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*Ground water resource development in hard crystalline rock aquifers  
on the Nebo Plateau, South Africa.*

By

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*“He opened a rock,  
and water gushed out,  
flowing through the desert like a river”*

**Psalm 105 : 41**



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ABSTRACT

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In some regions of the Northern Province difficulties have risen concerning the provision and management of water resources. This research project attempted to find some solutions to the problems encountered and the principal aims were to understand the water regime and to develop new ground water resources. A research area of approximately 100 km<sup>2</sup> was chosen in the Jane Furse district Northern Province.

The study area is underlain by granite of the Lebowa Granite Suite, Bushveld Igneous Complex, with Dolerite/Diabase intrusions prominent in the north. Linear structures were identified through field mapping, existing satellite images and geophysical data.

A first phase geohydrological investigation was conducted. The initial results indicated good blow yields, but from pump tests it was deduced that the aquifers have a low storage capacity. The results further indicated that the ground water may have a high fluoride content which must be addressed.

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3.4. 4110 4120 4130 4140 4150 4160 4170 4180 4190 4200

3.4.1. 4210 4220 4230 4240 4250 4260 4270 4280 4290 4300





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- Appendix 1 - Potentially high yielding sites.
- Appendix 2 - Pump test data.

**DESCRIPTION OF RESEARCH AREA**

The study area (see Figure 1) is situated near the  
 Nylstroom Dam. The area is part of the  
 Nylstroom Dam Catchment Area in the Northern Province.  
 The area is characterized by a variety of geological  
 features and is a typical example of a  
 typical granite landscape.

The area has a typical landscape of a granite  
 landscape, making it a typical example of a  
 typical granite landscape (Wolmar, 1994). The result is a typical  
 landscape consisting of granite hills and  
 rolling hills (Figure 1).