2.2 FAULTS AND JOINTING

2.2.1 INTERPRETATION OF FAULTS IN STUDY AREA

Field mapping of faults around Hellyer relies largely upon the recognition of discontinuity in lithologies, and only rarely can a major fault be observed directly and then usually in an excavated trench or cutting. The majority of recognised large faults have some associated quartz veining, which is often the best indication of its presence. Complexities in the folding make the recognition of bedding drag into the fault very difficult, though it is often present. The majority of fault structures observed at Hellyer are zones of fracturing up to several meters wide. Wider zones are difficult to recognise as faults unless they juxtapose different lithologies. If there is no juxtaposition they may simply appear to be complex folding, such as at location 2. These types of structures are best described as fault zones or brittle shears. The occurrence of both foliation and bedding drag, as well as transposition of earlier features is best described by shear related processes.

There is no evidence for plastic or ductile deformation in the study area. All fault or shear zones are brecciated to some extent and therefore are poorly preserved in any kind of exposure including drill core. This also relates to their relationship with topography and it is a reasonable expectation that most major shears have a strong influence on topography and drainage. This can be observed in both the aerial photography and topographic base plans, from which some degree of lineament interpretation can be made. Through drafting the linear alignments of the drainage pattern around Hellyer a number of consistent trend directions can be resolved. These are illustrated in the 1:10,000 scale interpretive geology plan in Appendix 4.

Most prominent of the linears on the 1:10,000 plans is the due NW trends, one of which passes next to the portal entrance and two others 800m to either side. Although not recognised in the field mapping as structures these features do in several localities lie along significant discontinuities in the mapped lithologies and there is good justification for assuming them to be faults. If the trends are continued to the NW of the mine these structures are coincident in