MOUNT POLLEY: A CALL FOR IMPROVED COORDINATION AND TRANSPARENCY IN COMPLIANCE MONITORING AND ENFORCEMENT FOR MINES IN BC

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ABBREVIATIONS

BC  British Columbia
BCEAA  British Columbia Environmental Assessment Act
BP  British Petroleum
COS  Conservation Officer Service
EA  Environmental Assessment
EAC  Environmental Assessment Certificate
EAO  British Columbia Environmental Assessment Office
EMA  Environmental Management Act
e-PIC  Project Information Center
HCTF  Habitat Conservation Trust Foundation
MFLNRO  British Columbia Ministry of Forests, Lands, and Natural Resources
MEM  British Columbia Ministry of Energy and Mines
MMS  Mine Management System
MoE  British Columbia Ministry of Environment
MSHA  Mine Safety and Health Administration
NRO  Natural Resource Officer
OAGBC  Office of the Auditor General of British Columbia
1. INTRODUCTION AND CONTEXT
On August 4th of 2014, Mount Polley, an open pit gold and copper mine located in south-central BC, experienced a tailings dam breach that resulted in a reported 17 million cubic meters of water and eight million cubic meters of tailings and toxic materials to be discharged into adjacent Polley and Quesnel Lakes.

The breach is considered by many to be one of the worst mining accidents to have occurred in the province, and has sparked widespread concerns over potential impacts on the surrounding environment, wildlife, and local communities. In response to the breach, an independent engineering investigation and inquiry into the tailings pond breach was launched, as well an independent third-party review of all 2014 Dam Safety Inspections for “every tailings pond at a permitted mine in the province” (Imperial Metals Website).

While details on the specific infractions of Imperial Metals will likely not come to light until findings from the Provincial reviews are released, the incident has raised questions around the weaknesses of BC’s regulatory process for mines in general. Compliance monitoring and enforcement of mining in BC is largely carried out at the provincial level by three key agencies: the BC Ministry of the Environment (MoE), MEM, and the BC Environmental Assessment Office (EAO). Though the responsibilities and actions of the MEM and MoE will likely be a focus of the provincial review processes, considerations should also be given to the role that EAO has had in the oversight of this mine. In the wake of the tailings breach, it has become clear that the role of EAO in the ongoing operation of the Mount Polley mine has been limited compared to other mines operating in the province, both in areas of monitoring and enforcement and in providing project information to the public. This is significant as EAO was established to function as the front line decision maker for large development projects in BC, and provide an integrated process for identifying, evaluating, avoiding, and mitigating adverse effects (environmental, social, health, heritage, and economic) (EAO Website). It also plays a crucial role in providing public access to project information through its Project Information Center (E-Pic) website.

The first half of this report provides an overview of EAO’s role in the province’s mining regulatory structure, specifically in relation to Mount Polley. Mount Polley has received very limited attention from EAO, possibly because the mine was grandfathered in using the pre-1994 environmental assessment (EA) process and out-dated project approval certificate, neither of which facilitate meaningful EAO involvement.
The second half of this report provides an overview of the sentencing options for environmental offences in BC and identifies appropriate sentencing recommendations for Imperial Metals in the case of Mount Polley. Fines and creative sentencing are evaluated as methods for addressing the Mount Polley tailings breach.

2. COMPLIANCE MONITORING AND ENFORCEMENT

2.1. EAO’s Role in Provincial Mining Regulation
As stipulated under the BC Environmental Assessment Act (BCEAA), all mines operating in BC that have a production capacity equal to or greater than 75,000 tonnes/year of mineral ore require an environmental assessment certificate (EAC) to operate (BCEAA, 2002). This certificate is issued by EAO upon completion of an EA and includes a list of “conditions” that the project must abide by in order to prevent or mitigate potential adverse effects that have been associated with the project. Older project EACs contained commitment rather than conditions. For all mines operating with an EAC, EAO is responsible for ensuring compliance with certificate conditions (or commitments).

2.1.1. Auditor General’s Report on EAO
In 2011, a report by the Office of the Auditor General of BC (OAGBC) criticized EAO for its lack of compliance monitoring and enforcement, including failing to write certificate conditions in a manner that was “measurable and enforceable” and failing to ensure conditions were being met (OAGBC 2011).

While EAO has attempted to address these concerns through the development of new policies for the content of EAC conditions, it appears that the new guidelines have only been applied to new or ‘draft’ certificates (OAGBC 2012). Although EAO reports that it has been developing new mechanisms to improve compliance monitoring and enforcement, including the hiring of dedicated compliance staff and establishing a management program for monitoring, it seems likely that these resources are being applied asymmetrically to newer mines that have more recent EACs.

Older mines, such as Mount Polley, established before the first comprehensive EA Act in 1994, were approved under different legislation, such as the Mine Development Assessment Act. While the Act required “information, analyses and an environmental protection plan” (UVic, 2010), it did not require the same type of procedural detail as the current EA process. While these mines (seven mines in total) were grandfathered into the EA Act in 1994 it is unlikely that a thorough list of commitments were written into the EACs that the projects received and one is left doubting whether it contains any
commitments under EAO’s jurisdiction which are measurable and enforceable. Unlike the majority of operational mines in the province, there is currently no EAC for Mount Polley published on EAO’s e-PIC website at this time. It is concerning that there is such limited public information available for Mount Polley, a mine which in 2013 alone milled 5,895,193 tonnes of ore (Imperial Metals Website), well exceeding the 75,000 tonnes/year production threshold for mineral mines triggering an EA (Reviewable Projects Regulation, updated 2012, BCEAA 2002).

2.1.2. EAO Inspections, Reporting, and Information Management

The number of inspections carried out by EAO and the use of inspection information on compliance with EAC conditions barely scratches the surface when it comes to meeting the recommendation from the Auditor General on a comprehensive compliance and enforcement program for active projects in BC. Components of the program that are not being met or have not been fully implemented yet include: effective “interagency coordination; an interagency information management system to track compliance inspection information; and, making outcome information available to the public.” (OAGBC, 2013). The source of this inadequacy is likely the result of insufficient funding, lack of data sharing and data management, inconsistent inspection forms, inadequate resourcing of staff, poor record keeping, and increasing complexity of regulations in absence of ministry hierarchy.

The EAO does not publish an annual inspection report for projects detailing what inspections have been carried out, what was inspected, and whether any actions were taken as a result. In order to for the public to access this type of information, a freedom of information request must be made (a lengthy process). Data from inspection reports are not entered into a searchable database or summarized for use by EAO or other ministries, let alone the public. This is likely the result of budget cuts, non-coordination of compliance efforts and blurred lines of responsibility between natural resource agencies, particularly for older mines. Between 1998 and 2011, funding for natural resource ministries has decreased by about 56%, when funding for other ministries (all functions with the exception of health, education, and social services) has doubled, (Archibald, Eastman, Ellis, and Nyberg, 2014) indicating a business and development first approach. Furthering the challenges faced in compliance and enforcement, the pace of statutory change governing resource management in BC has been increasing since the 1980s and has resulted in increased responsibilities and complexity for provincial natural resource agencies and the private sector, making it progressively more difficult to meet unclear responsibilities (Archibald, Eastman, Ellis, and Nyberg, 2014).

Although EAO charges fees for environmental assessment (EA) and for enforcement, the maximum fee that can be levied ($6,500) is for a 90-hour inspection (including travel, preparation, debrief,
reporting). There are no fees set aside for the coordination, management, and dissemination of information to other ministries and the public (EA Fee Regulation 2014). The structure of this fee regulation is not sustainable, as the inspection fee does not factor in the variable amounts of time required by government for subsequent activities (e.g. data entry, follow-up, and review of documentary evidence of compliance). Companies pay only once an inspection is complete, as opposed to paying into a fund at the time of project approval and prorating based on the number and content of EAC conditions. Not only does this prevent funding from being set aside for the long-term and proactive protection of BC’s natural resources, but each inspection that EAO carries out further decreases the agency’s remaining budget as the $6,500 fee is unlikely to cover all the activities and coordination associated with inspections. Between 1992 and 2012, 118 projects have been approved and issued an EAC under BCEAA; 11 EACs have been issued since January 1, 2013. The EAO conducts an approximated 20 to 25 inspections per year (desk-based and in the field) but may call on other natural resource agencies, mainly MFLNRO, to conduct inspections on their behalf. However, the number of inspections that take place each year on behalf of EAO is not tracked or recorded. All EAO receives is a scanned paper inspection report (often handwritten), which is then reviewed by EAO compliance staff.

2.1.3. Self-reporting by Industry

The EAO requires some certificate holders (i.e. mining companies) to submit self-reports which EAO reviews and posts on their e-PIC website within six weeks of their receipt. These reports are not easily located as one must click on each approved project on the website and view the post-certificate documents to see if a self-report has been published. There is no ‘one stop shop’ or list of projects that are required to submit self-reports. The EAO charges the certificate holder a nominal fee of $75 each time its compliance staff are required to review a self-report (EA Fee Regulation 2014). This nominal fee is unlikely to cover the cost of reviewing such technical reports and nor are any resources (or funding) allocated to database entry and management such that other ministries or the public can easily access specific information, perform analysis, or discover trends. This provides further evidence of a fee-for-service approach going awry. Ideally, there would be a regular schedule for inspections, reports, and fees that would allow the process of inspection and reporting to be covered in full. For example, if EAO’s compliance inspections were structured in a way similar to tax inspections, funds acquired through penalty charges would mean that compliance monitoring essentially paid for itself. And while penalties are often not sufficient to deter non-compliance in tax reporting, the wide publication of penalties by EAO would likely help to deter future non-compliances by the same and other firms.
2.1.4. Non-compliance Response Mechanisms for EAO

When EAO does undertake an inspection and finds a certificate holder is not in compliance with one or more conditions, they have a number of different enforcement mechanisms available for use. EAO’s first line of fire is to issue an advisory, usually requiring the company to correct the non-compliance by the date of the next inspection. After an advisory is issued and the company has made no efforts towards achieving compliance, a warning can be issued. A warning notifies the company of the possibility for an escalated response, should non-compliance continue (MoE 2013a). Advisories and warnings are not accompanied by any fines and are not publicly posted. The reason for the use of advisories and warnings is that initial infractions and associated small fines are not of concern to large companies and do not deter them from violating regulations, however, the true effectiveness of warnings and advisories can be realized when they are widely publicized. Further escalations include a Minister’s order to cease or remedy, which can halt operations until compliance is achieved, or order a company to remedy any non-compliances within a specified period of time. Similarly a Supreme Court order for compliance can be made.

An alternative to the Minister’s and Supreme Court orders is a ‘compliance agreement’, a written agreement with the Minister by which the certificate holder undertakes to comply with the condition of noncompliance within a given timeframe and on the terms specified in the agreement. An offence under section 41(2) of BCEAA is committed when the EAC or a Minister’s or Supreme Court order is violated, or when a certificate holder makes a statement about a material fact (or omission of) that they know to be false or misleading. Any company that commits an offence under section 41(2) of BCEAA can be fined no more than $100,000 for the first offence, and no more than $200,000 for each subsequent offence. However, there is a mechanism for companies who enter into a compliance agreement and are complying fully with the agreement to avoid committing an offence under section 41(2). Companies who voluntarily enter into a compliance agreement cannot commit an offence under section 41(2) that the compliance agreement is intended to rectify. In September and October 2014, the Pacific Trails Pipeline project and the Interior Lower Mainland project (BC Hydro) entered into compliance agreements with EAO. The Pacific Trails Pipeline project fell short on 14 conditions and the Interior Lower Mainland project failed to fully comply with commitments 4, 12, and 51 in schedule B of the EAC (Minister of Environment 2014a; 2014b). Rationale is not provided for why EAO elected to enter into compliance agreements as opposed to fining the companies for offences under section 41(2). At the time of writing no offences under section 41(2) of BCEAA have been reported publicly.
2.1.5. Inter-Agency Compliance and Enforcement Committee

In response to OAGBC’s report on EAO an inter-agency committee was recently formed to assist BC’s natural resource agencies in effectively working together on compliance. Some funding has been approved for 2014/15, and the committee is in its early stages of developing a database structure to manage the various agencies’ inspection information. Unfortunately, the people sitting on this committee have many other pressing responsibilities within their own ministries that likely trump the inter-agency committee.

The ongoing monitoring, compliance, and enforcement mechanisms and activities in an ever more complex environment—especially in light of recent criticisms and events—deserves a dedicated committee staffed with experts and sustained funding. In Archibald, et al’s analysis of the trends in resource management in BC\(^1\) they warn that “the lack of experience and corporate memory will worsen as older workers are laid off or retire and are replaced (if at all) by new recruits,” without the necessary time budgeted and allotted for knowledge transfer from experienced workers (2014). The authors highlight the importance of addressing these issues:

> ...the increase in statutory responsibilities is only one simple measure of the increasing complexity facing renewable resource managers....To address this increasing complexity, managers need funding and trained specialists to gather and analyze information that will lead to sound, well-informed, and credible decisions.’(Archibald, Eastman, Ellis, and Nyberg, 2014).

EAO and MOE’s Compliance divisions include key goals, objectives, and performance measures in their annual service plans which focus on inter-agency coordination for compliance and enforcement activities, providing transparency and accountability to the public (including posting names of companies in noncompliance), and timely communication of compliance activities. However, these intentions and targets are being implemented and interpreted in different ways within MoE’s divisions and EAO’s compliance team (MoE 2014a). There is currently a lack of interagency coordination of efforts to achieve these goals or delineate who will function as the overarching authority.

2.2. Compliance Monitoring and Enforcement by Other Natural Resource Agencies

2.2.1. Ministry of Environment

The MoE conducts inspections related to permit requirements under various acts (e.g. Environmental Management Act, Water Act, Waste Management Act etc.). Designated Program staff, including Park Rangers and the Conservation Officer Service (COS), are authorized to conduct inspections and investigations. The MoE publishes an environmental enforcement summary of infractions quarterly. In

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\(^1\) The authors are retired resource management professionals with over 120 years of experience in BC.
the first quarter of 2014, eight orders, 46 administrative sanctions, 294 tickets, and 12 court convictions for a combined total of over $72,000 in penalties were given out (the majority of penalties are for hunting or fishing violations under the Wildlife and Fisheries Acts) (MoE, 2013a).

The COS is part of MoE’s compliance division. The Provincial Operations’ Commercial Environmental Investigations Unit (one of three branches of the COS) is responsible for assisting with industrial investigations alongside conservation officers and other MoE staff, and is the primary tool for identifying serious issues of non-compliance that threaten the environment (MoE, n.d.). The COS performs compliance monitoring and enforcement activities for the MoE and for other natural resource agencies (through Memorandums of Understanding). Their legislative mandate includes six federal and 25 provincial statutes. Key program plan objectives for the COS include: verifying that compliance and enforcement environmental legislation is designed to achieve ministry objectives; promoting voluntary compliance activities; effectively monitoring and reporting levels of environmental compliance; and responding to contraventions and achieve compliance (MoE, n.d.). Key initiatives under the program plan objectives include the “development and implementation of improved cross-agency collaboration and coordination in delivery of compliance and enforcement services…” (MoE, n.d.). The Environmental Assessment Office and MFLNRO are not mentioned in the COS’ program plan or list of partner agencies.

2.2.2. Ministry of Forests, Lands, and Natural Resources

The Ministry of Forests, Lands, and Natural Resources has its own compliance and enforcement program responsible for ensuring conformity with environmental regulations, as well as public economic interests, health and safety under 17 provincial acts (including BCEAA). Approximately 150 Natural Resource Officers (NROs) are employed to conduct compliance verification inspections (8,000 per year) and take enforcement actions for non-compliances. The majority (80%) of non-compliances are dealt with informally through ‘compliance actions’; only 20 percent are dealt with through formal or on the record enforcement actions (MFLNRO 2014). The primary enforcement actions used are administrative penalties or violation tickets. The ‘management of information systems, data capture and storage’ is included under NROs’ roles and responsibilities, however, no further detail on how this information is used or shared is provided (MFLNRO, 2012).

2.2.3. Ministry of Energy and Mines

The MEM is responsible for inspecting mines for compliance with the Mines Act and the Health, Safety and Reclamation Code for Mines in British Columbia. Each year, the Chief Inspector issues an annual report highlighting the Ministry’s mine inspection activities. In 2012, 1163 mines were inspected. The
annual report states that “the Mine Management System (MMS) allows for the tracking of mine visits and issuances of orders at mines. When an inspector visits a mine, he or she passes on information about issues to which staff from other areas of government may need to attend” (MEM 2012). Unfortunately, it is unclear whether any information is shared and what type of information may be worth sharing with other agencies, primarily the MoE and EAO. This raises questions around the efficiency and effectiveness of mine inspections broadly. For example, do EAO and MoE have enough resources to communicate to the MEM what they could be inspecting on their behalf? Does MEM have the required expertise to inspect on behalf of EAO and MoE, and possibly be better positioned to do so? Do EAO and MoE have access to the MMS? These are all questions that deserve further thought and research but are not the focus of this paper.

2.3. Summary
This section has highlighted weaknesses of EAO’s role in ensuring that effective compliance monitoring and enforcement is occurring for mines throughout the province. As well, the structure of the current regulatory system results in situations where older mines, such as Mount Polley, do not receive adequate attention from EAO both in areas of monitoring and enforcement and in providing project information to the public. While EAO reports that it has been developing new mechanisms to improve compliance monitoring and enforcement, it seems that these resources are being applied asymmetrically to newer mines that have more detailed EACs.

Natural resource agencies in BC conduct their compliance activities in fundamentally different ways and have no single comprehensive management system or database for organizing, analyzing, and sharing the information they collect. There is a need for strategic targeting of projects and companies for agencies’ to focus their resources and efforts, and actions taken by government and industry must occur in a coordinated fashion. Many news stories and opinion articles do a fantastic job at pointing out all the problems with compliance and enforcement in BC, but few suggest thoughtful solutions. To break this trend, some potential solutions are discussed in the following section.

2.4. Recommendations for Monitoring and Compliance

2.4.1. Dedicated Inter-agency compliance and Enforcement committee
As a result of the Auditor General’s report on EAO, an inter-agency compliance and enforcement committee has been formed to assist BC’s natural resource agencies in effectively working together on compliance. Instead of relying on other agencies and available individuals (COS) to inspect and monitor project compliance with specific regulations, a taskforce of industry experts from each agency
should be pooled from which individuals can be selected for specific tasks appropriate to their expertise. The responsibilities of each agency when it comes to the suite of compliance activities that are required in BC must be clearly laid out and made available to the public. Currently, each ministry discussed has its own compliance and enforcement division; ideally, the ultimate authority for compliance and enforcement should rest with one ministry. A strong supporting cast from other ministries and divisions, industry associations, and independent agencies will be needed, but one agency must ultimately be responsible for the oversight of compliance in BC.

In light of decreased funding and the current hiring policies of natural resource agencies, actions must be taken to prevent the loss of industry experts and professionals assigned to manage BC’s natural resources in such a complex regulatory environment (Archibald, Eastman, Ellis, and Nyberg, 2014). Experienced inspectors should be consistently accompanied (or shadowed) by less experienced staff in order to facilitate knowledge transfer.

2.4.2. Create Mechanisms for EAO Involvement for Pre-EA Act Mines

Currently, EAO is the only provincial agency responsible for monitoring compliance and administering enforcement with legally binding EAC conditions. For any mines or large-scale projects that were developed prior to 1994, and which have not increased production, added facilities, or significantly altered the approved project, an EAC with meaningful conditions does not exist\(^2\). This prevents EAO from taking a preventative role in protecting the environment. If the pre-1994 EA process and regulations were not adequate, then it is especially imperative that projects approved prior to 1994 be effectively integrated into EA compliance programs whose aim it is to reduce damage to the environment.

For active projects (e.g. construction, operation, or decommissioning phases of a project) lacking a meaningful EAC, all relevant historical documentation should be reviewed. Once available information and documents have been assessed for an individual project, a determination could then be made by EAO about deficiencies or outdated information pertaining to the five pillars of EA (environmental, economic, social, heritage and health). Deficiencies and outdated information would then require assessment under present day standards. Historical information, if appropriate, could be used by the proponent to establish a baseline and would alleviate the placement of undue burden on the proponent. The new EA would be held to the same standards as new projects under BCEAA and include information about cumulative effects. A streamlined process could be explored to decrease the

\(^2\) By “meaningful” we mean detailed, project-specific conditions that are measurable and enforceable as outlined in the Auditor Generals Report (OAGBC 2011).
amount of time dedicated to comment periods and consultation, if appropriate. Once the EA application is submitted, the Ministers of Environment and of Energy and Mines (for mining projects) have a variety of options including determining whether the project can continue in its current state while implementing newly created EAC conditions within a specific timeline or adjusting project elements and implementing newly created EAC conditions. All determinations would require a set of EAC conditions to be developed by EAO and the proponent for a given project. This process would help in facilitating meaningful integration of pre-1994 projects into the EA process. Further, the collection of valuable information, including data on the effects of projects that have been active for some time, will be highly useful for more accurate cumulative effects analyses.

2.4.3. Sustainable Funding for Inter-agency Compliance Management
As discussed in previous sections, an insufficiency of government capacity, resources, and agency coordination for compliance monitoring and enforcement are often related to inadequate funding. Other jurisdictions have addressed funding issues by charging fees to recover costs associated with inspections and allow for recovery of enforcement costs from industry (Fair Mining Collaborative, 2014). Sustainable funding designated for use to address issues of capacity, coordination, data management, and resources must be set up for inter-agency compliance monitoring and enforcement activities.

Continued funding for an effective inter-agency compliance committee should be levied on projects when an EAC is issued, and be based on the project scope and certificate conditions. A portion of these fees should go towards EAO’s role on compliance with certificate conditions, and a portion towards database management and sharing of this information with other agencies and the public. Compliance fees should also be levied when permits are received; again a portion should go towards the agencies responsible for inspecting a given permit and a portion towards database management of permit compliance information and sharing. Fees could be allocated by sector (i.e. mining, oil and gas, energy, etc.) since different types of projects will require more or less costs for compliance and enforcement. This type of fee pooling for projects within a specific industry may facilitate more efficient effort by industry and industry associations (such as the Mining Association of BC) in achieving and maintaining compliance. Problem companies should be strategically targeted and charged higher compliance fees. Targeting should be on based on the content and number of EAC conditions, other agency inspections, and previous history of infractions across all environmental regulations and acts. The ability to recall information from a comprehensive inter-agency compliance database, in a format that is useful to each ministry and accessible by the public is critical. The development, maintenance, and ongoing entries into an inter-agency compliance and enforcement database would provide a tool
to identify companies and industries to strategically target, perform trend analysis, indicate the predictive capacity of ES, and demonstrate the effectiveness of current policies. Investing in deterring companies from not complying is necessary for efficient and effective compliance management province wide.

### 3. SENTENCING FOR ENVIRONMENTAL OFFENCES

The previous sections outline the gaps in BC’s environmental regulation processes, providing recommendations on how to improve this process in order to effectively prevent environmental accidents as a consequence of industrial/business activities. However, even with strict assessment, monitoring and compliance measures, accidents can still happen. Therefore, sentencing options are critical tools for reparation, punishment and reducing recidivism.

#### 3.1. Purpose of sentencing

There are two main purposes for legislative action in response to environmental offenses: curative and preventive. Curative responses rely on the obligation of the wrongdoing party to compensate for damages caused, either through a monetary penalty or by other means, such as restorative action to remediate the environment. Damages can include direct effects to the environment as well as indirect effects, such as adverse health or economic impacts to local communities. Preventive response, on the other hand, is an effort to avert the recurrence of a similar violation through punitive measures (e.g. sanctions) against the offending party or through legal action, including personal liability charges, to hold those in authority responsible. In the case of private companies committing environmental offenses, the aim is to deter future non-compliance, either by the same firm or others.

##### 3.1.1. The case of Imperial Metals

Imperial Metals was issued a Pollution Abatement Order by MoE on August 5th, the day after the Mount Polley incident, and ordered to stop the ongoing discharge, initiate clean-up plans, and to submit environmental impact assessment reports. The total penalty payable by Imperial Metals as well as any accompanying court convictions for the damage caused and regulatory violations will be unknown until the results of the ongoing investigations are submitted in January 2015. Imperial Metals reported over $20 million in costs incurred for response, recovery, initial rehabilitation and restoration activities in September 2014 (Imperial Metals, 2014). The following sections discuss sentencing options; fines as a commonly used sentencing tools and limitations of fines; and creative sentencing as an innovative, and perhaps more effective, option available.

#### 3.2. Sentencing Tools: Fines
Fines are enforcement incentives in the form of non-compliance fees, i.e. penalties charged to firms that do not comply with environmental standards or regulations. The curative aim of sentencing may be achieved through fines by covering the costs of restoring the environment through 'cleaning up' and compensatory payments to people who experience adverse health or economic effects, such as loss of livelihood through injuries or effects on livelihood sources like marine species. Fines can be preventive in nature if they make violations costly enough to serve as an effective economic deterrent. In order to effectively deter non-compliance fines must be more severe than pollution charges for two reasons. First, there are cases of ‘zero’ allowable pollution, for example when a small amount of hazardous mining waste discharge can have a disastrous impact on the environment. In this case a pollution charge that can be used to cover clean-up costs may not be sufficient to address the perhaps irreparable and long-term damage caused. Secondly, the effectiveness of the compliance law or standard itself is undermined, if a company were to commit repeated violations of the law and simply pay a pollution charge as a consequence.

3.2.1. Limitations of Fines in Environmental Non-compliance
Fines acting as the single mechanism for dealing with non-compliance with environmental regulations presents challenges in terms of quantification of environmental damage as it implies both that the value of environmental damage can be calculated in monetary terms and that the pollution event is reversible (OECD Environmental Action Programme Task Force, 2012). The Canadian mining company Barrick Gold Corporation was fined 16.4 million dollars in May 2013 by the Chilean environmental regulator (Canadian Mining Law, 2013). The fine was for the breach of Barrick’s environmental impact agreement through water contamination from the Pascua Luma mine. Although the fine was paid promptly by Barrick without contestation, the Diaguita Indians who live downstream of the mine and use the river water for drinking and irrigation face serious irreversible threats to their health and livelihoods. Thus a monetary payment does not compensate for the losses of those affected in this case.

Fines are often not high enough to promote compliance with time consuming, complex, or costly environmental regulations. In 1981, the average fine imposed on coal mines in the US for safety violations was $173, which 90% of mine operators found, did not affect their production and was not a strong enough incentive to adopt safety procedures in order to avoid fines in the future (Braithwaite, 1985).

Too often, penalty fines are not accompanied by stringent enforcement and collection mechanisms, and do not have sufficient consequences for non-payment. Moreover, the institution imposing the fine
may not have authority to take escalating action on non-payment. Since the 1990s, 2700 US coal mining companies have failed to pay ~70 million dollars in fines (National Public Radio, 2014). The Mine Safety and Health Administration (MSHA) under the Department of Labour conducts regular inspections of mines and issues fines which are then followed up with letters, phone calls, referrals to collection agencies by the MSHA, and federal court orders. However, the MSHA does not have the authority to shut down a mine if it hasn’t paid its safety fines. A pending bill at the US Senate proposes that a mine be automatically shut down 6 months after the fine is unchallenged in court and unpaid, but has gained no traction.

The time period within which the penalty is paid is also significant. A long time period without sanctions against the offending company allow a company to continue with profitable operations, and implies that the fine may have little effect on the company’s short-term operational capabilities. Further, lengthy legal processes allow for significant delay of payment and the dispute of payment amount in court. One example of this can be seen in the BP Deepwater Horizon oil spill in the Gulf of Mexico in April, 2010, which resulted in extensive damage to wildlife and habitats. BP has now been found guilty of ‘gross negligence’ and might face fines as high as 18 billion dollars. However, BP’s decision to appeal against the high fine as well as the total spill amount, implies that any final decision on payments could take years, and that much needed environmental restoration in the region is unlikely to happen in the immediate future (Harvard Environmental Law Review, 2014, October 29).

Fines charged for violations of environmental regulations often go to a ministry budget without any guarantee on the part of the government, whether municipal, provincial or national, to spend the amount on restoration of environment. Thus, in terms of bringing about reparative justice as well as enforcement of compliance to environmental regulations, fines used as sentencing tools have a number of restrictive weaknesses.

3.2.2. Fines for non-compliance to environmental regulations in BC

In BC, the MoE and MNLRO have the authority to issue tickets (along with pollution prevention or abatement orders and administrative sanctions) for violations of environmental regulations under the various acts, including the Environmental Management Act, Water Act, and Fisheries Act. Apart from tickets, the provincial court charges monetary penalties through court convictions which are payable to the BC government. The total amount collected through tickets and court penalties for non-compliance with environmental regulations in BC in the years 2013 and 2012 was $567,900 and $878,635, respectively (Ministry of Environment, 2014b). The quarterly environmental enforcement summaries published by the MoE provide the number of orders, administrative sanctions, tickets and court convictions, along with the total amount charged in penalties. The MoE does not publish data on fines
collected specifically in the mining industry, violations of environmental regulations categorized by industry, or data on the use of fines for restoration/conservation efforts, apart from penalties directed towards the Habitat Conservation Trust Foundation (HCTF) discussed later. There is also no data publicly available on the severity of each violation for which the fine was issued or the recurrence of violations for each company.

As of December 2013, a total of $1,140,000 was owed to the BC government for violations of environmental regulations for the period 2004-2012. This represents 60% of the environmental court penalties charged during the period. Additionally, more than $400,000, charged through court convictions, was owed to HCTF (Ministry of Environment, 2013b). BC has faced problems with implementing a rigorous collection mechanism for environmental fines. In December 2013, the BC government adopted the Closing the Gap strategy aiming to increase collection rates of environmental fines through measures such as revoking permits or licenses for non-payment of fines. The August 2014 update of the strategy states that $900,000 of the amount unpaid till December 2013 was not recoverable (Ministry of Environment, 2014b), although the reason for this is unclear.

Fines as financial penalties play a role in reparative and punitive responses in the aftermath of an environmental accident, but are often seen to be ineffective as the sole mechanism to enforce compliance to environmental regulations. This necessitates the use of alternative sentencing tools that are more comprehensive in terms of environmental protection and restoration.

3.3. Beyond Fines: Creative sentencing

The limitations of fines for addressing environmental offences are summarized nicely by Shockey (2006):

> Using fines as punishment for a crime related to the environment can be problematic. They are rarely substantial enough to prevent future crimes and are often seen as a cost of doing business. A fine should not be a mere licence to pollute.

Paul Adams (2014) echoes this sentiment, adding that sentencing can do much more than deter:

> Taking a fine-centric approach may represent a missed opportunity. An effective sentence can accomplish more than deterrence. The creative sentencing tools available in environmental protection legislation recognize that potential. They allow a sentence to be both an effective deterrent and a meaningful contribution to attaining the regulatory goal.

Fortunately, environmental law at the provincial (BC) and national levels now includes many forms of creative sentencing options for judges (HCTF, 2009). In the past thirty years, creative sentencing has
gained popularity as a sentencing option that looks beyond fines for addressing non-compliance of environmental standards. The roots of creative sentencing lay with the 1980 case, R. v United Keno Hill Mines Ltd (1980). Instead of simply issuing a fine to the company, Judge Barry Stuart laid out alternative - ‘creative’ - punishments that he believed could achieve community compensation and act as a deterrent to future non-compliance. These alternative or creative punishments can be a substitute to fines or act as complementary option. Since this case, creative sentencing use has grown steadily in Canadian courts and BC (Adams, 2014; Alberta Environment and Sustainable Resources Department, 2012; Ingelson, 2014).

Hughes & Reynolds (2009) summarize a few types of creative sentencing tools:

- Prohibition orders;
- Orders to conduct or fund research;
- Orders to fund educational projects;
- Orders directed toward improvement of internal corporate operations and practices; and
- Remedial orders funding specific environmental reclamation/improvement projects.

For meaningful action, the legal proceedings for the Mount Polley disaster should consider creative sentencing options. Fines alone are unlikely to be effective in addressing the multi-faceted issue of remediation of environmental damage at Mount Polley, regulatory gaps (both within and across ministries), and the prevention of future environmental disasters. The following section provides an overview the recent use of creative sentencing for environmental offences in BC as a backdrop for recommendations for sentencing in the case of Mount Polley.

3.3.1. Creative Sentencing for Environmental Offences in British Columbia

Many environmental laws in BC incorporate creative sentencing options for judges. For example, section 127(1) of the Environmental Management Act (EMA) outlines ‘Additional sentencing orders’ which gives judges more guidance on alternative sentencing options. Similar sections are present in the province’s Water Act (section 95), and Wildlife Act (section 84(1)) as well as the national Fisheries Act (section 79.2), to name a few. Likewise, the provincial and federal Crown Counsels actively encourage innovative sentencing options for environmental sentences.

A review of the available data from the MoE on court convictions under the EMA, Water Act, and Fisheries (Canada) Act3 gives a picture of the use of creative sentencing in BC. An analysis of the data from 2009 to the first quarter of 2014 indicates that over 70% of all court convictions under these

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3 The Waste Management Act and Fisheries Act (provincial) had no court conviction within the timeframe analyzed.
acts (53) included some form of creative sentencing. The total value of all creative sentencing orders was approximately $1,733,692 (90% of the total fines). The HCTF is one of two trust funds\(^4\) that are explicitly included in provincial environmental law (i.e. the EMA, the Water Act, and the Wildlife Act) as recipients of money for creative sentencing. The HCTF receives the majority of funds allocated for environmental conservation projects under creative sentencing. Of all creative sentencing orders, $1,077,300 (62% of total value) was given to the HCTF. The remaining creative sentencing outcomes were primarily directed towards other environmental reclamation/improvement projects (e.g. the Columbia River Integrated Environmental Monitoring Program and the Upper Columbia White Sturgeon Recovery Initiative, among others). These projects received a combined $656,392 (34%) of total creative sentencing orders.

As the primary recipient of creative sentencing awards in BC, the HCTF plays a critical role in the management and distribution of funds allocated to environmental conservation projects. Some of their awards\(^5\) come ‘restricted’ (i.e. the judge gives directions on how the money should be spent) while others come ‘unrestricted’ (i.e. HCTF determines where the money is spent) (HCTF, 2009). Therefore, in the process of allocating money for conservation projects, unless the judge gives specific instructions on how the money is spent, funds are not necessarily distributed to projects in the region that the offense was committed (HCTF, 2009). Though constituting only a small portion of creative sentencing, particularly in relation to the HCTF, funding directly to conservation projects could mean better matching between offense location/activity and conservation location/activity. However, whether allocated as a ‘restricted’ award to HCTF or directly to conservation projects, the goal should be to match offenses with relevant conservation projects.

From the same analysis of MoE data on court convictions, only 4 of 39 creative sentencing cases allocated funds to anything other than environmental or conservation projects. These cases involved community service hours, allocating money to a workplace safety non-profit and funding for the University of Northern British Columbia. Though this analysis is not comprehensive and utilizes a relatively small sample size, it shows that environmental offenses in BC have used very little creative sentencing beyond conservation projects or trust funds. This raises questions around why there has not been significant use of sentencing funds for research or to develop better management practices within firms. Where are the funds to address the root causes of these disasters, not only clean up once they occur? The Mount Polley disaster is an opportunity to incorporate various creative sentencing tools into a comprehensive sentencing package that can remediate environmental damage.

\(^4\) The other is the Grizzly Bear Fund. However, the HCTF is the primary recipient of creative sentencing funds (HCTF, 2009). No analyzed cases reported funds allocated to the Grizzly Bear Fund.

\(^5\) The term that HCTF uses for the funds allocated to HCTF from environmental offense sentencing.
while also addressing regulatory gaps to ensure that this type of incident does not happen again. The following section provides an overview the recommended sentencing actions for Imperial Metals in response to the Mount Polley disaster.

### 3.4. Recommendations for Sentencing: Mount Polley

The Mount Polley legal proceedings must result in compensation for environmental and social damages caused by the tailings dam breach. Additionally, sentencing should serve as a mechanism to evaluate and reform procedures that led to the disaster to reduce the likelihood of future environmental offences. A suite of sentencing options are proposed that would have a more meaningful and effective impact than fines alone. These suggestions are in addition to determined pollution clean-up costs and government fines.

#### 3.4.1. Orders to fund local conservation projects in the affected area

The court should ensure that funding for conservation projects is in the Mount Polley region. To do so, the court must identify specific objectives and/or locations for environmental conservation/enhancement projects in the Mount Polley region. Therefore, funds can be allocated directly to identified organizations that can provide conservation services in the outlined region. However, if funds are allocated to HCTF for distribution, they should be ‘restricted’ with the specific objectives/locations most relevant to the Mount Polley disaster.

#### 3.4.2. Setting a suitable level for monetary penalties

Often, non-compliance with environmental standards occurs because the trade-off between the expected loss in income that results when compliance is higher than the penalty for non-compliance. In the case of Mount Polley, if Imperial Metals made a conscious decision to increase their risk of non-compliance by avoiding the production loss that would be incurred during the period of structural strengthening of the tailings pond, the penalty for non-compliance should be set higher than the income generated during the period of non-compliance to act as a deterrent.

#### 3.4.3. Orders to fund research for improvements in inspection, monitoring and compliance processes

One goal of the legal proceedings for Mount Polley should be to effectively signal to the wider mining community (and other industries), that environmental laws will be monitored effectively and that non-compliance will be punished. Establishing a temporary research group to investigate the gaps in the inspection and enforcement process for approved projects under the EA process, with a particular focus on the issues that lead to the Mount Polley incident, is a first step. This group should be made up of researchers, industry experts and ministry officials. The goal of which would be to parse out the
critical leverage points upon which inspection procedures often fail. For efficient monitoring of compliance to safety regulations, the monitoring equipment available on each site must adhere to certain standards and guidelines and company workers must be trained in using such equipment. With Mount Polley, despite geotechnical concerns raised by the engineering firm Knight Piesold in the previous years, neither the monitoring instruments nor the personnel on site provided any warning of an impending breach (Imperial Metals, Mount Polley update, 2014). This raises questions regarding the sensitivity of the monitoring equipment and the quality of training for onsite personnel. Reparations from the Mount Polley case could be used to fund a process that looks into standardization of monitoring equipment and training modules for company personnel.

3.4.4. Orders to fund research in safer mine waste management
One of the actions taken by the BC government after the Mount Polley accident requires an independent expert review and inspection of all mines with tailings storage facilities in BC by December 1, 2014. The results of these inspections are to be submitted to the government, inspected by an independent engineer, and made public. While the actions taken post-accident are intended to restore public confidence in the industry, there have been ongoing concerns over tailings ponds safety reported by BC’s chief inspector of mines between the years 2000 and 2012. The mine management program under the Mining Association of Canada includes tailings management guidelines, but currently only two mining companies in BC are implementing the guidelines and reporting the status of their tailings management activities (Hoekstra, 2014, November 5). An assumption of using tailings ponds is that the waste must be prevented from leaking into the groundwater. With 98 permitted tailings ponds in the province, this raises concern over tailings pond safety. For example, are the guidelines for management of these ponds, which contain mine waste and toxic substances, comprehensive and enforceable? Are there alternatives or safer ways to manage mine waste that are not being explored by the industry for economic reasons? The reparations from the Mount Polley case could be directed towards exploring alternate technologies for storing mine waste, such as drying tailings or turning them into a ‘cake’ instead of storing them as toxic slurry (a technique used in some mines in Chile), or recycling tailings, a technology already being explored by a copper mining firm in Phoenix to make bricks.

3.5. Further recommendations
3.5.1. Using fines more effectively
In terms of penalties, the nature of consequences on non-payment may incentivize payment by the offending party. Given this, one option is to set an interest rate on non-payment, that is, a gradual
increase in penalties with delays in payment. Moreover, penalties could be greater for repeat offenders, thus deterring future violations by the same offender. However, if the reason for failing to adhere to environmental regulations is the economic inability to do so, greater penalties may be ineffective in terms of deterrence, in which case more stringent pre-requisites for obtaining mining permits may be more beneficial than increasing fines in terms of ensuring environmental protection.

3.5.2. Sanctions on operations during court process
Sanctions on the company’s operations while the non-compliance case is unresolved in court would also prevent the company from repeatedly appealing in court to delay payment. To avoid lengthy judicial proceedings in the case of major violations, special courts for environmental violations, with suitable representation of technical experts, could be set up. An example of this can be seen in Australia’s Environment, Resources and Development Court, which deals specifically with the enforcement of laws related to the protection and development of land and natural resources. Such courts can provide a number of advantages over general courts - judges who are experts in environmental matters and environmental law as well as speedy resolution of the increasing number of environmental cases, which would help hasten the process of environmental restoration.

3.6. Summary
Effective sentencing for Imperial Metals should aim to achieve curative purposes, through restoration of the environment and compensation to people affected; act as a deterrent for future violations; and aim to reform the compliance and monitoring systems in place to decrease the probability of similar events happening in the future. Effective enforcement through fines requires that fine amounts be substantial, and not simply the cost of compensation. Creative sentencing can be used as an innovative tool to achieve more than just deterrence, through orders to fund research and development in a variety of areas, from local conservation projects to improvement in monitoring and compliance processes, and safer mine waste management. Looking beyond the Mount Polley case, at future enforcement situations, establishing special environmental courts with judges who specialise in environmental matters would aid in efficient environmental restoration. Moreover, sentencing should involve a range of tools, including: fines applied in ways such that they act as effective deterrents, sanctions on company operations, and creative sentencing options.

WORKS CITED


