

# Phase 1 Heritage Impact Assessment of a Portion 21 of the Farm Mooivlakte 1047, Bloemfontein, Free State Province.

Report prepared by Paleo Field Services, PO Box 38806 Langenhovenpark, 9330.

14 June 2019

## Introduction

The application relates to the existing Calgro M3 Memorial Park, covering a total of 5.2 ha on the farm Mooivlakte 1047 at the Mooivlakte Small Holdings near Bloemfontein in the Free State Province (**Fig. 1-4**). The site is situated on flat terrain, about 6.8 km northwest of the Abrahamskraal Road turnoff on the R64 provincial road bound for Dealesville (**Fig. 2**). The heritage significance of the affected area was evaluated through a desktop study and carried out 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. Relevant information, aerial photographs and site records were consulted and integrated with data acquired during the on-site inspection.

The task also involved identification and assessment of possible heritage within the proposed project area, taking into account the following terms of reference:

- Identify and map possible heritage sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential heritage resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

The study area is rated according to field rating categories as prescribed by SAHRA as well as according to a probability of impact methodology for assessing the Duration (time scale), Extent (spatial scale) and the Probability of occurrence of potential impacts (**Table 1**).

## Site Information

The site is situated on flat terrain, about 6.8 km northwest of the Abrahamskraal Road turnoff on the R64 provincial road bound for Dealesville

Map Reference: 1:50 000 scale topographic 2926 AB Bloemfontein

1:250 000 scale geological 2926 Bloemfontein

Site Coordinates: 29° 1'3.71"S 26° 5'51.07"E

## **Background**

The palaeontological footprint in the region is primarily represented by Late Permian Karoo vertebrate fauna preserved within bedrock sedimentary strata and late Quaternary mammalian fossils preserved within superficial alluvial deposits (e.g. river gravels and overbank sediments). However, according to the 1: 250 000 scale geological map 2924 Bloemfontein, the site is located within an outcrop area of Ecca Group shales (**Fig. 5**).

The Stone Age archaeological record of the Bloemfontein region spans back to the Middle Stone Age. Prehistoric archaeological remains previously recorded in the region include numerous occurrences of *in situ* Middle and Later Stone Age artifacts eroding out of the overbank sediments associated with the nearby Modder River and its tributaries where they are often found in association large mammal fossil remains (Broom 1909; Churchill *et al.* 2000; Rossouw 1999, 2000, 2006). The study area is located outside the south-western periphery of distribution of Late Iron Age stone-walled settlements in the Free State (Maggs 1976). 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 was owned by Andrew Hudson Bain who settled in the Free State in 1847 (Collins 1965). The British march on Bloemfontein from the west, passed the Abrahamskraal area in March 1900.

## **Field Assessment**

Inspection of the site indicated that the underlying geology is capped by well-developed superficial deposits that are largely made up of Quaternary wind-blown sands that were at some stage utilized as agricultural land. No Permian sedimentary outcrop was observed during the survey. Historical maps of the area dating to circa 1951 record no dwellings within the footprint (**Fig. 6**). A survey of the terrain indicates that the affected terrain has been extensively disturbed by prior development (memorial park) activities, which have left no aboveground traces of intact archaeological remains, informal graves or historical structures.

## **Impact Statement & Recommendations**

Consisting of old agricultural land, the proposed development is primarily impacting already severely degraded top soils. Given the depth of the overburden, which is not considered to be palaeontologically sensitive, impact on potentially intact palaeontological heritage (Ecca Group sediments) is considered highly unlikely. Potential archaeological impact at the site is considered to be non-existent. As far as the archaeological heritage is concerned, the proposed development is considered to be of low archaeological significance and is assigned a site rating of Generally Protected C (**Table 1**).

## **Protocol for Chance Fossil Finds**

There is little chance of finding fossil material within intact superficial (geologically recent) overburden, mainly because of a lack of suitable alluvium in the area. If, in the event that localized fossil material is discovered exposed or eroding out of intact underlying sedimentary strata the development phase, a professional palaeontologist must be called in

immediately to confirm and record the finds. In the meantime, *ex situ* remains must be wrapped in paper towels or heavy duty tin foil and stored in a safe place. The material should not be washed or cleaned in any way. In situ material must be kept in place and protected from further damage by covering it with light but rigid object like a box, bucket or metal sheet until further confirmation by the palaeontologist.

## 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.



14 / 06 / 2019

### Specialist Info

Lloyd Rossouw matriculated at Robertson High School in the Western Cape and obtained his Honours in Archaeology at the University of Stellenbosch where he gained wide-ranging fieldwork experience by participating in Historical and Stone Age archaeological excavations (Stellenbosch & Franschhoek built environment, farmsteads, Klasies River Mouth) as well as rock art surveys (Cederberg Mountains). He received training in mammalian osteology and Quaternary palaeontology at the Bernard Price Institute of Palaeontology (Wits), as well as instruction in human anatomy at Duke University in Durham, North Carolina, USA, and participated in multiple field surveys and excavations in the south-western Cape (Cango Valley, Hoedjiespunt, Zwartklip, Basaansklip, Langebaanweg), the central interior (northern Karoo, central Makgadikgadi, Orange, Vaal, Modder, Vet and Sand River basins), Laetoli, Tanzania, as well as at the Florisian and Cornelian Land Mammal Type sites at Florisbad and Cornelia-Uitzoek in the Free State. He gained his PhD-degree at the University of the Free State, specializing in plant microfossil research and palaeoenvironmental reconstruction of Stone Age environments in Southern Africa. He is a member of the Association for Southern African Professional Archaeologists (ASAPA) and the Palaeontological Society of Southern Africa (PSSA).

## Tables and Figures

**Table 1.** Field rating categories as prescribed by SAHRA.

<b>Field Rating</b>	<b>Grade</b>	<b>Significance</b>	<b>Mitigation</b>
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

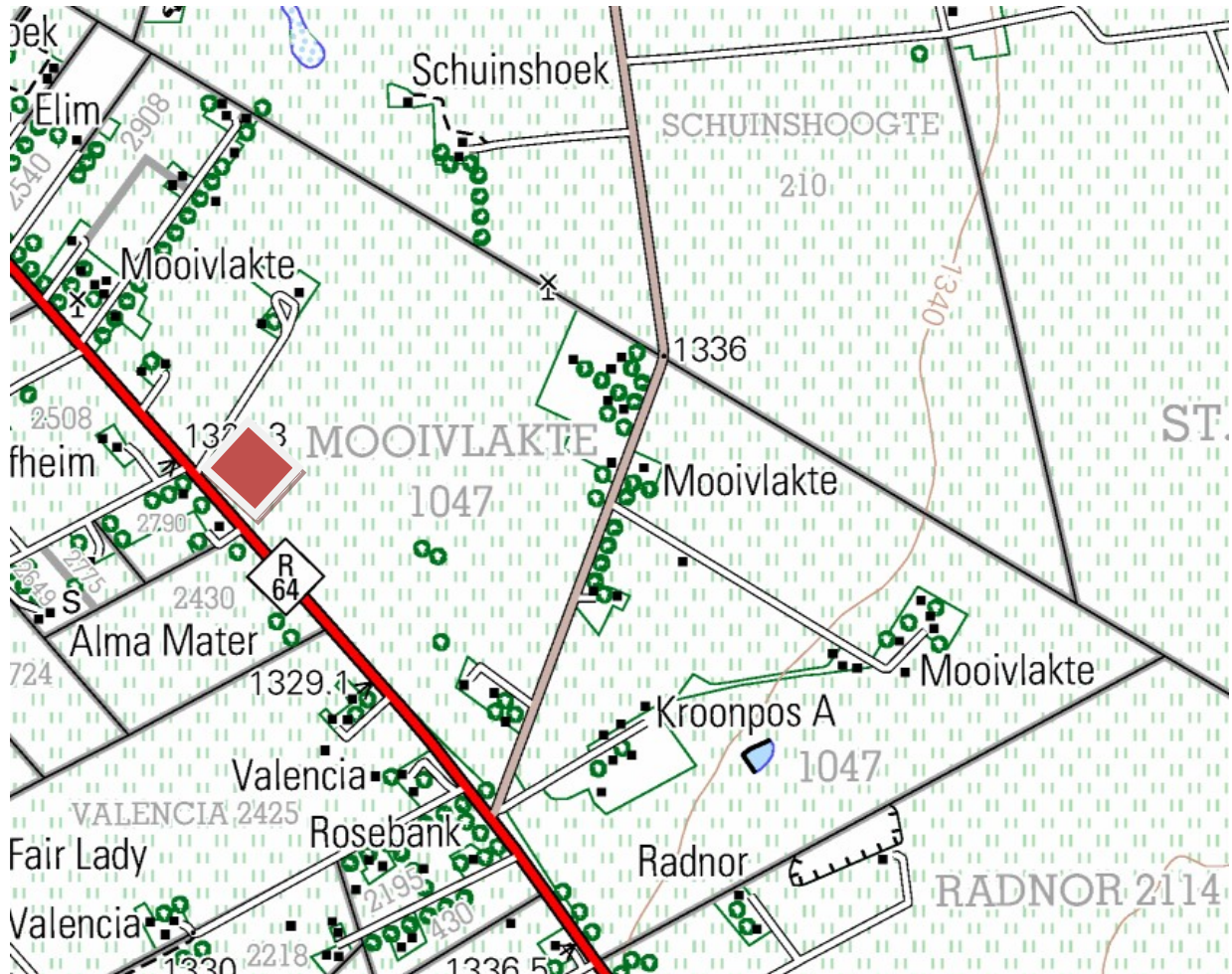


Figure 1. Map of the proposed development footprint (red square, portion of 1:50 000 scale topographic 2926 AA Bloemfontein).



Figure 2. Aerial view of the proposed development footprint.

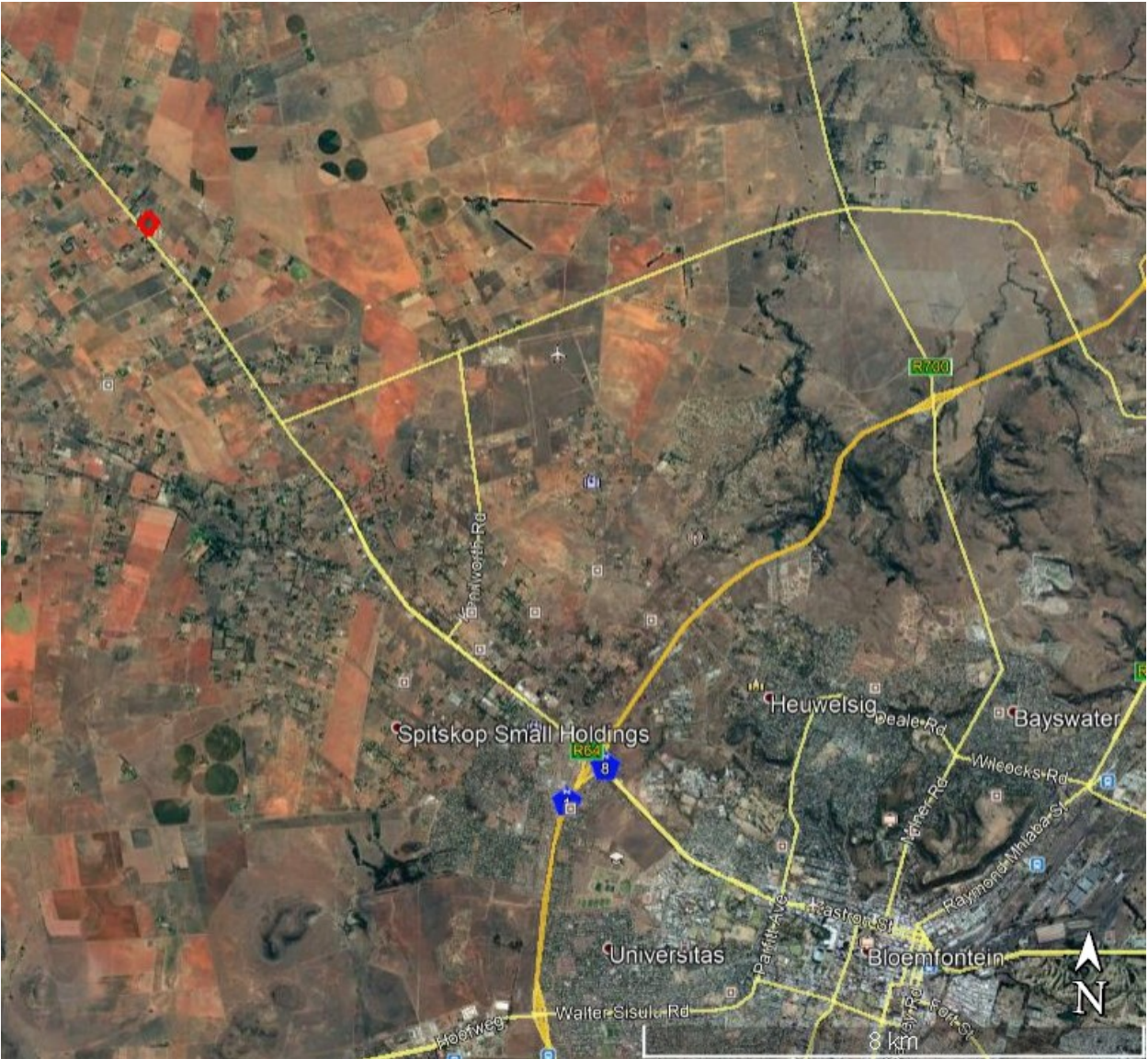


Figure 3. Location of site (red square) in relation to Bloemfontein.





Figure 4. General view of the memorial park facility

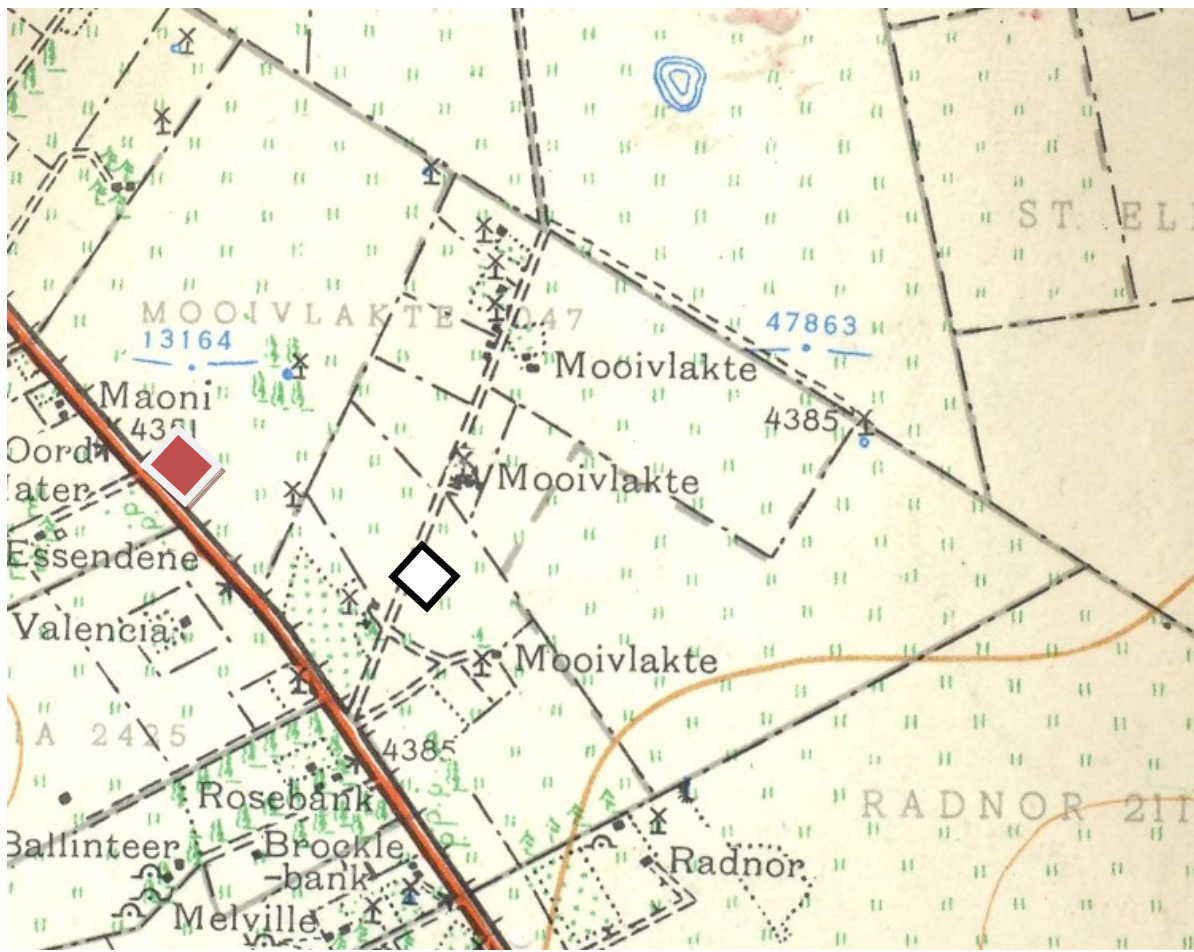


Figure 5. Historical map circa 1951 with development footprint (red square, portion of 1:50 000 scale topographic 2926 AA Bloemfontein)