

**Palaeontological Impact Assessment for  
Proposed Technical Training College on Erf 5529 of  
Kuruman,  
Northern Cape Province,**

**Desktop study  
For**

**ENVASS (1401429 024 Assmang)**

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# **Palaeontological Impact Assessment for Proposed Technical Training College on Erf 5529 of Kuruman**

ENVASS (1401429 024; Assmang)

## **Background**

As SAHRA requires a palaeontological impact assessment for Erf 5529 of Kuruman, situated adjacent to the National Route 14, next to the El Dorado Hotel and the Kuruman Country Club, at co-ordinates 27°27'40.64"E and 23°27'23.01"S, a desktop study is provided here.

According to the national legislation (National Heritage Resources Act (Act 25 of 1999)) any the site to be developed must be assessed to determine the likelihood of palaeontological remains occurring there and if so then their importance and possible protection or removal.

## **Terms of Reference**

In order to determine the likelihood of fossils occurring in the affected area geological maps, literature, palaeontological databases and published and unpublished records must be consulted.

If fossils are likely to occur then a site visit must be made to locate and assess the fossils and their importance.

Unique or rare fossils should be collected (with the relevant SAHRA permit) and removed to a suitable storage and curation facility or protected on site.

Common fossils can be sacrificed if they are of no importance but a representative collection could be made if deemed necessary.

## **Locality**

The land surface is currently under cultivation or has already been developed for a variety of urban needs. The topography is relatively flat but there are outcrops of metamorphic and igneous rocks around the town.

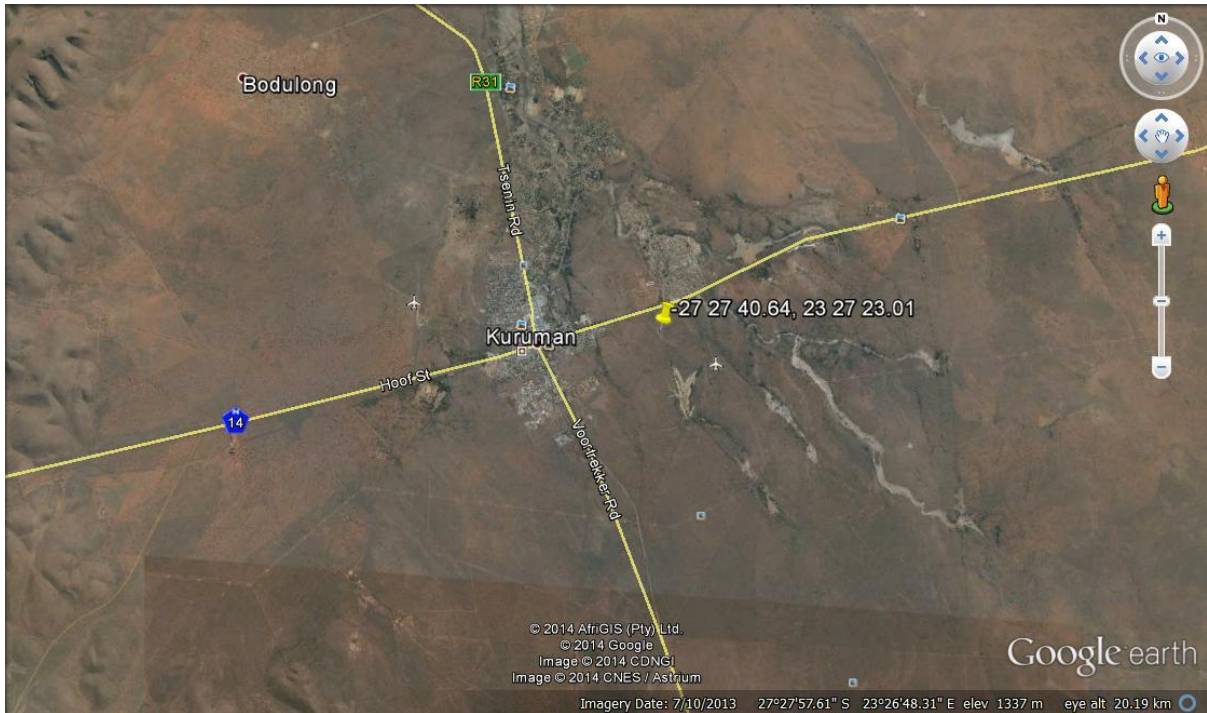


Figure 1: Map of proposed development along the N14, East of Kuruman, between the established El Dorado Hotel and the Kuruman Country Club, provided by ENVASS.

### Geology and Palaeontology

The site for the proposed technical training college is substations and powerline routes fall within a number of geological formations as indicated in Figure 2 and Table 1, including ancient rocks of the Transvaal Sequence of the Ventersdorp Supergroup, and young (Tertiary to Quaternary) Kalahari sands, alluvium and limestones. The Vryburg, Schmidtsdrif and Ghaap Plateau formations of the Campbell Group, Ventersdorp Supergroup, range in age from 2650 – 2588 Ma (Eriksson et al., 2006) which is much too old for vertebrates and plants. Algae, fungi and bacteria had evolved but were seldom preserved. These rocks are sedimentary (dolomites) and igneous (andesite) do not appear to have any microfossils.

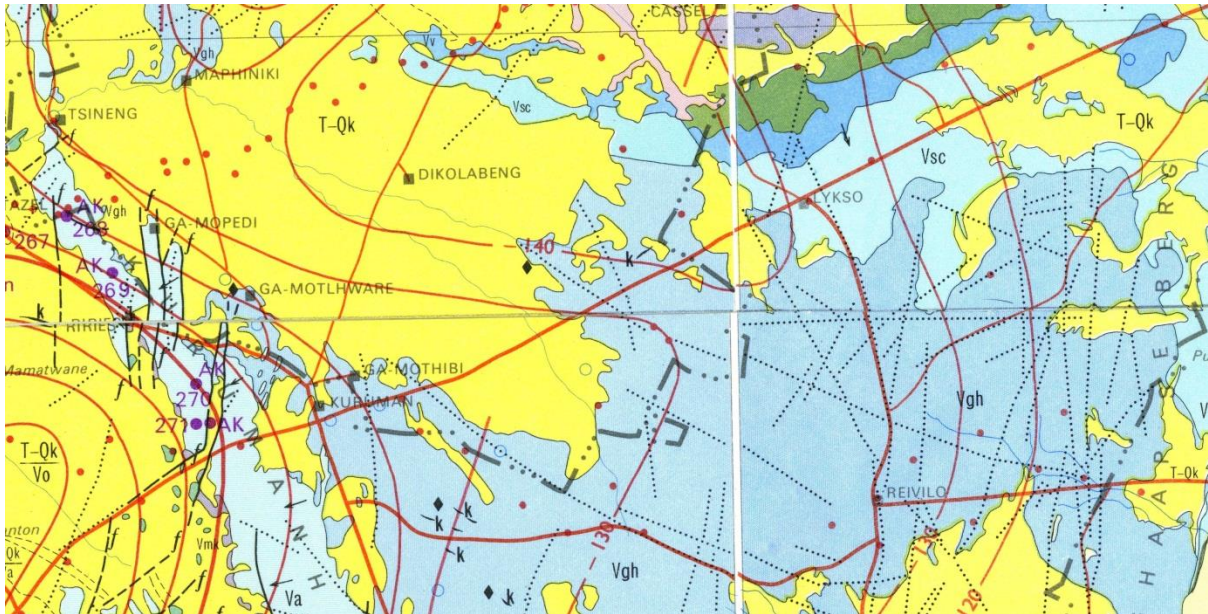


Figure 2: Geological map indicating Kuruman and surrounds. Symbols for geological formations are listed in table 1; Map enlarged from Geological Survey, Pretoria; 1984, 1: 1 000 000.

Table 1: Symbols for the geological map above and approximate ages from various published sources.

Symbol	Formation	Lithology	Age
Q	Quaternary	Alluvium, calcrete, sand	Less than 2.5 Ma
T-Qk	Kalahari	Sand, limestone	Tertiary (65 – 0 Ma)
Vmk	Makgangyeni	Diamictite, jaspilite, sandstone	Transvaal Sequence approx. 2650 - 2588 Ma
Va	Asbestos Hills	Iron formation, jaspilite	
Vgh	Ghaap Plateau	Dolomite, limestone, chert	
Vsc	Schmidtsdrif	Dolomite, shale	
Vv	Vryburg	Shale, sandstone, andesite	

### Recommendation

Since none of the rock formations or sediments in the region is potentially fossiliferous, being too old, the project to construct a technical training college on Erf 5529 of Kuruman, may continue as far as the palaeontology is concerned. If however, any fossils are discovered during the excavations then it is strongly recommended that the fossils are rescued and a palaeontologist is called to assess their importance and make further recommendations.

No phase 2 palaeontological impact assessment is required.

## References

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