

**DOORHOEK FLUORSPAR MINE ON VARIOUS PORTIONS OF FARMS  
DOORHOEK 305 JP, FARM 306 JP, KNOFLOOKFONTEIN 310 JP,  
STRYDFONTEIN 326 JP, RHENOSTERFONTEIN 304 JP, KWAGGAFONTEIN 297  
OR PAARDEPLAATS 296 JP, SAAMGEVOEG 320 JP AND WITRAND 325 JP,  
ZEERUST DISTRICT**



an agency of the  
Department of Arts and Culture

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CaseID: 9910

Date: Wednesday January 11, 2017  
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## Interim Comment

**In terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999)**

Attention: SA Fluorite (Pty) Limited

The proposed mining operations constitute an opencast fluorspar mine on various portions of farms Doornhoek 305 JP, Farm 306 JP, Knoflookfontein 310 JP, Strydfontein 326 JP, Rhenosterfontein 304 JP, Kwaggafontein 297 JP, Paardeplaats 296 JP, Saamgevoeg 320 JP and Witrand 325 JP, North West Province. The project falls under the jurisdiction of the Ditsobotla and Ramotshere Moiloa Local Municipalities located within the Ngaka Modiri Molema District Municipality (Refer to Figure 2 and Figure 3). The project area is located between Zeerust, Mahikeng and Lichtenburg and borders the eastern section of Mahikeng Local Municipality. The project site is located approximately 220 km west of Johannesburg and 18 km south of the town of Zeerust. The proposed site is adjacent to the Witkop open pit fluorspar mine. The following coordinates serve as the centre point of the site: Latitude: 25°44'11.85"S; Longitude: 26°10'29.75"E The project has the potential to contain a large fluorspar resource which could sustain a mining operation well into the future. The deposit hosts both surface and underground resources sufficient to justify an initial life of mine of 30 years. At full production the resource is proposed to be mined at 1.5 million tonnes per annum as follows (Figure 5): - Resource Area A: Opencast mining up to a depth of approximately 60 m from year 5 to 10. - Resource Area C: Opencast mining up to a depth of approximately 90 m from year 20 to 30. - Resource Area D: Opencast mining up to a depth of approximately 90 m from year 10 to 20 with the possible mining of the areas to the side of the resource taking place from year 20 to 30. Construction of the mining infrastructure and access road(s) will take place during year 1 to 5. The planned infrastructure for the mining operations is as follows: • Overburden stockpiles; • Minerals processing plant and associated infrastructure; • Tailings storage facility; • Haul roads and access road; • Mine offices; • Water supply pipelines; • Electrical reticulation and sub-stations; and • Water Treatment Plant.

Exigo Sustainability (Pty) Ltd was appointed by SA Fluorite (Pty) Limited and Southern Palace 398 (Pty) Limited to conduct an Environmental Impact Assessment (EIA) process for the proposed construction and operation of Doornhoek Fluorspar Mine and Associated Infrastructure, near Zeerust, North West Province. A draft Scoping Report was completed in support of the Environmental Authorisation Application in terms of the National Environmental Management Act, 1998 (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations, for activities that trigger the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (as amended). The proposed mine will consist of three open pits totaling 175 ha with the potential to extend



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the pit size in later mining years, a 7 ha processing plant and associated infrastructure including mine offices and workshops; two overburden stockpiles with combined footprint of 27.58 ha; ore stockpile of 0.103 ha; potable water pipeline of 15 km in length; water treatment plant of 400 m<sup>2</sup>; sewage treatment plant of 1190 m<sup>2</sup>; oil, diesel, fuel and explosives storage facilities of 30 m<sup>3</sup>; construction of water services dams; access roads and internal roads of 18 km in length; electricity distribution infrastructure; telecommunications tower; and a tailings storage facility of 150 ha.

Exigo's in-house archaeologist conducted an Archaeological Impact Assessment (AIA) and Dr JF Durand conducted a Palaeontological Impact Assessment (PIA).

*Kruger, N. 2016. Archaeological Impact Assessment (AIA) of demarcated areas on the Farms Rhenosterfontein 304JP And Farm 306JP for the Proposed Doornhoek Fluorspar Mine Project, Ngaka Modiri Molema District Municipality, North West Province.*

A total of three Iron Age sites were identified close and/or within the proposed development area. Sites IA02 and IA03 are located in close proximity to the proposed development area and consist of small stone-walled sites containing evidence of smelting activities. They may date to the late 18<sup>th</sup> early 19<sup>th</sup> century and can be regarded as part of the Kaditswene National Heritage Site Cultural Landscape. The sites have been rated as sites of medium significance.

Site IA01 is located within the proposed development area and consists of a large Iron Age stone-walled site that may date to the late 18<sup>th</sup> early 19<sup>th</sup> century and can be regarded as part of the Kaditswene Cultural Landscape; however no material culture was identified. The site has been rated as a site of medium significance.

Unidentified large stone structures, cairns, trenches and quarries were noted at FT01, FT02, FT03 and FT04; however they are likely to be remnants of recent artisanal mining activities and do not represent heritage resources.

Recommendations provided in the report include the following:

- A 100 m buffer must be implemented and maintained around sites IA02 and IA03. Should the sites be impacted on by the development in any way, it should be adequately documented and sampled by means of a Phase 2 Specialist study (mapping, site sampling and possible conservation management and protection) and the necessary permits should be obtained from the relevant Heritage Resources Authority;



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- A careful watching brief monitoring process must be implemented whereby an informed Environmental Control Officer (ECO) inspects construction sites on a regular basis in order to monitor possible impact on existing and previously undetected heritage resources;
- Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO or by the heritage specialist is recommended for all stages of the project. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately;
- Should any previously undetected heritage resources be exposed or uncovered during construction phases of the proposed project, these should immediately be reported to SAHRA;
- Should human remains be discovered at any stage, these should be reported to the Heritage Specialist and relevant authorities (SAHRA) and development activities should be suspended until the site has been inspected by the Specialist. The Specialist will advise on further management actions and possible relocation of human remains in accordance with the Human Tissue Act (Act 65 of 1983 as amended), the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), the National Heritage Resources Act (Act no. 25 of 1999) and any local and regional provisions, laws and by-laws pertaining to human remains. A full social consultation process should occur in conjunction with the mitigation of cemeteries and burials.

*Durand, J.F. 2016. Proposed Fluorspar Mine at Doornhoek near Zeerust, North West: Dekstop Study Report Palaeontology.*

The development footprint is underlain by sedimentary rocks of the Pretoria and Chuniespoort Groups of the Transvaal Supergroup. These rocks are covered in places by a layer of Quaternary age sand. The Chuniespoort group is known to contain stromatolites and very few fossils have been identified within the surrounding areas. The overall palaeontological sensitivity of the study area is considered to be low.

Recommendations provided in the report include the following:

- It is recommended that a palaeontologist should be appointed to do a site visit before the commencement of construction or mining to verify that no fossiliferous cave deposits or stromatolitic domes or columns will be damaged during development; and
- In the unlikely event of fossils turning up during the construction process, the ECO should take the responsibility of marking the site and take a GPS reading of the locality. No attempt must be made to excavate fossils before they have been assessed by a palaeontologist. Photographs of the fossil site and fossils or sub-fossils should be taken. The advice of a qualified archaeozoologist or



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palaeontologist should be called in and if necessary a rescue collection could be undertaken by the palaeontologist (after obtaining a SAHRA permit) to remove the fossils from the building site. The fossils should then be taken to a fossil repository such as the Ditsong Museum in Pretoria for safekeeping.

### Interim Comment

The Environmental Impact Assessment and all appendices must be submitted to the SAHRIS Case file so that an informed comment can be issued.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

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Natasha Higgitt  
Heritage Officer  
South African Heritage Resources Agency

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John Gribble  
Manager: Maritime and Underwater Cultural Heritage Unit / Acting Manager: Archaeology, Palaeontology and Meteorites Unit  
South African Heritage Resources Agency

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**ADMIN:**

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