



Figure 5. Diagrammatic illustration of 'normal' faults forming in the plane of shortening during inversion on basement faults. Note the dip direction on the normal fault and the dip on the basement structure are always opposite. Also, the normal fault will always be over the hanging-wall of the basement fault.

The model for basement controlled folding at Hellyer has important implications for understanding the relationship between Hellyer and Que River with zones of strong deformation. An association between high strain and the zone of mineralisation in both mines has been attributed to the susceptible nature of the phyllosilicate alteration zone to accommodating shortening. Brief observation of the alteration zone in the Hellyer underground indicates the phyllosilicates have indeed accommodated shortening and developed a strong foliation fabric consistent with the fold event. However, the magnitude of shortening within these phyllosilicates is far too small to be consistent with the considerable difference in shortening between the volcanic package hosting the deposit and the degree of shortening in surrounding areas. The same applies to the Que River deposit which has even higher strain and a smaller alteration zone. An alternative explanation for the observed relationship could be the deposits are localised along major basement structures that have been reactivated during compression and localise folding in the overlying sediments. If this is so, the occurrence of high strain fold closures in the volcanics may be indicative of prospective basement structures below.