

BC Molybdenum Deposits

The British Columbia Ministry of Energy and Mines' MINFILE database lists **1350** molybdenum-bearing occurrences in the province; **430** of these list molybdenum as the primary commodity. Total molybdenum production (1915-2004) from nearly 100 deposits is 320 300 tonnes; and, total resources in 60 deposits are estimated at 1 900 000 tonnes. Some deposits with higher-grade cores have the potential to facilitate production to proceed relatively quickly [e.g. Davidson: 20.6 Mt @ 0.24% Mo + 0.041% WO₃ (@ 0.12% Mo cutoff); Max: 260 Kt @ 1.17% Mo (@ 0.6% Mo cutoff)].

Two molybdenum metallogenic episodes are recognized:

- i) Early Cretaceous - Miocene: 140 Ma to 8 Ma
- ii) Late Triassic - Middle Jurassic: 220 Ma to 195 Ma

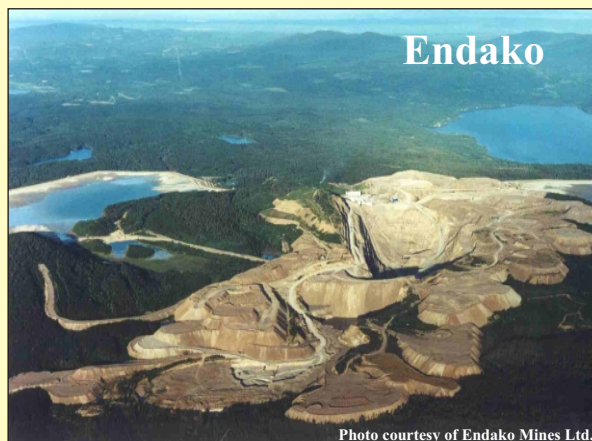
The exploration and development of porphyry deposits during the 1960s and 1970s had a profound effect on the mining community in British Columbia. Nearly all the molybdenum-bearing deposits were explored for and inventories identified up until the early 1980s when the molybdenum price dropped from ~US\$30 /lb to below US\$3 /lb.

Currently molybdenum is mainly used as an alloy to strengthen iron and steel. Rapidly expanding markets in China and rising oil prices, which may precipitate future pipeline construction, have led to a significant price increase in Mo - once again fueling exploration and development in BC.



Kitsault

- Phelps Dodge Corp.
- Since 1967, produced ~13 600 t Mo (30 M lbs Mo)
- Operated 1967-1972 @ 5500 tpd; 1981-1982 @ 10 900 tpd
- Capital cost ~ \$200 M (Sept. '78); ~500 employees with annual payroll ~\$10 M (town built for 2000 people)
- 1982: Mo price plunged (US\$35 to US\$2 /lb)
- Current Resources: 104.3 Mt @ 0.112% Mo



Endako

Photo courtesy of Endako Mines Ltd.

- Thompson Creek Mining (60%), Sojitz Moly Res. (40%)
- Canada's top low-cost molybdenum producer, and one of the world's largest primary producers. Employment ~250
- Since 1965, produced ~191 000 t Mo (422 M lbs Mo)
- 2004
 - i) Production ~5000 t Mo (av. millfeed ~0.066% Mo), from daily mill throughput ~28 000 t
 - ii) Reserves (end-2004) = 80.7 Mt @ 0.063% Mo
 - iii) Mine life (before pit expansion) - 2011
 - iv) Began major push back of south wall pit expansion

BC Molybdenum Deposit Types

- Porphyry Mo (low-F-type): BC Mineral Deposit Profile L05 [e.g. Endako (~145 Ma), Boss Mountain (~102 Ma), Kitsault (~51 Ma), Davidson (~67 Ma), Max (76 Ma?), Ruby Creek (~71 Ma), Ajax, Mac (~136 Ma), Storie, Logtung (~118 Ma), Lucky Ship, Carmi, Salal (~8 Ma)]
- Porphyry Cu±Mo±Au: BC Mineral Deposit Profile L04 [e.g. Brenda (210 Ma?), Island Copper (~167 Ma), Highland Valley Copper (~210 Ma), Schaft Creek (~220 Ma), Gibraltar (~217 Ma), Berg (~49 Ma), Catface (36 Ma?), Huckleberry (~82 Ma)]
- Occur in a variety of tectonic terranes
- Differentiated polyphase monzogranite suite
- Possible rhenium (e.g. Island Copper and Schaft Creek) and tungsten (e.g. Davidson and Logtung) credits

For More Information

<http://www.em.gov.bc.ca/Mining/Geolsurv>

Telephone: (604) 660-2812

Canadian Institute of Mining, Metallurgy and Petroleum

- Special Volumes 15 (1976) and 46 (1995)

Molybdenum, the British Columbia Perspective

- BCMEM, Paper 1980-2

Molybdenum in British Columbia



Stockwork Moly (Endako)



Ribbon Moly (Davidson)



Ministry of Energy and Mines
Mines and Minerals Division

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