

The upper most facies within the 'Lower Basalt' in Hat-5 is a pillow lava facies. The facies contains close packed pillows with associated interpillow sediments. Diameters of pillows, in core, range from 0.5 to 1 metre and often have chilled margins. Internally pillows are porphyritic and weakly vesicular (< 2-3%). This facies generally has gradational contacts with the quench fragmented lava facies over varying distances up to 1 metre.

Interpretation: The 'Lower Basalt' is mainly comprised of alternating intervals of massive and quench fragmented lava facies. This probably reflects the extrusion, shallow intrusion of multiple, small volume, basaltic flows, where the tops and bottoms of the flows are quench fragmented. In core thickness of these flows, including peperitic tops, is in the order of 25-35 metres. Often the internal massive portions of the flows are hydraulically fractured post emplacement.

The amount of sediment mixed in with the 'Lower Basalt', both in the form of matrix to the fragmental facies (peperites), and as small discrete greywacke/ volcanoclastic horizons suggest that the basalts were emplaced as shallow intrusions or extrusions onto wet unconsolidated sediments, most likely of the Animal Creek Greywacke. Peperitic textures, like those within this sequence also suggest that volcanism and sedimentation was contemporaneous (Busby-Spera and White, 1987).

The matrix to the peperitic intervals, in places, is coarser than that of a similar facies within the Hellyer Basalt (Pillow Lava Sequence). This difference may reflect the differences in grain size of the unconsolidated sediments being extruded over/intruded into, or may be due to a higher degree of well granulated hyaloclastite in the matrix of the peperitic facies of the Lower Basalt.

Feldspar Phyric Sequence

Introduction: The Feldspar Phyric Sequence (FPS), which occurs as the footwall to the mineralisation through out the Que - Hellyer area, is comprised of predominantly andesitic volcanics with a minor basaltic component in places. These volcanics are currently thought to be mainly fragmental in character, mainly as a result of primary fragmentation process (ie. auto brecciation, quench fragmentation), with massive or coherent lavas making up a minor proportion. In the two exploration holes