodology, asset calculations and reclamation calculations.¹⁹¹

However, as noted in an audit undertaken in 2015 by the Alberta Auditor General, taxpayers may be on the hook for billions of dollars in clean up costs due to a risky system of calculating and collecting securities from oil sands and coal companies. The audit determined that as of December 31, 2014 only \$1.57 billion of security was held for oil sands and coal reclamation, compared to the total estimated reclamation liabilities of \$20.8 billion—an unfunded liability of \$19.3 billion.¹⁹²

Much of the problem centres on the way the government calculates financial security for companies. The Province of Alberta applies an “asset to liability approach” rather than a “full security approach” where companies are required to provide full security up front. As the Alberta Auditor General pointed out, “both the security held and the value of the resource in the ground are considered assets in the program, which is designed to offset liabilities. As the resources are depleted, the security requirements increase to reflect greater liability exposure. The security required is reduced as reclamation takes place and the liability is reduced.”¹⁹³

The Alberta Auditor General went on to warn that there is significant risk that asset values calculated by the department are overstated, do not incorporate a discount factor to reflect risk, use a forward price factor that underestimates the impact of future price declines, and treats proven and probable reserves as equally valuable.

191 [Mine Financial Security Program Standard](#), March 2014, Alberta Energy Regulator.

192 [Report of the Auditor General of Alberta](#), July 2015, Environment and Parks and the Alberta Energy Regulator—Systems to Ensure Sufficient Financial Security for Land Disturbances from Mining.

193 *Ibid.*, page 25.

Under the MFSP, mining operators are required to pay a base deposit and to provide yearly plans for reclamation to the AER. For all the work planned but not completed, companies owe \$75,000 per hectare in future securities. Companies begin to pay this amount when there are fewer than 15 years left of reserves and those payments gradually increase until they are fully paid with less than six years left on the project. However, as the Auditor General indicates, flaws in the calculation and methods by which companies can extend a mine's life means that not a single company has provided additional financial security to date.

"Presently, no oil sands mining operator has posted more than the base amount of security. In other words, no security is currently required under the various other forms of deposit based on data submitted by oil sands mine operators."¹⁹⁴

Of greater significance, "the MFSP is not designed to respond quickly to sudden fluctuations in the price of oil... If an abrupt financial and operational decline were to occur in the oil sands sector it would likely be difficult for an oil sands mine operator to provide this security even if the need for the security was identified through the program. It is important to recognize that the department has accepted the risk of not protecting against a broad based and rapid structural decline in the oil sands sector..."¹⁹⁵

Alberta's reclamation program does not exhibit features that reflect those of a well designed or administratively effective regime.

7.4 Quebec—Amendments to the Mining Act

In December 2013, the Province of Quebec made amendments to its *Mining Act* and regulations.¹⁹⁶

The Mining Act's preamble explains that the purpose of the legislation is to recognize that:

- mineral resources are present throughout Québec and constitute social wealth for present and future generations;
- mining has helped forge Québec's identity and should continue to be a source of pride;
- it is necessary to promote the optimal use of mineral resources in order to create as much wealth as possible for the people of Québec;
- it is necessary to engage in mineral development in a manner respectful of the environment;
- it is necessary to promote development that is associated with Québec communities and integrated into their environment;
- it is necessary to pursue sustainable diversification of the regions' economies.

The amendments to the Act significantly reduce the risk that the Province will inherit mine sites in need of rehabilitation work without having the funds to undertake that work.

¹⁹⁴ Ibid., page 28.

¹⁹⁵ Ibid., page 28.

¹⁹⁶ [Quebec Mining Act](#), in particular, Division III—Protective Measures and Rehabilitation and Restoration Measures

The Province will not grant a mining lease unless a reclamation plan is approved by the Minister of Natural Resources and Energy. The reclamation plan must contain a detailed estimate of the expected reclamation costs which include water treatment. Work to complete the reclamation plan must begin within three years after operations cease.

A full 100 percent of the estimated reclamation costs must be guaranteed. The total amount of the guarantee must be deposited over a two year period once the rehabilitation plan is approved. Mining companies that were already active on August 22, 2013 have until August 22, 2016 to submit the full amount of the required guarantee.

In addition, the Quebec Ministry of Natural Resources is required to publish, on an annual basis, the rehabilitation and restoration plans approved by the Minister along with the total amount of the financial guarantee required.¹⁹⁷

Full funding and regular reporting of reclamation plans and security obligations are key features of an effective financial assurances regime for authorized environmental harm.

7.5 BC Oil and Gas Commission—Liability Management Rating

The British Columbia Oil and Gas Commission (OGC) is the independent regulator of oil and gas activities in the Province. The regulator is responsible for exploration and development, facilities construction, operation and decommissioning, including sites and pipelines. The BC oil and gas sector is predominantly driven by gas production. Of the 40,000 kilometres of pipelines in the province, over 80 percent transport natural gas, 5 percent oil, and the remainder carry water or other gases or liquids.¹⁹⁸

At present OGC regulates 26,491 oil and gas wells with:

- 12,771 wells that are active
- 6,161 wells that are inactive (not producing for at least 12 months)
- 3,014 wells that are abandoned (permanently plugged with cement to ensure fluids will not leak but the company still owns the infrastructure)
- 4,545 wells are restored¹⁹⁹

Contamination at oil and gas sites are addressed through remediation (clean up of contaminants and soil contamination) and reclamation. The OGC has legislated responsibility in this area and all well sites and facilities, including pipelines, that have not been abandoned must be restored to receive a Certificate of Restoration from the OGC.

¹⁹⁷ Ibid., Section 215

¹⁹⁸ [2014 Pipeline Performance Summary](#), BC Oil and Gas Commission, page 3

¹⁹⁹ [Oil and Gas Commission diligent about old wells](#), Letter to the Editor, Paul Jeakins, Commissioner and CEO, Oil and Gas Commission, February 18, 2016.

In 2010, the BC Auditor General undertook an audit to “assess whether the OGC is providing adequate oversight to the risks associated with upstream (exploration to abandonment) oil and gas site contamination.”²⁰⁰ He concluded that improvements were needed to adequately meet expectations and noted that the previous 2002/03 report by his office on contaminated sites (the same report that recommended the Ministry of Energy and Mines report on liability for reclamation at mine sites) had similar findings. These included the need for the OGC to improve its oversight of oil and gas sites in the province and to better manage the risks of contamination.

In addition to the environmental and human risk, the Auditor also noted that there is additional risk that some well operators might not meet their legal responsibilities to restore sites due to their financial position.

A number of changes have been made by the OGC to improve information on environmental and financial risks and associated oversight procedures, as well as improved accountability reporting to the public and the Legislature.

In November 2011, the OGC initiated its Liability Management Program (LMP) for making decisions regarding security requirements for BC operations, ensuring compliance with the Act and regulations and ensuring that a responsible party has adequate funding to meet its liability.

Security deposits for permit holders are calculated as a ratio of deemed assets to deemed liabilities using the following generalized formula:

$$\text{Liability Management Rating} = \text{Deemed Assets and Security Deposit} / \text{Deemed Liabilities}$$

“Permit holders with a calculated LMR of less than 1.0 will be deemed high risk and reviewed for a security deposit.”²⁰¹ If the LMR is below 1.0 then the company must pay a security deposit equal to the total deemed assets minus the total deemed liabilities which is placed in trust by the OGC. For the year ended March 31, 2015, the OGC held \$42 million in security deposits of which \$26 million is held as cash or investments, and \$16 million is in the form of irrevocable letters of credit.²⁰²

A list of permit holders and their respective LMR is updated monthly and posted on the Commission’s website.

The OGC also administers an orphan-site reclamation fund financed through a levy on oil and gas production. The fund ensures that the costs of reclamation for wells, pipelines and facilities, for which an owner cannot be identified, or is insolvent, is covered. There are 37 sites designated as orphaned

200 Office of the Auditor General of British Columbia, *Oil and Gas Site Contamination Risks: Improved oversight needed*, February 2010., page 1.

201 BC Oil and Gas Commission, *Liability Management Rating Program Manual*, November 2015, Version 2.6, page 6.

202 BC Oil and Gas Commission, *Financial Information Act Report*, For the Year Ended March 31, 2015, Note 4.

sites in the province of which 6 have been substantially restored with the remainder in various stages of restoration.²⁰³ The OGC recognizes \$7.5 million for remediation of orphaned sites and continues to monitor other sites that could potentially be designated as orphaned.

²⁰³ Ibid., note 12.

8. Toward a Financial Assurances System for Mining in BC

Environmental liability regimes should be aimed at achieving efficient levels of deterrence and compensation. In other words, applying economic theory to environmental policies, the introduction of a liability regime in response to planned and unplanned environmental harm needs to pursue two important and interrelated policy goals:

1. deterrence of inefficient activities which leads to the prevention of environmental harm, including pollution, because it is not cost justified; and
2. compensation from the polluter for environmental harm that satisfies clean up, restoration, remediation, reclamation and adequately settles claimants' commercial losses.

Efficient levels of deterrence arise when, for example, a mine operator decides to rely on a dry stacking technology for tailings because the reclamation and environmental accident related financial assurances under a dry stacking method are much less expensive over the life of the project. In this way, fewer tailings ponds failures result, because there are fewer tailings ponds. Certainly this goal is consistent with the expert engineers report whereby the report identified the need to reduce the number of tailings dams to reduce risk of breaches.

Both the deterrence and compensation functions are undermined if the polluter does not fear the spectre of being held accountable to pay and/or, if after the harm is done, has insufficient financial ability to compensate for the damage caused.

The Polluter Pay Principle is the guiding force behind the development of who pays, when, and how. Adopting this principle requires that measures be introduced to not only require that the polluter pay, but establish up front that the polluter actually can, and will, pay. A rigorous financial assurances mechanism fulfills this function.

8.1 Site Reclamation—Recommendations

The benefits from an effective financial assurances framework for site reclamation and remediation, which includes a requirement that companies provide full funding of their future obligations up front, go far beyond removing the threat that the public will pay. The benefits go beyond the assurance that the reclamation and remediation from permitted operations will be undertaken in a timely and efficient manner.

When a company is required to internalize the environmental cost of its production prior to commencing operations—costs it has agreed to pay as part of the permitting process—the project proceeds only if the company proves it can live up to its obligations. This reduces the likelihood of future insolvency and the negative impact mine failures have on the economy.

Internalizing costs also means that when projects advance they have a greater likelihood of success. There are far too many insolvencies and bankruptcies in BC's mining sector. Too often the same players, and the same assets, reappear and begin the cycle anew. Internalizing environmental externalities will help remove the boom and bust; rush and retreat tendencies of the mining sector bringing with it the benefits of a more stable and resilient mining industry.

As well, full funding of estimated future obligations means that if unexpected costs arise during the life of the project, or when it moves into its closure phase, the gap between the security the company has posted, and the unexpected costs is narrower, and easier for the company to bridge. If a company has \$50 million in reclamation security to meet \$50 million in expected costs and finds it needs an addition \$10 million it is a lot harder for the company to renege on its obligation than if it only has \$20 million as posted security. Full funding of reclamation makes it easier for companies to fulfill their promises.

An effective financial assurances framework for site reclamation and remediation:

1. enforces the Polluter Pay Principle by ensuring those who benefit from disturbing the land and contaminating it, pay to reclaim and remediate it;
2. requires full financial security at permit to ensure that the public is not left to pay if the company does not fulfill its obligations thereby removing the discretionary power for determining security from the Chief Inspector of Mines along with the inherent conflict of interest such discretionary power implies;
3. requires those who own operating, care and maintenance or closed mines, provide full security within a three to five year period;
4. creates a fund levied against volume of production which could be made available for a fee to smaller companies who may be able to pay for financial assurance instruments but are not able to gain access to them through the financial sector. The fund would also be available to provide financial resources for reclamation and remediation in the unlikely event a company was unable to pay;
5. provides full disclosure of reclamation plans, costs and types of security in place on an annual basis, along with an estimate of unfunded liability, if any;
6. allows among the types of financial instruments letters of credit and surety bonds, because these instruments have a built in regulatory element—the bank or insurance company reviews the company and its financial/operational risk as part of the entering into the contract. Parental guarantees and pledging of physical assets should not be permitted. Parental

guarantees are undesirable because of the difficulty which may arise if the parent experiences financial challenges, and physical assets are undesirable because they are illiquid and their value eroded over time.

8.2 Environmental Accidents—Recommendations

The benefits from a financial assurances framework for environmental accidents, which includes a requirement that companies prove access to adequate financial resources prior to an event, go far beyond removing the threat that the public will pay. It also goes beyond the benefits that are achieved from the assurance that the response will be efficient and effective.

When a company has adequate financial resources to meet the costs of a major or catastrophic event the threat of financial insolvency is removed. This is a benefit to the company, its shareholders, and if the mine is operating, its employees.

Ready access to adequate financial resources is also a benefit to the regulator. A company's deteriorating financial position after an accident can have an affect on regulatory decisions regarding clean up and remediation orders as well as affect the decision making process involved in permitting a mine operator to restart operations.

An effective financial assurances framework for environmental accidents:

1. enforces the Polluter Pay Principle by ensuring those who pollute, pay;
2. reaffirms that the liability of the company who operates the mine site is unlimited if an unintended environmental harm event occurs as result of their fault or negligence;
3. establishes a limit of liability on a no-fault basis—fault or negligence does not need to be proven. The limit of liability determined on the basis of risk related to the size of the mine, the relative degree of risk of its technologies (e.g. dry stacking is a less risky method of tailings management than wet), and other factors that speak to accident frequency and consequence;
4. requires that companies who operate mines maintain the financial resources necessary to pay the limit of liability amount that applies to them;
5. requires that companies who operate mines prove on a regular basis that they have the financial resources necessary to pay the limit of liability that applies to them, along with a requirement that if any change to their financial resources program occurs that the regulator must be notified and provided a plan as to how the capability to meet the limit of liability has been achieved;

6. establishes an industry funded pool for damages that might exceed limits of liability (for which there is no party who is found to be at fault) or if in the unlikely event, the polluter is unable to pay;
7. recognizes the full funding of legitimate claims for damages to the environment and people in other jurisdictions such as Alaska and Washington;
8. allows for the establishment of a claims process for compensable damage which is arms length from the mine operator who experienced the event along with a procedure for review of disputes regarding claims adjudication which is outside the courts; and
9. allows among the types of financial instruments insurance policies or certificates of insurance, letters of credit, and surety bonds, because these instruments have a built in regulatory element as the bank or insurance company review the company and its financial/operational risk as part of the entering into the contract. Parental guarantees and pledging of physical assets should not be permitted. Parental guarantees because of the difficulty which may arise if the parent experiences financial challenges, and physical assets because their value may be eroded from the event itself.

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