



SOUTH AFRICAN HERITAGE RESOURCES AGENCY
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FOR ATTENTION: **PHRA: Mr Andrew Timothy**

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SAHRA File No: **9/2/075/0001**
Date Received: **8 March 2012**.....
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SAHRA Contact Person: **Ms K. Smuts**
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REVIEW COMMENT ON ARCHAEOLOGICAL AND PALAEOLOGICAL IMPACT ASSESSMENTS

BY ARCHAEOLOGY, PALAEOLOGY AND METEORITES UNIT OF THE SOUTH AFRICAN HERITAGE RESOURCES AGENCY

South Africa has a unique and non-renewable archaeological and palaeontological heritage. Archaeological and palaeontological sites are protected in terms of the National Heritage Resources Act (Act No 25 of 1999) and may not be disturbed without a permit. Archaeological Impact Assessments (AIAs) and Palaeontological Impact Assessments (PIAs) identify and assess the significance of the sites, assess the potential impact of developments upon such sites, and make recommendations concerning mitigation and management of these sites. On the basis of satisfactory specialist reports SAHRA or the relevant heritage resources agency can assess whether or not it has objection to a development and indicate the conditions upon which such development might proceed and assess whether or not to issue permission to destroy such sites.

AIAs and PIAs often form part of the heritage component of an Environmental Impact Assessment or Environmental Management Plan. They may also form part of a Heritage Impact Assessment called for in terms of section 38 of the National Heritage Resources Act, Act No. 25, 1999. They may have other origins. In any event they should comply with basic minimum standards of reporting as indicated in SAHRA Regulations and Guidelines.

This form provides review comment from the Archaeologist of the relevant heritage resources authority for use by Heritage Managers, for example, when informing authorities that have applied to SAHRA for comment and for inclusion in documentation sent to environmental authorities. It may be used in conjunction with Form B, which provides relevant peer review comment.

- A. PROVINCIAL HERITAGE RESOURCES AUTHORITY: **Northern Cape**.....
- B. AUTHOR(S) OF REPORT: **Mr Jayson Orton**
- C. ARCHAEOLOGY CONTRACT GROUP: **Archaeology Contracts Office**
- D. CONTACT DETAILS: **Department of Archaeology, University of Cape Town,
Private Bag Rondebosch 7701**
- E. DATE OF REPORT: **January 2012**
- F. TITLE OF REPORT: **HERITAGE IMPACT ASSESSMENT FOR A PROPOSED
PHOTOVOLTAIC ENERGY PLANT ON THE FARM HOEKPLAAS NEAR
COPPERTON, NORTHERN CAPE**
- G. AUTHOR(S) OF REPORT: **Dr John Almond**
- H. ARCHAEOLOGY CONTRACT GROUP: **Natura Viva**
- I. CONTACT DETAILS: **PO Box 12410, Mil Street, Cape Town 8010**
- J. DATE OF REPORT: **February 2012**
- K. TITLE OF REPORT: **PALAEOLOGICAL SPECIALIST ASSESSMENT:
DESKTOP STUDY: PROPOSED PHOTOVOLTAIC ENERGY PLANT ON THE
FARM HOEKPLAAS (REMAINDER OF FARM 146) NEAR COPPERTON,
NORTHERN CAPE PROVINCE**

- L. Please circle as relevant: Archaeological component of **EIA** / EMP / HIA / CMP/
Other (Specify).....
- M. REPORT COMMISSIONED BY (**CONSULTANT** OR DEVELOPER): **Aurecon South
Africa (Pty) Ltd**
- N. CONTACT DETAILS: **P O Box 494, Cape Town, 8000; tel: 021 526 9400;
franci.gresse@aurecongroup.com / louise.corbett@aurecongroup.com**
- O. COMMENTS:

REVIEW COMMENT ON ARCHAEOLOGICAL AND PALAEOLOGICAL IMPACT ASSESSMENTS

Author Mr J. Orton

Dated: January 2012, Received: March 2012

HERITAGE IMPACT ASSESSMENT FOR A PROPOSED PHOTOVOLTAIC ENERGY PLANT ON THE FARM HOEKPLAAS NEAR COPPERTON, NORTHERN CAPE

REVIEW COMMENT ON PALAEOLOGICAL IMPACT ASSESSMENT

Author Dr J. Almond

Dated: February 2012, Received: March 2012

PALAEOLOGICAL SPECIALIST ASSESSMENT: DESKTOP STUDY: PROPOSED PHOTOVOLTAIC ENERGY PLANT ON THE FARM HOEKPLAAS (REMAINDER OF FARM 146) NEAR COPPERTON, NORTHERN CAPE PROVINCE

INTRODUCTION

Mulilo Renewable Energy (Pty) Ltd is planning to establish a 100 MW Photovoltaic (PV) energy facility on 300 ha of Farm Hoekplaas 146, 10km southeast of Copperton. The development would consist of panels of Photovoltaic cells, connected by overhead powerlines to the Kronos Substation along the southwest of the farm. Farm roads will be upgraded and new access roads built, along with offices, a connection centre and security facilities; the site will be fenced with electric fencing.

DISCUSSION

Two archaeologists, Mr Jayson Orton and Mr Ross Lyall, conducted a field survey of the wider property to provide information on possible alternative sites within the farm boundaries. Mr Orton notes that low density artefact scatters were found across the site, but as these have no original context, they are of little archaeological value. Within this material were several hand-axes and a single, large lower grindstone. Several discrete sites were also recorded, predominantly Later Stone Age, with a single, significant Middle Stone Age site located (HKP2011/002) that contained both buried stone artefacts and faunal remains, including an equid tooth. This site, which also included some Later Stone Age material was eroding out of the side of an old borrow pit. Most of these sites were associated with a large pan. No buildings or other structures were identified on the site and the only built environment consisted of a 20th Century cement dam with a windmill, water trough and a stand of gum trees, which the author considered of low significance. The archaeologist considers the visual impact of the development, and notes that the road is not well used and that the landscape setting has been compromised by the now abandoned Prieska Copper Mine, reducing the potential impact.

Dr Almond conducted a desk based study of the proposed development area, using satellite images and geological maps. Underlying Precambrian basement rocks protrude through the Kalahari sands around Copperton and, on Hoekplaas, are assigned to the Vogelstruisbult Formation of the Jacobsmyn Pan Group. These rocks are unfossiliferous, metamorphic gneisses and migmatites. Also below the superficial sediments are Permo-Carboniferous, Dwyka Group, glacial sediments, belonging to the Mbizane Formation. These heterolithic deposits are very thick and, in this area, forms the the upper part of the Dwyka succession. The Mbizane Formation, particularly within successions of interglacial mudrocks, is known to contain sparse, low density trace fossils such as arthropod trackways; sporadic vascular plant remains; palynomorphs; marine invertebrate fossils; primitive bony fish as well as fossilised wood. However, interglacial mudrocks are unlikely to be well represented at Hoekplaas and fossils are unlikely. Mantling these older deposits, are the superficial sediments of Pleistocene to Recent age, consisting largely of downwasting, while sandy to silty soils, ranging from very thin to up to 2m thick are also found. A laminated calcrete hardpan underlies these soil deposits across much of the study area. The calcretes and their overlying gravels are likely to be

Pleistocene Mokalanen and Obogorop Formations, respectively, both of the Kalahari Group. Further, unconsolidated Gordonina Formation sands are found to the south of the study area, with a variety of gravelly, alluvial sediments found in water courses. Fossils, such as bones, teeth and horn cores, as well as freshwater molluscs, ostrich egg shells and trace fossils, are known to occur in these superficial sediments and important fossil mammalian remains are known to occur at nearby Bundu Pan. Dr Almond notes that the fluvial and pan sediments of the study area are likely to contain mammalian tooth and bone fossils, such as that found by Mr Orton.

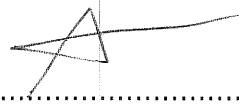
SAHRA RECOMMENDATIONS

SAHRA supports the recommendations of the author and requires that:

- Buffer zones should be placed around the pans. These buffers should extend 100m from the edge of the pans and should be fenced off before and during construction.
- The two Later Stone Age sites recorded in the study (HKP2011/004 and HKP2011/006), which fall outside of the 100m buffer zone around the pans, should be mitigated, if they fall within the chosen development area. These sites are only likely to be impacted by Alternative 1, while none are affected by Alternative 2. Should the planned access road running past the pan be constructed then site HKP2011/009 should also be mitigated through excavation as it lies immediately alongside the present road. The specialist will require a mitigation permit from the relevant Heritage Resources Authority. On receipt of a satisfactory mitigation (Phase 2) permit report from the archaeologist, the heritage authority will make further recommendations in terms of the site. Very often permission is given for the destruction of the remainder of the archaeological or palaeontological sites. Very rarely, if a site has high heritage significance the authority may request that it be conserved, that mini-site management plans, interpretive material and possibly protective infrastructure be established.
- From a heritage perspective Alternative 2 is the preferred option
- Should development involve disturbance of an archaeological or palaeontological site of some significance, Phase 2 mitigation will be required by SAHRA, in terms of s.35 of the National Heritage Resources Act, no. 25 of 1999. The specialist will require a mitigation permit from the relevant Heritage Resources Authority. On receipt of a satisfactory mitigation (Phase 2) permit report from the archaeologist, the heritage authority will make further recommendations in terms of the site. Very often permission is given for the destruction of the remainder of the archaeological or palaeontological sites. Very rarely, if a site has high heritage significance the authority may request that it be conserved, that mini-site management plans, interpretive material and possibly protective infrastructure be established.
- The Environmental Control Officer should be advised of the possible presence of important fossil finds and should monitor all substantial excavations into superficial sediments and unweathered sedimentary bedrock for fossil remains.

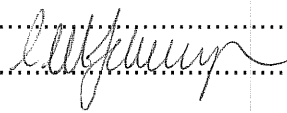
CONCLUSION

If the recommendations made in the specialist report and in this comment are adhered to, the SAHRA Archaeology, Palaeontology and Meteorites Unit has no objection to the development (in terms of the archaeological and palaeontological components of the heritage resources). If any new evidence of archaeological sites or artefacts, palaeontological fossils, graves or other heritage resources are found during development, construction or mining, SAHRA (Katie Smuts / Colette Scheermeyer, tel: 021 462 4502) and a professional archaeologist or palaeontologist, depending on the findings, must be alerted immediately.



SIGNATURE OF ARCHAEOLOGIST PROCESSING REPORT:

EMAIL: ksmuts@sahra.org.za.....

SIGNATURE OF SAHRA HEAD ARCHAEOLOGIST: 

EMAIL: cscheermeyer@sahra.org.za

NAME OF HERITAGE RESOURCES AGENCY: SAHRA.....

PLEASE NOTE THAT THE COMMENT (ABOVE OR APPENDED) CONSTITUTES THE COMMENT OF THE HERITAGE RESOURCES AGENCY ARCHAEOLOGIST AND THAT ANY DEVELOPMENT THAT INVOLVES DESTRUCTION OF ANY ARCHAEOLOGICAL/PALAEONTOLOGICAL SITE IS STILL SUBJECT TO A PERMIT/PERMISSION FOR DESTRUCTION OF SUCH SITE GIVEN TO THE DEVELOPER BY THE RELEVANT HERITAGE RESOURCES AGENCY ARCHAEOLOGICAL AND PALAEONTOLOGICAL PERMIT COMMITTEE (THIS WILL BE SUBJECT TO APPROVAL OF THE PHASE 2 OR ARCHAEOLOGICAL/ PALAEONTOLOGICAL MITIGATION AS NECESSARY). THIS REPORT MAY BE TAKEN ONLY AS APPROVAL IN TERMS OF SECTION 35 OF THE NATIONAL HERITAGE RESOURCES ACT. THE PROVINCIAL MANAGER OF THE HERITAGE RESOURCES AUTHORITY MUST ADVISE AS TO APPROVAL IN TERMS OF HERITAGE ISSUES ENCOMPASSED BY OTHER ASPECTS OF THE LEGISLATION, SUCH AS ISSUES OF THE BUILT ENVIRONMENT (STRUCTURES (E.G. FARM HOUSES), OVER 60 YEARS), INDIGENOUS KNOWLEDGE SYSTEMS OR OF CULTURAL LANDSCAPES AS THIS IS NOT WITHIN THE SCOPE OF THE ARCHAEOLOGIST.

PLEASE NOTE THAT SAHRA IS NOW RESPONSIBLE FOR GRADE I HERITAGE RESOURCES (AND EXPORT) AND THE PROVINCIAL HERITAGE RESOURCES ARE RESPONSIBLE FOR GRADE II AND GRADE III HERITAGE RESOURCES, EXCEPT WHERE THERE IS AN AGENCY ARRANGEMENT WITH THE PROVINCIAL HERITAGE RESOURCES AUTHORITY.