

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG



Palaeosciences Centre, East Campus, 1 Jan Smuts Avenue, Braamfontein, Johannesburg
Private Bag 3, WITS 2050, Johannesburg, SOUTH AFRICA Tel: 011 717 6682

Marion.bamford@wits.ac.za

02 December 2018

To whom it may concern

**RE: Vardocube (Pty) Mining Right – Comment from a professional palaeontologist
SAHRIS CaseID: 12995**

Background:

ABS Africa (Pty) Ltd has been appointed by Vardocube (Pty) Ltd to conduct an Environmental Authorisation (EA) Application and Mining Right Application for proposed mining activities on the Remaining Extent of Portion 1 of the Farm Vogelstruisbult 104, near Copperton, Northern Cape Province.

Comment from a professional palaeontologist:

In my capacity as a professional palaeontologist (CV attached) I have read the report by Dr Lloyd Rossouw entitled: "Palaeontological desktop study of the proposed redevelopment of the Prieska Copper Mine (PCM) at Copperton near Prieska, NC Province." Report prepared by Palaeo Field Services, PO Box 38806 Langenhovenpark 9330. 12 October 2017.

The **report remains valid** for the proposed mining right application and notes that the Permo-Carboniferous Mbizane Formation of the Dwyka Group within the mine footprint is potentially fossiliferous and that a palaeontologist should be called if fossils are found. In my opinion this point should be made stronger and that a **Fossil Chance Find Protocol** should be added to the EMPr. Also, photographs of examples of fossils that have been found in the Dwyka Group near Douglas should be added to assist the geologist, environmental officer or other responsible person. These two items are added to the end of this letter.

If you have any further questions please contact me.

Yours sincerely

A handwritten signature in blue ink that reads 'Marion Bamford'.

Prof Marion Bamford, PhD (Wits 1990)
Palaeobotanist
Director: ESI

Fossil Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the mining operations commence.

1. The following procedure is only required if fossils are seen on the surface and when drilling or excavations commence.
2. When drilling or excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, wood, bone, coal) should be put aside in a suitably protected place. This way the prospecting activities will not be interrupted.
3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones (for example see Figure 1, 2). This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary. Annual reports by the palaeontologist must be sent to SAHRA.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

Reference for photographs below:

Anderson, A.M., McLachlan, I.R., 1976. The plant record in the Dwyka and Ecca Series (Permian) of the south-western half of the great Karoo Basin, South Africa. *Palaeontologia africana* 19, 31-42.

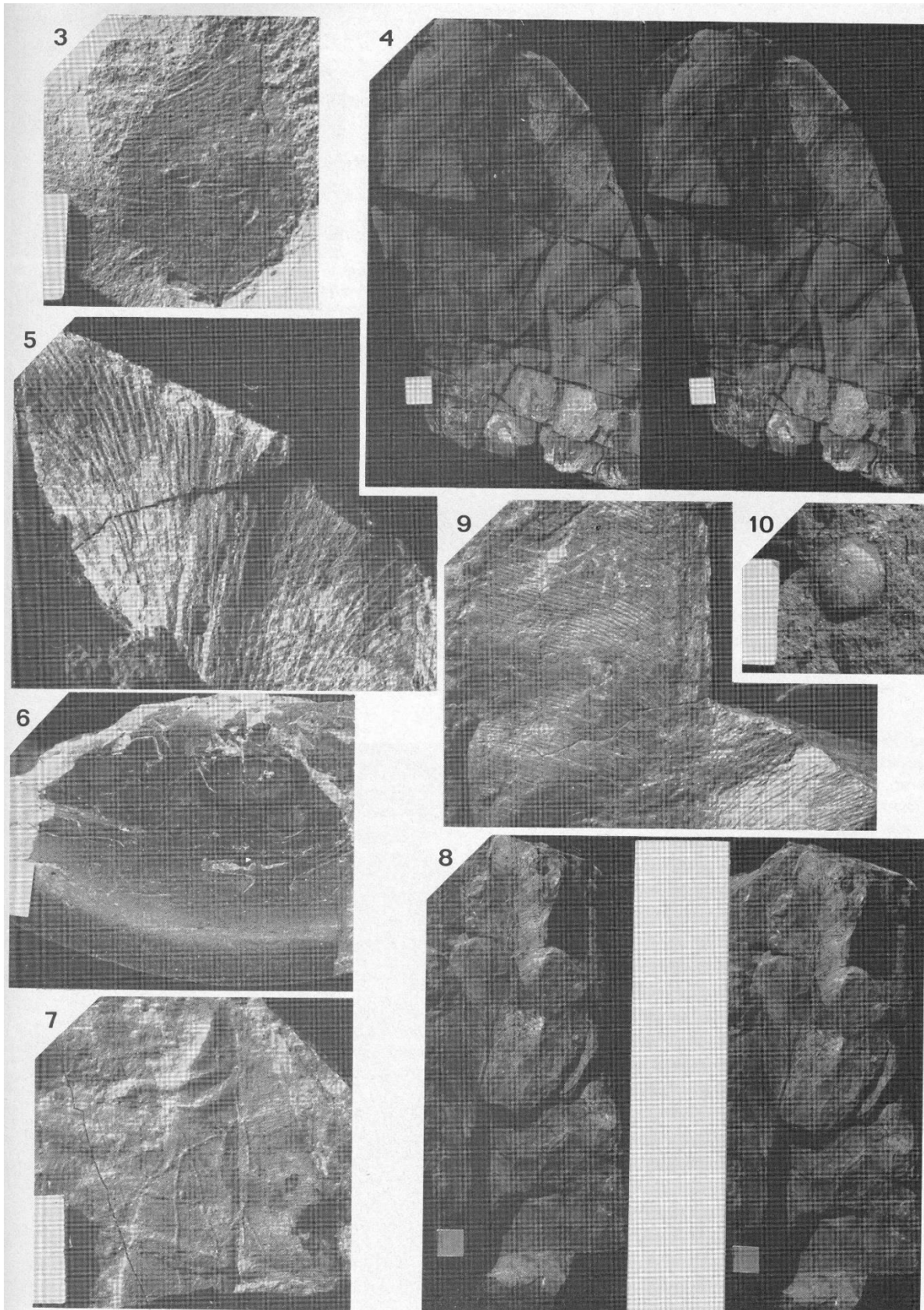


Figure 1: Fossil plants from the Dwyka Group near Douglas (From Anderson and McLachlan, 1976, (figures 3-10)).

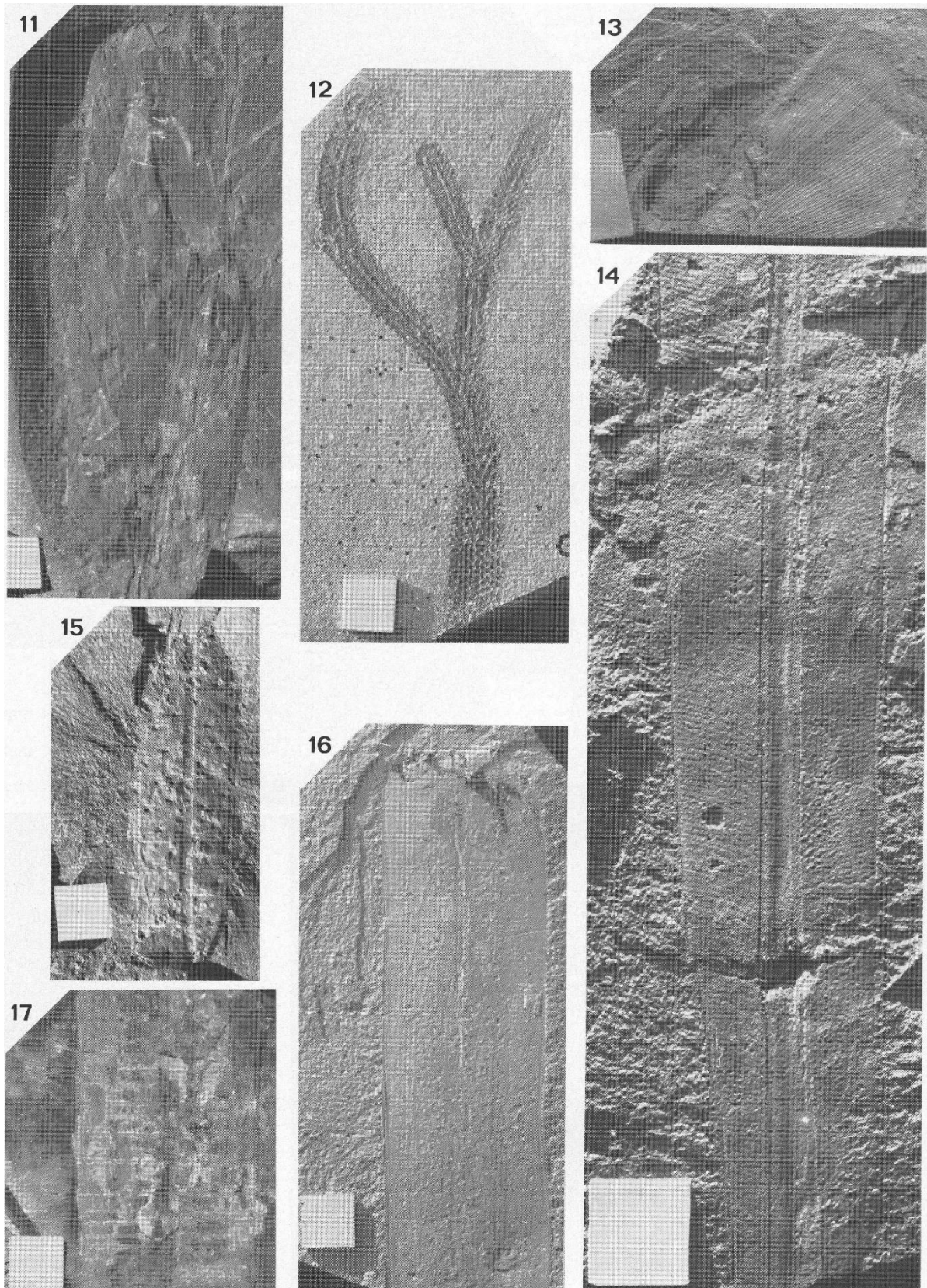


Figure 2: More examples of fossil plants from the Dwyka group near Douglas (from Anderson and McLachlan, 1976, figures 11-17).