serpentinisation at Grid 4 could have been reactive. Where fresh and siliceous, the only replacing minerals observed so far are illite and muscovite. But these rocks being silicified may not have been sufficiently permeable. Where the carbonate rocks are not silicified, they are seen to be comprised of goethite, manganese wad and talc. This could also reflect hydrothermal alteration.

The fine grained rocks, the shales, mudstones and silty shales are generally simply hornfelsed but do contain biotite, phlogopite, clinozoisite and muscovite as alteration minerals (5). The rocks are slatey or cherty in aspect and are very fine grained. Quartz-tourmaline veins have been mapped in Costeans 1000N and 1200N, generally cross cutting fairly acid rocks such as chert conglomerate or shale.

5.1.6. Mineralisation

Mineralisation of the Renison Bell Tin Mine is of three main types:

(a) Metasomatic replacement of carbonate beds: The sulphide ore has formed by replacement of dolomite as the ore solutions moved away from the major fractures. The main sulphide is pyrrhotite with patches of arsenopyrite and pyrite, widespread trace amounts of chalcopyrite and sporadic development of stannite, sphalerite and galena. The tin occurs as cassiterite and is contemporaneous with quartz and much of the pyrrhotite.

(b) Vein filling in fault zones with limited wall rock replacement: These occur in the Bassett-Federal Fault and in adjacent faults. The ore consists of fracture fillings and vein networks of quartz-pyrrhotite-arsenopyrite-cassiterite, sometimes with chalcopyrite. Volcaniclastic greywacke, adjacent to the Bassett-Federal Fault, is patchily replaced and reaches ore grade in places.

(c) Veinlet and disseminated mineralisation in recrystallised quartzite: This is confined to a zone of quartzite in the Renison Bell Member and consists of quartz-tourmaline with veinlets and

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