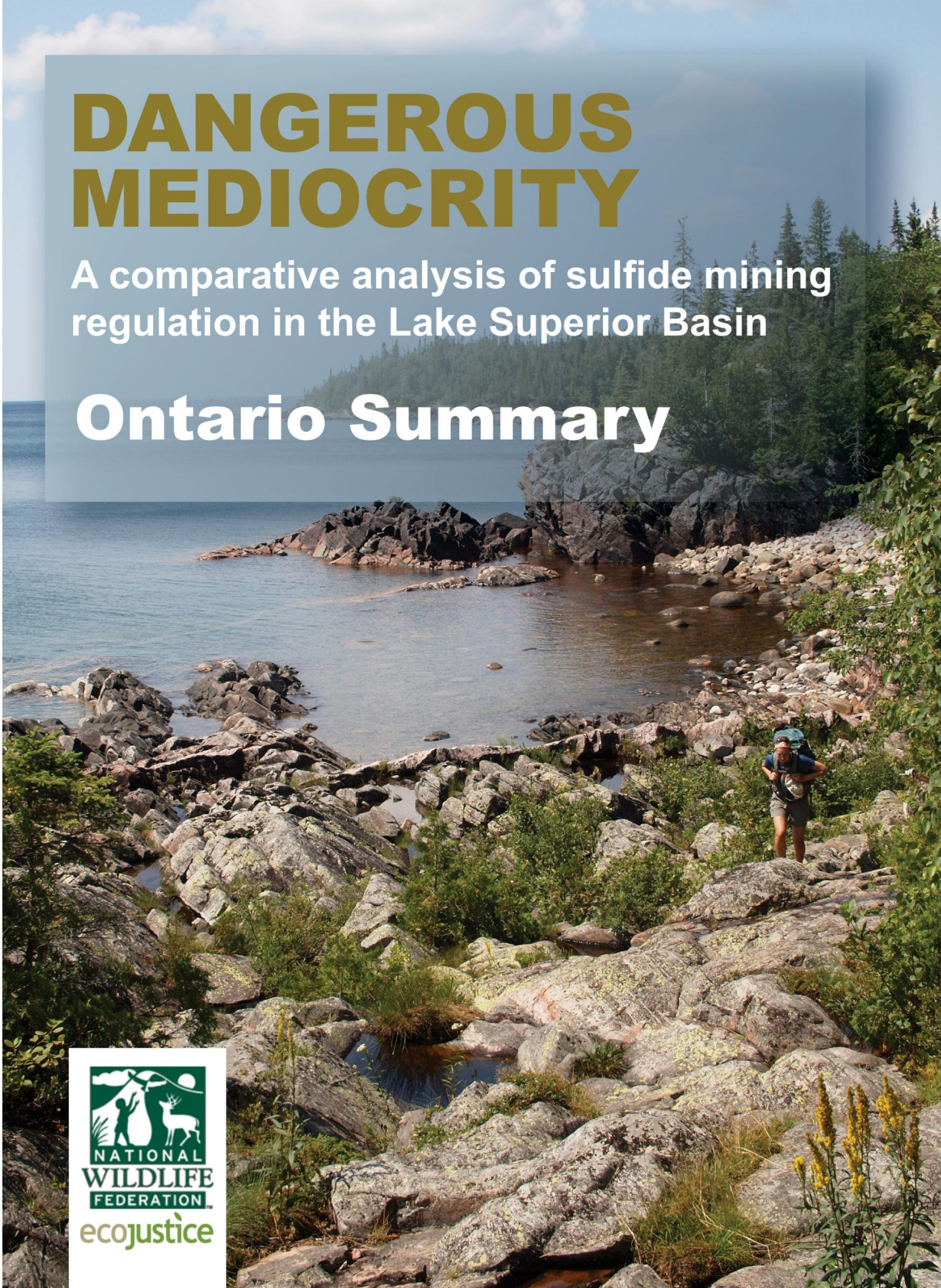
DANGEROUS MEDIOCRITY

A comparative analysis of sulfide mining regulation in the Lake Superior Basin

Ontario Summary



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The following are excerpts from **Sulfide Mining Regulation in the Great Lakes Region: A Comparative Analysis of Regulation in Michigan, Minnesota, Wisconsin & Ontario**. To read the full report, visit nwf.org/sulfidemining

ONTARIO

Canada's mining regulations are as varied as the impacts mining has created. Given that mining engages consideration of economic, social, and environmental policy, one must look to the varied Constitutional powers for the authority to regulate mining activity on the Canadian side of the Great Lakes basin.

The management of fisheries, heavy metal and other contamination, general land use and planning, shipping and infrastructure issues, environmental assessment, impacts to Aboriginal peoples, and the regulation of the physical mines themselves come under the various powers of two levels of government: the province of Ontario and the federal government. Canada's *Constitution Act, 1867*, divides powers over resources and the impacts of mining activities between provincial and federal governments. Three sections of the *Constitution Act, 1867*, (sections 91, 92 and 92A) assign authority over mining activities as follows:

a. Regulation of staking of claims, exploration, mine leases is predominately provincial (s.92A).

b. Land use planning to decide where mining can happen is provincial (ss.92A(1)).

c. Regulation of impacts on fisheries can be both levels of government but is largely federal (ss.91(12)).

d. Regulation of impacts to navigation and shipping caused by mine development is federal (s.91(10)).

e. Regulation of water, land-based and air pollution from mining can be both levels of government – federal criminal law power (s.91(27)) or provincial property, civil rights and natural resource powers (ss.92(13), 92A(1)).

f. Consultation and accommodation of Aboriginal interests can be one or both levels, again depending on whether the issue is impacts to "Indian lands" or impacts to resources relied upon to exercise Aboriginal rights (ss.91(24)) and also section 35(1) of the *Constitution Act, 1982*, which requires all levels of government to consult and accommodate Aboriginal interests that may be impacted by government decisions that may impact that interest.

g. Impacts on species at risk can be one or both levels of government (ss.91 and 92).

In Ontario specifically, the law regulating mining is older than the province itself, dating back at least 130 years. The law was originally used as a means to settle Ontario and assert control of lands through regulation.

However, recent land use conflicts between First Nations and exploration companies resulted in major amendments to the law in 2009 (*Mining Amendment Act* - Bill 173) to address potentially unconstitutional provisions of Ontario's *Mining Act.* The *Mining Act* currently allows unfettered access to lands for staking and exploration without meaningful consultation with Aboriginal peoples and accommodation of their interests. Regulations now under development will require permitting for exploration and mines and an associated aboriginal consultation processes. However, it remains to be seen how rigorous the assessment process will be in terms of ensuring that environmental protection is prioritized or even considered previous to such permits being issued.

In Ontario, the permitting, operation and reclamation of sulfide mines is primarily the responsibility of the provincial Ministry of Northern Development and Mines under the authority of the *Mining Act*. Environmental assessment is required only if "triggered"; federally, this often occurs due to the requirement for a federal permit under the *Fisheries Act* or the *Navigable Waters Protection Act*. Provincially, an environmental assessment has been mandated for the disposition of public (a.k.a. Crown) resources since 1981; however, mining dispositions have been and continue to be exempted, pending the approval of a proposed environmental assessment process. Federally, environmental assessments have generally been limited to the aspects of a project that fall squarely under federal jurisdiction while, provincially, the various ministries responsible for environmental assessments limit the assessments to aspects of the project within their mandates. It is perhaps unsurprising therefore that the Ministry of Northern Development and Mines intends to assess only the impacts of the disposition of the resources (the mine pit, for example) and the rehabilitation of the public lands. Also, the vast majority of environmental assessments are at the lowest level of scrutiny (e.g., "Screening Assessment" federally), which does not require extensive public engagement. Comprehensive assessment of all aspects of a project only occurs in rare cases where the federal and provincial governments voluntarily agree to have the full project assessed by an independent third party called a Joint Review Panel ("JRP"). The first ever JRP for an Ontario mine has been commenced to assess the proposed Marathon Platinum Group Metals and Copper Mine Project (August 2011, Environmental Assessment Registry Number 10-05-54755).

Sulfide mining, in addition to approval from the Ministry of Northern Development and Mines, often requires both federal and provincial permits. As mentioned above, federally, permits are often required under the *Fisheries Act* or the *Navigable Waters Protection Act*. Provincially, approval is needed to develop infrastructure on public lands and for water pumping and discharges (Ministry of the Environment).

SUMMARY OF FINDINGS

The following summarizes the "Assessment" section of the report, providing an overview of each jurisdiction's performance. The information found by this study reveals a number of interesting similarities and differences between the jurisdictions surveyed. A summary table can be found at Appendix B to this report, showing side by side all the criteria scores and overall scores for each jurisdiction.

However, as noted above, their very different practical experiences with sulfide mining regulation make an apples-to-apples comparison impossible. It would not be fair, for example, to assess the experiences of states that have already permitted sulfide mines against states that have

no practical experience. It is, therefore, not the intent of this report to rank the jurisdictions against each other, but rather to evaluate each jurisdiction against the set of objective criteria set out in each assessment category. At the same time, it is worth noting any areas where one jurisdiction may provide a model of a regulatory framework or implementation practice for the other jurisdictions. Those suggestions are made in the "Recommendations" section at the end of the report.

Ontario's **regulatory structure** does not require that a permit be obtained from the Ministry of Northern Development and Mines in order to commence mining operations. A mine is subject to limited environmental assessment (federally and/or provincially), though the disposition of the public resources is currently exempt from Ontario's *Environmental Assessment Act*. Prior to operations commencing, a detailed closure plan must be submitted to the Ministry of Northern Development and Mines. Closure plans must comply with the Mine Rehabilitation Code, which has detailed requirements related specifically to sulfide mining. As well, recent amendments to Ontario's *Mining Act* will provide additional regulatory structure once supporting regulations are developed. Approvals may also be required pursuant to environmental laws administered by the Ontario Ministry of the Environment and Ministry of Natural Resources and the federal Department of Fisheries and Oceans.

As there is no mining permit approval, there is no formal **review process**. In particular, although a closure plan is mandated, the Ministry of Northern Development and Mines does not have the authority to approve/reject the closure plan. There are review processes required for environmental assessments and for approvals for activities related to mining; however, materials submitted to the approving authority are not generally made available to the public. There is some informal coordination among approval authorities when assessing proposed projects; however, cooperation between the federal and provincial government on environmental assessments is voluntary. First Nations have limited ability to influence the review process.

Ontario's **enforcement** authority is limited to those approvals that are granted for activities related to mining. With respect to the approvals that are granted for activities related to mining, there are a number of mechanisms for enforcement, including the ability to make orders and civil penalties. Under Ontario's *Environmental Bill of Rights*, residents of Ontario are given some ability to participate in government decision making and the enforcement of any resulting approvals. Barriers to participation include difficulties in accessing information and adverse cost consequences of litigation. There are no provincial funding mechanisms that enable public participation.

The **program resources** available are very likely not sufficient to fund the work required for the various components related to sulfide mining in Ontario. Any permit application fees are not dedicated to use by the mining regulatory body and although civil penalties are available in Ontario, they do not exist within the *Mining Act*. Financial assurance can be provided in forms that are safe from creditors, though this is not a requirement for all of the mines.

Finally, information requirements for **reporting and official statements** both federally and provincially are of high quality. However, public access to the information is almost nonexistent. Accessibility to provincial datasets is better than is available federally, though the public release of information relevant to mining is subject to extensive lags.

1. REGULATORY SCOPE

The regulatory scope of a sulfide mining regulation program refers to the breadth and depth of issues and activities regulated by the jurisdiction, and also to the overall purposes and goals of the program. This analysis does not evaluate or account for how the law is actually implemented but simply how it is written; the quality of application and implementation is evaluated in later sections. An ideal program would cover all the major issues of concern (e.g., runoff from tailings, structural stability, financial capacity of the operator, etc.) and also set a robust policy goal for remediation and the greatest degree of environmental protection both during and after mining activities. Fulfillment of the following criteria would indicate a comprehensive system of regulation with an appropriate end goal of the greatest possible protection to the human and natural environment:

1. The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.
2. The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.
3. The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.
4. Regulations are applicable statewide or province-wide.
5. The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location's appropriateness for future mining.

6. The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.
7. The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.
8. The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures, contingency plan implementation.
9. Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.
10. A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.
11. An environmental review process that uses ecological values and carrying capacity is required and is applied by the state or province to determine where mining will be allowed.
12. Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every medium (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).
13. The state or province requires holistic mine plans, including factors like stability, workers' safety; long-term viability of the mine (prohibiting high-grading), economic plans for communities' long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.
14. Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.
15. The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.
16. The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.
17. The state or province requires contingency plans for any potential failures.

Currently, there is no permit approval required for mining in Ontario. Assessment of the impact of potential mining activity is conducted through an inadequate, uncoordinated environmental assessment process. There is a requirement that prior to an operation commencing, a closure plan must be submitted. Before the Ministry of Northern Development and Mines accepts the closure plan, there is a process to receive input from the public. And there are very detailed requirements of the closure plan that are specific to sulfide mining.

Overall grade: Fair/Poor

1.	The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.	SOME
2.	The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.	SOME
3.	The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.	NO
4.	Regulations are applicable statewide or province-wide.	NO
5.	The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location's appropriateness for future mining.	NO (changes pending)
6.	The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.	SOME
7.	The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.	NO
8.	The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures, contingency plan implementation.	SOME
9.	Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.	SOME
10.	A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.	NO
11.	An environmental review process that uses ecological values and carrying capacity is required and is applied by the state to determine where mining will be allowed.	NO
12.	Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every media (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).	SOME
13.	The state or province requires holistic mine plans, including factors like: stability, workers' safety, long-term viability of the mine (not allowing just high-grading), economic plans for communities' long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.	NO
14.	Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.	SOME

15.	The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.	NO
16.	The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.	SOME
17.	The state or province requires contingency plans for any potential failures.	NO

Discussion:

1. The state or province regulates a broad array of issues unique to sulfide mining, including: production, transport and fate of acid mine drainage and other contaminants; siting and buffers; heap and dump leaching; waste rock piles and storage; tailings basin management; particulate contributions to acidic conditions on and off site; transportation of acid-producing materials; long-term remediation and short and long-term acid production potential in pit and storage areas.

Production, Transport, and Fate of Acid Mine Drainage and Other Contaminants:

A number of specific items are mandated for reporting within closure plan pursuant to section 11 of the *Mine Development and Closure* Regulation[1]. For example, a closure plan must include:

> (vi) details of the production, handling and disposal of any tailings on the site, including the physical and chemical nature of the tailings, an assessment of the potential for metal leaching and acid mine drainage in accordance with the Code, the rate of production of tailings, methods of handling tailings, the location, size and nature of any tailings impoundment and treatment areas and a surface plan of legible scale showing the location of any such areas with engineering details of any impoundment structures.
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> (vii) details of the production, handling, storage and disposal of waste rock, ore, concentrate and overburden, including the physical and chemical nature of the materials, an assessment of the potential for metal leaching and acid mine drainage in accordance with the Code, the rates of production of such material, methods of handling and the location, size and nature of any storage or disposal areas and a surface plan of legible scale showing the location of any storage or disposal areas.[2]

The Code referred to above is the Mine Rehabilitation Code of Ontario.[3] Pursuant to the Code, the mine proponent must "determine the potential for significant metal leaching (ML) or acid

[1] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, available on-line: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_000240_e.htm.
[2] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 2, item 5.
[3] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1.

rock drainage (ARD)" and, if it is determined that there would be significant metals leaching or acid rock drainage, "ensure the development and implementation of effective prevention, mitigation and monitoring strategies."[4] Also, the proponent must undertake a program (consistent with prescribed guidelines) to have a qualified professional engineer or professional geoscientist or agrologist sample all materials remaining on site that were excavated, exposed, or otherwise disturbed by mining activities.[5] Where sampling indicates potential for ARD, a management plan must be developed to ensure that the materials do not adversely affect the quality of the environment.[6] When a mine is put into a state of inactivity or is closed out, the proponent must, in accordance with the management plan, deal with all "materials, or conditions created as a result of mining, that produce or may produce acid rock drainage or metal leaching."[7] Funded by Natural Resources Canada and the Canadian Mining Association, the Mine Environmental Neutral Drainage (MEND) Program asserts to have reduced ARD liability by at least $400 million on an investment of $17.5 million.[8]

Siting and Buffers: Mines can generally be sited on any public (Crown) lands and private lands unless the lands have been withdrawn from mining by the Minister of Northern Development, Mines and Forestry,[9] are part of a provincial park or conservation reserve,[10] or are required for the development of water power, highway, or another public interest purpose.[11] No surface mines can be sited within 45 meters of a road or highway without the written consent of the Minister of Transportation.[12] The Ontario *Environmental Assessment Act*[13] applies to public (Crown) undertakings and to designated private-sector undertakings. The proponent of any undertaking can enter into an agreement under section 3.0.1 of the Act with the Minister of the Environment to have an environmental assessment done voluntarily. Currently, mining is exempted from environmental assessment pursuant to two "Declaration Orders" ("DO"): Declaration Order MNDM-3 (also known as MNDM 3/4, formerly MNDM 3/3) and Declaration Order MNDM-4/2 (formerly MNDM-4).[14] There is a proposed Terms of Reference for an environmental assessment currently submitted by the Ministry of Northern Development and Mines ("MNDM") to the Ministry of the Environment for approval. The proposal only covers

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[4] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, section 56.
[5] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, sections 56-59.
[6] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, sections 56-59.
[7] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsections 23(2)(12) and 24(2)(15).
[8] http://www.mend-nedem.org/Default-e.aspx.
[9] *Mining Act*, R.S.O. 1990, c. M.14, section 35.
[10] *Mining Act*, R.S.O. 1990, c. M.14, section 31; *Provincial Parks and Conservation Reserves Act, 2006*, S.O. 2006, c. 12, section 16.
[11] *Mining Act*, R.S.O. 1990, c. M.14, subsection 30(1).
[12] *Mining Act*, R.S.O. 1990, c. M.14, section 34.
[13] R.S.O. 1990, c. E.18.
[14] Declaration Order MNDM-3 is set to expire on December 31, 2012. MNDM-4/2 was extended on June 4, 2009 and will expire on December 31, 2012. Both Declaration orders exempt the Ministry of Northern Development and Mines from complying with section 5 of the *Environmental Assessment Act*, R.S.O. 1990, c. E.18. The authority for making these Declaration Orders is given to the Minister of the Environment under subsection 3.1(3) of the *Environmental Assessment Act*, R.S.O. 1990, c. E.18.

the disposition of public (Crown) resources and rehabilitation activities. Mining leases and licences are not subject to the Ontario *Environmental Assessment Act* because they are statutory entitlements (i.e. MNDM has no discretion to refuse these if the statutory requirements have been met).

The purpose of MNDM-3/4 (originally MNDM-3, which has been extended three times) is to allow the Ministry of Northern Development and Mines to grant rights, title and interests to Crown mining lands and mining rights without having to conduct an individual environmental assessment in each case. The MNDM's coverage under this DO does not include mine claim staking or leasing of mining claims as these are not the MNDM's activities but are private sector undertakings which are not subject to the *Environmental Assessment Act*. Under the DO, the MNDM assesses whether there are potential environmental impacts; if there are none, the approval is given. Public notice is to be given and comments are to be solicited. If there are potential environmental effects, the Ministry of the Environment is to be notified. It is possible that certain components of a mine, such as access roads or portable generators, could be subject to an environmental assessment process, if they are not administered by the MNDM. In addition, the Minister of the Environment can recommend that the project be designated a major commercial or business enterprise, which would subject the undertaking to an environmental assessment process.

The purpose of MNDM-4/2 (formerly MNDM-4) is to ensure that there are no delays in rehabilitating sites where there is the possibility of hazardous contaminants being discharged to the environment, or the exposure of the public to personal safety hazards. This may be beneficial in terms of the sulfide mining criteria, in that it speeds up the rehabilitation process to minimize the ARD and other contamination that occurs before a site is rehabilitated. The DO requires notice of the project to be posted for at least 30 days before implementation. Under the DO, rehabilitation must still comply with the Mine Rehabilitation Code and a number of other conditions.

A mining project may be subject to a federal environmental assessment if it includes an activity prescribed by the regulations. For example, where a "Harmful Alteration, Disruption, of Destruction" of fish habitat authorization is required from the federal Department of Fisheries and Oceans, or where exploration or other activities require a permit under the *Indian Mining Regulations*, a federal environmental assessment must occur.[15]

In all instances where environmental assessment is required, the standard is to ensure no significant environmental impacts that cannot be mitigated. There is no legal requirement that all aspects of the project be considered in one comprehensive assessment. It is possible for both levels of government to voluntarily agree to harmonize any federal and provincial environmental assessment requirements. Comprehensive assessment of all aspects of a project only occur in

[15] *Canadian Environmental Assessment Act*, S.C. 1992, c. 37; *Law List Regulations*, SOR/94-636; *Inclusion List Regulations*, SOR/94-637.

rare cases where the federal and provincial governments voluntarily agree to have the full project assessed by an independent third party called a Joint Review Panel ("JRP"). Some recent JRPs in Canada have employed sustainability criteria. For example, the Kemess North Gold-Copper Mine (Duncan Lake, BC)[16] and the Whites Point Quarry and Marine Terminal Project (Digby Neck, NS)[17] JRPs both employed sustainability criteria including: environmental stewardship, economic benefits and costs, social and cultural benefits and costs, fair distribution of benefits and costs, present vs. future generations (Kemess) and public involvement, traditional community knowledge, ecosystem approach, sustainable development, precautionary principle (Whites Point). As can be seen, each JRP will develop the guiding criteria/principles independently. And the recommendations resulting from a JRP is only advice to government and need not be followed. The first ever JRP for an Ontario mine has been commenced to assess the proposed Marathon Platinum Group Metals and Copper Mine Project (August 2011, Environmental Assessment Registry Number 10-05-54755).

Heap and Dump Leaching; Waste Rock Piles and Storage: "Process effluent" (which can include effluent from waste rock storage) over a specified quantity requires a Certificate of Approval pursuant to Ontario's *Environmental Protection Act*. Limits are set for specific parameters, including cyanide, copper, lead, nickel, zinc, and arsenic.[18] Similarly, under the federal *Fisheries Act*, waste rock can be deposited to a Tailings Impoundment Area, if the concentrations of "deleterious substances" do not exceed the limits set out in regulation.[19]

When a mine is closed, the proponent must address the hydrogeology of the mine site through a site ground water characterization study, which must indicate the location of waste rock dumps, waste disposal sites, fuel storage areas, and chemical storage areas, among other things.

A similar indication of the location of existing waste rock, ore, concentrate and overburden piles must occur in assessing the ARD and metal leaching potential of a mine that is being closed.[20]

Tailings Basin Management: In order to ensure long-term physical stability of tailings dams and other containment structures, the Canadian Dam Safety Association "Dam Safety Guidelines"

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[16] All documentation is available on-line: www.ceaa.gc.ca/052/details-eng.cfm?pid=3394#decision.
[17] All documentation is available on-line: www.ceaa.gc.ca/default.asp?lang=En&n=D67F0296-1.
[18] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, Schedule 1 – Process Effluent Limits and Monitoring Frequency.
[19] *Metal Mining Effluent Regulations*, SOR/2002-222, s. 5 and Schedule 4 – Authorized Limits of Deleterious Substances.
[20] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 6 (ss. 50-55), Part 7 (ss. 56-59).

must be considered by the proponent in constructing such dams and structures, and details of the consideration given must be included in the closure plan.[21]

Tailings dams or other structures for impoundment of tailings must be designed in accordance with good engineering practice by a professional engineer, built in accordance with that design, and maintained to provide stability against static and dynamic loading.[22]

An owner or operator of mine may deposit waste rock or effluent containing a substance deleterious to fish into a tailing impoundment area (TIA). A TIA can be a natural water body or place designated in Schedule 2, or it can be a disposal area confined by anthropogenic or natural structures or by both, other than a disposal area that is part of a natural water body frequented by fish. If the TIA is a natural water body, the owner or operator must submit a compensation plan to the Minister of Fisheries and Oceans, and that plan must be approved, before a deleterious substance is deposited into a TIA that is added to Schedule 2; this provision is designed to offset the loss of fish habitat that will occur. If the requirements of subsections 27(2), (3), and (4) are met, the Minister must approve the plan.[23]

The provincial *Lakes and Rivers Improvement Act* and associated regulations govern the construction of dams, including tailings dams. The Ontario Minister of Natural Resources must approve the location and specifications of any dam to be constructed in a lake or river.[24]

A Director of the Ministry of the Environment must approve any sewage works before these can be constructed and operated. This provision only applies to sewage works with design capacity over 10,000 L per day, but does not apply where sewage is not to drain or discharge directly or indirectly into a water body or watercourse or a storm sewer.[25]

Particulate Contributions to Acidic Conditions On and Off Site: Section 9 of Ontario's *Environmental Protection Act* provides that any plant or structure emitting contaminants into the air requires a certificate of approval from the Director to do so.[26] Section 20 of the *Air Pollution – Local Air Quality* Regulation states that no facility of a sector included in Schedule 4 shall exceed the standards for discharge of contaminants as set out in Schedule 3. The section applies to discharges that occur on or after February 1, 2010, or to discharges from facilities the construction of which began after November 30, 2005, and no application for a certificate of approval was made on or before that day for the facility. Metal ore mining is a prescribed sector in Schedule 4, as is non-ferrous metal (except aluminum) smelting and refining. The remainder

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[21] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 4 (ss. 35-36).
[22] *Mines and Mining Plants*, R.R.O. 1990, Reg. 854, s. 7, enacted pursuant to *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1.
[23] *Metal Mining Effluent Regulations*, SOR/2002-222, ss. 5(1), 27.1, Schedule 2.
[24] *Lakes and Rivers Improvement Act*, R.S.O. 1990, c. L.3.
[25] *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, section 53.
[26] *Environmental Protection Act*, R.S.O. 1990, c. E.19, section 9.

of non-ferrous metal mining operations will become subject to the standards in Schedule 3 on February 1, 2013.[27] Metal and non-metal mining operations are subject to the regulation, which requires facilities to report emissions exceeding a threshold set out in Tables 2A and 2B of the Ministry of the Environment publication entitled "Step by Step Guideline for Emission Calculation, Record Keeping and Reporting for Airborne Contaminant Discharge." Particulate matter is one of the contaminants that must be tracked.[28]

Transportation of Acid-Producing Materials: The transportation of hazardous and toxic chemicals is governed by the Canada-Ontario Agreement Respecting the Administration of the Transportation of Dangerous Goods Act[29] and both federal and provincial legislation. [30] There are no specific regulations that apply to the transporting of acid-producing materials.

Long-Term Remediation: Part VII of Ontario's *Mining Act*, which is entitled "Rehabilitation of Mining Lands," applies to surface and underground mining of minerals and metallic minerals and to advanced exploration on mining lands.[31] A proponent is required to take all reasonable steps to progressively rehabilitate a site whether or not closure has commenced or a closure plan has been filed. Progressive rehabilitation is defined as "rehabilitation done continually and sequentially during the entire period that a project or mine hazard exists." Rehabilitate is defined as measures taken to restore the use or condition of the site to its former use or condition (i.e. prior to mining) or is made suitable for a use that the Director sees fit.[32]

Any person can apply for a permit to rehabilitate a mine hazard on Crown land, but obtaining a permit does not require that person to rehabilitate the hazard.[33] However, if they do rehabilitate the hazard, this must be done in accordance with a rehabilitation plan.[34] Once rehabilitation pursuant to a permit is underway, orders under the *Ontario Water Resources Act* (ss. 16.1, 16.2, 16.3, 31, 32, 61) and the *Environmental Protection Act* (ss. 7, 8, 18, 43, 157.1, 97) cannot be made.[35]

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[27] *Air Pollution – Local Air Quality*, O. Reg. 419/05, s. 20, Schedules 3, 4, enacted pursuant to *Environmental Protection Act*, R.S.O. 1990, c. E.19.
[28] *Airborne Contaminant Discharge Monitoring and Reporting*, O. Reg. 127/01, enacted pursuant to *Environmental Protection Act*, R.S.O. 1990, c. E.19.
[29] Canada-Ontario Agreement Respecting the Administration of the Transportation os Dangerous Goods Act is available on-line: www.tc.gc.ca/eng/tdg/clear-agreements-on-238.htm.
[30] *Transportation of Dangerous Goods Act, 1992*, S.C. 1992, c. 34 and *Dangerous Goods Transportation Act*, R.S.O. 1990, c. D.1; *Environmental Protection Act*, R.S.O. 1990, c. E.19.
[31] *Mining Act*, R.S.O. 1990, c. M.14, subsection 139(2).
[32] *Mining Act*, R.S.O. 1990, c. M.14, section 139.1.
[33] *Mining Act*, R.S.O. 1990, c. M.14, section 139.2.
[34] *Mining Act*, R.S.O. 1990, c. M.14, subsection 139.2(6).
[35] *Mining Act*, R.S.O. 1990, c. M.14, subsection 139.2(7).

Closure plans are required for many advanced exploration and mining operations.[36] Filed certified closure plans are mandatory and must be complied with; rehabilitation measures which are required are set out in the Mine Rehabilitation Code included in O. Reg. 240/00.[37]

The Director may order the proponent on whose lands exists a mine hazard to file a certified closure plan to rehabilitate the hazard. Failure to file a plan enables the Crown to rehabilitate the hazard.[38] The proponent cannot be required to file a closure plan pertaining to a mine hazard that was created by someone other than the proponent and which the proponent has not materially disturbed.

Where a mine hazard is likely to cause an immediate and dangerous adverse effect and rehabilitation is practical, immediate rehabilitation of the hazard can be required of the proponent.[39] Again, rehabilitation cannot be required where the hazard was not created or materially disturbed by the proponent.

Short and Long-Term Acid Production Potential in Pit and Storage Areas: During operations, the Ontario Ministry of the Environment requires a Certificate of Approval for the "sewage works."[40] If out of compliance with the Certificate of Approval, enforceable penalties can be applied.[41] After operations have ceased, the Ontario Ministry of Northern Development and Mines oversees rehabilitation, which includes metal leaching and acid rock drainage requirements.[42]

2. The state or province regulates and exhibits comprehension of the structural integrity of mines, including thorough rock mechanics review, lateral support issues and impacts to adjacent lands.

The proponent is required to submit notice of project status under s. 140, 141, or 144 of the *Mining Act* prior to the commencement or resumption of advanced exploration or mining operations.[43] This notice must include information on the uses of the land and water adjacent to the site. Some definitions also suggest that adjacent lands would be considered in the determination of impacts. "Operations area" is defined to include cleared or disturbed areas that are adjacent to the land that has been used in conjunction with a mining activity, including (given

[36] *Mining Act*, R.S.O. 1990, c. M.14, subsection 140(3).
[37] *Mining Act*, R.S.O. 1990, c. M.14, sections 141(2), 143.
[38] *Mining Act*, R.S.O. 1990, c. M.14, section 147.
[39] *Mining Act*, R.S.O. 1990, c. M.14, section 148.
[40] *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, section 53.
[41] *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, sections 107, 108.
[42] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 7.
[43] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 5(3)(c).

the purpose of the enabling legislation) adjacent waters.[44] The owner or operator of a mine must identify final discharge points for effluent.[45]

A closure plan must include details regarding the current land use of lands immediately adjacent to the site that may be affected by the project; details of water flowing through and receiving flow from the site; details on ground waters within and beyond the site boundaries that may be affected by the project; and details regarding terrestrial and aquatic plant and animal life that may be affected by the project.[46]

Part 1 of the Mine Rehabilitation Code deals with preventing access to the mine after closure. [47] Part 2 deals with rehabilitation of open pits, including considerations such as rock stability.[48] Part 3 deals with the stability of crown pillar and room and pillar operations, and is concerned with the long term stability of the mine site.[49] Possible environmental impacts caused by a collapse must be included in a study to assess the stability of the mine. Part 8 deals with physical stability monitoring, and any site that is determined not to be physically stable must be remediated "forthwith."[50]

Sections 18 and 19 of the *Ontario Health and Safety Act* regulations deal with sealing entrances to mines upon termination of mining and the thickness of pillars between adjacent underground operations, respectively.[51]

3. The state or province uses an ecosystem-based approach to mining regulation and employs comprehensive and integrated regulation and analysis of air, surface water, ground water and aquifer impacts, and considers all discharges synergistically to determine impacts on bioaccumulative chemicals of concern.

At the environmental assessment stage, there are significant barriers to employing an ecosystem approach. As detailed under the "Siting and Buffers" (Criterion 1, above), aspects of the mining project may come under federal or provincial environmental assessment processes. However, components of a mining operation are often exempted from environmental assessment or only considered in a piece-meal fashion. Only a federal-provincial Joint Review Panel will

[44] *Metal Mining Effluent Regulations*, SOR/2002-222, subsection 1(1).
[45] *Metal Mining Effluent Regulations*, SOR/2002-222, section 9.
[46] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 2, Item 4.
[47] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 1 (sections 1-17).
[48] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 2 (sections 18-27).
[49] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 3 (sections 28-34).
[50] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1 (Mine Rehabilitation Code), Part 8 (sections 60-67).
[51] *Mines and Mining Plants*, R.R.O. 1990, Reg. 854, sections 18-19.

integrate the assessment of a project. Joint Review Panels are not the norm for environmental assessments.

Regarding approvals, there is a similar lack of integration needed to employ an ecosystem approach. There are no permits currently required from the Ministry of Northern Development and Mines for mining in Ontario. And, approvals for the water use and air emissions associated with mining are handled by different branches within the Ministry of the Environment.

Closure plans are subject to Ontario's *Environmental Bill of Rights* (EBR). Section 11 of the EBR requires that the minister, when making decisions that might significantly affect the environment, take every reasonable step to ensure that the ministry statement of environmental values is considered.[52] The Ministry of Northern Development and Mines's Statement of Environmental Values (unlike the Ministry of the Environment's Statement of Environmental Values) does not contain a requirement that the precautionary approach be adopted. Two of the "environmental principles" that the Ministry of Northern Development and Mines commits to in the Statement of Environmental Values are that the Ministry: "Ensure continuing availability of mineral resources for the long-term benefit of the people of Ontario" and "Recognizes mining as a temporary land use, replaced in the long-term with alternative natural, recreational, or commercial land uses."[53]

With respect to review of closure plans, an official from the Ministry of Northern Development and Mines indicates that copies of the plans are posted on the Environmental Registry for public comment (as required under the EBR) and sent to various regulatory agencies including but not limited to the Ministry of the Environment, Ministry of Natural Resources, Ministry of Labour, Department of Fisheries and Oceans, as well as municipalities and potentially affected aboriginal communities for comment.[54]

4. Regulations are applicable statewide or province-wide.

The *Mining Act* recognizes (or will recognize when the provisions are proclaimed to be in force, in the case of ss. 204 and 205) a difference among mining rights in the Far North, Northern Ontario, and Southern Ontario, and different considerations may apply in different areas.[55]

5. The state or province regulates exploration to ensure protective capping and site remediation, and a thorough review process determines whether exploration is permitted based on the location's appropriateness for future mining.

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[52] *Environmental Bill of Rights, 1993*, S.O. 1993, c. 28, section 11.
[53] Ministry of Northern Development and Mines. Statement of Environmental Values. http://www.ebr.gov.on.ca/ERS-WEB-External/content/sev.jsp?pageName=sevList&subPageName=10004.
[54] Personal communication communication with Laura Blondeau, Communications Director, Office of the Minister of Northern Development, Mines and Forestry (e-mail dated November 10, 2011).
[55] *Mining Act*, R.S.O. 1990, c. M.14, sections 35.1, 204, 205.

A closure plan is required for advanced exploration under the *Mining Act* pursuant to section 140(3). The Code requires that a closure plan deal with protective capping and site remediation.[56] On a day to be proclaimed, the current *Mining Act* section 78 is to be repealed and replaced with a number of provisions, including section 78.2 (which requires the submission of an exploration plan before exploration can occur) and section 78.3 (which requires an exploration permit to be obtained before exploration can occur). Although regulations prescribing the activities to which each section will apply have not been made (expected to be introduced in April 2012), section 78.2 is to apply to activities that will have lower impacts on the land, while s. 78.3 is to apply to activities with more serious impacts.[57]

6. The state or province has an adequate monitoring program that allows for proactive, protective measures to be taken prior to any release or accident.

Various monitoring requirements are required components of closure plans; the proponent is responsible for implementing these programs.[58] For example, see item 10 of Schedule 2 of O. Reg. 240/00, which requires a closure plan to include details of monitoring for physical stability; chemical stability of waste rock, tailings, effluents, etc.; and biological monitoring.

The Mine Rehabilitation Code prescribes a variety of monitoring programs, including:

- compliance with the Provincial Water Quality Objectives (PWQOs), although a mixing zone may be used where the proponent establishes it is not practicable to meet the PWQOs[59]
- monitoring program demonstrating that contaminant concentrations in water draining from the site do not exceed the more stringent of the concentration limits in existing Certificate of Approval or effluent limits prescribed under O. Reg. 560/94[60]
- groundwater monitoring[61]
- physical stability monitoring[62]

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[56] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, s. 11, Schedule 1 (Mine Rehabilitation Code).
[57] *Mining Act*, R.S.O. 1990, c. M.14, sections 78.2, 78.3.
[58] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, section 11, Schedule 2 (Contents of Closure Plan).
[59] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 5 – Surface Water Monitoring.
[60] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 5 – Surface Water Monitoring, section 39.
[61] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 6 – Ground Water Monitoring.

In addition, the Mine Rehabilitation Code contains provisions for ongoing inspections post-closure[63] and for leaching and acid drainage sampling (and if necessary, a management plan).[64]

Ontario has established sampling procedures and provides for the establishment of sampling points. Sampling procedure is to comply with "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" published by the Ministry of the Environment.[65] Sampling points are to be used for all samples required under the Metal Mining Sector regulation, except pH monitoring as provided for in section 25. The Metal Mining Sector regulation applies only to metal mining plants that discharge a total volume of more than 50 m^3 of process effluent, cooling water effluent, and overflow effluent. Monitoring requirements are set out in Part V of the Metal Mining Sector regulation, including procedures, frequency, etc. for process effluent, cooling water effluent, overflow effluent, and acute lethality testing.[66] Some exceptions are provided in section 20 to the general monitoring requirements.

Federally, the owner or operator of a mine must conduct environmental effects monitoring studies of the potential effects of effluent on the fish population, on fish tissue, and on the benthic invertebrate community.[67] The monitoring must follow the procedure and occur with the frequency prescribed. These studies include effluent and water quality monitoring and biological monitoring. Procedures for deleterious substance and pH testing, with reference to Schedules 3 and 4, are set out and final discharge points must be sampled at least once weekly and at least 24 hours apart.[68] There are also procedures for acute lethality testing.[69] These tests must be conducted at least once monthly on a date selected at least 30 days prior to sampling. Samples must be collected at least 15 days apart.

Where a deposit occurs outside the normal course of events, a sample from the location of the deposit must occur without delay unless an inspector is notified that the deposit is an acutely lethal effluent. Where a sample is acutely lethal, sampling from that point increases to twice monthly; if those samples are lethal sampling occurs weekly until three consecutive tests come back as not acutely lethal. If effluent is not acutely lethal over 12 consecutive months, testing may decrease to once per calendar quarter. Procedure is set out for *Daphnia magna* monitoring tests.[70] If monitoring shows that the limits in Schedule 4 are exceeded, the pH of

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[62] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 6 – Physical Stability Monitoring.
[63] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 1 – Protection of Mine Openings to Surface and Part 9 – Revegetation.
[64] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1, Part 7 – Metal Leaching and Acid Rock Drainage Requirements.
[65] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, sections 3, 7, 8.
[66] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, Part V – Monitoring.
[67] *Metal Mining Effluent Regulations*, SOR/2002-222, s. 7, Schedule 5.
[68] *Metal Mining Effluent Regulations*, SOR/2002-222, section 12.
[69] *Metal Mining Effluent Regulations*, SOR/2002-222, sections 14-16.
[70] *Metal Mining Effluent Regulations*, SOR/2002-222, section 17.

effluent is less than 6.0 or greater than 9.5, or the effluent is acutely lethal, the owner or operator of the mine must notify an inspector without delay.[71]

7. The state or province requires mining and cleanup operations to comply with all applicable state, federal and tribal regulations.

The Ministry of Northern Development and Mines does not issue a permit for mining in Ontario. The potential to cancel or revoke mining rights in Ontario is only subject to noncompliance with the *Mining Act*. There is no mechanism that would trigger a review of a mining operation as a result of noncompliance with permits or approvals issued by other ministries (either provincially or federally).

Because the "acknowledgement of receipt of closure plan" is an instrument under the *Environmental Bill of Rights*, any two residents of Ontario could request a review of the instrument (including that there should be a review for noncompliance with approvals in other ministries).[72] However, the decision whether or not to review an instrument is highly discretionary and not subject to judicial review by the courts.[73]

8. The state or province requires adequate up-front financial assurance to cover costs for worst-case scenario failures, contingency plan implementation.

Financial assurance is required as a component of a closure plan, which must be submitted prior to the commencement of advanced exploration or mining operations.[74] Various forms of financial assurance are acceptable to the Director of the Ministry of Northern Development and Mines including cash, a letter of credit, or compliance with a prescribed corporate financial test, among others. The proponent, if choosing a corporate financial test as assurance, must identify in the closure plan an alternative means of assurance if they cease to meet the corporate financial test, and must provide this to the Director within 30 days of ceasing to meet the test. If the proponent chooses a corporate financial test and wishes to place a project into temporary suspension, it must pay ¼ of the assurance immediately, and a further ¼ of the assurance for each of the next three years on the date on which the project was placed into suspension. Schedule 2 requires that details of the costs of implementing rehabilitation measures be included in the closure plan; it appears as though the proponent is responsible for setting the level of required financial assurance.

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[71] *Metal Mining Effluent Regulations*, SOR/2002-222, section 24.
[72] *Environmental Bill of Rights, 1993*, S.O. 1993, c.28, Part IV and *Classification of Proposals for Instruments,* O.Reg 618/94, section 12.
[73] *Environmental Bill of Rights, 1993*, S.O. 1993, c.28, sections 67, 68, 118.
[74] *Mining Act*, R.S.O. 1990, c. M.14, section 145 and *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, sections 13-20, Schedule 2.

Federally, the owner or operator of the mine must submit an irrevocable letter of credit to cover the implementation costs of the tailings impoundment area compensation plan.[75] This letter of credit is payable upon demand on the declining balance of the implementation costs. The amount of this assurance is based on the owner's/operator's own estimate of the cost of implementing the plan, although this estimate (as part of the plan) must be approved by the Minister of the Department of Fisheries and Oceans.

9. Financial assurance requirements reach beyond the term of the mining and waste management permits to encompass long-term water treatment needs, etc.

The Director of the Ministry of Northern Development and Mines can order that the performance of a requirement in a closure plan be paid for out of the financial assurance.[76] Financial assurance by way of the corporate financial test does not extend beyond the productive life of the mine.[77]

10. A comprehensive web of effective, interactive regulations protect surface water, ground water, air, land, wildlife habitat, wetlands, endangered species and assess impacts on global warming; mining operations are not exempted.

There are a number of legal and policy protections for ecosystems, which do apply to mining operations. It is not clear how the various legislative mandates (scattered across provincial and federal ministries) are coordinated. See also Criterion 3 (above).

11. An environmental review process that uses ecological values and carrying capacity is required and is applied by the state to determine where mining will be allowed.

To the extent that environmental assessment is required for mining activities (see Criterion 3 above), the federal standard is "no significant adverse environmental effects that cannot be mitigated." Provincially, the standard is "betterment of the people" of Ontario "by providing for the protection, conservation and wise management" of the environment.[78] However, in practice the process assesses potential significant environmental impacts and proposed mitigation.

12. Numeric standards or determination processes for setting numeric standards are consistently applied to all discharges in every media (water, air, etc.); standards apply to all contaminants from all media and there are standards specifically applicable to sulfide mining contaminants (sulfides, heavy metals, chlorine, etc.).

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[75] *Metal Mining Effluent Regulations*, SOR/2002-222, subsection 27.1(4).
[76] *Mining Act*, R.S.O. 1990, c. M.14, subsection 145(6).
[77] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, sections 16, 17.
[78] *Environmental Assessment Act*, R.S.O. 1990, c. E.18, section 2.

With respect to water, Ontario has set daily concentration limits and monthly average concentration limits for process effluents.[79] Monitored contaminants include total cyanide, total suspended solids, copper, lead, nickel, zinc, and arsenic.[80] The Ontario regulation sets out parameter limits (in numerical range) for pH value of effluent samples and prescribes a maximum of 50% mortality for acute lethality testing in 100% effluent.[81] Federally, there are authorized limits of deleterious substances, including maximum authorized monthly mean concentration, maximum authorized concentration in a composite sample, and maximum authorized concentration in a grab sample.[82] Regulated contaminants include arsenic, copper, cyanide, lead, nickel, zinc, total suspended solids, and radium-226.

13. The state or province requires holistic mine plans, including factors like: stability, workers' safety, long-term viability of the mine (not allowing just high-grading), economic plans for communities' long-term health, reasonable royalties, past performance of applicant and community priorities as expressed in Master Plans, zoning, etc.

The owner of a surface mine producing metallic ore, or the owner of an underground mine, must prepare and maintain a mine design assessing ground stability of active and proposed workings of the mine.[83] This design is to be assessed and updated at least annually and before any alteration is made that may significantly affect ground stability of the mine. Safety information must be provided to an inspector before a closed mine is reopened.[84] The *Occupational Health and Safety Act* operates to protect workers' safety generally. There are also a number of specific requirements pertaining to the safety of workers in the mines.[85] Further, the Mine Rehabilitation Code contains a number of provisions relevant to the physical stability of mines, although many of these relate to post-closure stability.[86]

Communities determine land use priorities under the authority of the *Planning Act*.[87] Ontario guides land use planning by requiring that decisions made under the *Planning Act* are consistent with provincial policies.[88] The current Provincial Policy Statement contains specific policies related to minerals and petroleum.[89] Section 2.4.1 states that minerals shall be protected for long term use.

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[79] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, section 18 and Schedule 1.
[80] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, Schedule 1.
[81] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, sections 18, 19.
[82] *Metal Mining Effluent Regulations*, SOR/2002-222, Schedule 4.
[83] *Mines and Mining Plants*, R.R.O. 1990, Reg. 854, section 6.
[84] *Mines and Mining Plants*, R.R.O. 1990, Reg. 854, section 23.
[85] *Mines and Mining Plants*, R.R.O. 1990, Reg. 854.
[86] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedules 1, 2.
[87] R.S.O. 1990, c. P.13.
[88] *Planning Act*, R.S.O. 1990, c. P.13, subsection 3(5).
[89] Ministry of Municipal Affairs and Housing. (2005). Provincial Policy Statement. Toronto: Queen's Printer for Ontario. Available on-line: http://www.mah.gov.on.ca/Page1485.aspx

Section 2.4.2.1 states that minerals are to be protected from development and activities that would hinder their expansion or continued use or which would be incompatible for reasons of public health, public safety, or environmental impact. In addition, where lands have significant mineral potential, non-mining activities in and around those lands are prohibited unless resource use would not be feasible, proposed land use serves a greater long-term public interest, and issues of public health and safety and environmental impact are addressed. Section 2.4.3.1 requires rehabilitation to accommodate subsequent land uses once extraction and related activities have ceased, and states that progressive rehabilitation should be undertaken whenever feasible. In addition, extraction of minerals is permitted in prime agricultural areas as long as the area is subsequently rehabilitated. With mineral development being a prioritized land use, local community plans would only prevail if an alternative land use could meet the all the requirements in section 2.4.2.1 (as noted above).

Mining fees, taxes, rents, and royalties can be determined by Ontario under the authority of the *Mining Act*[90]and the *Mining Tax Act*[91]. The Minister of Northern Development, Mines and Forestry sets the fees by regulation. Although royalties in Ontario are comparable to other jurisdictions, there are also mining incentives and tax exemptions that reduce the amount collected from mining companies. In 2005, the Auditor General for Ontario audited the Mines and Minerals Program:

> We reviewed the Ministry's revenue collection efforts and found that royalties and mining fees were collected as required, and there were no appreciable outstanding debts.
>
> However, we noted a number of concerns related to the invoicing and collection of taxes and rents for patented, leased, and licensed mining lands.[92]

14. Mining sites must be returned to a functioning ecosystem that does not require perpetual care post-mining.

A proponent is required to undertake progressive rehabilitation on the mine site, unless the Director specifies otherwise. Progressive rehabilitation requires a site to be rehabilitated to its former use or condition.[93] All on-site watercourses, upon closing out of the mine, must be left so as not to require maintenance and shall be consistent with future use of land.[94] A proponent must restore the site to its former use or condition or an alternate use or condition that the Director sees fit.[95] Section 40 of the Mine Rehabilitation Code provides that a closure plan must

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[90] *Mining Act*, R.S.O. 1990, c. M.14, section 102.
[91] R.S.O. 1990, c. M.15.
[92] Auditor General of Ontario, Annual Report, 2005, page 200.
http://www.auditor.on.ca/en/reports_en/en05/309en05.pdf
[93] *Mining Act*, R.S.O. 1990, c. M.14, sections 139, 139.1.
[94] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 24(2)(18).
[95] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 24(3).

include steps to re-establish a diverse and viable aquatic community if this has been adversely affected during the mine's operation or closure.[96] And Part 9 of the Mine Rehabilitation Code provides for the revegetation of the closed mine site.

15. The state or province requires that all impacts, on and off site, be analyzed, assessed and included in permitting decisions.

As mentioned previously, there currently is no permit for mining in Ontario. The only requirement is the submission of a closure plan, which requires details regarding the current land use of immediately adjacent lands that may be affected by the project; waters flowing through and receiving flow from the site; and ground water and terrestrial and aquatic plant and animal life.[97]

16. The state or province requires a cumulative impacts analysis that includes impacts from any beneficiation or transportation of the facility's ore in the state or province.

As detailed under the "Siting and Buffers" (Criterion 1, above), aspects of the mining project may come under federal or provincial environmental assessment processes. However, components of a mining operation are often exempted from environmental assessment or only considered in a piece-meal fashion. Cumulative impacts analysis is required federally, but that would only apply to the assessment of the aspects of the project that fall under federal jurisdiction.

17. The state or province requires contingency plans for any potential failures.

Ontario does not require contingency plans for mining operations. Under the authority of the *Fisheries Act*, the owner or operator of a mine must prepare an emergency response plan that describes the measures to be taken in respect of a deleterious substance to prevent a deposit out of the normal course of events or to mitigate the effects of such a deposit.[98]

2. REVIEW PROCESS

Since each jurisdiction surveyed prohibits mining or related activities without a state-issued permit, with the sole exception of Ontario, the process of reviewing an application for a mining permit is a critical part of the states' regulatory scheme. The application stage is a jurisdiction's best opportunity to control a sulfide mine by setting the parameters of the operation's location, technologies, monitoring requirements, and so on, or by denying an application that fails to meet the state's safety requirements. An ideal application review process is highly detailed, independent, and public. There are a number of factors the jurisdiction can require of a proposed

[96] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1.
[97] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 2.
[98] *Metal Mining Effluent Regulations*, SOR/2002-222, section 30.

mine that will decrease the likelihood of environmental damage and ensure that the mine operator/owner is providing a net positive value to the jurisdiction. The jurisdiction should apply clear standards to each application, and should have the resources (financial and expert) to conduct a thorough and competent review. It is also important that the application review process be open to the public and that special care be taken to respond meaningfully to the concerns of any local governments or tribes whose interests are directly affected by the proposed mine. These standards and expectations are set forth in the following criteria:

1. The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.
2. The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.
3. The state or province has an integrated process for assessing applications and integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.
4. The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.
5. Consent by any impacted tribe/First Nation is required for mine approval.
6. Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI "Prove it first" law).
7. Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.
8. Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.
9. The state or province denies permits if they do not meet the regulatory standards.
10. All state or province analytical materials and data are available to the public.
11. The state or province requires that all data supporting an application be available to the public.
12. The state or province supplements applicant-provided data with its own, independently-gathered data.
13. Tribes/First Nations impacted by a mine proposal have delegated authority, if desired, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.
14. The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.
15. Public funds may not be committed to financing or assisting project development until environmental review is completed.
16. Financial assurance is calculated transparently and well-before any permit is issued.
17. Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.

Currently, there is no permit approval review process required for mining in Ontario. Although a closure plan is mandated prior to advanced exploration or mining operations, the Ministry of Northern Development and Mines does not have the authority to approve or reject the closure plan. There are review processes associated with environmental assessment and for permits/approvals needed under related environmental legislation (e.g., Ontario *Water Resources Act*). In each of these situations, the technical materials and data submitted by the proponent are generally not publicly available without undergoing potentially expensive and time-consuming freedom of information requests. Financial assurance information specifically is unavailable publicly. There is some integration of review processes, though for environmental assessment in particular cooperation between the federal and provincial government is voluntary. First Nations have limited ability to influence the review process. Some aspects of the review process for mining in Ontario may change in the future, if the government fully implements legislative amendments that enable a permit requirement for advanced exploration.

Overall grade: Poor

1.	The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.	NO
2.	The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.	SOME
3.	The state or province has an integrated process for assessing applications integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.	NO
4.	The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.	NO (Mine); SOME (related approvals)
5.	Consent by any impacted First Nation is required for mine approval.	NO
6.	Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI "Prove it first" law).	NO (Mine); SOME (related approvals)

7.	Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.	SOME (standards); NO (gaining approval)
8.	Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.	NO
9.	The state or province denies permits if they do not meet the regulatory standards.	NO (Mine); SOME (related approvals)
10	All state or province analytical materials and data are available to the public.	SOME
11.	The state or province requires that all data supporting an application be available to the public.	SOME
12.	The state or province supplements applicant-provided data with its own, independently-gathered data.	NO (Mine); YES (related approvals)
13.	First Nations impacted by a mine proposal have delegated authority, if desired by the First Nation, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.	NO
14.	The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.	YES
15.	Public funds may not be committed to financing or assisting project development until environmental review is completed.	NO
16.	Financial assurance is calculated transparently and well-before any permit is issued.	NO (transparency); YES (before mining)
17.	Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.	Unknown

Discussion:

1. The state or province requires applicants and permittees to submit supporting data sufficient to provide for meaningful and substantive review of the application or request.

There currently is no permit/approval process for mines in Ontario. The closure plan, which must be submitted prior to advanced exploration or mining operations, must include details on a variety of environmental impacts of the mine site.[99]

2. The state or province is supportive of and cooperative with other applicable regulatory regimes including federal and tribal governments.

The *Canada-Ontario Agreement on Environmental Assessment Cooperation* provides for voluntary cooperation and coordination of processes for approval, when both a federal and provincial environmental assessment is required.[100] The most comprehensive environmental assessment process is a Joint Review Panel (JRP). As detailed under the "Siting and Buffers" (Criterion 1, Regulation Scope, above), there have been recent JRPs that have employed sustainability criteria and JRP is very infrequently employed. The first ever JRP for an Ontario mine has been commenced to assess the proposed Marathon Platinum Group Metals and Copper Mine Project (August 2011, Environmental Assessment Registry Number 10-05-54755).

3. The state or province has an integrated process for assessing applications integrating input. The process should include cross-disciplinary review and input from fellow agencies that is unhampered by political pressure.

There currently is no permit/approval process for mines in Ontario. Closure plans are required for many advanced exploration and mining operations.[101] When a proponent submits a closure plan, it is reviewed by the Ministry of Northern Development and Mines with a "one window" approach. The proponent engages only with the Ministry of Northern Development and Mines, and then the Ministry distributes information to other regulatory agencies (such as the Ministry of the Environment, Ministry of Natural Resources, Ministry of Labour, and the federal Department of Fisheries and Ocean), municipalities, and potentially impacted aboriginal communities. Each of these organizations may have knowledge or information related to the site which it uses in addition to the information provided by the proponent. However, the closure plan process is one in which the project proponent (not the government) certifies that the closure plan complies with all of the legislative requirements.

4. The state facilitates and incorporates feedback from public participation in all aspects of environmental review, application assessment, permitting and enforcement.

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[99] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 2.
[100] *Canada-Ontario Agreement on Environmental Assessment Cooperation* available on-line at: http://www.ceaa.gc.ca/default.asp?lang=En&n=F4591D20-1.
[101] *Mining Act*, R.S.O. 1990, c. M.14, subsection 140(3).

As detailed under the "Siting and Buffers" (Criterion 1, Regulation Scope, above), aspects of the mining project may come under federal or provincial environmental assessment processes. However, components of a mining operation are often exempted from environmental assessment or only considered in a piecemeal fashion. Many environmental assessments are subject to a "screening" process, which has no public participation component. Other forms of environmental assessment have some public notice and request for comment. The most involved public participation happens in public hearings, which can occur both provincially and federally.

Public notice regarding advanced exploration is not mandatory, but can be required at the discretion of the Director.[102] Public notice regarding mining operations is required.[103] None of these provisions states what the Director is to do with the public comment, or even if there is an opportunity for public comment. However, since a closure plan must be filed prior to commencing advanced exploration or mining operations and because the "acknowledgement of receipt of closure plan" is an instrument under Ontario's *Environmental Bill of Rights*, there is a mandatory public participation process.[104] A regulation sets out procedure for public notification under sections 140 and 141 of the *Mining Act*, including public information sessions.[105] The proponent must provide the Director with the names of the members of the public who attended the information session, and must also provide the Director with any written comments provided by those members no later than 15 days after the session.[106] The *Mining Act* provides a process for disputing the validity of a mining claim and for resolving disputes between persons with respect to unpatented mining claims.[107]

5. Consent by any impacted First Nation is required for mine approval.

The purpose of the Ontario *Mining Act* is to encourage mining in a manner that is consistent with the recognition and affirmation of existing Aboriginal and treaty rights under section 35 of the Constitution, including the duty to consult.[108] The Supreme Court of Canada has suggested that the duty to consult may require the consent of an Aboriginal community where a potential infringement of Aboriginal rights or title is very serious.[109]

A yet-to-be-proclaimed section of the Ontario *Mining Act* will allow the Minister to consider, when deciding whether to withdraw lands from staking and prospecting, whether the lands meet the prescribed criteria as a site of Aboriginal cultural significance.[110] The Minister is

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[102] *Mining Act*, R.S.O. 1990, c. M.14, subsections 140(1), (2).
[103] *Mining Act*, R.S.O. 1990, c. M.14, subsection 141(1).
[104] *Environmental Bill of Rights, 1993*, S.O. 1993, c. 28, Part II and *Classification of Proposals for Instruments,* O.Reg 618/94, section 12.
[105] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, section 8.
[106] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 8(3).
[107] *Mining Act*, R.S.O. 1990, c. M.14, sections 48 and 110.
[108] *Mining Act*, R.S.O. 1990, c. M.14, section 2.
[109] *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010 at para 168.
[110] *Mining Act*, R.S.O. 1990, c. M.14, subsection 35(2).

not, however, required to do so. Also, a yet-to-be-proclaimed section of the Ontario *Mining Act* will allow the Minister to restrict the claim holder's right to use portions of the surface of an unpatented mining claim if those portions are on lands that meet the prescribed criteria for a site of Aboriginal cultural significance.[111] Yet-to-be-made regulations under Ontario's *Mining Act* may prescribe required levels of Aboriginal consultation before an exploration plan can be submitted (and thus before any mining activities can occur on a claim).[112] Aboriginal consultation may also be prescribed and may need to be completed before an exploration permit can be obtained.[113] The updated versions of sections 140 and 141 of the Ontario *Mining Act*, which are not yet in force, require consultation with affected Aboriginal communities in accordance with the regulations.[114] Once in force, no advanced exploration or mining activity can occur until this requirement is satisfied.

6. Standards and criteria are concrete, clear and easily enforced. Self-realizing standards are best (like the WI "Prove it first" law).

There are no self-realizing standards for mining., but standards related to effluent limits are clear.[115] Federally, there are no site-specific effluent standards for mining. When issuing an Environmental Compliance Approval (ECA) for the mining sector, the Ontario Ministry of the Environment applies both overarching regulations and policies (e.g., *Effluent Monitoring and Effluent Limits – Metal Mining Sector*) and site specific regulatory requirements (e.g., effluent limits and monitoring based on the nature of the contaminants of concern and quality of the receiving environment).[116]

7. Standards for reclamation and remediation are in place prior to mining; the applicant must demonstrate that they can be met prior to an application gaining approval.

There is no approval process for mines in Ontario. A closure plan must be submitted before advanced exploration or mining operations can occur; the plan must be certified (by the proponent) and the Director of the Ministry of Northern Development and Mines must have received it and confirmed receipt in writing.[117]

8. Government-to-government consultation results in tribal requests being integrated into the permitting process and enforceable.

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[111] *Mining Act*, R.S.O. 1990, c. M.14, subsection 51(4).
[112] *Mining Act*, R.S.O. 1990, c. M.14, section 78.2.
[113] *Mining Act*, R.S.O. 1990, c. M.14, section 78.2.
[114] *Mining Act*, R.S.O. 1990, c. M.14, sections 140, 141.
[115] *Metal Mining Effluent Regulations*, SOR/2002-222 and *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94.
[116] Personal communication with Dean Therrien, Supervisor of Issues Management, Operations Division, Office of the Deputy Minister of the Environment (e-mail dated December 12, 2011).
[117] *Mining Act*, R.S.O. 1990, c. M.14, sections 140, 141.

No formal regulations currently exist that address First Nation requests. New regulations are to be developed under Ontario's *Mining Act* that will set requirement regarding aboriginal consultation and accommodation (See Criterion 5, above).

9. The state or province denies permits if they do not meet the regulatory standards.

There currently is no permitting process for mines in Ontario. Once new provisions of the Ontario *Mining Act* come into force, the Director of Exploration for the Ministry of Northern Development and Mines will be able to deny an exploration permit if Aboriginal consultation has not occurred; all activities covered by the exploration permit must comply with the terms of the permit; and the Director will have the discretion to decide whether to grant an exploration permit, and also to determine the terms and conditions attaching to that permit.[118]

For related approvals under other environmental laws, the province denies permits if the proponent is not able to meet the regulatory standards. For example, for a Permit to Take Water under the *Ontario Water Resources Act*, the Director of the Ministry of the Environment has discretion to "issue, refuse to issue or cancel a permit" and "impose such terms and conditions in issuing a permit … and may alter the terms and conditions of a permit after it is issued."[119]

10. All state or province analytical materials and data are available to the public.

Technical materials and the associated data generally can only be accessed by the public through formal freedom of information requests. Sometimes, technical materials are available to the public during the approvals process (e.g., an environmental assessment); however, viewing the materials often requires that the individual attend at a specific office during limited business hours. Data regarding non-compliance with approvals under related environmental legislation (e.g., the *Ontario Water Resources Act*) is publicly available (See Criterion 7, Enforcement, below), as is pollutant reporting through the National Pollutant Releases Inventory (See Criterion 2, Reporting and Official Statements, below). The financial and commercial information pertaining to financial assurance is confidential and not subject to a freedom of information request.[120]

11. The state or province requires that all data supporting an application be available to the public.

See Criterion 10, above. Records pertaining to claims staked are available to the public, including any personal information.[121]

12. The state or province supplements applicant-provided data with its own, independently-gathered data.

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[118] *Mining Act*, R.S.O. 1990, c. M.14, section 78.3(2).
[119] *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, subsection 34(6).
[120] *Mining Act*, R.S.O. 1990, c. M.14, subsections 145(10), (11).
[121] *Mining Act*, R.S.O. 1990, c. M.14, subsections 7(4), (5).

The Ministry of Northern Development and Mines does not supplement the proponent's information with its own. The proponent certifies that the submitted closure plan complies with all legal requirements.

In approvals associated with related environmental legislation the Ontario Ministry of the Environment relies on the applicant's documentation for site specific information, and also supplements this information with applicable Guidelines, Best Management Practices and consistency with similar projects.[122] The Ministry of the Environment may also verify data through its own monitoring programs, modeling and site visits.[123]

13. First Nations impacted by a mine proposal have delegated authority, if desired by the First Nation, for regulation and enforcement of environmental standards and adequate resources to pursue that authority.

There is no such authority in Ontario.

14. The state or province ensures that regulators do not have financial conflicts of interest in making permit decisions.

Officers appointed under Ontario's *Mining Act*, including the Director and recorders of the Ministry of Northern Development and Mines, are not permitted to purchase or become interested in, either directly or indirectly, any mining lands, claims, or rights in Ontario unless the Deputy Minister waives this requirement because he or she is convinced the acquisition was in good faith.[124] A closure plan submitted to the Ministry of Northern Development and Mines must contain a numbers of certificates; any certificate required for the closure plan must disclose details of any direct or indirect interest, current or expected, the person providing the certificate or a person providing information to the certifying person has in the proponent's project or in the projects of the corporate proponent's affiliates, including direct or indirect beneficial ownership of securities of the proponent or its affiliates.[125]

15. Public funds may not be committed to financing or assisting project development until environmental review is completed.

If an undertaking is subject to an individual environmental assessment, section 12.2 of the Ontario *Environmental Assessment Act* applies. This section provides what types of activities are permitted, and which are not allowed, prior to environmental assessment approval. In most circumstances, loans, grants, subsidies or guarantees by the province are prohibited in

[122] Personal communication with Dean Therrien, Supervisor of Issues Management, Operations Division, Office of the Deputy Minister of the Environment (e-mail dated December 12, 2011).
[123] Personal communication with Dean Therrien, Supervisor of Issues Management, Operations Division, Office of the Deputy Minister of the Environment (e-mail dated December 12, 2011).

[124] *Mining Act*, R.S.O. 1990, c. M.14, section 12.
[125] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 12(4)(e).

respect of an undertaking seeking individual environmental assessment. This legislative section does not apply to projects approved by Class Environmental Assessments. Mining projects are currently not subject to the Ontario *Environmental Assessment Act* (See also "Siting and Buffers", Criterion 1, Regulation Scope, above).

16. Financial assurance is calculated transparently and well-before any permit is issued.

Financial assurance is calculated in the closure plan, which must be submitted before advanced exploration or mining operations can begin.[126] Financial assurance is not calculated transparently, as documents relating to financial assurance are confidential and not subject to public scrutiny, even through freedom of information requests.[127]

17. Financial assurance, including its amount and devices, is developed collaboratively with financial as well as environmental expertise.

Proponents can effectively self-assure through corporate financial tests, and this does not require any environmental input.[128] The closure plan must contain a certificate signed by the proponent (or the senior officers of a corporate proponent) certifying that the cost estimates of rehabilitation work in the plan are based on market value cost of the goods and services required by the work, that the closure plan contains the full amount of rehabilitation work that will be required, and that the amount of financial assurance is sufficient to cover the cost of the rehabilitation work.[129] Presumably, this would require environmental expertise to determine the amount of work required and the devices needed. Although the Ontario Ministry of Northern Development and Mines reviews the closure plan, it is the proponent that certifies the financial assurance covers the cost of rehabilitation.

3. ENFORCEMENT

A regulatory structure is only as strong as its enforcement, including the mechanisms and powers granted to the regulators and whether and how the regulators actually use them. An ideal enforcement system gives regulators the tools and resources to enforce the standards set forth in statutes, rules and permits, and to ensure that deviations from or violations of those standards are reversed and adequately punished so as to deter future violations. In addition to having the authority, staff, and money to enforce the law, a meaningful enforcement system must have regulators capable of and committed to enforcement.

It is important to note that the lack of experience in regulating sulfide mines in the jurisdictions surveyed leaves a lack of certain data in this area. Until sulfide mines are permitted, operate, and close under the existing laws, it is impossible to say how a jurisdiction actually and

[126] *Mining Act*, R.S.O. 1990, c. M.14, section 145.
[127] *Mining Act*, R.S.O. 1990, c. M.14, subsections 145(10), (11).
[128] *Mining Act*, R.S.O. 1990, c. M.14, section 145.
[129] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 12(2).

fully enforces its laws and permit conditions, and this report does not speculate on such issues. Furthermore, we recognize that the strength of enforcement may depend to some extent on the political climate in a jurisdiction, and may therefore ebb and flow with legislative and executive changes. However, there is at least some experience to work from in some jurisdictions, and the basic capacity for enforcement is very clearly set out in the statutory authorization, staffing and funding of each jurisdiction's sulfide mining program.

In all states, a mine operator/owner holding a Clean Water Act (CWA) wastewater/stormwater permit will be subject to CWA penalties for violating those permits, including monetary sanctions and stop orders. In all states, citizens can sue operators for violations of CWA permits, with attorneys' fees awarded to successful plaintiffs. In all states, the CWA allows citizen intervention in NPDES permit, 404 and 401 appeals. This system of regulation operates in parallel with the mining permit enforcement scheme in each U.S. jurisdiction, but there is little to no operational overlap. For a review of states' CWA enforcement mechanisms, see the Water Quality Report at Appendix A.

1. The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.
2. The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney's fees for prevailing citizens.
3. The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.
4. The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.
5. The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.
6. The state or province requires personnel to conduct inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.
7. Citizens have access to all enforcement data.
8. Reclamation, enforcement and monitoring are enabled beyond the life of the permit.
9. Post-closure enforcement is strong, with adequate resources and public involvement.
10. Immediate independent judicial review is available to citizen plaintiffs.
11. Citizens can initiate and participate in inspections.
12. Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.
13. Permit conditions and work plans are reviewed at least annually.
14. The agency has authority to modify permit conditions whenever necessary ("adaptive management"), and exercises that authority as needed.

15. Any permit variances, amendments, or changes requested by the permittee are rare and uncontested.

Currently, there is no permit approval required for mining in Ontario. The assessment of enforcement is therefore limited to permits/approvals that are issued for activities related to mining by the Ministry of the Environment and to the required mine closure plans that are filed with the Ministry of Northern Development and Mines. There is some ability for citizens to participate in the enforcement of permits/approvals. However, there are barriers to participation which include difficulties accessing information and cost consequences of conducting litigation. There are no provincial funding mechanisms to enable intervention and participation in government decision-making, though the latter is a citizen right under Ontario's *Environmental Bill of Rights*.

Overall Grade: Fair

1	The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.	SOME
2	The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney's fees for prevailing citizens.	SOME
3	The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.	SOME
4	The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.	NO
5	The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.	SOME
6	The state or province requires personnel to conduct inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.	SOME
7	Citizens have access to all enforcement data.	SOME
8	Reclamation, enforcement and monitoring is enabled beyond the life of the permit.	SOME
9	Post-closure enforcement is strong, with adequate resources and public involvement.	SOME NO (water quality)
10	Immediate independent judicial review is available to citizen plaintiffs.	SOME
11	Citizens can initiate and participate in inspections.	SOME
12	Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.	YES
13	Permit conditions and work plans are reviewed at least annually.	SOME
14	The agency has authority to modify permit conditions whenever necessary ("adaptive management"), and exercises that authority as needed.	NO

15	Any permit variances, amendments or changes requested by the permittee are rare and uncontested.	N/A

DISCUSSION:

1. The state or province has adequate enforcement policies in place, including authorization to: issue stop orders and corrective action orders, to assess civil penalties, to impose costs of inspections, and attorney and staff costs. States should have written enforcement policies that are available to the public.

Stop Orders and Corrective Action Orders: Where a court convicts a person of an offence under the *Mining Act*, it has the discretion to impose a number of penalties in addition to the prescribed fine, jail time, or other prescribed penalty.[130] This discretion includes the ability to impose an order requiring a person to take such action as the court directs. The court may also include conditions in the order that it considers "appropriate to prevent similar unlawful conduct or to contribute to rehabilitation of the person."[131] In addition, the Minister and Director of the Ministry of Northern Development and Mines have the power to make various orders under different provisions of Part VII of the *Mining Act*.[132] For example, subsection 139.3(5) of the *Mining Act* gives the Director of the Ministry of Northern Development and Mines the power to order a person to rehabilitate a mine hazard in accordance with a rehabilitation plan. Under subsection 143(2) of the *Mining Act*, the Director of the Ministry of Northern Development and Mines may order that a proponent file a closure plan. Under subsection 143(3) of the *Mining Act*, the Director of the Ministry of Northern Development and Mines may order that a closure plan be changed. Under subsection 145(2) of the *Mining Act*, the Director of the Ministry of Northern Development and Mines may order that a required rehabilitation measure be carried out, or provide for its being carried out, and that this be paid for out of the financial assurance. And, under section 148 of the *Mining Act*, the Minister of the Ministry of Northern Development and Mines has the authority to order the immediate rehabilitation of any mine hazard deemed likely to cause an immediate and dangerous adverse effect. In addition, the Director of the Ministry of Northern Development and Mines may, at any time, apply to a judge of the Superior Court of Justice for an order prohibiting advanced exploration, mining or mine production on a site where a person has failed to comply with sections 140, 141, 143(1), or 144(2) of the *Mining Act*.[133]

Where a person is convicted of an offence under the *Fisheries Act*, the court has the power to, among other things, prohibit any activity by the person that may result in the continuation or repetition of the offence; and directing the person to take appropriate action to avoid harming fish or fish habitat.[134] Contravention of such an order is an offence punishable under section 79.6 of the *Fisheries Act*.

The Director of the Ministry of the Environment can issue control orders and stop orders where a provincial officer's report states that a facility has discharged a contaminant in violation of the regulations (control order) or where the Director believes on reasonable and probable

[130] *Mining Act*, R.S.O. 1990, c. M.14, subsections 164(7), (8).
[131] *Mining Act*, R.S.O. 1990, c. M.14, subsection 164(8).
[132] *Mining Act*, R.S.O. 1990, c. M.14, Part VII.
[133] *Mining Act*, R.S.O. 1990, c. M.14, subsection 167(3).
[134] *Fisheries Act*, R.S.C. 1985, c. F-14, section 79.2.

grounds that a discharge is occurring that constitutes an immediate danger to human life, health, or property (stop order).[135] Section 17 of the *Environmental Protection Act* allows the Director of the Ministry of the Environment to order remedial measures where a discharge of a contaminant has occurred and caused damage. Section 18 of the *Environmental Protection Act* allows the Director of the Ministry of the Environment to require a person to take preventative measures to prevent damage from occurring.

Civil Penalties: There are no civil penalties under the *Mining Act* in Ontario, but in 2005, civil "environmental penalties" were enabled under Ontario's *Environmental Protection Act* and *Ontario Water Resources Act*.[136] Environmental penalties apply equally to metal mining operations and can be assessed immediately when there are spills.[137] Also, there are penalties for various offences set out in the *Mining Act* and the federal *Fisheries Act*; fines may be imposed upon conviction.[138] Under the *Fisheries Act*, the owners of any substance deleterious to fish are responsible for all costs reasonably incurred by the Crown for measures taken to prevent such a deposit or to remedy the harm caused by the deposit.[139] Further, anyone found to have deposited a substance deleterious to fish is liable to licensed commercial fishermen for any loss of income resulting from the deposit. All such loss is recoverable with costs in proceedings in any court of competent jurisdiction.[140]

Costs of Inspections: Inspections are not charged to the mine operator/owner, though the Minister of the Ministry of Northern Development and Mines is authorized to establish and charge fees in respect of anything that a person or entity is authorized or required to do under the *Mining Act*.[141] However, where an inspection related to a survey of mining claims is ordered, the fee is payable in advance[142] and the Minister may require that the applicant supply the inspector with transportation to and from the site.[143]

Federally, where a person is convicted of an offence under the Act, they may be ordered to pay the Minister of the Department of Fisheries and Oceans the costs incurred in the seizure, storage, or disposition of any fish or other thing seized in relation to the offence; presumably one such cost would be the cost of doing the inspection where the thing was seized.[144]

Attorney Costs: A person who appeals to the Mining and Lands Commissioner under section 112 of the *Mining Act* may have a hearing, and the Commissioner may award costs to any party

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[135] *Environmental Protection Act*, R.S.O. 1990, c. E.19, sections 7, 8, 17, 18.
[136] *Environmental Protection Act*, R.S.O. 1990, c. E.19, section 182.1. *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, section 106.1.
[137] Links to the legislation, guidance documents, and annual reports regarding environmental penalties is available on-line:
http://www.ene.gov.on.ca/environment/en/industry/compliance_and_enforcement/environmental_penalties/index.htm
[138] *Mining Act*, R.S.O. 1990, c. M.14, sections 164-170. *Fisheries Act*, R.S.C. 1985, c. F-14, sections 40, 42.
[139] *Fisheries Act*, R.S.C. 1985, c. F-14, subsections 42(2).
[140] *Fisheries Act*, R.S.C. 1985, c. F-14, subsections 42(3).
[141] *Mining Act*, R.S.O. 1990, c. M.14, section 177.1.
[142] *Mining Act*, R.S.O. 1990, c. M.14, subsections 95(7), (8).
[143] *Mining Act*, R.S.O. 1990, c. M.14, subsection 95(8).
[144] *Fisheries Act*, R.S.C. 1985, c. F-14, section 71.1.

in such a proceeding.[145] In addition, section 122 of the Mining Act allows the Commissioner to order that security for costs be posted.

Staff Costs: As noted above, the Minister of the Ministry of Northern Development and Mines may establish fees for anything that a person or entity is authorized or required to do under the *Mining Act*,[146] but this authority has not been used to charge for staff costs. Though the regulations set a minimum value of assessment work to be performed on mining claims that are not leases,[147] it is not clear whether these fees are directed to support the mining program.

Written Enforcement Policies Available to the Public: The Ministry of Northern Development and Mines does not make enforcement policies publicly available. The Ministry of the Environment does.[148]

2. The state or province provides for citizen intervention in state enforcement actions and for citizen suits, with attorney's fees for prevailing citizens.

With leave of the Court, a citizen can intervene in provincial enforcement actions.[149] Citizen suits have been enabled by the Ontario *Environmental Bill of Rights*.[150] There is no funding available for interventions and citizen suits. Participating in these activities hold the usual risks of adverse costs awards.

3. The state or province allows citizen intervention in state proceedings. States allow citizens to intervene in permit proceedings or appeals and in state suits.

With leave of the Court, a citizen may participate in provincial civil actions.[151] There is also a mechanism for citizens to participate in decision-making regarding prescribed permitting and related appeals.[152] Because there is no permit issued for mining, these latter rights of participation and appeal are only associated with the Ministry of Northern Development and Mines's acceptance of closure plans. There is no funding available for interventions and citizen suits, and these activities hold the usual risks of adverse costs awards.

4. The state or province facilitates an atmosphere in which environmental protection is the top priority of the regulatory scheme and those charged with implementing it; agencies do not view themselves or act like agents of the industry.

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[145] *Mining Act*, R.S.O. 1990, c. M.14, sections 126, 127.
[146] *Mining Act*, R.S.O. 1990, c. M.14, section 177.1.
[147] *Assessment Work*, O. Reg. 6/96, respectively.
[148] Ministry of the Environment. *Compliance Policy: Applying Abatement and Enforcement Tools.* May 2007. Publication PIBS 6248, Queen's Printer for Ontario. Available on-line: http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079163.pdf.
[149] Ontario Court of Justice Criminal Proceedings Rules (SI/92-99), Rule 27.06. http://laws.justice.gc.ca/eng/regulations/SI-92-99/FullText.html.
[150] *Environmental Bill of Rights, 1993*, S.O. 1993, c.28. In particular, see harm to a public resource (Part VI) and the clarification regarding standing for public nuisance (section 103).
[151] *Rules of Civil Procedure*, R.R.O. 1990, Regulation 194, Rule 13.
[152] *Environmental Bill of Rights, 1993*, S.O. 1993, c.28. In particular, see public participation in government decision making (Part II) and appeals of instruments (sections 38-48).

The general purpose of the Act is to encourage mining.[153] The atmosphere is not one in which environmental protection is the top priority.

5. The state or province has adequate enforcement capabilities, including dedicated staff time and expertise.

Officials from the Ministry of Northern Development and Mines and the Ministry of the Environment indicate that they have adequate enforcement capabilities.[154] However, the Environmental Commissioner of Ontario has expressed concern that there are not adequate enforcement capabilities in the Ministry of Natural Resources and the Ministry of the Environment.[155]

6. The state or province requires personnel to conduct frequent inspections and enforcement of mining and cleanup operations sufficiently frequently and ensures that problems are addressed promptly.

Part X of the *Mining Act* sets out the powers and duties of inspectors, but does not set the frequency of inspection.[156] The inspectors may gather information and make inspections or inquiries at any time without warrant, and persons must allow the inspectors to carry out these duties. Although not technically provincial enforcement, the Mine Rehabilitation Code contains various inspection requirements. For instance, the proponent must inspect a site put into a state of temporary suspension at least every six months to ensure rehabilitation measures are in place.[157] An official from the Ministry of Northern Development and Mines indicated that inspections are conducted on a priority ranking basis.[158] Those sites of higher risk are inspected more frequently and sites entering closure are of the highest priority to ensure that they are closed out in accordance with the Code.[159]

Inspectors may be appointed by the Minister of the federal Department of Fisheries and Oceans to ensure compliance with the prohibition on deposition of deleterious substances in fish habitat or waters frequented by fish.[160] Again, no mention is made regarding frequency of inspections.

The owner or operator of a mine is required to notify an inspector without delay where tests indicate prescribed limits of contaminants in effluent have been exceeded, where the pH of the effluent is less than 6.0 or greater than 9.5, or where the effluent is acutely lethal.[161] No mention is made of frequency of inspection by government inspectors. The Ministry of the

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[153] *Mining Act*, R.S.O. 1990, c. M.14, section 2.

[154] Personal communication with Laura Blondeau, Communications Director, Office of the Minister of Northern Development, Mines and Forestry (e-mail dated November 10, 2011) and Dean Therrien, Supervisor of Issues Management, Operations Division, Office of the Deputy Minister of the Environment (e-mail dated December 12, 2011).

[155] Environmental Commissioner of Ontario. 2007. *Doing Less with Less: How shortfalls in budget, staffing and in-house expertise are hampering the effectiveness of MOE and MNR, ECO Special Report, 2007.* Toronto, ON : Environmental Commissioner of Ontario. http://www.ecoissues.ca/index.php/Doing_Less_with_Less.

[156] *Mining Act*, R.S.O. 1990, c. M.14, Part X (Inspections) (sections 156 – 163).

[157] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedules 1, 2.

[158] Personal communication with with Laura Blondeau, Communications Director, Office of the Minister of Northern Development, Mines and Forestry (e-mail dated November 10, 2011).

[159] *Id*.

[160] *Fisheries Act*, R.S.C. 1985, c. F-14, section 38.

[161] *Metal Mining Effluent Regulations*, SOR/2002-222, section 24.

Environment uses a risk-based inspection strategy that focuses on operations with higher potential for environmental impact.[162] Planned inspections, not limited to mine properties, are developed at the beginning of each year based on information such as: local, provincial and ministry priorities and commitments; place-based assessments; compliance trends, and past performance.[163] The Ministry of the Environment inspects mining properties and associated tailings areas as frequently as required based on known risks and non-compliance.[164] As part of these inspections, Ministry of the Environment staff will collect effluent samples in order to assess compliance with established regulatory limits.[165]

7. Citizens have access to all enforcement data.

The Ontario *Mining Act* provides for public access to some records and restricts public access to other records.[166] More generally, there is access to some enforcement data such as *Metal Mining Effluent Regulations* reports and Ministry of the Environment non-compliance reports. Data regarding enforcement is not generally available. And, at least one nongovernmental organization has been told by Environment Canada that the *Metal Mining Effluent Regulations* reports and information regarding the Environmental Effects Monitoring program will require a formal request under the *Access to Information Act* (R.S.C., 1985, c. A-1).[167]

8. Reclamation, enforcement and monitoring is enabled beyond the life of the permit.

Part 10 of the *Mine Development and Closure Regulation* prescribes details regarding monitoring that must be included in the closure plan, which presumably extend beyond the life of the permit.[168] Some sections of the Mine Rehabilitation Code (e.g. section 15) require ongoing monitoring. According to an official from the Ministry of Northern Development and Mines, ongoing monitoring of physical and environmental hazards may be required (depending on the type of mine feature or hazard) to ensure the stability of the rehabilitation measures.[169] The closure plan must indicate if the rehabilitation of a project will require long-term ongoing monitoring and testing, and there must be adequate financial assurance provided to ensure funds will be available in the future to cover those ongoing requirements.[170]

Monitoring must continue even when a project is placed into temporary suspension.[171] When a project is placed into inactivity, all tailings, rock piles, overburden piles, stockpiles, landfill sites and other waste management sites and systems must be monitored and maintained,

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[162] Personal communication communication with Dean Therrien, Supervisor of Issues Management, Operations Division, Office of the Deputy Minister of the Environment (e-mail dated December 12, 2011).
[163] *Id.*
[164] *Id.*
[165] *Id.*
[166] *Mining Act*, R.S.O. 1990, c. M.14, sections 7(4), (5), 145(10), (11).
[167] Personal communication with Ramsey Hart, MiningWatch Canada (December 6, 2011).
[168] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedules 1, 2.
[169] Personal communication with Laura Blondeau, Communications Director, Office of the Minister of Northern Development, Mines and Forestry (e-mail dated November 10, 2011).
[170] *Id*.
[171] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 22(2)(5).

or rehabilitated.[172] Once a site is placed into inactivity, it must be monitored at least once every six months to ensure that rehabilitative measures are in place.[173]

9. Post-closure enforcement is strong, with adequate resources and public involvement.

The Ministry of Northern Development and Mines has a Rehabilitation, Compliance and Inspection Office, which is empowered to ensure that post-closure management is conducted in "a manner consistent with sound environmental and public safety closure designs and to limit accrual of public risk and liability."[174] The Rehabilitation, Compliance and Inspection Office staff "audit closure plans as required under Part VII of the *Mining Act*; monitor and inspect rehabilitation works; ensure that operating mines are rehabilitated by mine owners in accordance to the legislative standards of the province; investigates occurances [*sic*] of non-compliance of the *Mining Act*; develop regulations, policies, procedures, guidelines and standards in order to administer Part VII of the *Mining Act* in a fair and consistent manner."[175]

Regarding water pollution, on the other hand, the *Environmental Protection Act* regulation ceases to apply to a metal mining plant ten days after it ceases production.[176]

10. Immediate independent judicial review is available to citizen plaintiffs.

An application for judicial review may be brought within thirty days regarding any of the following: a provincial mining recorder's decision, an order or judgment of the Mining and Lands Commissioner, and anything done by a provincial mining recorder or other officer.[177]

Upon submission of a closure plan, citizen plaintiffs are barred from the *Environmental Bill of Rights* provisions that allow third-party appeals and from judicially reviewing the decision.

11. Citizens can initiate and participate in inspections.

There is no mechanism in the *Mining Act* to initiate an inspection. However, if there is an imminent contravention of environmental legislation, any two residents of Ontario can request an investigation under the *Environmental Bill of Rights*.[178] An inspection warrant can authorize any person to accompany an inspector on an inspection.[179]

12. Parent and successor corporations and other materially participating entities are obligated to assume permit requirements.

A closure plan cannot be assigned without the Ministry of Northern Development, Mine and Forestry Director's consent, and is binding on the heirs, successors, and permitted assigns of the proponent.[180] When amendments to the *Mining Act* come into force, the recipient of a proponent's rights (pursuant to an exploration plan or permit) will be bound by the terms of the

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[172] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsections 23(2)(8), 23(3).
[173] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsections 23(2)(8), 23(3).
[174] Mine Rehabilitation website: http://www.mndm.gov.on.ca/mines/mg/mine_rehabilitation_e.asp.
[175] Mine Rehabilitation website: http://www.mndm.gov.on.ca/mines/mg/mine_rehabilitation_e.asp.
[176] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, subsection 3(5).
[177] *Mining Act*, R.S.O. 1990, c. M.14, section 135.
[178] *Environmental Bill of Rights, 1993*, S.O. 1993, c.28, Part V (Application for Investigation). Inadequate response to the Application for Investigation is a prior condition to making use of the citizen suit provision under the *Environmental Bill of Rights*.
[179] *Mining Act*, R.S.O. 1990, c. M.14, section 158.
[180] *Mining Act*, R.S.O. 1990, c. M.14, subsection 153.2(6).

exploration plan or permit, and is also liable for the rehabilitation of the mine as per section 78.6.[181]

13. Permit conditions and work plans are reviewed at least annually.

Mine owners are required to send annual (or if requested, quarterly) reports regarding mine activities to the Minister of Northern Development, Mines and Forestry.[182] When amendments to the *Mining Act* come into force, the Director may amend or renew exploration permits.[183] No timeline is established for the review of these new permits.

14. The agency has authority to modify permit conditions whenever necessary ("adaptive management"), and exercises that authority as needed.

Currently, there is no permit for mining in Ontario. When amendments to the *Mining Act* come into force the Director may amend or renew exploration permits after consideration of the following: the purpose of the Act, whether Aboriginal consultation has occurred, any arrangement with surface rights owners, and any other prescribed circumstances.[184]

15. Any permit variances or changes requested by the permittee are rare and uncontested.

Until such time as permitting is enabled in Ontario, there cannot be an assessment of this criterion.

4. PROGRAM RESOURCES

In order to implement the provisions of statutes, rules, and permit conditions, a regulatory authority must have the resources to do so. Necessary resources include time, money, expertise and personnel. Ideally, the state or province funds the sulfide mining program adequately and ensures that payments and penalties assessed against mine owners and operators go back to the mining program. Such funding or self-funding must be adequate to cover the program's needs in all stages including regulating exploration and prospecting, reviewing permit applications, overseeing ongoing mining operations and reclamation activities, and post-closure monitoring.

1. The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of permit applications, modifications to permit, enforcement activities, and post-closure cleanup activities.
2. The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.
3. The state or province allows civil penalties to be used by the mining regulation program.

[181] *Mining Act*, R.S.O. 1990, c. M.14, sections 78.4, 78.6.
[182] *Mining Act*, R.S.O. 1990, c. M.14, section 155.
[183] *Mining Act*, R.S.O. 1990, c. M.14, subsection 78.3(5).
[184] *Mining Act*, R.S.O. 1990, c. M.14, subsection 78.3(5).

4. Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.

Ministries with oversight of mining do not have adequate resources to perform responsibilities. Permit application fees are not dedicated to use by the mining regulatory body and although civil penalties are available in Ontario, they do not exist within the *Mining Act*. Financial assurance can be provided in forms that are safe from creditors, though this is not a requirement for all of the mines.

Overall Grade: Poor

1	The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of permit applications, modifications to permits, enforcement activities and post-closure cleanup activities.	NO
2	The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.	NO
3	The state or province allows civil penalties to be used by the mining regulation program.	NO
4	Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.	SOME

Discussion:

1. The state or province provides adequate funding, staffing, external experts and time to agencies responsible for mining regulation programs for thorough review of permit applications, modifications to permits, enforcement activities, and post-closure cleanup activities.

Revenues for the Ministry of Northern Development, Mines and Forests come from royalties (including annual rent for leasing public land), taxation (the mining land tax, also known as an acreage tax), and fees (application fee, assessment work fee, etc.). In 2010-11, the majority of the revenues were from royalties (79%), with much less revenue from taxation and fees (both at 7%).[185] Penalties only arise from the forfeiture of mining rights. These revenues do not cover the costs of the Ministry's programs, so the provincial budget allocates additional resources from general revenues.

In 2005, the Auditor General for Ontario audited the Mines and Minerals Program. At the time, there were significant concerns about the closure plans:

> The Ministry does not periodically review whether the closure-cost estimates and financial assurances are still sufficient to properly close out the mine. For example, the costs originally estimated in the closure plan for one mine were $551,000 in 1993. The plan was not filed because the owner could not provide financial assurance. Nevertheless, the mine owner significantly underestimated closure costs. Since the mine is no longer operational and the company is not able

[185] Ministry of Finance, Public Accounts of Ontario, 2010-11, pages 1-16 to 1-17. http://www.fin.gov.on.ca/en/budget/paccts/2011/11vol1eng.pdf.

to pay closure costs, the Ministry may ultimately be responsible for rehabilitating this site, at a cost that is now estimated to be $9 million.[186]

When the Auditor General followed up this report in 2007, some of the 18 outstanding closure plans had been submitted and the Ministry indicated it would continue to pursue outstanding closure plans.[187] At that time, the Ministry had not established a regular review process to determine if closure-cost estimates and financial assurances were sufficient to properly close out a mine.[188]

The Ministries of the Environment and Natural Resources are also under-resourced. In 2007, the Environmental Commissioner of Ontario reported that these two "key environmental Ministries have not been allocated financial resources in accordance with the growth in the overall operating budget of the Ontario Government."[189] The Commissioner's most recent Annual Report stresses that these Ministries do not have the resources to undertake core activities.[190]

2. The state or province charges a permit application fee commensurate with permitting costs to support its mining regulation programs. States should require a permit application fee that is dedicated to use by the mining regulatory body.

The Ministry of Northern Development and Mines can establish fees (including an application fee) and rents.[191] As mentioned above, these revenues are a very small share of the Ministry's revenues and are not sufficient to support the mining program, nor are they even dedicated to use for mining regulation.

3. The state or province allows civil penalties to be used by the mining regulation program.

There are no civil penalties under Ontario's *Mining Act*, but in 2005, civil penalties were enabled under Ontario's *Environmental Protection Act* and *Ontario Water Resources Act*. These "environmental penalties" can apply to metal mining operations and can be assessed immediately when there are spills.[192] Environmental penalties are deposited in the Ontario Community

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[186] Auditor General of Ontario, Annual Report, 2005, page 183. http://www.auditor.on.ca/en/reports_en/en05/309en05.pdf

[187] Auditor General of Ontario, Annual Report, 2007, page 393 http://www.auditor.on.ca/en/reports_en/en07/409en07.pdf

[188] Auditor General of Ontario, Annual Report, 2007, page 393 http://www.auditor.on.ca/en/reports_en/en07/409en07.pdf

[189] Environmental Commissioner of Ontario. 2007. *Doing Less with Less: How shortfalls in budget, staffing and in-house expertise are hampering the effectiveness of MOE and MNR, ECO Special Report, 2007.* Toronto, ON : Environmental Commissioner of Ontario. http://www.ecoissues.ca/index.php/Doing_Less_with_Less

[190] Environmental Commissioner of Ontario. 2011. "Less and Less: Budgets for MOE and MNR not Meeting Needs", *Engaging Solutions: Annual Report 2010/11*. Toronto, ON : Environmental Commissioner of Ontario. pages 80-85. http://www.ecoissues.ca/index.php/Less_and_Less:_Budgets_for_MOE_and_MNR_not_Meeting_Needs

[191] *Mining Act*, R.S.O. 1990, c. M.14, sections 41, 81, 82, 83, 177.1. The prescribed rents are established in the *General Regulations*, O. Reg. 45/11.

[192] Links to the legislation, guidance documents, and annual reports regarding environmental penalties is available on-line: http://www.ene.gov.on.ca/environment/en/industry/compliance_and_enforcement/environmental_penalties/index.htm

Environmental Fund to fund projects in the watersheds where violations have occurred.[193] The money is not, therefore, directly returned to fund the mining regulation program. A number of metal mining operations have been assessed penalties. For example, in 2010 six mines (two of which are in the Lake Superior watershed) were assessed penalties totaling $81,299.05.[194]

4. Financial assurance is required in a form that is safe from creditors and is utilized and available when needed.

Financial assurance is required as part of the closure plan.[195] The proponent of the mine must certify that the financial assurance is adequate.[196] Permitted forms of financial assurance are: cash, letter of credit, bonds, reclamation trust fund, and compliance with a corporate financial test.[197] There are different requirements for meeting the corporate financial test, depending on whether it is to be used for all or only half of the life of the mining project. [198] Subsection 145(5) of the *Mining Act* states that the security can be utilized when it is needed to ensure that rehabilitation measures are performed. Also, subsection 145(8) of the *Mining Act* states that the funds intended for financial assurance are to be paid into a special purpose account and that disbursements from the account can be made by the Minister of Finance. According to an official from the Ministry of Northern Development and Mines, cash, letters of credit, and surety bonds have been collected for 143 of the 156 filed closure plans.[199]

5. REPORTING AND OFFICIAL STATEMENTS

An ideal sulfide mining regulatory program requires the highest quality data from permittees so decisions and actions are based in fact, not simply on a permittee's assurances. Not only must the permittee be accountable to the regulators, but the regulators must be accountable to the public whose safety and resources they are charged to protect. In order to assess these factors, the following criteria were considered:

1. The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.

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[193] For more information see Ontario Community Environment Fund on-line: http://www.ene.gov.on.ca/environment/en/funding/community_environment_fund/index.htm

[194] Ministry of the Environment. 2010 Environmental Penalty Annual Report. Publication PIBS 8154e, Queen's Printer for Ontario, 2011. Available on-line: http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_084242.pdf.

[195] *Mining Act*, R.S.O. 1990, c. M.14, Part VII.

[196] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, section 12.

[197] *Mining Act*, R.S.O. 1990, c. M.14, subsection 145(1).

[198] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, sections 16 and 17.

[199] Personal communication with Laura Blondeau, Communications Director, Office of the Minister of Northern Development, Mines and Forestry (e-mail dated November 10, 2011).

2. All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.

For information on water quality monitoring and reporting, see the Water Quality Report, at Appendix A.

Information required by both the federal and the provincial governments is of high quality, but public access to the information is almost nonexistent. In some instances, the mine proponents are required to make information public, but access is limited because the public must appear in person at the business office during regular business hours. Federally, litigation was necessary to ensure that pollution from tailings ponds and waste rock must be reported to the National Pollutants Release Inventory. Yet even with a Court order, reporting is not complete or easily accessible. Provincially, there has been improvement in public accessibility to some datasets, but the availability of information relevant to mining is subject to extensive lags.[200]

Overall grade: Fair

1.	The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.	YES
2.	All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.	SOME

Discussion:

1. The state or province provides and/or requires accurate, adequate and truthful legally-required reports informed by statistically appropriate, high-quality data.

Most of the reporting requirements under the various applicable Acts and regulations specify at least some type of technical format and/or assurance of accuracy. For instance, closure plans must be submitted in accordance with prescribed reporting requirements, which are set out in Schedule 2 of the *Mine Development and Closure Regulation*.[201] The closure plan must contain a certificate attesting to the truth of the information therein and that the plan is full, true, and plain disclosure of the rehabilitation work required to restore the site.[202] A progressive rehabilitation report must be submitted within 60 days of completing rehabilitation work,[203] including the contents specified in section 9 of the *Mine Development and Closure Regulation*.

Under the federal *Fisheries Act*, testing results must be recorded (as must the volume of effluent discharged from each final discharge point) and summarized in an annual report.[204] Reporting requirements set out in the *Metal Mining Effluent Regulations* include reporting on the monthly mean concentration and calculations regarding the loading of substances deleterious to fish. Monitoring results are reported quarterly and all of the tests and monitoring conducted during that quarter must be included. Monitoring studies must be done using documented and validated methods, and interpreted and reported in accordance with generally accepted standards

[200] Datasets are available for 2004-2009 only.
[201] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, Schedule 1.
[202] *Mine Development and Closure Under Part VII of the Act*, O. Reg. 240/00, subsection 12(2).
[203] *Mining Act*, R.S.O. 1990, c. M.14, subsection 139.1(2).
[204] *Metal Mining Effluent Regulations*, SOR/2002-222, ss. 17-26, Schedule 5, available on-line: http://laws.justice.gc.ca/eng/regulations/SOR-2002-222/.

of good scientific practice.[205] The owner or operator of a mine must keep records relating to effluent monitoring equipment, including manufacturer's specifications and year and model number, and the results of calibration tests of the equipment.[206]

Also, under Ontario's *Environmental Protection Act*, a mining operation must keep records of all sampling and analytical procedures, monitoring, calculations, maintenance/calibration procedures, retention times, problems/malfunctions, incidents, process changes, locations of sampling points, etc.[207] Records must be made as soon as reasonably possible and retained for three years in an electronic form acceptable to the Director of the Ministry of the Environment. Section 38 of the *Effluent Monitoring and Effluent Limits – Metal Mining Sector Regulation* requires that quarterly reports be submitted to the Director of the Ministry of the Environment and section 39 requires semi-annual chronic toxicity tests reporting. Further, under Ontario's *Environmental Protection Act* metal and non-metal mining operations are subject to the *Airborne Contaminant Discharge Monitoring and Reporting Regulation*, which requires facilities to report emissions exceeding a threshold set out in Tables 2A and 2B of the Ministry of the Environment publication entitled "Step by Step Guideline for Emission Calculation, Record Keeping and Reporting for Airborne Contaminant Discharge."[208]

2. All monitoring reports, and the raw data that informs them, are available to the public in easily accessible (electronic) formats before, during and after mining.

Although information is often required to be submitted to the government in an electronic format, generally reports are not easily accessible by the public. In some cases, the information that is required to be made public is only done so during regular business hours at the office of the proponent. The raw data is generally not made public at all. And, use of the freedom of information legislation federally and provincially is costly and often requires undergoing dispute resolution with the proponent who challenges the release of information on proprietary grounds.

Reports under sections 7, 21, and 22 of the federal *Metal Mining Effluent Regulations* must be submitted electronically if Environment Canada has provided an electronic format.[209] The owner of the mine has to keep all records, books of account, or other documents required by the regulations at the mine's location for no less than 5 years beginning on the day they are made.[210] The summary reports required to be prepared annually summarizing a range of data must be made available to the public <u>on request</u> at the metal mining plant <u>during normal office hours</u> (emphasis added).[211]

There is an electronic federal National Pollutant Release Inventory[212] established under the Canadian Environmental Protection Act that, as a result of litigation (*Great Lakes United* v. *Canada (Environment)*, 2009 FC 408 (CanLII)[213]), now requires reporting of pollution related to tailings ponds and waste rock dumps. Responding to the Court order to submit information regarding these releases for 2006-2009, the first information of this type was submitted to

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[205] *Metal Mining Effluent Regulations*, SOR/2002-222, subsection 7(3).
[206] *Metal Mining Effluent Regulations*, SOR/2002-222, section 11.
[207] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, Part VIII, sections 34-39.
[208] *Airborne Contaminant Discharge Monitoring and Reporting*, O. Reg. 127/01.
[209] *Metal Mining Effluent Regulations*, SOR/2002-222, section 23.
[210] *Metal Mining Effluent Regulations*, SOR/2002-222, section 27.
[211] *Effluent Monitoring and Effluent Limits – Metal Mining Sector*, O. Reg. 560/94, section 35.
[212] National Pollutant Release Inventory – Environment Canada. http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=4A577BB9-1.
[213] Available on-line: http://www.canlii.org/en/ca/fct/doc/2009/2009fc408/2009fc408.html.

Environment Canada in 2010. However, according to Environmental Canada, not all of the metal mines that are now required to report to them actually provided data.[214]

Provincially, where monitoring is required under section 3 and 4 of the *Airborne Contaminant Discharge Monitoring and Reporting Regulation* (as it is for a number of contaminants from mining operations), an annual report must be prepared and made available for examination by any person, free of charge, either by posting it to the internet or by making it available during regular business hours at the facility or the owner's/operator's business office.[215]

Ontario's Ministry of the Environment has committed to making data more publicly accessible. For example, the datasets for reporting under the Municipal/Industrial Strategy for Abatement are available for the years 2004-2009. And, the Ministry's website states: "Data available here for download has been extracted from the MOE GIS portal, an interactive web-based GIS application that will soon be available for the public to explore these data and create maps through a place-based format."[216] Progress toward making the information freely available has been slow.

RECOMMENDATIONS

Ontario-specific recommendations:

1. A permitting program for mining should be established. The permitting program should include the ability to review permits and amend or revoke a mining permit in situations of noncompliance with the permit conditions.
2. Strategic environmental assessment of mining should be conducted in Ontario, with a goal to promote sustainability. All subsequent individual mines that are assessed should be subject to the criteria/recommendations associated with the strategic environmental assessment.
3. Exemption for mining from environmental assessment should be discontinued and full, comprehensive, coordinated environmental assessment of all aspects new/expanding mines should be required.
4. The federal environmental assessment standard should be changed from no significant adverse effects (after mitigation) to promotes/furthers sustainability. The provincial standard ("betterment of the people" of Ontario) should be applied as promoting/furthering sustainability (rather than minimizing impacts).
5. The regulation permitting the use of natural water bodies as tailings impoundment areas should be revoked.

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[214] See media release *Incomplete reporting still reveals mining companies' toxic threat*, August 10, 2010. http://www.ecojustice.ca/media-centre/press-releases/mining-companies-toxic-threat.

[215] *Airborne Contaminant Discharge Monitoring and Reporting*, O. Reg. 127/01, sections 6-13.

[216] Data Downloads – Ministry of the Environment. http://www.ene.gov.on.ca/environment/en/resources/collection/data_downloads/index.htm.

6. Anticipated new plans/permits associated with advanced exploration should be consistent with the purpose enabling the recent amendments to the *Mining Act*.
7. Fiscal tools applied to mining in Ontario should be fully audited; financial assurance that is sufficient to rehabilitate mined lands/waters should be required and subsidies/tax holidays should only be employed to promote/further sustainability.
8. Public notice of advanced mining exploration should be required.
9. Anticipated new regulations regarding First Nation engagement in the mining program should be consistent with the constitutional protection for Aboriginal and Treaty Rights.
10. Adequate support to First Nations in order to ensure meaningful consultations, consistent with the constitutional protection for Aboriginal and Treaty Rights, should be provided.
11. Information, including technical background documents, reports submitted regarding monitoring and compliance, and enforcement data, should be publicly available and accessible.
12. Proponent-provided information and data should be supplemented with that collected by government. A process for addressing inconsistencies should be established.
13. Mining program enforcement policies should be publicly available.
14. Funding that supports public participation and access to justice should be provided by government.
15. The citizen appeal process for instruments relating to mining should be consistent with the purpose of the *Environmental Bill of Rights*.
16. Civil penalties for noncompliance with the *Mining Act* should be established and any funds received should be dedicated to the mining program.

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(Cover Photo: Adam Kahtava)