

CRITICAL REFORMS: MINING IN MANITOBA

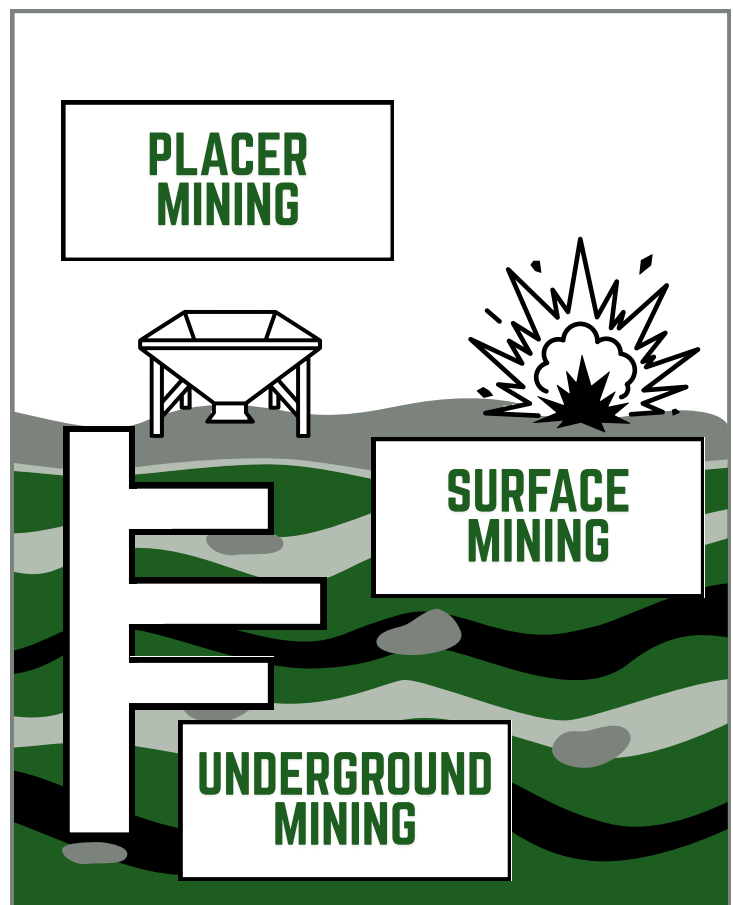
MINING 101: OVERVIEW OF THE MINING LIFECYCLE

While the life-span of individual mines can range from a few years to several decades, each mine will go through the same stages from start to finish, a process informally referred to as the 'mining lifecycle.' Each stage of the lifecycle describes the typical steps that a mining operation will go through and includes any activities that may continue long after the digging stops.

WHAT IS A MINE, REALLY?

Mining is the process of removing valuable rock from the earth, either because those rocks hold valuable metals and minerals or because they are used as an important building material for construction. The major types of modern mines in Canada include:

- **Surface Mining:** Surface mines are large holes blasted into the earth with explosives and then dug out using heavy machinery.
- **Underground Mining:** Underground mines are made up of one large central downward tunnel called a 'shaft' that connects to many smaller horizontal tunnels branching out across the deposit site.
- **Placer Mining:** Mining using water to separate heavily eroded minerals (often gold, platinum, tin, diamonds, or gemstones) from sand or gravel. Placer mining takes advantage of the mineral's high density, which causes it to sink more rapidly from moving water than the lighter sand or gravel.



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What are the Stages of the Mining Lifecycle?

1. Exploration

- **Prospecting:** The ‘discovery’ stage. Includes searching the land for a large metal, mineral, or rock deposit that has a high value to the economy or construction industry. Then applying for ownership through a process called ‘staking a claim.’ (see our [Free Entry Factsheet](#) to learn more)
- **Initial Exploration:** Once a claim is established, more detailed surveys and samples are collected. Data collection for environmental and other studies often begins at this stage
- **Advanced Exploration:** Sometimes more intensive and expensive exploration techniques, such as bulk sampling, are used to determine the potential for development of the deposit, and the most suitable mining and processing techniques to be used.

2. Development

- **Feasibility:** Determines the technical, legal and financial feasibility of developing the deposit. Advanced exploration often goes on during the feasibility stage.
- **Design:** All aspects of mine construction, operation, closure and reclamation are planned in detail. Applications are submitted to obtain required permits and other approvals. This includes environmental impact assessments (which estimates how the mine could harm the local plants, animals, and groundwater). Stakeholder engagement with nearby local communities and Indigenous consultation often take place. This stage often overlaps with the advanced exploration and feasibility studies.
- **Construction:** Once a mine receives the necessary approvals construction can begin. The site is prepared, often involving cutting trees and clearing the land. The mine, associated buildings, and other infrastructure such as roads and bridges are constructed. This stage can overlap with operations, as some mines are developed in stages or seek approval to expand after commencing initial operations.

3. Operation: The ‘digging and making’ stage. Once a mine shaft or pit has been dug (using explosives, machines, or both) the metals/minerals/rocks are ‘mined’ and brought to the surface to be cleaned and turned into usable materials.

4. Closure & Reclamation: The ‘closing and cleanup’ stage. A mining site will close down either when the deposit runs out or when it stops being profitable or cost-effective for the mining company to keep site operations running. Reclamation activities support the renewal and restoration of areas affected by the mine, activities include removing and/or containing waste material, filling any open pits or plugging open mine shafts, monitoring, and replanting native plants and trees.

WANT TO LEARN MORE?

For more info, use this QR code to visit the [Project page](#) on the Manitoba Eco-Network website.



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