

Appendix 1a

Memo to: B.R. Brown

Date 22.4.74

Our Ref: CEP-LJT

Your Ref:

Subject: E1/15: Petrological examination of  
basalts from Aroo-1, Bass Basin.

File: M207

Date:

Aroo-1 has intersected a basaltic unit, four specimens of which have been submitted for petrological examination.

Specimen MRL 4883 Aroo 1 11,788'.

This rock is a dark grey fine grained amygdaloidal basalt.

Plagioclase laths ( $\approx 0.5$  mm long) marginally zoned from An 65 (labradorite) to An 40 (andesine) occupy 50% of the rock and occur subophitically intergrown with titanaugite (20%). Chlorite is an important constituent of the rock also and occurs in the following habits; intersertal to plagioclase and titanaugite with a colloform texture, 5-10%; as zoned colourless, violet, pink, green and yellow chlorite pseudomorphing euhedral stumpy prismatic crystals (100-150  $\mu$  in diameter) outlined by goethite, 3%; as an alteration product of plagioclase, 3%; as an alteration product of occasional larger (500  $\mu$ ) euhedral prismatic conchoidally fractured crystals, 3%; and rimming amygdales, 3%. Calcite also occurs as an alteration product in association with chlorite and fills amygdales, 5-10%. Interstitial opaque minerals (3%) altered to goethite make up the remainder of the rock.

Discussion. The rock is an amygdaloidal basalt. The presence of titanaugite indicates the rock has alkaline affinities. The small crystals altered to chlorite appear to have been nepheline and the large ones were almost certainly olivine. If nepheline was originally present the rock could be termed a basanite or if not an alkali olivine basalt.

Specimen MRL 4884 Aroo 1 11,799'.

This specimen is a dark grey fine-grained basalt and in thin section is an identical rock type to MRL 4883 except it is not amygdaloidal. It is an alkali olivine basalt.

Specimen MRL 4885 Aroo 1 11,801'.

This rock is a pale grey slightly schistose altered basalt. In thin section it has an identical texture to MRL 4883 however the primary mineralogy has been completely destroyed. Calcite has replaced the plagioclase and titanaugite is represented by an irresolvable sub-opaque leucoxene-carbonate mixture. Intergranular and amygdaloidal calcite and chlorite are also present. Original olivines are now serpentine and carbonate. It was originally an alkali olivine basalt.