

**Eskom Bulge-Dorset 132kV line**

**DEA Ref 12/12/20/2094**

**Eskom Bulge-Dorset line**

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### **Introduction**

The National Heritage Resources Act 25 of 1999 requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance are protected. Fossil heritage of national and international significance is found within all provinces of the RSA. Heritage resources may not be excavated, damaged, destroyed or otherwise impacted by any development without prior assessment and without a permit from the relevant heritage resources authority.

The main aim of the assessment process is to document resources in the development area and identify both the negative and positive impacts that the development brings to the receiving environment. The PIA will make recommendations for protection or mitigation of these resources.

This report prescribes to the Heritage Impact Assessment of Section 38 of the National Heritage Resources Act 25 of 1999.

For this study resources such as geological maps, scientific literature, fossil collections, satellite images, aerial maps and topographical maps were used. It provides an assessment of the observed or inferred palaeontological heritage within the study area, with recommendations (if any) for further specialist palaeontological input where this is considered necessary.

This report will not repeat information found in the DEA 12/12/20/2094 document.

### **Details**

Type of assessment: Desktop Palaeontological Impact Assessment commissioned by Texture Environmental Consultants.

Description of rocks / lithostratigraphy: The affected area is situated in the Limpopo Province, close to the small towns of Vaalwater, Matlabas and Elместon. Lephalale (Ellisras) is further to the north. This is the Waterberg Biosphere Reserve. Two major streams were identified, the Mokolo River and the Poer se Loop. The proposed line is in an east-west direction between the R517 and crossing the R33.

It covers an area present in the Waterberg Group consisting of red brown to yellow-white sandstone, coarse conglomerates, tuffs, mudrocks, lava and grit. No fossils have been found in the Waterberg Group which overly the older Bushveld Igneous Complex. The palaeontological sensitivity is generally ZERO to LOW.

Area affected: The construction of a 65 km, 132kV power line from the Bulge Rivier substation to the new Dorset substation. An area of approximately 65km and construction road of 8m wide, with pylons 220-350m apart and planted at a depth between 2 – 3m deep. It covers the area south of Lephalale, north of Vaalwater and north of the Waterberg mountain range and the Marakele National Park. It is within the area south and east of the Mokolo Dam – and Nature Reserve.

Sensitivity and importance: Palaeontological sensitivity = ZERO to LOW.

### **Assumptions and limitations**

The accuracy and reliability of the report is limited by the following constraints:

1. Most development areas have never been surveyed by a palaeontologist.
2. Variable accuracy of geological maps and associated information.
3. Poor locality information on sheet explanations for geological maps.
4. Lack of published data.

### **Recommendation**

- a. There is no objection to the development of the radial feed to ring feed by the construction of a 65km 132kV power line from Bulge River substation to the new Dorset substation, construction road of 8m, and 31m wide servitude.
- b. Preferred choice: Alternative 4 as it has less overall impact as Alternatives 1 & 2 were designed to run through more 'disturbed' corridors and Alternative 3 has slight impact on entrances to properties and agricultural activities.
- c. The following should be conserved: if any palaeontological material is exposed during digging, excavating, drilling or blasting and SAHRA must be notified. All development activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.
- d. Condition in which development may proceed: It is further suggested that a Section 37(2) agreement of the Occupational, Health and Safety Act 85 of 1993 is signed with the relevant contractors to protect the environment and adjacent areas as well as for safety and security reasons.
- e. The promotion of tourism is the key to socio-economic development in this region such as the Marakele National Park, Welgevonden, Mokolo Dam, Kwalata and Lapalala Nature Reserves.

### **Qualifications**

Dr Fourie obtained a PhD from the Bernard Price Institute for Palaeontological Research, University of the Witwatersrand. She specialises in vertebrate morphology and function. For the past seven

years she carried out field work in the Eastern Cape. Dr Fourie has been employed at the Ditsong: National Museum of Natural History in Pretoria (formerly Transvaal Museum) for the past 17 years.

### **Declaration**

I, Heidi Fourie, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed development project for which I was appointed to do a desktop palaeontological study. There are no circumstances that compromise the objectivity of me performing such work.

HFourie

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Heidi Fourie

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### **Acknowledgements**

Mr L. Conradie (Ditsong: Museums of Africa) for technical discussions on loop-in-loop lines, transmission lines, chickadee lines, substations, switching stations, and pylon positions. To Texture Environmental Consultants (Ria Pretorius) for providing documentation and further information.

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