

DESCRIPTIVE MODEL OF PORPHYRY Mo, LOW-F

By Ted G. Theodore

APPROXIMATE SYNONYM Calc-alkaline Mo stockwork (Westra and Keith, 1981).

DESCRIPTION Stockwork of quartz-molybdenite veinlets in felsic porphyry and in its nearby country rock.

GENERAL REFERENCE Westra and Keith (1981).

GEOLOGICAL ENVIRONMENT

Rock Types Tonalite, granodiorite, and monzogranite.

Textures Porphyry, fine aplitic groundmass.

Age Range Mesozoic and Tertiary.

Depositional Environment Orogenic belt with calcalkaline intrusive rocks.

Tectonic Setting(s) Numerous faults.

Associated Deposit Types Porphyry Cu-Mo, Cu skarn, volcanic hosted Cu-As-Sb.

DEPOSIT DESCRIPTION

Mineralogy Molybdenite + pyrite + scheelite + chalcopyrite + argentian tetrahedrite. Quartz + K-feldspar + biotite ± calcite ± white mica and clays.

Texture/Structure Disseminated and in veinlets and fractures.

Alteration Potassic outward to propylitic. Phyllic and argillic overprint (see table 3).

Ore Controls Stockwork in felsic porphyry and in surrounding country rock.

Weathering Yellow ferrimolybdite after molybdenite. Secondary copper enrichment may form copper ores in some deposits.

Geochemical Signature Zoning outward and upward from Mo + Cu ± W to Cu + Au to Zn + Pb, + Au, + Ag. F may be present but in amounts less than 1,000 ppm.

EXAMPLES

Buckingham, USNV (Blake and others, 1979)
 USSR deposits (Pavlova and Rundquist, 1980)

GRADE AND TONNAGE MODEL OF PORPHYRY Mo, LOW-F

By W. David Menzie and Ted G. Theodore

COMMENTS See figs. 88, 89.

DATA REFERENCE Theodore and Menzie (1983).

DEPOSITS

<u>Name</u>	<u>Country</u>	<u>Name</u>	<u>Country</u>
Anduramba	AUQL	Boss Mountain	CNBC
Adanac (Ruby Creek)	CNBC	Boswell River	CNYT
Ajax (Dak River)	CNBC	Buckingham	USNV
B. C. Moly	CNBC	Cannivan Gulch	USMT
Bell Molybdenum	CNBC	Carmi	CNBC

Creston	MXCO	Pitman (JB)	CNBC
Endako	CNBC	Quartz Hill	USAK
Gem	CNBC	Red Bird	CNBC
Glacier Gulch	CNBC	Red Mountain	CNYT
Hall	USNV	Serb Creek	CNBC
Haskin Mountain	CNBC	Setting Net Lake	CNON
Karen	CNBC	Storie	CNBC
Lucky Ship	CNBC	Sunshine Creek	CNBC
Machkatica	YUGO	Thompson Creek	USID
Mount Thomlinson	CNBC	Trout Lake	CNBC
Mount Tolman	USWA	UV Industries	USNV
Pine Nut	USNV		

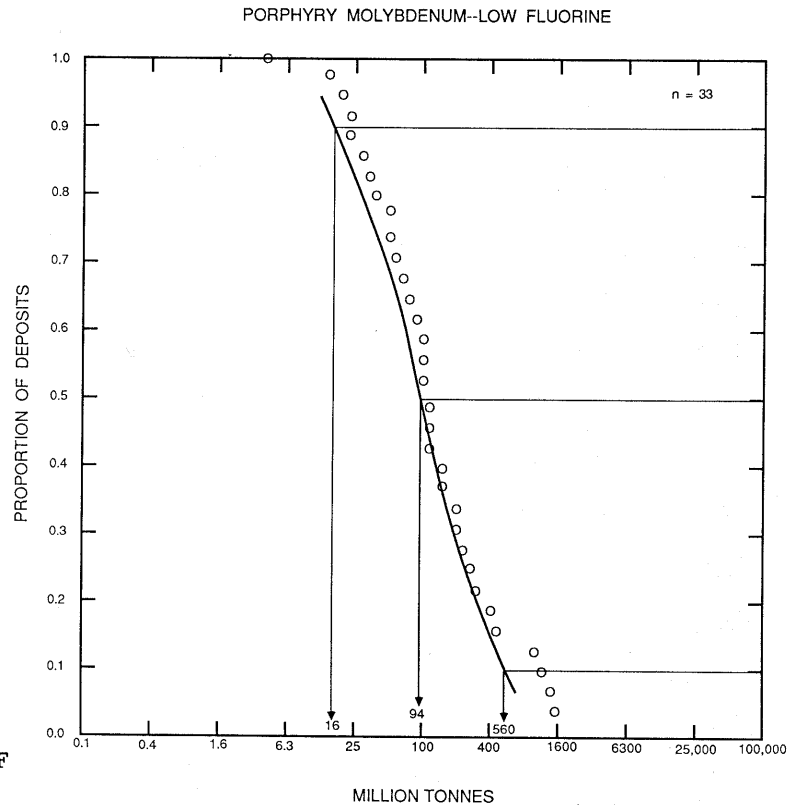


Figure 88. Tonnages of porphyry Mo-low F deposits.

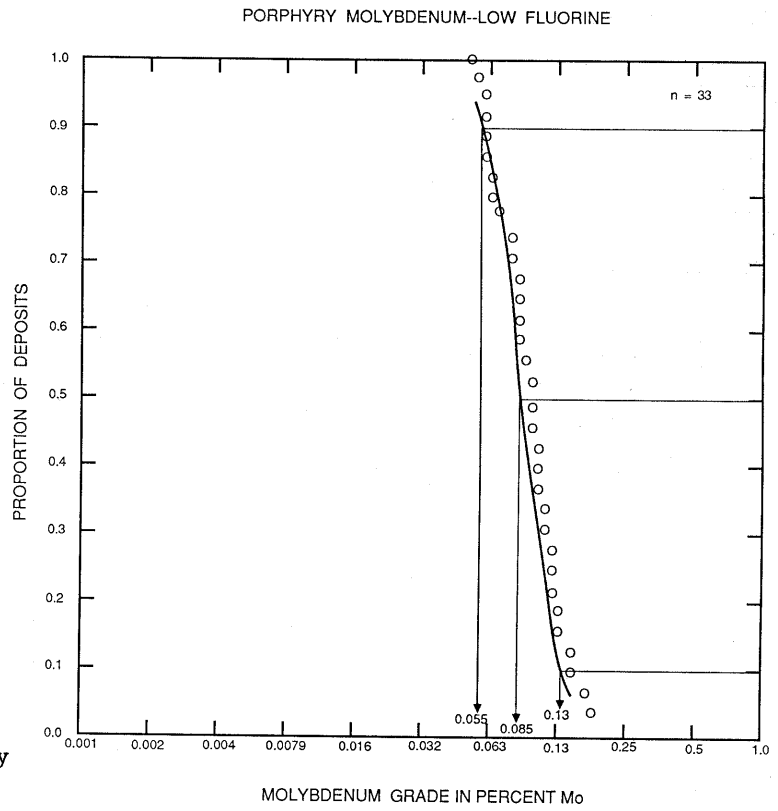


Figure 89. Molybdenum grades of porphyry Mo-low F deposits.