

**NATURA VIVA cc**  
***Palaeontological Impact Assessments & Heritage Management,***  
***Natural History Education, Tourism, Research***

**Attn: Ms Marelie Griesel**  
**Environamics**  
**PO Box 6484**  
**Baillie Park 2526, RSA**

**Date: 27 June 2016**

**PALAEONTOLOGICAL HERITAGE COMMENT:**

**WATERLOO PV SOLAR POWER PLANT NEAR VRYBURG, NORTHWEST PROVINCE**  
**– EXPANSION OF FACILITY FOOTPRINT AND NEW POWER LINE ROUTE**

Dear Ms Griesel,

I have studied the revised, expanded development area for the authorized Waterloo PV Solar Power Plant on the farm Waterloo 922 near Vryburg as well as the proposed power line connection route to the existing Mookodi Substation (Fig. 1) from a point of view of potential impacts on palaeontological heritage resources.

The palaeontological sensitivity of the rock units concerned has already been assessed in previous desktop and field-based impact assessments by the author (Almond 2013a, 2013b). The power line route traverses the outcrop area of the potentially stromatolitic Boomplaas Formation (Vb in Fig. 2 below) as well as those of the comparatively insensitive Vryburg Formation (Vv) and Dwyka Group (C-Pd). The Solar Plant itself overlies the Boomplaas Formation that is known to contain important Precambrian stromatolites (fossil microbial mounds) in this area.

The proposed changes in the size of the development area as well as the construction of the proposed new transmission line do not materially affect the conclusions of my original report for the Waterloo Solar Power Plant project (Almond 2013a), viz:

*The overall impact of the proposed solar plant development on the southern portion of Waterloo 992 is provisionally rated as of NEGATIVE MEDIUM SIGNIFICANCE in palaeontological heritage terms. Recommended mitigation of the inevitable damage and destruction of fossil stromatolites within the proposed development area involves the surveying, recording, description and judicious sampling of well-preserved fossil occurrences within the development footprint by a professional palaeontologist. This work should take place after initial vegetation clearance has taken place but before the ground is leveled for construction. The palaeontologist concerned would need to apply beforehand for a fossil collection permit from SAHRA. These recommendations should be incorporated into the Environmental Management Plan for the Waterloo solar plant project.*

It should be emphasised that, *provided* that the recommended palaeontological heritage mitigation is followed through, the proposed solar park development will actually have a *positive* impact on our

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understanding of local palaeontological heritage.

Yours sincerely,

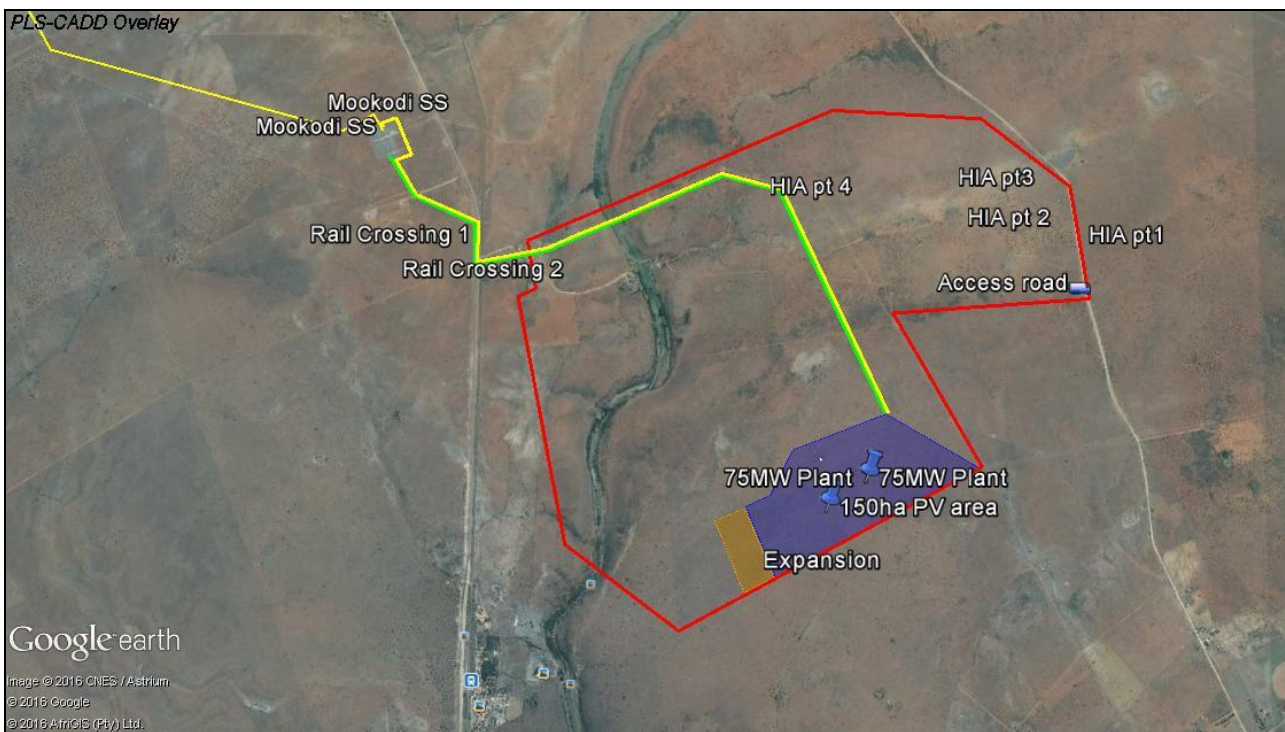


**Dr John E. Almond (Palaeontologist)**  
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Cape Town

## REFERENCES

ALMOND, J.E. 2013a. Proposed PV Solar Facility on a portion of the farm Waterloo 992 near Vryburg, Naledi Local Municipality, North-West Province. Palaeontological heritage assessment: combined desktop & field-based study, 29 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2013b. Proposed PV Solar Facility on a portion of the farm Rosendal 673 near Vryburg, Naledi Local Municipality, North-West Province. Palaeontological heritage assessment: desktop study, 15 pp. Natura Viva cc, Cape Town.



**Fig. 1. Google earth© satellite image of the region to the south of Vryburg, Northwest Province, showing the expanded development area for the authorised 75 MW Waterloo Solar Power Park (purple polygon) on Farm Waterloo 992 (red polygon). The yellow-green line shows the proposed power line connection to the existing Mookodi Substation on Rosendal 673.**

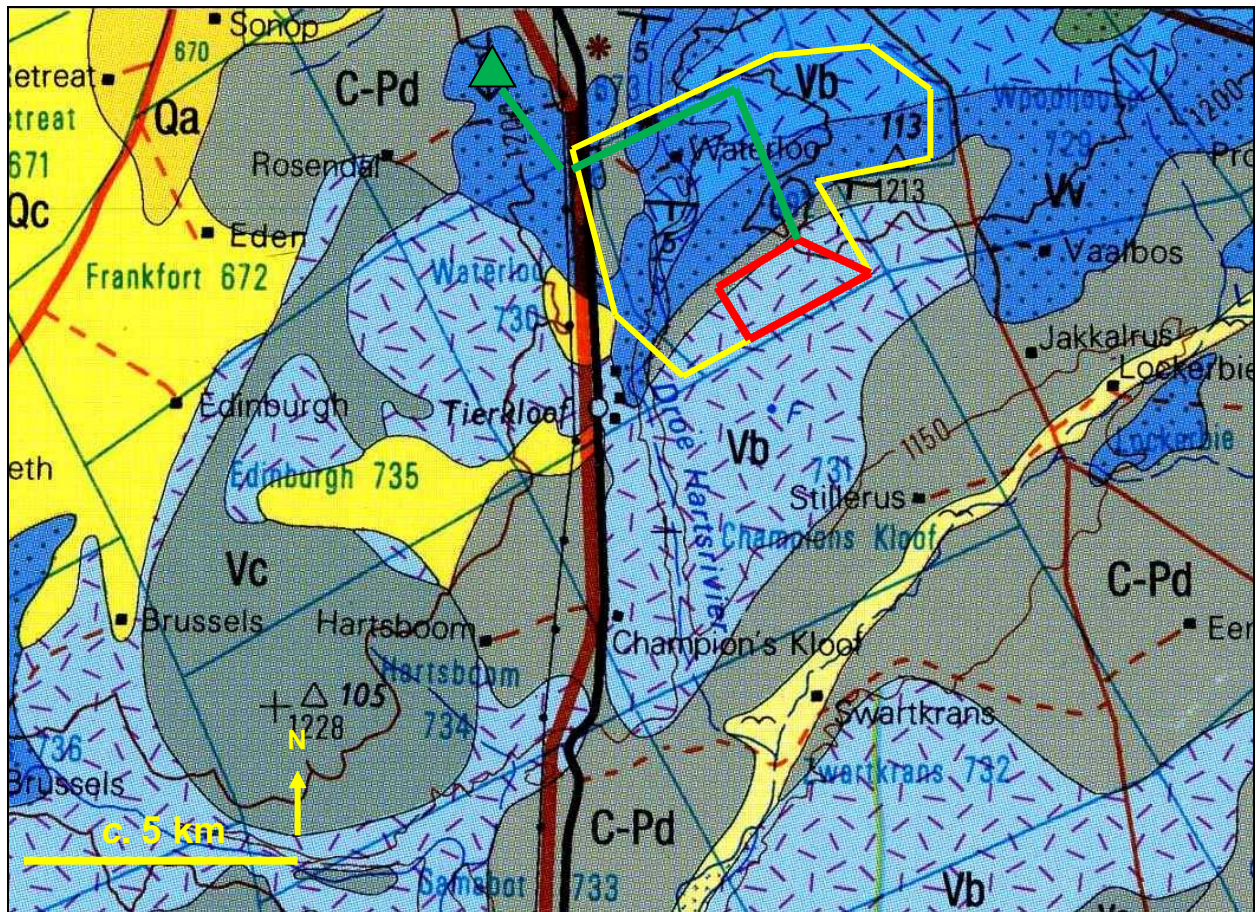


Fig. 2. Extract from the 1: 250 000 geological map 2724 Christiana (Council for Geoscience, Pretoria) showing the outline of the Waterloo Solar Power Park study area on the farm Waterloo 992, located some 10 km southeast of Vryburg (yellow polygon). The red polygon shows the expanded development area and the green line indicated the *approximate* power line route to Mookodi Substation (green triangle).

The main geological units represented the broader study region include:

#### GHAAP GROUP (SCHMIDTSDRIF SUBGROUP)

Vryburg Formation (Vv, dark blue with stipple) – late Archaean fluvial and shallow marine quartzites, mudrocks, conglomerates with two intervals of andesitic volcanics

Boomplaas Formation (Vb, pale & middle blue with dashes) – late Archaean dolomites (locally stromatolitic or oolitic) interbedded with siliciclastics (quartzite, shale, flagstone)

#### KAROO SUPERGROUP

Dwyka Group (C-Pd, middle grey) – Permocarboferous glacial sediments