

Appendix 2: Petrographic Description

ROCK SPECIMEN

Sample Number : C 4550 9670

Location: GDA 764687 E, 8079831 N

orange brown ferruginous breccia with green spots.

THIN SECTION

FRAGMENTS	MAJOR
AMYGDALOIDAL "TRACHYTE"	DOMINANT
KAOLINITE	MAJOR
GLAUCONITE	MINOR
GOETHITE	MINOR
QUARTZ	ACCESSORY
MATRIX	MAJOR
SILICA	DOMINANT
BARITE	ACCESSORY

CLASSIFIED AS A **VOLCANIC BRECCIA**.

It is predominantly composed of angular fragments of an amygdaloidal volcanic rock, set in a fine grained silica rich matrix. The volcanics features common round former amygdales that are now composed mainly of microcrystalline silica. These are set in a groundmass that stains heavily for K feldspar (cobaltinitrite). There is a minor population of "feldspar" microlites, that may be altered plagioclase. These are set in a obscured matrix, due to ? iron oxides, that stains very positively for K feldspar. The SEM analysis of this matrix in addition to the high K, Al and Si, (7.8%, 17%, and 55%) found low Mg and Na but >4% TiO₂.

Other possible lithic fragments are composed of fine kaolin, some with goethite, and the green mineral visible macroscopically. This phase, green in polarized light with a microcrystalline texture, has optics similar to glauconite. Its composition also is similar to glauconite. (~ 10% K₂O, 10% Al₂O₃). However its distribution includes an unequivocal replacement of euhedral phenocrysts. Celadonite is a mineral of similar optics that is characteristic of int. to mafic volcanics. However it differs chemically by a total lack of alumina.

The matrix to the above materials is a fine grained, "cherty" silica. There are also some pockets of coarse ? vein quartz. Barite occurs as veins through some of the fragments.

