

A second fault (Myrtle Grove Fault) running subparallel to the Ring River Fault has been mapped. Evidence for this fault is based entirely on the discordance in mineral layering in the Serpentine Hill Complex with the basalt/ultramafic contact. In both instances these faults are closely associated with geochemical soil anomalies.

The contact between the basalts and the overlying polymict breccias is either conformable or more likely paraconformable, and this contact is believed to follow the strike of the associated NNE striking sandstones and siltstones.

#### GEOLOGICAL HISTORY

A suggested sequence for geological events in the area covered by GAP west is as follows:-

**Late Proterozoic :** During the late Proterozoic, to possible early Cambrian time, there developed a sequence of miogeosynclinal sandstones, siltstones and dolomites in a shallow marine environment (Success Creek Group). These rocks are now exposed to the west of the current lease, in the Renison Mine area and may continue at depth under GAP west.

**Cambrian :** In the Renison Mine area this sedimentary sequence passes conformably or paraconformably upwards into the base of the Crimson Creek Group, which comprises a basal haematitic chert conglomerate, silicified carbonate rocks and tuffaceous immature sandstones. Of critical importance is the relationship of this basal portion of the Crimson Creek Group to steeply dipping sandstones and siltstones mapped within GAP west and tentatively included within the Crimson Creek Group. These latter sediments appear to have been deposited within an unstable and rapidly subsiding trough or basin whose western margin was demarcated by a major fault or a collection of faults. These faults probably date from the early Cambrian and have acted as loci for the development of the basalt/dolerite and Serpentine Hill Complexes. The mafic lavas are regarded as having formed in a rift environment. The serpentinised ultramafics and minor gabbros may represent the plutonic equivalent of these lavas, though there is tenuous evidence from the structural discordance between the two that there may not be an intermediate genetic association.

The presence of polymict breccias containing clasts of weathered lava and greenish pyroxenite, overlying the basalt/dolerite complex indicates that at least a portion of the ophiolite was exposed to erosion by early Cambrian time. This in turn suggests that the associated faults were reactivated several times from the Cambrian to at least the Devonian. These breccias fine upwards into a partially bedded sequence of sandstones and siltstones. The finer sediments probably reflect slightly deeper basinal conditions and a much reduced supply of detrital sediments.

**Middle Devonian :** During the early-middle Devonian a major orogenic phase (Tabberabberan Orogeny) occurred through western Tasmania. Associated with this period of folding and faulting was the upwelling and intrusion of acid magma. This magma intruded zones of structural weakness and crystallized in high-level magma chambers. Within GAP west, high-level equivalents of this magma were injected along the Ring River Fault and subsequently these rocks were altered by late-phase quartz-tourmaline bearing solutions. These paulopost or deuteritic solutions apparently