

8. Conclusions.

- 8.1. Flow-banding and agglomeratic textures in the metafelsites support their volcanic origin. Effects of metamorphism resulted in a variety of grain size and micrographic intergrowth.
- 8.2. The Stavoren Granophyre is truly magmatic, which follows from the intrusive relationships into Rooiberg Felsite and the granophyric intergrowth types.
- 8.3. The Stavoren Granophyre in the area under consideration probably crystallized from a partial melt extracted from the felsites on metamorphism by the Rustenburg Layered Suite. A co-magmatic origin could also be postulated.
- 8.4. The Klipkloof Granite, which intruded below a cover sequence of Stavoren Granophyre is an aplitic phase of the Nebo Granite.
- 8.5. The Nebo Granite displays a large differentiation trend on binary variation diagrams, while the Klipkloof Granite plots randomly near the end of the Nebo Granite trend.
- 8.6. The relationship between the Nebo and Klipkloof Granites is not simple, which is obvious from some variation diagrams where the latter does not conform to the Nebo Granite trend. This is evidently caused by late-stage alteration of the Klipkloof Granite.
- 8.7. Trace element data indicates that the Klipkloof Granite is highly differentiated and therefore a possible target

for tin mineralization. No tin mineralization is, however, present in the Klipkloof Granite of this area, which is ascribed to the removal of the uppermost portions of the granite by erosion.

8.8. The granites of the Zaaiplaats area are characterized by post crystallization metasomatism, which resulted in the tin mineralization of the area (Coetzee, 1984). The albitized Klipkloof Granite has the same Rb-Ba-Sr pattern as the Zaaiplaats granites, but the normal Klipkloof granites show a different pattern with lower Rb values. The trend of the normal, unmineralized Klipkloof granites, which are only slightly metasomatized, appear to represent the normal fractionation pattern for the Bushveld Granite. These two different trends can thus be used to identify metasomatized granites and therefore areas of possible tin mineralization.

8.9. The Bushveld granites are characteristic A-type granites.

8.10. Mineralization in the Lebowa Granite Suite of the area occurs below impermeable Klipkloof Granite sills and is related to the intrusion of late Klipkloof Granite aplite dykes, which carried the ore-bearing fluids.

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