breccia bodies, quartz veins probably contain most of the molybdenite at Boss Mountain. Minthora breccias are related spatially as well as batholith near its head. Breccias are about 600 meters in diameter, centered on the Boss area, known over an area exceeding 1,800 by 900 meters.

Molybdenum mineralization is associated with Upper Triassic Nicola Group and near-economic concentrations restricted to small areas, which are widespread and alkali basalt dykes of pleistocene age. Dykes of rhyolite porphyry, as well as three phases of Andesite volcanics, are in fault contact with Lower Jurassic volcanic composite Upper Triassic Takomkan batholith of pleistocene age. A rhyolite and quartz latite porphyry, as the molybdenum deposit. Dykes of rhyolite porphyry, as well as three phases of andesite dykes of pre-mineral age and alkali basalt dykes of pleistocene age are the only other rock units in the vicinity of the deposits.

Although important concentrations of molybdenum occur in breccia bodies, quartz veins probably contain most of the molybdenum at Boss Mountain. Quartz-molybdenite veins are known over an area exceeding 1,800 by 900 meters, with economic and near-economic concentrations restricted to a much smaller area, about 600 meters in diameter, centered on the Boss Breccias. Pyrite is the most abundant and widespread sulphide mineral noted. Although the ore is spatially associated with rhyolite, and quartz latite porphyry, the ore is controlled, in a large part, by the quartz monzonite stock (Boss Mountain stock) intrudes the sedimentary rocks on the east and north.

The molybdenum deposit occurs in granodiorite phases of the composite Upper Triassic Takomkan batholith, which intrudes Upper Triassic Nicola Group volcanics on the south and west, and is in fault contact with Lower Jurassic volcanic and sedimentary rocks on the east and north. A small Cretaceous quartz monzonite stock (Boss Mountain stock) intrudes the batholith near its northeastern edge, some 1,500 feet northeast of the molybdenum deposit. Dykes of rhyolite porphyry, rhyolite and quartz latite porphyry, as well as three phases of breccias are related spatially as well as genetically to the molybdenum mineralization. Andesite dykes of pre-mineral age and alkali basalt dykes of pleistocene age are the only other rock units in the vicinity of the deposits.

Although important concentrations of molybdenum occur in breccia bodies, quartz veins probably contain most of the molybdenum at Boss Mountain. Quartz-molybdenite veins are known over an area exceeding 1,800 by 900 meters, with economic and near-economic concentrations restricted to a much smaller area, about 600 meters in diameter, centered on the Boss Breccias. Pyrite is the most abundant and widespread sulphide mineral noted.

The work during 1959 and 1960. In 1955 Mr. H.H. Huestis, of Vancouver, and associates acquired the Crown-granted claims at tax sale and the following year located 94 additional claims. Climax Molybdenum Company optioned the property in 1956. The company merged in January 1958 with the American Metal Company, Limited, to form American Metal Climax, Inc. Work on the property during the period 1956-1959 included geological mapping, a geophysical survey, trenching, and some 32,000 feet of diamond drilling. Indicated reserves were estimated at 1,000,000 tons averaging 0.90% MoS₂. The work during 1959 was carried out by a subsidiary company, Southwest Potash Corporation. The option was given up in 1960.

Noranda Mines Limited purchased the 11 Crown-grants and 64 recorded claims in 1961 and subsequently transferred the 64 recorded claims in 1961 and subsequently transferred the

Associated minerals or products: pyrite, molybdenite, and other base metal sulphides.
From the start of production in 1965 until the end of 1974, 1,792,501 tons of ore were milled. From this ore 17,099,409 pounds of molybdenum were recovered (the mine was closed during 1972-73).

Production for the period 1975-82 inclusive totalled 147,845 tonnes milled. From this ore 6,755,464 Kg of molybdenum were recovered.

REFERENCES

++Brown, A. Sutherland; Takomkane Mountain; Report of Minister of Mines, British Columbia: 1957, pp. 18-22.
Heim, R.C., Clarke, W.G., Austin, J.A.; Boss Mountain Mine; Western Miner, Vol. 37, No. 12, pp. 27-37, December 1964.
Stevenson, John S.; Molybdenum Deposits of British Columbia; Bulletin No. 9, pp. 34-47, British Columbia Dept. of Mines, 1940.
Noranda Prepares Boss Mountain for Early Production; Western Miner & Oil Review, Vol. 36, p. 80, October 1963.
Reinecke, L.; Mineral Deposits between Lillooet and Prince George, British Columbia; Memoir 118, pp. 91-95, Geol. Surv. of Canada, 1920.
Mineral Policy Sector; Corporation Files: "Noranda Mines Limited"; "Brynnor Mines Limited".
Mineral Policy Sector; Resource File 167-M5-2-93.
Eardley-Wilmot, V.L.; Molybdenum; Report 592, p. 32, Mines Branch, Ottawa, 1925.
property to a wholly owned subsidiary, Brynnor Mines Limited. A program of geophysical and geochemical surveying, trenching, and diamond drilling was begun. During 1962-1963 a main haulage crosscut adit at the 5,045 foot elevation was driven 5,800 feet almost due west to the vicinity of the orebodies and a raise put up to the surface at the 5,488 foot elevation. In 1964, 4,897 feet of crosscutting and drifting, and 1,246 feet of raising was done in preparation for mining the Main Breccia and Fracture orebodies. Construction of a 1,000 ton-per-day mill was completed and milling began on February 17, 1965; the mill rate was increased to over 1,400 tons-per-day in 1968. An 885 foot internal production shaft was completed in 1969. Production was suspended December 3, 1971. Reserves at that time were estimated at 2,700,000 tons averaging 0.25 per cent molybdenum (Noranda Mines Limited, 1971 Annual Report).

Exploration and development work during 1972-73 included magnetometer and geochemical soil surveys, development drilling and raising, and 13,695' of surface and underground diamond drilling. The mine and mill were reconditioned during the latter part of 1973 in preparation for production. The mill operated on a one shift basis for 14 days in December 1973, treating approximately 6,500 tons of ore. Production was resumed in January 1974; the mine operated as the Boss Mountain Division of Noranda Mines Limited.

An exploration program was begun in 1976 to investigate the open pit potential of the property. The original proven reserves were depleted in 1978 and production began in mid year in a small open pit, supplemented by development ore from underground. The extraction of ore from two small open pits was completed in 1980 and mining reverted to an all underground operation. Ore reserves at the end of 1980 were reported as 5,438,000 tons at 0.13% molybdenum, including an open pit reserve of 2,600,000 tons at 0.11% molybdenum (Noranda Mines Limited, 1980 Annual Report).

Work began in 1980 to expand the capacity of the concentrator to 2,900 tons per day, the additional 1,200 tons per day of ore to be supplied by a new open pit commencing in 1982. The underground mine produced at capacity until July 2, 1982 when the production rate was reduced by 50%. The open
DESCRIPTION OF DEPOSIT/DESCRIPTION DU GISEMENT (continued)

A system of quartz-molybdenite veins localized in a sheared and intensely altered andesite dyke north of the Main Breccia zone is known as the High-Grade Vein. This vein system strikes 47°E and dips 40° to 45°N. It has been explored along a strike length and a dip length exceeding 120 meters and is 1.2 to 3 meters wide. Very coarsely crystalline and erratically distributed molybdenite locally may assay several per cent across the width of the vein.

REFERENCES/BIBLIOGRAPHIE (continued)


BC EMPR, Mining in British Columbia; 1975-80, p. 3.

HISTORY OF EXPLORATION AND DEVELOPMENT (con't)

Pit mine wasn't placed in production. The mine closed indefinitely on February 15, 1983. Reserves were reported as 4,232,000 tons at 0.135% molybdenum (Noranda Mines, 1984 Annual Report) (includes the open pit reserve of 2.6 million tons reported above).