

**SCOPING ASSESSMENT: PROPOSED CONSTRUCTION OF RE CAPITAL
10 PV DEVELOPMENT ON REMAINING EXTENT OF THE FARM
KAPSTEWEL 436, POSTMASBURG, NORTHERN CAPE**

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act No 25 of 1999)

Prepared for:

RE Capital 10 (Pty) Ltd

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EXECUTIVE SUMMARY

ACO Associates cc was appointed by Perception Planning on behalf of the client, RE Capital 10 (Pty) Ltd, to undertake a Scoping assessment for the construction of a PV facility on the remaining extent of the farm Kapstewel 436, situated in the Tsantsabane Local Municipality, Northern Cape.

The client proposes to construct a 75 MW fixed-tilt, single-axis tracking or double-axis tracking PV on approximately 220 ha of the property. The total footprint will not exceed 240 ha. The PV facility will include a lay-down area, access roads and a 132 kV powerline which will connect to the existing Manganore substation.

This Scoping assessment provides a brief baseline description and attempts to predict the possible range of impacts and identify issues in terms of accumulated knowledge of the area. It sets out the methodology for a full heritage impact study.

A number of heritage impact assessments have been conducted in close vicinity to the study area during the last decade. None of these reports have identified sites of high significance. Surveys by David Morris of McGregor Museum and ACO Associates cc confirms that artefact densities tend to be low on the plains, but concentrations of MSA and LSA material may be found around pans, along the banks of perennial streams and on the slopes of small rocky outcrops. The construction of a solar facility on the farm Kapstewel will result in direct, physical disturbance of any archaeological material (and its context) on the property

It is not anticipated that there will be any impacts to the Built Environment. There do not appear to be any structures on the property. Historic structures and graveyards are sensitive to physical damage such as demolition as well as neglect. The presence of any historic structures and graveyards will need to be assessed through site inspection.

The aim of the EIA would be to identify and assess the significance of all heritage resources on the property, to determine the potential impacts on the resources, and where appropriate to recommend “no-go’ areas and to propose mitigation if avoidance is not possible.

Terms of Reference for the EIA:

- The proposed study area, including proposed routes of linear infrastructure (access roads, underground services, power lines) will need to be subject to a detailed survey by heritage practitioner/archaeologist who will need to walk transects over the site recording details and locations of any heritage material found;
- The significance of each find will need to be assessed along with the impacts of the proposed activity;
- In the case of impacts to significance heritage resources, the proposed mitigation measures may include the “No-Go” alternative, avoidance, archaeological excavations or monitoring during earthworks.

Based on the archaeology of the adjoining areas, the terrain on which the proposed RE Capital 10 Solar Development will be located is unlikely to be rich in heritage remains.

Indications are that in terms of archaeological heritage and built environment the proposed activity is viable and impacts are expected to be limited and controllable. In terms of the information available at this time, no fatal flaws are anticipated.

GLOSSARY

Archaeology: Remains resulting from human activity which is in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Early Stone Age: The archaeology of the Stone Age between 700 000 and 2500 000 years ago.

Fossil: Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage: That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Holocene: The most recent geological time period which commenced 10 000 years ago.

Late Stone Age: The archaeology of the last 20 000 years associated with fully modern people.

Middle Stone Age: The archaeology of the Stone Age between 20-300 000 years ago associated with early modern humans.

National Estate: The collective heritage assets of the Nation

Palaeontology: Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Pleistocene: A geological time period (of 3 million – 20 000 years ago).

SAHRA: South African Heritage Resources Agency – the compliance authority which protects national heritage in the Northern Cape.

Structure (historic:) Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

Acronyms

DEA	Department of Environmental Affairs
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

1. INTRODUCTION

ACO Associates cc was appointed by Perception Planning on behalf of the client, RE Capital 10 (Pty) Ltd, to undertake a Scoping assessment for the construction of a new solar facility on the remaining extent of the farm Kapstewel 436, situated in the Tsantsabane Local Municipality, Northern Cape (Figure 1). The PV facility will be situated on the R325 which links Postmasburg with Olifantshoek.



Figure 1: An aerial image of the proposed PV facility on the Farm Kapstewel, which is located on the R325 between Olifantshoek and Postmasburg in the Northern Cape.

2. DEVELOPMENT PROPOSALS

The client proposes to construct a 75 MW fixed-tilt, single-axis tracking or double-axis tracking PV on approximately 220 ha of the property (Figure 1). The total footprint will not exceed 240 ha and will include a 2-5 ha laydown area. Access roads are expected to vary between 6m – 8m. The length of the roads depends on the various layout assessed. The facility will connect directly to the Manganore substation via a 132 kV powerline. The Manganore substation will need to be upgraded. Various grid connections are being considered. The powerline poles will be steel monopole structures and the servitude width is expected to be 32 m. The lifetime of the facility is 2-25 years and the site will be rehabilitated at the end of the project.

3. HERITAGE LEGISLATION

This report is conducted in terms of Section 38 (8) of the National Heritage Resources Act, No 25 of 1999.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

3.1 Grading

The South African heritage resources management system is based on grading, which provides for assigning the appropriate level of management responsibility to a heritage resource.

Table 1: Grading of Heritage Resources

Grade	Level of significance	Description
I	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
II	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential Grade 2 heritage resources.
IIIa	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3a heritage resources.
IIIb	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3b heritage resources.
IIIc	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3c heritage resources.

4. METHODOLOGY

This study has been commissioned as a Scoping assessment. It provides a brief baseline description and attempts to predict the possible range of impacts and identify issues in terms of accumulated knowledge of the area. It sets out the methodology for a full heritage impact study.

This Scoping study includes a review of the published material as well as unpublished reports on the SAHRIS database. The 1:50 000 maps of the area as well as Google Earth aerial images were consulted. Numerous impact assessments have been conducted in proximity to the proposed facility as reflected on the SAHRIS database. This review of the CRM literature has identified the report by Morris (2005a) and Webley & Halkett (2010c) to be most useful in terms of providing background information at heritage resources in close proximity to the study area. The latter assessment, on the farm Driehoeks Pan 435 is in fact on the opposite side of the R325 from the farm Kapstewel 436.

5. RECEIVING ENVIRONMENT

The study area is located on the R325 between Postmasburg and Olifantshoek in the Tsantsabane Local Municipality.

Morris (2005b) describes the landscape as a combination of undulating plains, hills with occasional prominent rocky outcrops and non-perennial water courses. There is a substantial rocky outcrop on the farm Kapstewel.

5.1 Archaeological Background

Early and Middle Stone Age

Sites in the vicinity of high significance include Wonderwerk Cave to the east of the study area in the Kuruman Hills (Beaumont 1990a) and a number of important Early Stone Age sites, some with extremely high densities of Acheulian artefacts at the Kathu Townlands (Beaumont 1990b; Walker et al 2014). Beaumont has excavated numerous sites around the pan and he observed (Beaumont 1990) that a combination of geological conditions resulted in the preservation of a long record of human habitation in the Northern Cape.

During this survey on Sishen South properties (Morris 2002, 2005) Morris reported material of mainly Pleistocene age on the fringes of many small doline depressions on the farms Ploegfontein, Leeuwfontein and Klipbankfontein.

Similarly, excavations at Bundu Pan near Marydale in the Northern Cape (Kiberd 2006) have also revealed a sequence including Early, Middle and Later Stone Age assemblages as well as preserved faunal remains. This suggests that the margins of pans need to be investigated for early human habitation. During the Webley et al. (2010) survey, a mix of Middle and Later Stone Age artefact scatters on fine-grained raw material were found around the margins of pans.

Later Stone Age

There is archaeological evidence that specularite deposits in this part of the Northern Cape were mined during the Later Stone Age. Beaumont and Boshier (1974) excavated a prehistoric pigment (specularite) mine four (4) kilometers to the west of Bleskop at Jonas Vlakte on Doornfontein 446. The Doornfontein site represents a number of chambers which have been dug into a hillside. Archaeological excavations resulted in the discovery of large numbers of stone artefacts comprising mainly stone choppers and hammerstones which had been used to mine the specularite. In addition, the archaeologists discovered pottery, decorated ostrich eggshell pieces, beads and bone implements as well as faunal (bone) remains which provide information on the diet of the pre-colonial miners (Beaumont & Boshier 1974). Radiocarbon dates place the mining activities to 1200 years ago or 800 AD. Fragmentary human remains from the Blinkklipkop mine which is 5km to the north-east of Postmasburg suggest that the early miners were of Khoisan physical type rather than representing Iron Age settlement.

During his survey Morris (2005a) found a Later Stone Age shelter site on Wolhaarkop. Small specularite workings were pointed out on Wolhaarkop (but not on a portion of that farm included in this survey). Beaumont and Boshier (1974) also refer to some engraving sites nearby at Paling which is located on Driehoekspan 435 as well as on Beeshoek to the west of Postmasburg. These roughly pecked engravings occur on shale outcrops.

According to Humphreys and Thackeray, Iron Age farmers only settled in the Northern Cape after A.D. 1600. The main area of Iron Age settlement and the only area, in which there is direct archaeological evidence for such settlement in the form of stone walling, are to the north-east of Kuruman. By the time the first European travellers arrived in this area they met only Iron Age Tswana-speaking people such as the Tlhaping. The Tswana settlement of Dithakong was located

to the north-east of Kuruman in an area with many large springs. During the Webley et al. (2010) survey, a site on the farm Gaston (to the west of Macarthy) was discovered with pottery and stone tools. The remains could relate to the Koranna, a Khoekhoen group who were active along the Orange River in the 18th century, or conversely the Iron Age Tswana – although they are believed to have settled more to the north-east.

5.2 Historical Background

Morris (1990) points out that numerous early travellers, such as Lichtenstein, Campbell, Burchell, Backhouse and others visited and described the site of Blinkklipkop to the north of Postmasburg. However, European missionaries and farmers only began to settle in the Northern Cape during the 19th century. Their numbers were relatively small until the use of borehole water for farming.

The area known as Griqualand West was first 'roughly' surveyed by F. Orpen and W. Stow in 1872. During the Webley et al. (2010) survey of 20 farms to the west of Macarthy it was discovered that they were all surveyed and beaconed between the years 1904 – 1911. This is very late when compared to the rest of the country. Many of the farmsteads contained buildings of calcrete blocks and a high percentage also had family graveyards in close proximity to the farmhouse.

6. ANTICIPATED IMPACTS

Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified and their significance assessed prior to development.

Nature of Impacts

The main cause of impacts to archaeological sites is direct, physical disturbance of the material itself and its context. The heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from the area in which they were found. Large scale excavations will damage archaeological sites, construction of roads and laydown areas, injudicious use of off-road vehicles can contribute to high levels of impact. The impacts are likely to be most severe during the construction period although indirect impacts may occur during the operational phase of the project.

It is not anticipated that there will be any impacts to the Built Environment. Historic structures and graveyards are sensitive to physical damage such as demolition as well as neglect. They are also context sensitive, in that changes to the surrounding landscape will affect their significance. The presence of any historic structures and graveyards will need to be assessed through site inspection.

Extent of Impacts

In the case of the proposed solar facility, it is expected that impacts will be extensive. The clearance and levelling of the ground surface to install the PV units will result in the destruction of all surface material. Similarly, the clearing of access roads could impact material that lies buried in the surface sand.

Potential impacts caused by a 132 kV power line and the power line access roads are likely to be limited and local, however these will need to be physically searched and assessed during the EIA phase and the routes adjusted where necessary. Morris (2013) points out that the access road required for a 132 kV powerline is likely to be a 'two-track' which generally only requires limited physical disturbance of the ground surface.

6.1 Impacts on Pre-Colonial Archaeology

Archaeological surveys on the adjoining properties (Morris 2005) suggest that with the exception of small pan depression, the archaeological visibility on the landscape was virtually zero in many areas. However, “almost without exception, the small pan depressions contained stone artefacts, and certain features on the hill slopes attracted occupation/activity in the Stone Age” (Morris 2005). This observation was supported by Webley & Halkett (2010a, b, c & d). Webley and Halkett (2010c) assessed the farm Driehoekspan, on the opposite side of the road from Kapstewel, and reported a single ESA artifact, some LSA flakes and a small roughly packed stone enclosure. Morris (2005b) reported that farms in the vicinity contained a very low density of artefacts on the plains, but higher concentrations were found in the vicinity of rocky outcrops which may have provided some protection from the elements. Morris (2005b:9) did however, ask for surface collections to be made at two localities ‘in order to characterise the material observed in higher density occurrences and to salvage a representative sample of these as part of the South African National Estate”.

In the Webley & Halkett (2010) surveys, special attention was paid to the possibility of specularite mining, but none were observed. This was borne out by Morris (2005). No rock engravings have been reported from this area.

Based on the surveys conducted on adjoining properties, the following impacts may occur:

- It is expected that ephemeral scatters of Middle Stone Age and Later Stone Age material may occur around pans and on the slopes of small koppies;
- There may be evidence for the pre-colonial mining of specularite;
- Buried pre-colonial graves may occur.

6.2 Impacts on Colonial Period Heritage

The farms between Olifantshoek and Postmasburg generally date to the late 19th century and there are very few buildings or structures which have high heritage value.

In his survey of a number of farms between Postmasburg and Kathu, Morris (2005b) reported at least four cemeteries, three being on a single farm. Beaumont (2007b) observed some graves on the outskirts of the Olifantshoek township.

While there is a possibility that colonial period heritage may occur, the likelihood of this occurring is low.

Based on the surveys conducted on adjoining properties, the following impacts may occur:

- 20th century buildings and structures associated with farming and mining;
- Unmarked graves.

6.3 Living Heritage

Living or intangible heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) is given also protection under the National Heritage Resources Act, No 25 of 1999.

Close association with the land, such as that experienced by farm owners and farm workers, may result in certain features on the landscape enjoying particular social or ritual significance. This information is difficult to obtain unless there is a possibility of conducting oral interviews with the

inhabitants of the property. However, it is not thought likely that any significant intangible heritage values would be attached to the particular terrain in question.

7. PROPOSED METHODOLOGY FOR THE HIA STUDY

The EIA phase study needs to fulfill the requirements of heritage impact assessment as defined in section 38 of the NHRA. This means that the assessment has to cover the full range of potential cultural heritage resources as defined in the National Heritage Resources Act 25 of 1999.

The aim of the EIA would be to identify and assess the significance of all heritage resources on the property, to determine the potential impacts on the resources, and where appropriate to recommend “no-go” areas and to propose mitigation if avoidance is not possible.

- The proposed study area, including proposed routes of linear infrastructure (access roads, underground services, power lines) will need to be subject to a detailed survey by heritage practitioner/archaeologist who will need to walk a pattern of transects over the site recording details and locations of any heritage material found;
- The significance of each find will need to be assessed along with the impacts of the proposed activity;
- In the case of impacts to significance heritage resources, the proposed mitigation measures may include the “No-Go” alternative, avoidance, archaeological excavations or monitoring during earthworks.

Based on the archaeology of the adjoining areas, the terrain on which the proposed RE Capital 10 Solar Development will be located is unlikely to be rich in heritage remains.

7.1 Assumptions and Constraints

It is assumed that, given the sparse vegetation of the study area, the presence of archaeological resources should be readily apparent from a surface survey and that test pit excavations will not be necessary to establish the potential of sub-surface archaeology.

If however, archaeological features or sites (such as burials, ostrich eggshell water flasks, high stone artefact concentrations) are uncovered during construction, then work will have to cease in that area and SAHRA must be notified.

These provisions should be included in the EMP.

8. CONCLUSION

Indications are that in terms of archaeological heritage and built environment the proposed activity is viable, impacts are expected to be limited and controllable. In terms of the information available at this time, no fatal flaws are anticipated.

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