

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

Attn: Dr Ragna Redelstorff
South African Heritage Resources Agency
111 Harrington Street
Cape Town 8001

Date: 11 April 2018

SAHRA Case ID: 10938

APPLICATION FOR A FOSSIL DESTRUCTION PERMIT:

**Precambrian stromatolites from the Boomplaas Formation (Ghaap Group)
within the development footprint of the Waterloo PV Facility on a Portion of the
Farm Waterloo 992 near Vryburg, Naledi Local Municipality, Northwest
Province**

Dear Dr Redelstorff,

Stromatolites (fossil microbial mounds) within 2.6 billion-year-old shallow marine sediments of the Boomplaas Formation (Ghaap Group, Transvaal Group) are known from several localities to the south of Vryburg, Northwest Province. These ancient Precambrian (Late Archaean) bio-sedimentary structures are among the oldest diverse stromatolite assemblages recorded from southern Africa but have not yet received detailed palaeontological attention.

A range of different types of partially-silicified stromatolites was recorded within and just outside the project area for the proposed Waterloo PV Facility on a Portion of the Farm Waterloo 992 (Palaeontological Impact Assessment by Almond 2013). Following authorisation of the solar PV development and the granting of Fossil Collection Permit by SAHRA (Case ID 10938, permit dated 4 May 2017), a Phase 2 palaeontological mitigation study was undertaken (Phase 2 report by Almond 2017a). This study involved (1) recording of stromatolites within or close to the development footprint as well as (2) judicious sampling of representative stromatolite material. The stromatolite samples collected (*c.* 30 blocks) are now curated in the palaeontological collections of the Council for Geoscience, Bellville.

The Phase 2 palaeontological report (Almond 2017a) concluded that:

Following the recent Phase 2 recording and collection of stromatolites on Farm Waterloo 992 covered by this report, it is considered that a representative, scientifically-useful sample of the various stromatolite types known to be present in the Boomplaas Formation in the Vryburg region would be conserved within the following areas once the solar facility is constructed: (a)

NATURA VIVA cc (Reg. No. 2000/019296/23)
Members: Dr J.E. Almond (British)(Managing), M.L. Tusenius
P.O. Box 12410 Mill Street, CAPE TOWN 8010, RSA
Tel / Fax: +27 (21) 462 3622 E-mail: naturaviva@universe.co.za

the area just outside and to the east of the main solar facility project area on Waterloo 992 (portion of area encircled in red in Fig. 39 of Almond 2017a that lies outside the PV development area) and (b) protected areas proposed on neighbouring farms Champions Kloof 731 and Hartsboom 734 (See Almond 2016a, 2016b, Groenewald 2016 and Fig. 2 in Almond 2017a).

Damage or destruction to additional known stromatolites exposed at surface within the PV development footprint was considered acceptable *with the proviso that all the palaeontological mitigation measures outlined in the specialist reports listed above as well by Almond (2017a) were followed through.* In the case of Farm Waterloo 992, these mitigation measures include:

- protection of that portion of the area encircled in red in Fig. 39 (Almond 2017a) that lies outside the defined solar facility project area by security tape or a fence during construction, and
- exclusion of the sensitive stromatolite-rich area from the route of the access road or selection of an alternative road option.

Proposed changes in the routing of the transmission line connecting the Waterloo PV Solar Power Plant to the existing Mookodi Substation do not materially affect the conclusions of the original palaeontological report for the Waterloo Solar Power Plant project (Almond 2013), as updated by the Phase 2 report for this project (Almond 2017a) (See Almond PIA Letter of 2017b).

As indicated by the developer, African Clean Energy Developments (Pty) Ltd, ACED (Contact details: Ms Stephnie Kot. ACED. PO Box 23101, Claremont, 7735. E-mail: stephnie.kot@aced.co.za. Tel: 021 670 1423. Cell: 083 318 3982):

There will be no wholesale clearing of the site. However it is inevitable that some stromatolites will be destroyed by the establishment of internal roads, PV Panel foundations, cable trenching etc. as well as by the general disturbance caused by construction machinery and personnel working on site (E-mail of 27 October 2017).

In my opinion, the final footprint for the approved Waterloo PV Power Plant on a Portion of the Farm Waterloo 992 - including the main PV site and expansion area, access road and overhead transmission line servitude, as illustrated in the reports of Almond (2017a, 2017b) - adequately addresses the relevant palaeontological heritage issues. Indeed, the highly professional way in which the developer has taken considerable pains to fully address these issues is considered worthy of praise.

I therefore recommend that a Fossil Destruction Permit for the approved Waterloo PV Power Plant be issued to the developer ACED by SAHRA, with the condition that the portion of the area encircled in red in Fig. 39 of Almond (2017a) that lies outside the defined solar facility project area be protected by security tape or a fence during construction.

John E. Almond

Dr John E. Almond
Palaeontologist
Natura Viva cc

NATURA VIVA cc (Reg. No. 2000/019296/23)
Members: Dr J.E. Almond (British)(Managing), M.L. Tusenius
P.O. Box 12410 Mill Street, CAPE TOWN 8010, RSA
Tel / Fax: +27 (21) 462 3622 E-mail: naturaviva@universe.co.za

REFERENCES

ALMOND, J.E. 2013. 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. 2016a. Proposed Gamma Solar Power Plant on the Remaining Extent of Portion 4 (Bos Kop), Farm Champions Kloof 731 near Vryburg, Naledi Local Municipality, North-West Province. Palaeontological heritage assessment: combined desktop & field-based study, 30 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2016b. Proposed Khubu Solar Power Plant on Portion 5 (Shadow Eve) (Portion of Portion 4), Farm Champions Kloof 731 near Vryburg, Naledi Local Municipality, North-West Province. Palaeontological heritage assessment: combined desktop & field-based study, 32 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2017a. Recording & surface sampling of Precambrian stromatolites from the Boomplaas Formation (Ghaap Group) on a Portion of the Farm Waterloo 992 near Vryburg, Naledi Local municipality, Northwest Province. Palaeontological heritage: phase 2 mitigation report, 42 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2017b. Waterloo PV solar power plant near Vryburg, Northwest Province –revised power line route. Palaeontological heritage comment: 4 pp. Natura Viva cc, Cape Town.

GROENEWALD, G. 2016. proposed construction of the Sendawo Solar Photovoltaic (PV) Energy Facility near Vryburg, Northwest Province. Palaeontological Assessment Report, 77 pp.