

# Mining in Canada Lessons for the Nashwaak Watershed

MiningWatch Canada  
[www.miningwatch.ca](http://www.miningwatch.ca)

# Environmental Challenges

- Immediate footprint
- **Waste**
- **Water**
- Dust
- Noise, traffic, vibrations
- Energy use
- Habitat fragmentation
- **Rehabilitation**

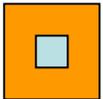




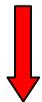
**Waste Rock**



Image courtesy of DDB Public Relations for Taseko Mines



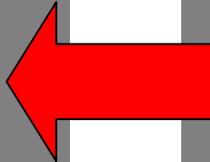
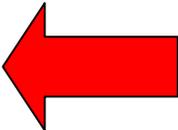
**Concentrate  
with mineral  
(1% of ore)**



**smelter /  
processing**

**Tailings**

**Ore**

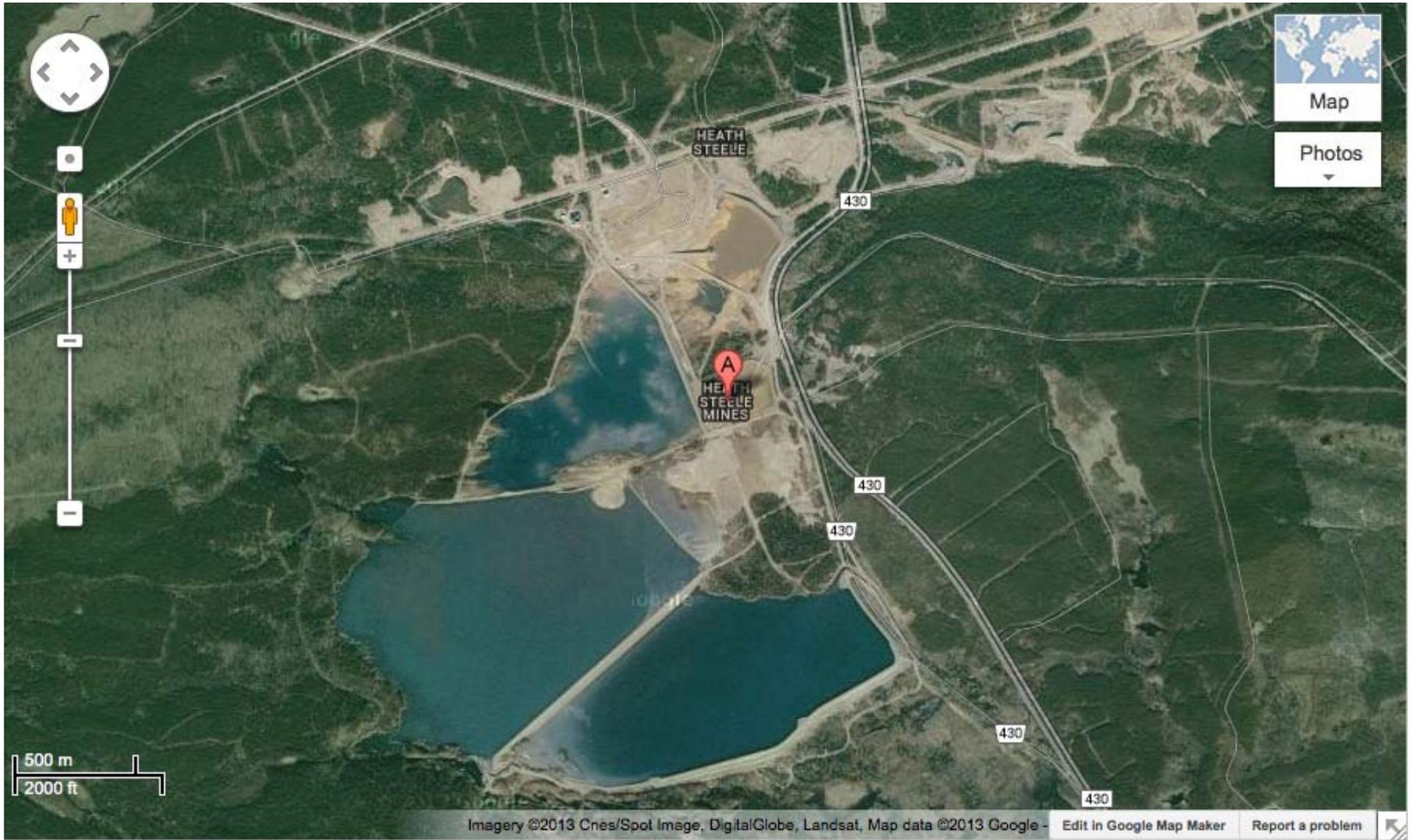








Fort Knox AK, 350'/107m high impoundment



Heath Steele NB, 215 ha of tailings



# Mining & Water

- Metals and acid mine drainage
- Diversions and draw-downs
- Explosives (nitrates)
- Hydrocarbons
- Reagents

# National Environmental Effects Monitoring

- 2 reviews of nation-wide data on impacts of mining effluents downstream of mines.
- Most mines are having effects downstream
  - Decreased diversity and abundance of fish food (I.e. aquatic inverts)
  - Decreased health of adult fish

# Spills and Accidents

- No national tracking system for spills and accidents.
- Some notable accidents have occurred in recent years:
  - Pic River cyanide spill (1996)
  - Pinchie Lake mercury spill (2004)
  - Chapais tailings dam spill (2008)
  - Cliffs tailings spills at Lac Bloom (2012-2013)



# Groundwater Impacts

- No national reporting
- Mine site public reporting is spotty
- Problems at uranium mines in SK
- Problems at potash mines in NB



# Mine Rehabilitation

- All mines now required to rehabilitate site.
- Closure bonds are public's assurance.
- Are bonds adequate?
- Does site require perpetual care and maintenance?



# Mining and Economic Development

## BENEFITS

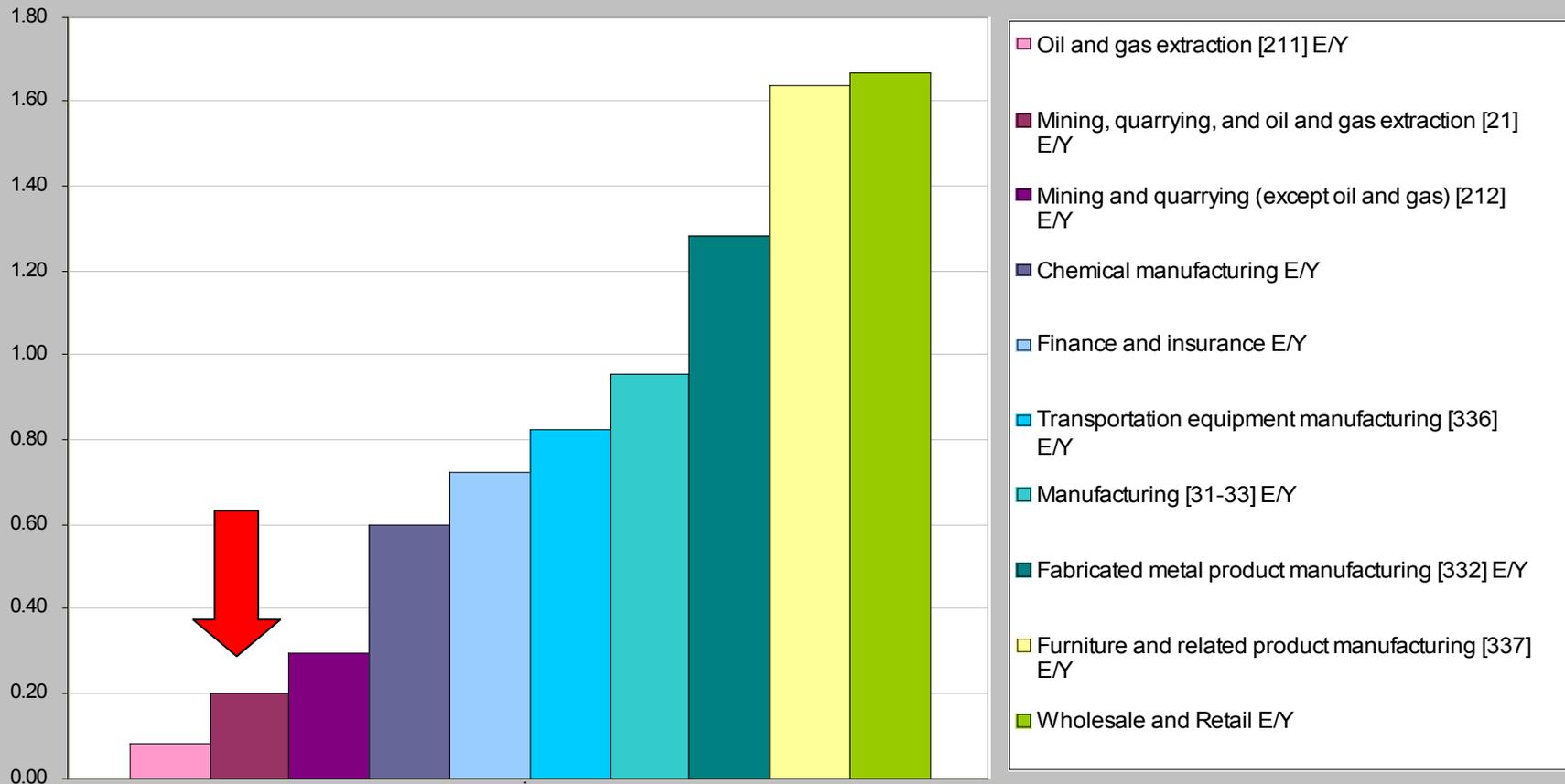
- GDP
- Jobs
- Spending
- Taxes and Royalties

## COSTS

- Direct subsidies
- Indirect subsidies
- Economic distortions
- Natural Capital / Ecosystem services
- Perpetual care

# Jobs?

Employment intensity: selected (sub) industries



Calculations based on Statistics Canada, CANSIM Tables 379-0029 and 281-0024

# Jobs?

- For whom?
- From where?
- Entrance requirements and competition
- Net job creation vs. # employed
- Salaries in mining are higher than avg.
- Unstable / transient workforce

# Taxes and Royalties

- Corporate taxes low / “competitive” when compared internationally.
- Base tax rate on-par with many jurisdictions BUT....
- Paid on “profits” of mining (for tax purposes)
- Some mines in Ontario and Quebec show no profits (for tax purposes) so pay no taxes.

# NB Metal Mining Taxes Paid

- 2009 = \$43.8 M (5.7% of gross value)
- 2010 = \$20.0 M (2.8% of gross value)
- 2011 = \$48.0 M (5.9% of gross value)

# Metal Mining Effluent Regulations

- Federal regulation under Fisheries Act
- Limits for 6 metals, cyanide, pH, & acute lethality to trout (50% survival after 96 hrs).
- Limits based on ability of industry to comply / compromise NOT on biology or receiving waters.
  - E.g. copper limit in MMER = 0.3 mg/L
  - Guideline for aquatic environments = 0.0002 mg/L (depends also on hardness of water)