

Phase 1 Heritage Impact Assessment for the proposed Tempe Agrimark and Petrol Station development, Bloemfontein, Free State Province.

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Introduction

The application relates to a proposed commercial development covering a 5.5 ha area situated on low-relief terrain near Tempe, about 1 km east-southeast of the Abrahamskraal Road turnoff on the R64, bound for Dealesville and about 17 km north-west of the Bloemfontein CBD (**Fig. 1 - 4**).

Site Coordinates: 29° 4'16.00"S 26° 8'34.34"E

Map Reference:

1:50 000 scale topographic 2926 AA Bloemfontein

1:250 000 scale geological 2926 Bloemfontein

The heritage significance of the affected area was evaluated on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Maps and aerial photographs (incl. Google Earth) were consulted and integrated with data acquired during the on-site inspection. Site significance classification standards prescribed by SAHRA (2005) were used to indicate overall significance and mitigation procedures where relevant (**Table 1**).

Background

The palaeontological footprint in the region is primarily represented by Permian Karoo fossils preserved within bedrock sedimentary strata, as well as late Quaternary mammalian fossils preserved within superficial alluvial deposits (e.g. river gravels and overbank sediments). According to the 1:250 000 scale geological 2926 Bloemfontein, the Bloemfontein area is

underlain by fluviially derived sedimentary and fossil-bearing rocks of the Permian Adelaide Subgroup (Karoo Supergroup), with Jurassic volcanic and igneous intrusions in the form of dolerite sills and dykes dominating the local landscape (**Fig. 5**). The palaeontological footprint in the region is primarily represented by Permian Karoo fossils preserved within bedrock sedimentary strata, as well as late Quaternary mammalian fossils preserved within superficial alluvial deposits (e.g. river gravels and overbank sediments). Surface scatters of Later Stone Age and Middle Stone Age artefacts are frequent archaeological components in pristine rural areas around Bloemfontein and particularly along river drainages such as the nearby Modder River and the Renosterspruit.

The cultural significance of the landscape west of Bloemfontein is primarily represented by the historical footprint left behind by early colonial settlers, when several farms, including Bains Vlei and Kwaggafontein, was owned by Andrew Hudson Bain who settled in the Free State in 1847 (Collins 1965). In 1860 and 1862 two hunts, organized for the second son of Queen Elizabeth and for the Barolong tribe respectively, took place at Bains Vlei which led to the mass killing of thousands of antelope and a subsequent dwindling of large antelope herds in the Bloemfontein area. The British march on Bloemfontein from the west, passed the study area on the 12th of March 1900. After Bloemfontein was occupied by British forces on 13 March the city became a major military centre, with several farms north of Bloemfontein requisitioned for military purposes which also included military hospitals, rifle ranges, sangars and a large remount camp at Hillandale. Hillandale was owned by Abraham Fischer, and was expropriated by the British along with the Tempe farms. Structures relating to historical farming activities include stone kraals and the foundations of houses or sheds. Many of these structures are no longer intact. A large rubbish dump containing bottles and other military artifacts and an unmarked graveyard dating to between 1930 and the 1960 was recently recorded at Lilyvale, but by the 1950's, few of these structures were on record or seem to have remained intact.

Field Assessment

The site is located within an outcrop area of moderately sensitive sedimentary rocks of the Adelaide Subgroup. However, no outcrop were observed during the inspection of the site which indicated that the underlying geology is capped by well-developed superficial deposits that are largely made up of (palaeontologically sterile) Quaternary wind-blown sands and residual soils (**Fig. 6**). A systematic foot survey showed no evidence for the preservation of Quaternary fossil remains or Stone Age archaeological material that are either capped or

distributed as surface scatters on the landscape. Suburban activities in the past have noticeably impacted on the surrounding area while the site itself has been extensively disturbed, in particular by the dumping of refuse and building rubble. Historical maps of the area dating back to as recent as 1951 show no evidence of buildings, homesteads or associated structures on the property. There are no aboveground traces of historically significant structures, rock art (engravings), prehistoric structures or clearly marked graves. Several modern remnants were recorded including the remains of several rubbish dumps which includes brick, concrete, plastic and modern glass fragments (GPS coordinates 29° 4'17.42"S 26° 8'36.41"E) (**Fig. 7 & 8**). However, one isolated feature, which resembles a rubble dump, but what could also be the remnants of an informal grave, has been recorded (**Fig 7, bottom photograph**).

Impact Statement & Recommendation

Given the depth of the Quaternary overburden and relatively low topography terrain, impact on palaeontological remains within sedimentary bedrock is generally considered low and the development can proceed provided that the following recommendations are followed:

- Any excavations required for laying of foundations or installation of underground fuel tanks, that *exceeds 1 m into bedrock*, will impact *in situ* sedimentary strata which could be palaeontologically sensitive.
- In this case, freshly exposed sedimentary rock will require appropriate monitoring for fossil remains by a professional palaeontologist.

The potential for archaeological impact within the proposed development area is considered to be very low. Provided that the following recommendation is adhered to, the affected area is assigned a site rating of Low Significance (Generally Protected C, **Table 1**):

- One isolated feature, which resembles a rubble dump, but what could also be the remnants of an informal grave, should be avoided at this stage by a 5m no-go buffer zone pending further investigation and confirmation by a professional archaeologist (**Fig 7, bottom photograph**).

References

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DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.



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Tables & Figures

Table 1. Field rating categories as prescribed by SAHRA.

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction



Figure 1. Aerial view of the development footprint.

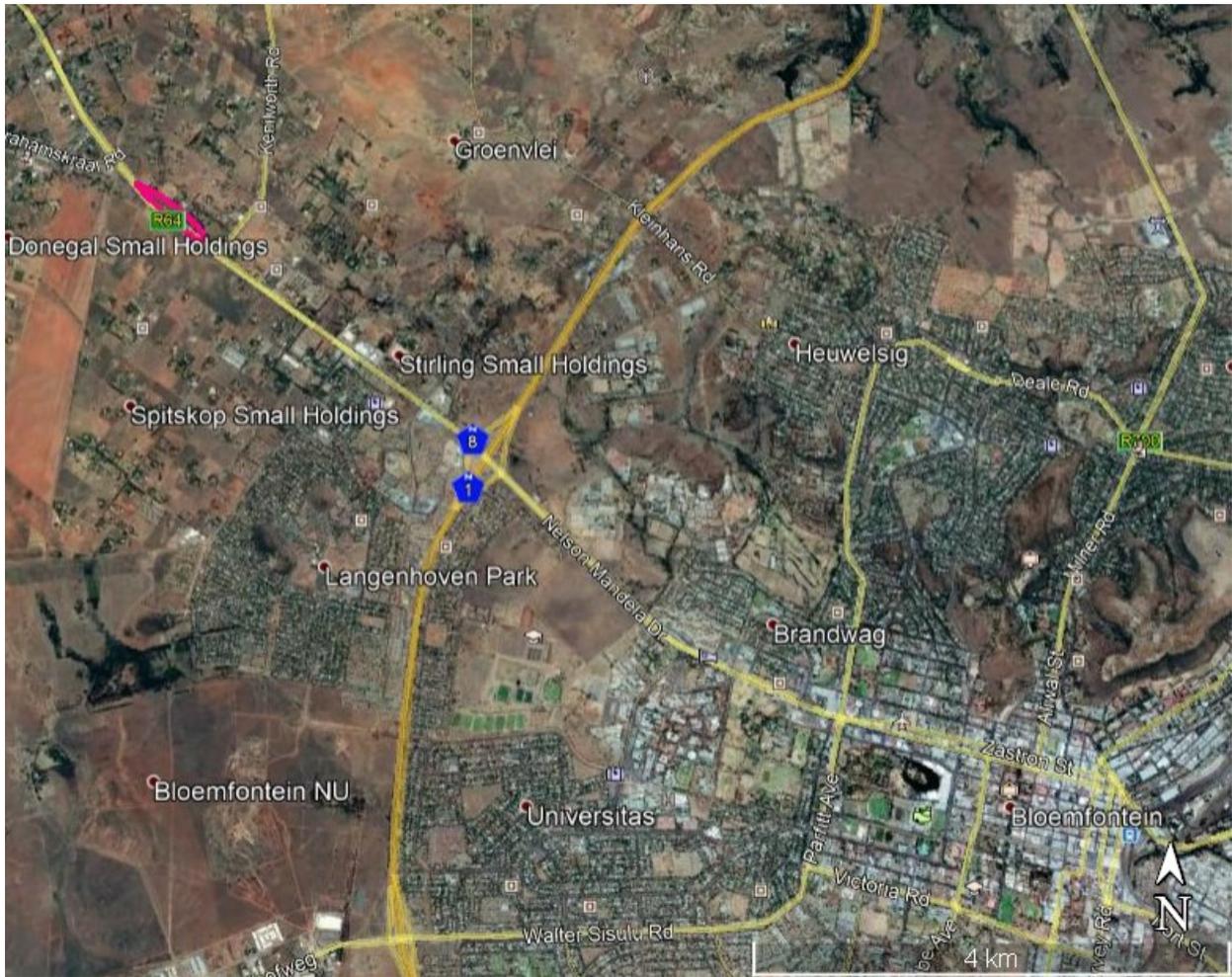


Figure 2. Position of the site (white polygon) in relation to Bloemfontein CBD.



Figure 3. General view of the site, looking southwest.



Figure 4. General view of the site, looking west (above) and east (below).



Figure 5. According to the 1:250 000 scale geological 2926 Bloemfontein, the site (white star) is underlain by fluviially derived sedimentary and fossil-bearing rocks of the Permian Adelaide Subgroup (Karoo Supergroup, light green areas), with Jurassic volcanic and igneous intrusions in the form of dolerite sills and dykes dominating the local landscape (red areas).



Figure 6. The underlying geology is capped by well-developed superficial deposits that are largely made up of Quaternary wind-blown sands and residual soils.



Figure 7. Evidence of dumping of refuse and building rubble.



Figure 8. The remains of a rubbish dump that also includes plastic and modern glass fragments.