



— Alberta's Natural Resources —

# MINING

## ENVIRONMENT & SOCIETY

Reclamation. Reforestation. Ground water monitoring.  
Careers, taxes and royalties. Climate change.

**How can these seemingly disconnected themes be connected through mining? This poster *digs deep* as it tries to address the relationship between mining, the environment and our society.**

# Environment and Society

Environmental sustainability and economic success are not opposite ideas - if natural resources development is done properly and responsibly, this can be true of mining in Alberta.

Alberta's natural resources belong to us, Albertans. The government's job is to make sure that if our natural resources are going to be extracted to meet human needs, that it is done in an environmentally responsible way. The government also requires that **royalties** and **taxes** are paid by companies developing the resources. Since we are the owners of the resources, it is reasonable that we all benefit financially from resource extraction and use. Royalties and taxes are like the 'fees' paid to the Alberta government, who in turn are able to

invest in things like schools, hospitals and roads that we all need and use regularly.

At the same time, our natural resources are also part of our natural environment. As Albertans, we are all responsible to protect and conserve our environment, and to insist that those we allow to work on our landscape do so responsibly. Clean air, clean water, reducing greenhouse gas emissions are motivating to all Albertans - including those Albertans who work in mining. The mining industry is guided by regulations that require them to mine responsibly and operators could lose their business if they do not follow these rules. Therefore, what is good for the environment, is also good for business.

## MINING ISSUES AND INNOVATIONS



### ISSUE

A challenge for mining companies in Alberta is our Government's plan to phase out coal as Alberta's major fuel source for electricity.

### INNOVATION

The growth in precious metal exploration in Alberta may mean workers traditionally in coal mines will have a chance to work on mining new minerals. Also, organizations like Iron and Earth ([www.ironandearth.org](http://www.ironandearth.org)) help workers retrain into the growing renewable energy economy through solar and wind energy production.

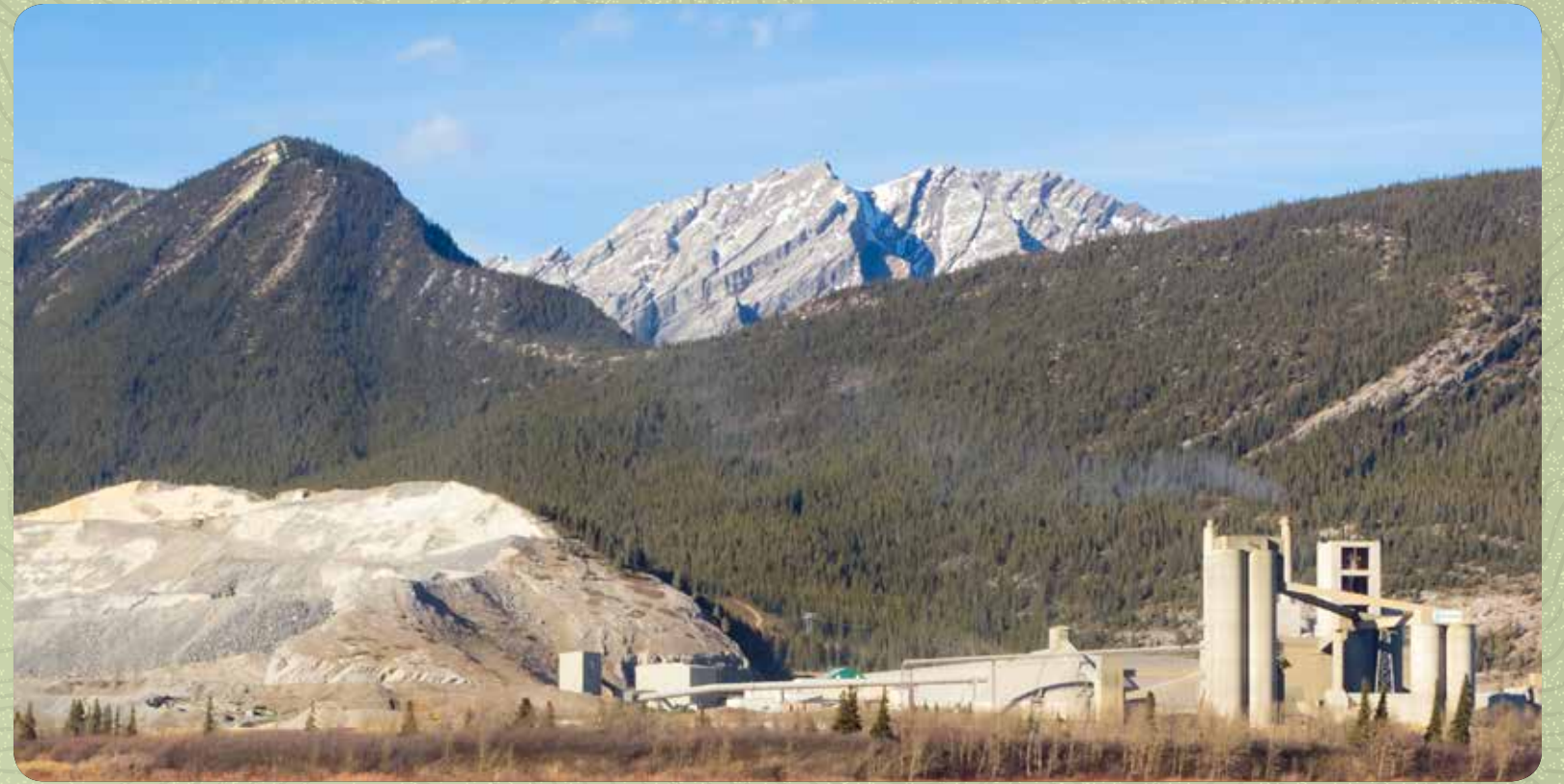


### ISSUE

Increased automation and technology in traditionally "people-powered"/labour intensive Alberta industries may result in loss of current mining jobs and careers.

### INNOVATION

While it is likely that some of the more labour-intensive roles in mining will be replaced by increased automation, there are many opportunities to pursue different, 21st Century technical careers. This will make training and post secondary education programs even more important for the future of mining.



### ISSUE

Environmental impact has traditionally been assessed on a project-by-project basis, not considering other nearby projects and overall impacts on the land, air and water.

### INNOVATION

Mining companies participate in the Alberta Government's Land Use Framework which supports province wide decision-making on natural resource projects. These plans consider cumulative effects, that is, the combined impact of development of a particular region of Alberta. Projects (including mine projects) are decided based on the total impacts on the air, land and water.

### ISSUE

The pace of mining reclamation - especially in Alberta's oil sands - has progressed more slowly than some Albertans would like.

### INNOVATION

Historically, reclamation was mainly accomplished at mine closure - that is, companies would wait until all the mining was through before starting to turn the land back to a more natural state. Today, most mining companies 'reclaim as they go' - beginning the reclamation process while mining is still happening, sometimes even reclaiming side-by-side with active mining. This way there would be less need to catch up later.



**CAREER  
DEEP DIVE**

### Hydrogeologist

A hydrogeologist is a scientist who studies, monitors and makes recommendations to natural resource development that involves both surface water and groundwater. In mining, a hydrogeologist helps decide how to deal with groundwater and surface water in the mining process. He or she also studies protection and impact on water during the mining, and especially the tailings ponds that often exist alongside mining operations.



**Did you know?**



In traditional mining reclamation, after a mine was refilled with soil, sand, gravel and the rest of the overburden - often what was planted were hardy grasses that mining companies knew would grow. These grasses weren't necessarily native to the area, but they grew well.

Today, reclamation involves the planting of grass, tree and shrub species that naturally occur in the area. Work is being done to bring back native wetlands like lakes and bogs, even fens (which are very difficult to create since a fen has water that flows through it). As new technologies and techniques develop, reclamation will continue to advance and improve so that the 'footprint' of a mine will be more like a snapshot in time.