



Bronkhorstspuit Filling Station: Portion 28 (a portion of Portion 15) of the
Farm Roodepoort 504 JR, Gauteng

Notification of Intent to Develop and Request for Exemption
for

The Biodiversity Company

Project file number: THE 44137

December 2020

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11 December 2020

Revision history:

Version	Action	Reviewer	Date
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Signed on 11 December 2020 in Pretoria.



Johan Nel

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1 INTRODUCTION

Fuwela Consulting (Pty) Ltd (Fuwela) appointed The Biodiversity Company (TBC) to complete certain environmental studies as part of the Environmental Impact Assessment (EIA) in terms of the EIA Regulations, 2014, for the proposed establishment of the Bronkhorstspuit Filling Station and associated structures.

TBC in turn appointed the Heritage Foundation to complete a Heritage Resources Management (HRM) process in terms of Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).

Details for Fuwela and TBC are provided in Table 1.

Table 1 Summary of environmental consultant and developer details

Environmental consultant	
Company name	Fuwela Consulting (Pty) Ltd
Contact person	Martin Fuwela
Address	Highveld Steel Evzra Office Park
Contact number	082 696 4671 / 063 332 1483
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Website	www.fuwelaconsulting.co.za
Environmental consultant	
Company name	The Biodiversity Company
Contact person	Andrew Husted
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This document constitutes a Notification of Intent to Develop (NID) and Request for Exemption (RfE) from all further heritage studies, based on evidence collected during a site-screening visit and high-level literature review.

2 PROJECT BACKGROUND

The proposed development comprises a filling station situated west of the R25 Bronkhorstspuit-Groblersdal road (see Figure 1). The approximate total extent of the complex is around 5 000 m² / 0.5 ha.

The construction of the complex will include –

- installation of underground storage tanks, a pipe network and fuel pumps;
- a convenience store;
- parking bays; and
- an administration building and offices.

3 PROPERTY DETAILS

The proposed study area is situated along the R25, 3 km north of Bronkhorstspuit towards Groblersdal, on Portion 28 (a portion of portion 15) of the farm Roodepoort 504 JR (see Figure 1 and Figure 2).

More property details are presented in Table 2 and the current landscape is depicted in Figure 3 to Figure 5.

Table 2 Summary of property details

Farm	Portion 28 (a portion of Portion 15) of Roodepoort 504 JR
Nearest town	Bronkhorstspuit
Local municipality	Ekangala
District municipality	City of Tshwane Metropolitan
Province	Gauteng
Relative centre coordinates of development area	26° 30' 46.37" S 28° 22' 50.61" E
Approximate property size	30 ha
Approximate maximum development extent	20 ha



Figure 1: Development context and outline of proposed study area



Figure 2: Detail of proposed development footprint



Figure 3: Project area facing south towards existing residence



Figure 4: General view of project area landscape



Figure 5: Existing dirt road through project area

4 GEOLOGY AND FOSSIL SENSITIVITY

According to the SAHRIS PalaeoSensitivity Map,¹ (see Figure 6) the proposed project area is located within a moderately sensitive palaeontological zone. The underlying geology in the area includes rocks from the Elandsvlei Formation of the Dwyka Group of the Karoo Supergroup and the Wilge River Formation of the Waterberg Group (Figure 7). The project area is specifically underlain by the Wilge River Formation.

The Wilge River Formation is the only stratigraphic unit of the Waterberg Group in the Middelburg Basin and correlates with the Swaershoek Formation of the main Waterberg Basin.² Along the northern, eastern, and southeastern margins, the Loskop Formation uncomfortably overlies the Wilge River Formation. Coarse-grained, red-bed sandstones dominate the Wilge River Formation, with conglomerate interbeds more common in the west. Thin mudrocks are more common in the upper part of upward-fining sandstone successions in the eastern part.³ Most sandstones in the Wilge River Formation are textually and compositionally immature. The Waterberg Group in general is estimated to be between 2060 and 1700 Ma.⁴

The chronostratigraphy of this formation places it in the Orosirian Period, the third geological period of the Palaeoproterozoic Era of the Proterozoic Eon, 2050-1900 Ma.⁵ Problematic fossil eukaryotes may occur within the associated palaeosols.⁶

The Waterberg Group (without any reference to the Wilge River Formation) is of low significance, although this formation in general potentially contains terrestrial cyanobacterial mats from playa lake deposits to occur⁷.

¹ SAHRIS 2020a

² Barker et al 2006: 315

³ Barker et al 2006: 315

⁴ Barker et al 2006: 316

⁵ Council for Geoscience 2019

⁶ Ratallack et al 2013

⁷ SAHRIS 2020b



The Dwyka Group is part of the Karoo Supergroup. Along the northern basin margin, it rests on glaciated Precambrian bedrock and uncomfortably overlies the Natal Group and the Msikaba Formation in the east.⁸ The Dwyka Group includes a variety of lithofacies types considered to have been deposited in a marine basin. Two distinct facies are recognised, the northern Mbizane Formation and southern Elandsvlei Formation.⁹

The chronostratigraphy of this group places it in the Late Carboniferous to Early Permian Period in the Palaeozoic Era of the Phanerozoic Eon, 299-252 Ma.¹⁰ The Dwyka Group is of low palaeontological significance, although it potentially contains trace fossils, organic-walled microfossils, and rare marine invertebrates such as molluscs, fish, and vascular plants.¹¹

⁸ Johnson et al 2006: 462

⁹ Johnson et al 2006: 464

¹⁰ Council for Geoscience 2019

¹¹ SAHRIS 2020c

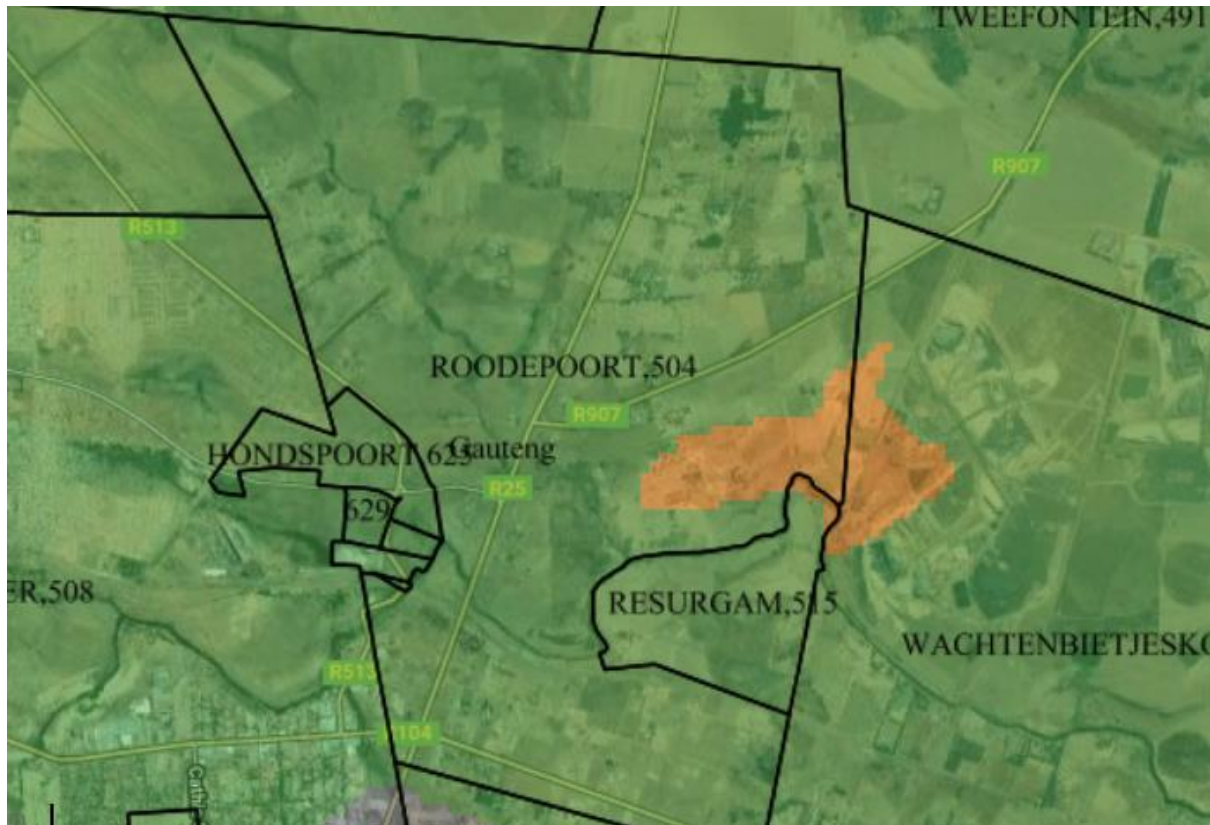


Figure 6: Palaeo-sensitivity map indicating farm Roodepoort 504 (© SAHRIS 2020)

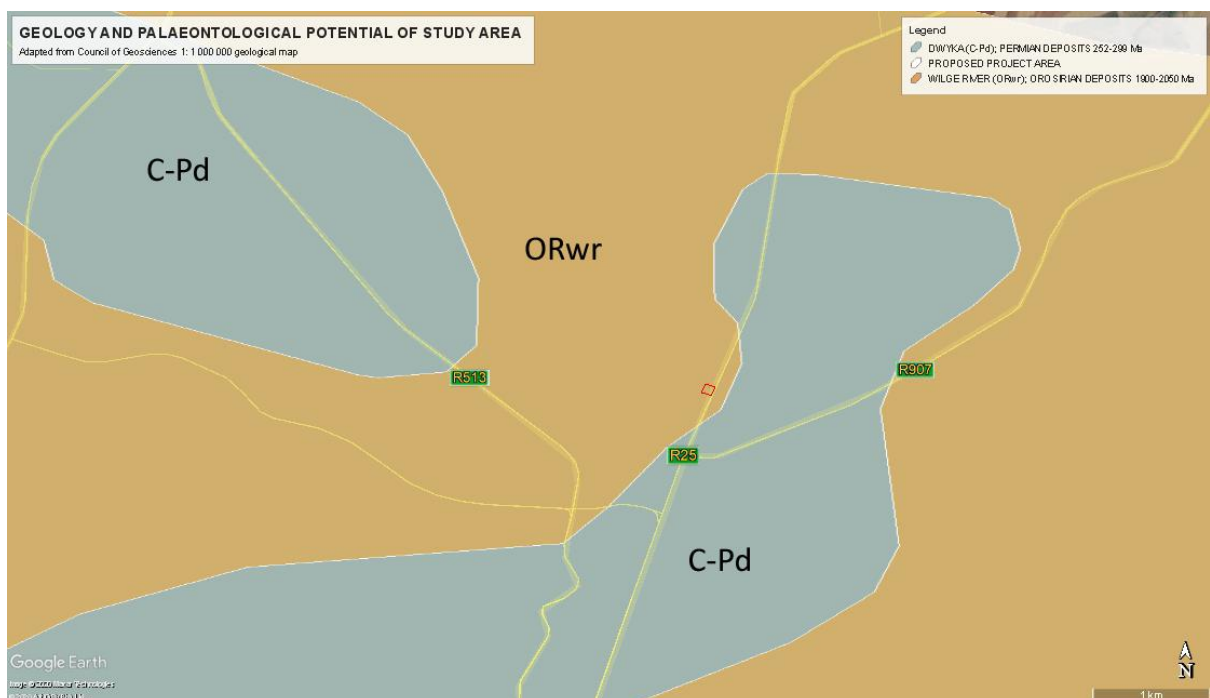


Figure 7: Detailed geology of proposed project area adapted from 1: 1 000 000 geological map



5 CONCLUSION AND RECOMMENDATION

The proposed development of the solar facility will not affect any existing, tangible heritage resources. It is unlikely that fossil heritage will be impacted in a low sensitive area. There remains an inevitable risk that subsurface heritage resources may be exposed during construction. The potential that significant subsurface heritage resources are present is, however, very unlikely.

A Basic Assessment process is required to obtain necessary Environmental Authorisation for the proposed filling station. This process in requires a heritage resources management (HRM) process in terms of section 38(8) of the NHRA.

TBC requested the Heritage Foundation to undertake the HRM process, limited to this NID and RfE. The document was prepared following a brief desktop literature review focussing on the underlying geology and associated fossil sensitivity. Site screening was undertaken by TBC who recorded the current state of the environment through photographs.

Based on the relatively small scale of the proposed development, the low significance of the geology in terms of fossil sensitivity and the absence of visible, recorded surface heritage resources, it is recommended that exemption be granted from all further heritage studies for this development.

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