Recovery of Minerals

# Introduction

Ontario is committed to cutting red tape in the mining sector to attract global investment, expand the industry and create new jobs.

Through the Critical Minerals Framework Discussion Paper engagement process, the Ministry of Northern Development, Mines, Natural Resources and Forestry (the Ministry) has been actively seeking out and listening to the advice of the mining industry and stakeholders, environmental groups and Indigenous communities through a public engagement process. Mining proponents have told us there is significant value in the minerals in mining wastes located at operating, closed and abandoned mines across Ontario. Proponents have also identified challenges and barriers under the *Mining Act* that discourage them from pursuing mineral recovery projects. In the meantime, other jurisdictions, such as companies in Australia, are actively pursuing recovery of minerals from wastes at mine sites.

Historically, waste products derived from mining were viewed as long-term liabilities that provided little or no economic value. In recent years, modern mining and mineral processing technologies and shifting demands for minerals to support the low carbon economy, have unlocked potential economic value from materials previously viewed as wastes The recovery of mineral resources from mining wastes could also contribute to a green economy and a sustainable mining industry.

Mining wastes include materials generated through excavation and processing that are not used as an end-product. Common mining wastes include tailings[[1]](#footnote-1) and waste rock.[[2]](#footnote-2).Mining wastes can cause negative environmental impacts that may require long-term monitoring and treatment.

As a result, we are developing a legal framework to facilitate waste reprocessing initiatives that would improve public health and safety and the environment while creating economic opportunities. Through the proposed *Supporting People and Business Act, 2021* the Ontario government introduced amendments to the *Mining Act*, which, if passed, would enable a new regulatory pathway for recovery of minerals from mining wastes. The proposal for those legislative amendments is currently posted to the Environmental Registry of Ontario for public feedback. Although the legislative amendments enable a framework for recovery of minerals activity, the details of the regulatory framework will be provided in regulations and, where necessary, operational policy and guidance.  Through this proposal, we are hoping to get feedback to inform the development of these regulations, policy, and guidance. Our goal is to help companies rethink mining wastes and deploy effective solutions to reduce, reprocess and repurpose mining wastes to connect the mining sector to the green economy.

Through this proposal, we discuss the steps that are being taken to facilitate the recovery of minerals in Ontario, while improving public health and safety and the environment, and in a manner consistent with the recognition and affirmation of Aboriginal and treaty rights in section 35 of the *Constitution Act, 1982*, including the duty to consult. In addition, the proposal includes discussion questions: your answers to these questions could help guide our development of a regulatory regime for mineral recovery and associated environmental requirements, and will inform us as we consider whether there is more Ontario can do to create opportunities related to mining wastes.

We welcome your feedback on these opportunities and other considerations. All comments will be considered as we develop supporting regulations and policy for current proposals and assess future opportunities.

## Principles

The Province understands the significance of mining regulation, and the following principles will guide decision making on this project:

* Achieve a net benefit to public health and safety, and the environment.
* Attract new global investment, expand the mining industry, create new jobs and partnership opportunities for Indigenous communities.
* Transparent, meaningful engagement of the public, stakeholders and Aboriginal rights holders.

# Recovery of Minerals

## Summary of Proposed Amendments to the Mining Act

The *Mining Act* requirements for a closure plan and financial assurance require companies to make significant investments and take on liabilities that can be cost-prohibitive for some mineral recovery projects and cause them to be uneconomical. This is because the *Mining Act* requires a closure plan for all mine hazards at a site, so where a company is seeking to extract value from a subset of existing legacy hazards at a site, they cannot do so without a closure plan that covers all hazards. To address some of these perceived barriers, the government of Ontario is proposing to amendments to the *Mining Act* to:

* Facilitate remediation of tailings and waste hazards at mine sites, reducing environmental liabilities.
* Create jobs and economic opportunities.
* Allow extraction of minerals and mineral bearing substances to meet global needs to support the emerging green economy, while maintaining Ontario’s environmental practices.

More specifically, the government has introduced amendments to the *Mining Act* to enable a new regulatory pathway for “recovery and remediation” activities. The proposed amendments would:

* Require a person interested in recovering minerals from mine wastes to submit an application to the Ministry that describes the proposed recovery activity, as well as the proposed remediation plan for the disturbance created by the activity and, to the extent applicable, the underlying mine wastes. Proponents would be required to demonstrate that the proposed project would result in a net benefit to public health and safety or the environment.
* Provide the Director of Mine Rehabilitation (the Director) with the authority to issue a permit (a recovery permit) and impose terms and conditions.
* Provide the Director with discretion to determine the form and amount of financial assurance required commensurate to the project.
* Require the Director to consider whether Aboriginal consultation has occurred in accordance with any prescribed requirements, before a recovery permit is issued.
* Provide the Director with additional order-making authority such as stop-work, remedial or preventative measures orders at current operating, closed or abandoned mine sites.

If the proposed amendments to the Act are passed, the Ministry will then proceed to develop regulations and guidance to provide the details of in which many of the operational details of the regulatory framework for these recovery activities will be set out. Aspects of the proposed amendments and regulations and policy to be developed are summarized in the following sections.

### Net Benefit to Public Health and Safety or the Environment

For all recovery projects, the condition of the land with respect to one or more of public health and safety or the environment would be required to be improved following recovery and remediation, demonstrating a net benefit to public health and safety or the environment.

Applicants would be required to demonstrate how the activities proposed by the project would achieve this net benefit and the Director would determine if the proposal is acceptable.

### Where Could This Happen?

Ontario would accept applications for recovery permits to recover minerals or mineral bearing substances from land on which tailings or other waste materials resulting from mining are located. This would include tailings and mining wastes at current operating, abandoned or closed mines.

There are circumstances where it may not be appropriate to allow for recovery of minerals from tailings or mine wastes on certain land. For example, where a proponent or the Ministry has undertaken significant rehabilitation of a mine site, recovery may not be permitted where it would disturb previous rehabilitation efforts. There may also be sites where disturbance via recovery could result in impacts to public health and safety or the environment that could not easily be mitigated (i.e. where radioactive materials are present or where tailings were deposited in lakes/rivers). In these circumstances, the Director could designate specified land, or regulations could be made to prescribe land or classes of land, to which the proposed “Recovery and Remediation” section of the *Mining Act* would not apply – that is, where proponents could not apply for a recovery permit.

The proposed amendments to the *Mining Act* outline the proposed requirements for a recovery permit, including:

* The submission of a recovery and remediation plan.
* The written consent of landowners.
* Any other prescribed document or information.

#### Recovery and Remediation Plan

Applicants would be required to include a recovery and remediation plan, which would provide details of the proposed recovery project as well as details of the remedial work the applicant intends to undertake as part of, or following the recovery project, to improve the condition of the land (achieving the net benefit).

A recovery and remediation plan would include:

* A description of the land on which the tailings or other waste materials are located.
* How the minerals or mineral bearing substances would be recovered. This may include a description of the processes and technologies that would be used to recover the minerals.
* How the existing features impacted by the recovery, and any new hazards created, would be remediated.
* Estimated costs of recovery and remediation.
* A proposed schedule for the recovery and remediation.
* Any other information specified by the regulations and as the Director may require.

#### Remediation

In the context of mineral recovery, we are proposing the term “remediation” to describe the activities that applicants will take to improve the condition of the land related to a recovery permit. Unlike closure plans, where a proponent must provide a rehabilitation plan for all mine hazards on site in accordance with the Mine Rehabilitation Code, including legacy hazards, a proponent will only be required to remediate any existing features they impact or new hazards they create – demonstrating a net benefit to the public health and safety or environmental condition of the land. Some remediation requirements or standards may be prescribed by regulation. For example, remediation standards may include requirements for grading/sloping and revegetation to prevent wind and water erosion, requirements for monitoring of surface and groundwater, and backfilling or installation of fencing to prevent inadvertent access to open hole hazards.

### Aboriginal Consultation

When considering an application for a recovery permit, the Crown would determine whether the actions proposed by the project have the potential to adversely affect an Aboriginal community’s established or credibly asserted Aboriginal or treaty rights. If the duty to consult with one or more Aboriginal communities is triggered, the Director would ensure that appropriate consultation has been carried out before deciding to issue a recovery permit.

The duty to consult flows from the honour of the Crown and from s. 35 of Canada’s *Constitution Act, 1982*, the fundamental objective of which is reconciliation. The honour of the Crown is a constitutional principle that requires Ontario to act honourably in all of its dealings with Aboriginal peoples.

### Recovery Permit

Once the Director is satisfied that appropriate consultation with Aboriginal communities has been carried out, and a review of the permit application is complete, the Director would decide to either issue a recovery permit, issue it with modifications, or reject the application. The recovery and remediation plan would form part of the permit, including any changes required by the Director. Compliance with the permit would also require compliance with the recovery and remediation plan. The permit would not become effective until the Director acknowledges receipt of any required financial assurance.

A recovery permit would be issued for a specific duration and could be transferred (where the Director consents), renewed or amended, and would be subject to terms and conditions determined by the Director.

Some terms and conditions would be standard and would apply to every recovery permit. For example, as a standard term and condition, the recovery and remediation plan would form part of the permit and would need to demonstrate how the project would result in a net benefit to public health and safety, and/or the environment. Other terms and conditions would be included in appropriate circumstances as required by the Director. Project-specific terms and conditions could include financial assurance requirements commensurate to the scope of the project, and any other required measures to prevent, eliminate or ameliorate any adverse effect arising from the recovery or remediation, to the extent appropriate given the nature of the activity. Terms and conditions may also respond to specific concerns raised during any consultation with Aboriginal communities that takes place, where appropriate (for example, avoiding work at certain times of year, or ensuring no disturbance to particular areas of interest, harvesting areas, migratory routes, etc).

### Financial Assurance

For projects regulated under the *Mining* Act that require a mine production closure plan, proponents are required to provide a rehabilitation plan and financial assurance for all mine hazards on site. As part of the terms and conditions of a recovery permit, a proponent may be required to provide financial assurance. However, the financial assurance requirement will be at the discretion of the Director and will be commensurate with the project. That is, an applicant will be required to provide financial assurance equal to the costs of proposed remediation activity outlined in the remediation plan, in the amount and form specified by the Director. The estimated costs provided in the permit application will inform the Director’s consideration of the appropriate amount of financial assurance, although the Director has discretion to require a different amount where appropriate (for example, where the remediation activity may not fully address long-term issues created by the activity or extant on the site, such that long-term monitoring or other work may be required; or where there is a risk of adverse impact).

### Other Permits and Authorizations

Issuance of a recovery permit under the *Mining Act* will not replace the requirements for proponents to obtain permits and authorizations from other provincial and federal authorities under legislation other than the *Mining Act*. Depending on the scope and nature of the project and technologies used, there may be numerous other authorizations required under environmental or other legislation.

The Ministry will work with other ministries when outlining the requirements for submission of supporting investigations and data to avoid duplication and overlap where possible.

# Rethinking Mining Wastes

As we think about creating value from mining waste, we recognize that creating the best solution requires collaborative thinking between industry, Indigenous communities, and researchers. Proponents should be energized and motivated to pursue mineral recovery projects.

As part of rethinking the approach to mining wastes, the Ministry is considering further opportunities to:

* Work with other ministries and organizations to promote and facilitate partnerships that support research and innovation
* Promote Indigenous economic development by increasing contracting opportunities for Indigenous-owned businesses
* Support opportunities for waste segregation and waste reprocessing through regulatory reform

# Discussion Questions

## Recovery of Minerals

1. Stakeholders have expressed that closure plan requirements discourage mineral reprocessing and recovery projects. The Ministry has proposed amendments to the *Mining Act* to facilitate recovery from tailings and other wastes, by requiring a tailored remediation plan that is activity-specific as opposed to a closure plan covering all hazards on a mine site. Please comment on this change.
2. Are there other regulatory barriers under the *Mining Act* that inhibit mining waste reprocessing in Ontario?
3. Are there other challenges to pursuing recovery projects in Ontario? Please describe.
4. In determining the application requirements for a recovery permit, are there additional elements that have not been considered? Please describe.
5. Should the Ministry require supporting baseline studies and investigations be provided with an application for a recovery permit? Please describe.
6. Are there certain lands for which the Ministry should consider not allowing recovery permits to be approved?
7. What requirements for the contents of a remediation plan should the Ministry consider?
8. Should specific remediation standards be prescribed in regulation, and, if so, what should those standards be? (i.e. requirements for resloping and/or revegetation). Please explain.
9. Are there technologies and processes that would benefit from standards and guidelines to support recovery?

## Rethinking Mining Wastes

1. Should Ontario allow for alternative rehabilitation strategies (i.e. not currently in the Mine Rehabilitation Code) where wastes may have future value? If so, what kind?
2. What are other opportunities to rethink mining wastes?
3. Do the existing rehabilitation standards for closure plans, detailed in O. Reg. 240/00, prohibit opportunities for repurposing? Please describe.
4. Is there anything else you want to add?

# We want to hear from you

The Ontario government is accepting feedback on this proposal during a 45-day period. All comments will be considered as we consider future regulations and policy to support mineral recovery as well as further opportunities to rethink mining wastes in Ontario. Though specific questions are included herein, all comments with respect to the proposal are welcome and encouraged.

Please submit your comments on the Environmental Registry or email us at criticalminerals@ontario.ca. You may attach your submission as a PDF or Word document. While we encourage electronic submissions, we recognize the need to accept hard copy submissions where electronic submissions are not possible. If you are sending a letter, please include the name of your organization (if applicable), and address it to:

Director’s Office - Strategic Services Branch, Mines and Minerals Division

Ministry of Northern Development, Mines, Natural Resources and Forestry

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1. Tailings are a by-product of mineral processing activity and generally consist of ground rock, water and reagents that may be used as part of the milling process. [↑](#footnote-ref-1)
2. Waste rock is the material that is excavated through mining that does not contain sufficient quantities of target minerals to warrant processing through a mill. Milled rock is generally considered to be ore. [↑](#footnote-ref-2)