VALLERIITE

On the Whitehorse Copper Belt valleriite occurs typically in dark green and black cupriferous magnetite serpentine skarn, and not at all in the calc-silicate skarns which are also common along the belt.

The largest magnetite serpentine skarn is at Little Chief where the ore occurs at the contact between a Triassic (Lewes River) limestone and an underlying series of clastic feldspathic and siliceous sediments. The ore strikes north west and dips at about 70 degrees north east. The ore zone has an average width of about 80 feet, a length of up to 1200 feet, and a depth of nearly 1400 feet. The total tonnage of ore is over five million tons grading in excess of 2% copper. The main copper minerals are bornite (55%), chalcocite(20%), chalcopyrite (15%), covellite (5%), native copper (trace), cuprite (trace) and of course valleriite (5-10%). Minor quantities of gold (.025 ozs/ton) and silver (.3 ozs/ton) are also present in the ore. Note that the distribution of copper between the various sulphides is shown in brackets, and that the valleriite contains 5% to 10% of the total copper in the deposit.

Valleriite tends to occur in the richer parts of the ore zone where bornite/chalcocite are relatively abundant. The mineral can be massive and in bands up to several feet wide, or in discontinuous leases which can be quite small. Typically valleriite occurs on slip planes in the well mineralized skarn, and often as a surface coating on the octahedral cleavage planes in more massive magnetite - samples of valleriite are usually magnetic for this reason.

In hand specimen valleriite has a dull bronze brown colour, and is very soft, leaving a black smudge on the hands.

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