

UNIVERSITY OF THE
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DESKTOP PALAEOONTOLOGICAL IMPACT ASSESSMENT

Kathu Extensions 6-10 Township development in Gamagara Local Municipality

Specialist report by:

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EXECUTIVE SUMMARY

Bruce Rubidge was appointed by Maxim Planning Solutions on behalf of Gamagara Local Municipality to undertake a desktop Palaeontological Impact Assessment for the township development at Kathu Extensions 6-10 on Portions 1 and 2 of the farm Kalahari Gholf en Jag Landgoed No. 775, at the town of Kathu in Northern Cape Province.

Most of the area is underlain by Precambrian rocks of the Griquatown Group, comprising the Kuruman and Danielskuil formations which in turn are overlain by Tertiary limestone and unconsolidated wind blown sand of the Quaternary Kalahari Formation.

As the Precambrian Griquatown Group is not known to host fossils it is highly unlikely that palaeontological heritage will be affected by the proposed township development. The overlying Tertiary-Quaternary sediments, which are covered by vegetation in the study area, are the only sedimentary deposits in the area which could host palaeontological heritage. As these deposits are not consolidated it is very unlikely that any fossils will be present.

If in the unlikely event that fossils are exposed in the Tertiary-Quaternary sediments in the course of the proposed development, a qualified palaeontologist must be contacted to assess the exposure for fossils so that the necessary rescue operations are implemented.

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Introduction and Brief

A Palaeontological Impact Assessment was requested by Koot Raubenheimer of Maxim Planning Solutions on behalf of the Gamagara Local Municipality. The development is the proposed township Kathu Extensions 6-10 on Portions 1 and 2 of the farm Kalahari Gholf en Jag Landgoed No. 775.. The township area is located north-west of the town of Kathu situated north of the R380 road in Northern Cape Province (Figure 1). The proposed development comprises a total area of 380,8600 hectares.

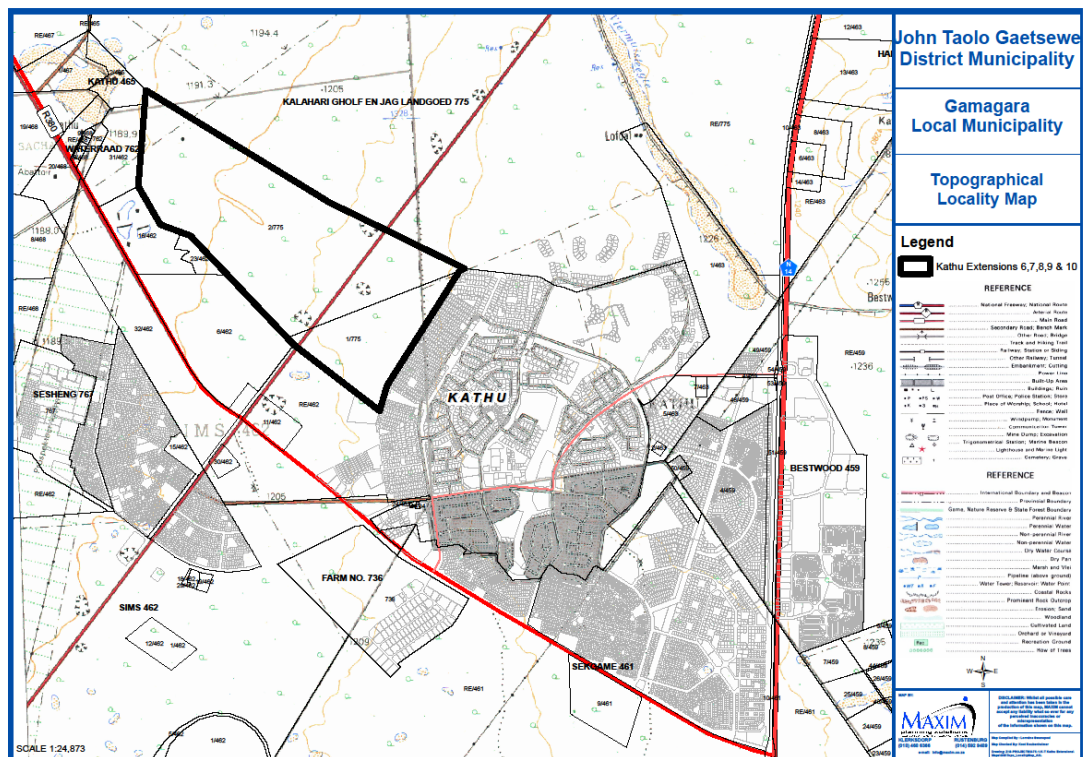


Figure 1. 1:50 000 topographic map showing the site (black outline) for the proposed Kathu township development on Portions 1 and 2 of the farm Kalahari Gholf en Jag Landgoed No. 775.

Legislative framework

The Department of Environmental Affairs (DEA) through the National Environmental Management Act (NEMA Act 107 of 1998) requires that developers apply to the competent authority for approval of the proposed development as more than 1 hectare of indigenous vegetation is to be removed (Listing Notice 1 of the EIA regulations).

Details of the study area

The study area of the Kathu Extensions 6-10 township development is located in Northern Cape Province on Portions 1 and 2 of the farm Kalahari Gholf en Jag Landgoed No. 775, north-west of the town of Kathu and north of the R380 road (Figure 2). The study area is covered by the 1:50 000 topographical map Sheet 2723CA Kathu (Figure 1). The proposed development area covers 380,8600 hectares.

The main infrastructure expansion is associated with the layout of a new township which will be developed and will include Residential, Business, Institutional and Public Open Space erven as well as streets. With regard to services infrastructure, the proposed township area will be supplied with potable water. All sewerage generated in Kathu Extensions 6-10 is from a full waterborne system.

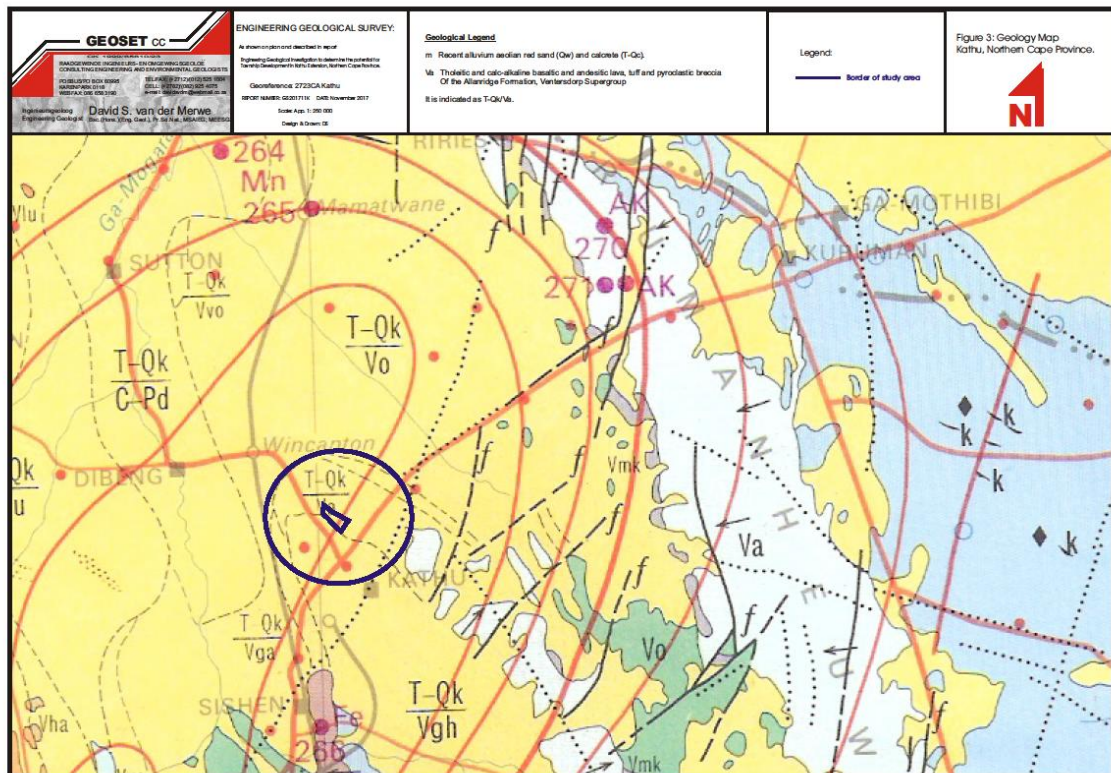


Figure 3: 1: 250 000 scale geological map (2722 Kuruman) showing the position of the proposed Kathu township development (blue quadrangle) on the farm Kalahari Gholf en Jag Landgoed No. 775 north-west of Kathu in relation to the regional geology. Va – Griquatown Group (white); T-Qk – Tertiary - Quaternary alluvial deposits (yellow).

Geological Setting

Referral to the geological map (1979 sheet Kuruman 2722; 1:250 000 series) indicates that the entire study area is covered by Tertiary limestones and unconsolidated wind

blown sand of the Quaternary Kalahari Formation. From the proximity of the mapped outcrops on the geological map it appears that the study area is underlain by Precambrian rocks of the Griquatown Group (Figure 3).

Palaeontological Heritage

The Precambrian rocks of the Griquatown Group, which are not known to host fossils, are overlain by thick deposits of Tertiary limestone and Quaternary sands of the Kalahari Formation. As these are sedimentary deposits there is the possibility that the Kalahari Formation could preserve fossils of animals and plants, but this is unlikely as these deposits are not consolidated. If they are present their occurrence will be sporadic.

Methodology

Because the study area is underlain by Precambrian rocks of low palaeontological sensitivity, a desktop Palaeontological Impact Assessment was undertaken to identify possible sensitive fossil occurrences, assess the significance of possible fossil occurrences, comment on the impact of the proposed development, and to make mitigating recommendations.

Recommendations

From the documentation supplied regarding the development it is extremely unlikely that the proposed development will have any affect on palaeontological heritage. The underlying Precambrian rocks of the Griquatown Group are not exposed in the study area and are not known to preserve fossils. However if fossils are exposed in the overlying Tertiary-Quaternary alluvial deposits it will create a unique opportunity to explore the area for fossils.

It is thus recommended that, in the unlikely event that fossils are exposed as a result of construction activities, a qualified palaeontologist must be contacted to assess the exposure for fossils before further development takes place so that the necessary rescue operations are implemented. Depending on the nature of the fossils discovered this could entail excavation and removal to a registered palaeontological museum collection. A list of professional palaeontologists is available from South African Heritage Resources Agency (SAHRA).

Conclusion

The proposed Kathu Extensions 6-10 township development area is underlain by Precambrian aged rocks of the Griquatown Group which in turn is overlain by unconsolidated Tertiary-Quaternary aged alluvial deposits. It is extremely unlikely that fossils will be exposed as a result of the development. From a palaeontological perspective, the proposed township development should proceed but, if fossils are uncovered in the course of construction activities, the developer immediately calls in a

qualified palaeontologist to assess the situation and, if necessary, undertake excavation of the fossils.

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