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Gotcha W

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MINERALOGICAL AND CHEMICAL ZONATION IN THE SILENCE LAKE TUNGSTEN SKARN,
 CLEARWATER, BRITISH COLUMBIA

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The Silence Lake or Gotcha scheelite skarn is 32 km northeast of
 Clearwater, B.C., within metasedimentary rocks probably correlative
 with the late Proterozoic Snowshoe Fm. of the Cariboo district. The
 pelite-carbonate sequence is regionally metamorphosed to upper amphi-
 bolite facies, isoclinally folded about NW axes and intruded by mid
 Cretaceous(?) quartz monzonite and early Tertiary (64±2 Ma) alaskite.
 A synformal pendant exposed over a 50 x 150 m area is underlain by
 biotite quartz monzonite similar to that of the adjacent Raft Batho-
 lith, cored by pegmatitic alaskite, and converted to scheelite-bearing
 calcic skarn. Skarn assemblages reflect both protolith inhomogen-
 eities and the varying metasomatic influences of two plutons, the
 younger rich in SiO₂ and W. Pure limestone of the Upper Band is con-
 verted to wollastonite-grossularite skarn whereas calcareous pelite of
 the Lower Band went to a less calcic assemblage of actinolite-vesu-
 vianite-diopside-pyrrhotite. Garnet of the former is unzoned gros-
 sularite (Gr₉₀Al₅Sp₅) whereas Lower Band garnet is Fe⁺⁺ and Mn⁺⁺ rich
 (Gr₅₅Al₂₅Sp₂₀) and normally zoned with decreasing Ca⁺⁺ from core to
 rim; reflecting availability of Ca. A superimposed coarse grained
 garnet-vesuvianite-diopside skarn assemblage contains abundant schee-
 lite, quartz and calcite and intermediate (Gr₇₀Al₁₈Sp₁₂) garnets with
 rims more calcic than cores. The siliceous, W-rich skarn formed at
 the expense of earlier assemblages, in response to emplacement of
 pegmatitic alaskite.

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1982 production: 18350 tonnes ore @ 0.57% WO₃
 recovered 104.7 t W

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