

**HERITAGE SCOPING ASSESSMENT: PROPOSED HARTEBEEST WIND ENERGY  
FACILITY, MOORREESBERG, WESTERN CAPE PROVINCE**

(Assessment conducted under Section 38 (8) of the  
National Heritage Resources Act as part of an EIA.)

*Draft 1 Prepared for:*

Savannah Environmental (Pty) Ltd  
August 2016



Prepared by:

Tim Hart  
ACO Associates  
8 Jacobs Ladder  
St James  
7945  
admin@aco-associates.com  
www.aco-associates.com

## EXECUTIVE SUMMARY

ACO Associates cc were appointed by Savannah Environmental (Pty) Ltd on behalf of the client, Hartebeest Wind Farm (Pty) Ltd, to undertake a Heritage Scoping level report for the establishment of the Hartebeest Wind Energy Facility (WEF) as well as associated infrastructure on a site located east of the N7 at Moorreesburg, Swartland Municipality, Western Cape.

The proposed property consists of portions of the farms Zwartfontein, Bessiesfontein, Tontelberg and Hartebeesfontein.

This desktop assessment has identified the following potential heritage indicators:

**Palaeontology:** No paleontological issues expected.

**Archaeology:** The proposed study area is within the highly transformed landscape of the Swartland. Archaeological impacts are expected to be low.

**Built Environment:** There are at least 4 groups of farm buildings on or close to the land parcel. These may be greater than 60 years of age but none have been previously identified as heritage sites of greater than local significance. It is possible that farm cemeteries and/or graves may occur on the property.

**Cultural Landscape:** The proposed facility will be visible from Moorreesburg and the N7. The impacts that could result are of an aesthetic nature. It is expected that these will be tolerable within the vast manicured landscape of wheat lands. The impact is likely to be acceptable and of medium to low significance

### **Proposed work for the EIA phase:**

- A field survey to determine the location of above-ground pre-colonial archaeological remains and to make recommendations for mitigation;
- An assessment of any farm buildings and farm graves to determine their historical significance and the impact of the proposed facility on the built environment; and
- Integration of the visual impact assessment in terms of the heritage qualities and values of the area.

**Declaration:**

Mr Tim Hart is an independent specialist consultant who is in no way connected with the proponent, other than delivery of consulting services.

Tim Hart (MA) has been involved in heritage impact assessment and applied research for 29 years. Tim Hart is accredited with Principal Investigator status with the Professional Association of Archaeologists.

## **GLOSSARY**

**Archaeology:** *Remains resulting from human activity which are 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.*

**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.*

**Wreck (protected):** *A ship or an aeroplane or any part thereof that lies on land or in the sea within South Africa is protected if it is more than 60 years old.*

## **Acronyms**

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

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## 1. INTRODUCTION

ACO Associates cc have been appointed by Savannah Environmental (Pty) Ltd on behalf of the client (Hartebeest Wind Farm (Pty) Ltd), to establish a commercial wind energy facility as well as associated infrastructure on a site located immediately to the east of the N7 at Moorreesberg in the Western Cape (Figure 1).



**Figure 1:** The locality of the proposed wind farm on a number of farms situated to the East of the Town of Moorreesberg.

The proposed wind farm will be located on the following properties indicated in Table 1 (referred to as 'the site') in the Malmesbury Division within the Swartland Local Municipality, Western Cape:

Table 1. Land portions making up the site.

<b>Farm</b>	<b>Farm Number</b>	<b>Portion</b>	<b>Extent (Ha)</b>	<b>Landowner</b>	<b>Drafting notes</b>
Klipheuwel (Hartebeestfontein) (servitude)	412	6	303,0881	Klipheuwel Trust IT 1821/2011	
Hartebeestfontein	412	2	303.9461	Engcar Plase (Pty)Ltd Reg No: 68/14405	
Tontelberg	424	1	264.4282	Pool Familie Trust IT 1793/2000	
Biesjesfontein	413	9	626.5630	Kleindrif Boerdery (Pty)Ltd Reg No: 73/13751	
Zwartfontein	416	1	325.5824	Pool Familie Trust IT 1793/2000	
Zwartfontein (servitude)	414	8	406.084	Wecar Trust IT 2920/2001	
Zwartfontein	414	Remainder of Portion 11 (Portion of Portion 1)	352.2524	Hanekomshoop Trust	
Zwartfontein (Klein Zwartfontein)	414	Remainder of Portion 12 (Portion of Portion 1)	24.0997	Hanekomshoop Trust	
Zwartfontein (annex Klein Zwartfontein)	414	Remainder of Portion 13 (Portion of Portion 1) of the farm ZWARTFONTEIN no 414	66.7481	Hanekomshoop Trust	Comment: in the deed (page 4) it is Portion 13 and not remainder of Portion 13
Zwartfontein	414	Remainder of Portion 18	24.9874	Hanekomshoop Trust	Comment: in the



		(Portion of Portion 1) of the farm ZWARTFONTEIN no 414			deed (page 5) the extent is 24.9873 ha
Zwartfontein	414	Portion 23 (Portion of Portion 11) of the farm ZWARTFONTEIN no 414	51.3922	Hanekomshoop Trust	
Zwartfontein	414	Remainder of Portion 17 (Hanekomshoop) (Portion of Portion 1) of the farm ZWARTFONTEIN no 414	360.4609	Hanekomshoop Trust	
Zwartfontein	416	Portion 7 (Portion of Portion 3) of the farm ZWARTFONTEIN no 416	35.3002	Hanekomshoop Trust	
Zwartfontein	416	Remainder of Portion 3 and portion 5 (Zwartfontein noord) of the farm ZWARTFONTEIN no 416	196.2630	Hanekomshoop Trust	
Zwartfontein	414	Portion 21 and 20	83.9628	Hanekomshoop trust	

All the land is currently zoned agricultural 1, and being situated in the Swartland, is mainly used for the cultivation of wheat along with some stock farming.

### **1.1 Development Proposal**

It is envisaged that the total generation output of the wind farm will be approximately 160MW. The size, location and number of turbines will be informed by incoming wind data and through specialist input in the EIA process, however the following are envisaged:

- Up to 40 turbines with a rotor diameter of up to 136m
- Hub Height: up to 120m
- Turbine Capacity: up to 4MW
- Project size: up to 160MW

The power will be evacuated from the site by means of a 132kV power line to the Eskom grid.

- The proposed activity will require the construction of laydown areas - cleared, compacted areas for a heavy lift crane next to each turbine foundation for turbine assembly, maintenance and decommissioning.
- The excavation of a large foundation trench (typically 25x25x5m) for the concrete footing of each turbine.
- Temporary laydown areas for the placement and assembly of the turbine equipment during construction and decommissioning.
- An overhead transmission power line (132kV) to the existing substation, and internal connections between turbine sites.
- An on-site substation/collector point.
- Internal access roads to turbine sites.

### **1.2 Terms of reference**

This scoping phase of an HIA is required as a preliminary desktop exercise to identify potential heritage resources which may be impacted during the *construction, operation and decommissioning* phases of the project.

The heritage practitioner is required to provide:

- Description of the affected environment;
- Description of the issues identified during the scoping process;
- Recommendations regarding a methodology to be adopted in assessing potentially significant impacts in the EIA Phase, i.e. Plan of Studies for the EIA.

ACO Associates was approached to undertake provide scoping level heritage input for the proposed Hartebeest Wind Farm. This study attempts to predict the possible range of impacts and identify issues in terms of accumulated knowledge of the area. The source of information is primarily based on published archaeological reports and unpublished Archaeological and Heritage Impact Assessments for the general area. A site inspection has been carried out for the purposes of this scoping study.

### **1.3 Restrictions and assumptions**

Access to the study area is unrestricted but dependent on permission from land owners. No trail excavations have been conducted.

### **1.4 Methodology**

The author of this report has relied on records contained with the ACO, SAHRIS and his own post-graduate experiences of doing dissertation work in the wheat lands to compile a desktop assessment.

Literature that is relevant to the project areas is sparse being limited to two surveys by the late HJ Deacon (2008a) who surveyed a land portion immediately adjacent (north) for a proposed golf estate. He found the site to be archaeologically sterile. Deacon (2008b) also assessed the route of the NoGo river through Moorreesburg and did not identify any heritage resources of significance.

A great deal more work has been done in the Malmsbury area, which is a similar environment. This includes work by J. Kaplan, HJ, Deacon, T. Hart and others. None of the six or more studies in the Malmsbury area revealed any archaeological sensitivity. Works by H. Fransen (2006) were consulted to establish if any of the buildings in the project area had any notable heritage qualities.

The SAHRA palaeontological sensitivity map was consulted to establish the palaeontological sensitivity of the area. Please see references section for literature.

The site is known to the author, Google Earth (Professional) was used to establish the nature and location of farm buildings.

## **2. LEGISLATIVE CONTEXT**

The basis for all heritage impact assessment is the National Heritage Resources Act 25 (NHRA) of 1999, which in turn prescribes the manner in which heritage is assessed and managed. The National Heritage Resources Act 25 of 1999 has defined certain kinds of heritage as being worthy of protection, by either specific or general protection mechanisms. In South Africa the law is directed towards the protection of human made heritage, although places and objects of scientific importance are covered.

As this development is the subject of an EIA, heritage is dealt with under section 38 (8) of the NHRA. This requires that aspects of the NHRA are addressed as part of the EIA. The Provincial Heritage Authority (HWC) is a commenting authority and must determine if the EIA process has adequately addressed heritage issues as required by the NHRA. A comment in this regards will be sent to DEA&DP.

The National Heritage Resources Act also protects intangible heritage such as traditional activities, oral histories and places where significant events happened. Generally protected heritage which must be considered in any heritage assessment includes:

- Buildings and structures (greater than 60 years of age)
- Archaeological sites (greater than 100 years of age)
- Palaeontological sites and specimens
- Shipwrecks and aircraft wrecks
- Graves and grave yards
- Cultural Landscape

With respect to the last bullet, the Visual Impact Assessment is being conducted by a VIA specialist. Nevertheless, in terms of Section 3 (2)(d) of the NHRA, No 25 of 1999, the national estate may include "landscapes and natural features of cultural significance". It is important that the VIA specialist examines the impact of the development on the cultural landscape or consults with a heritage practitioner in this regard.

While not specifically mentioned in the NHRA, No 25 of 1999, Scenic Routes are recognised by DEA&DP as a category of heritage resources. In the DEA&DP Guidelines for involving heritage specialists in the EIA process, Baumann & Winter (2005) comment that the visual intrusion of development on a scenic route should be considered a heritage issue. This is also given recognition in the Notice of Intent to Develop (NID) application which is used by Heritage Western Cape.

## **3. RECEIVING ENVIRONMENT**

The study area is in the heart of the Swartland, the main wheat farming area of the Cape Province. The Swartland is broad rural expanse of low rolling hills interspersed with

farms, small communities and towns. Before the advent of wheat farming, the Swartland was characterised by “Renosterveld” plant communities which gave the area a dark-grey olive-green appearance when viewed from afar – hence the name Swartland (black country). The underlying geology which consists of schists and shales of the Malmesbury Group is considered to be good agricultural land, the shale being rich in trace elements, which before the advent of agriculture supported large quantities of game. The Berg River alluvial terraces contain copious quantities of Early and Middle Stone Age artefacts attesting to the occupation of this landscape by humans for a million years or more. Today the Swartland is one of the most important wheat producing areas of the nation (see Figure 2). Almost every farmer is involved in the cultivation of wheat which has given the entire area its particular character and texture.



**Figure 2.** The project area is characterised by rolling wheat lands, however enclaves of indigenous renosterveld survives on the un-cultivated higher ground.

### 3.1 History

In 1661, Pieter Cruythoff, one of Jan van Riebeeck’s corporals, led a reconnaissance team of eleven men to explore the hinterland. A myth had been circulating for some time about the city of gold, Monomotapa, which allegedly lay somewhere to the immediate north of the Cape settlement.<sup>1</sup> The VOC headquarters were impatient for their envisioned instant profits and commissioned several expeditions to find the fabled land. While the mission obviously never succeeded in locating a town saturated with gold, it did provide one of the earliest written records describing the interior of the Cape.

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<sup>1</sup> Worden, N, Van Heyningen, E & V. Bickford-Smith, 1998: *Cape Town: The Making of a City: an Illustrated Social History*, D. Philip, South Africa.

The surgeon, Pieter van Meerhof, accompanied the first mission and kept the journal and wrote of plains teeming with wildlife. From one vantage point at Kasteelberg, on one day, they saw "thirteen horses (quagga), five rhinoceros, ostrich, thousands of hartebeest"<sup>2</sup> It is also in this journal that 'Riebeek Kasteel' was first mentioned, named in honour of their mentor Jan van Riebeek.

When Willem van der Stel became governor of the Cape in 1699, he opened up new area for settlement, which included land grants in the Riebeek Valley and Tulbagh. Some of the first arrivals were Huguenots, and this resulted in the early establishment of vineyards, along with wheat and other fruit crops.

The VOC *freeburgher* system intensified pressures on the land. Food production yielded dreadfully low financial returns for the farmers, as the VOC paid unrealistically low prices. This forced farmers to turn to hunting as a means of survival. Within a number of years the larger fauna, such as the hippos of the Berg River, were exterminated. This level of natural resource exploitation put the settlers into inevitable conflict with the local indigenous Khoekhoen groups in the region, which included the Souqua (Sonqua), Cochoqua, and further along the coast, the 'Saldanhars'. The settlers' numbers, their uncompromising drive, and firepower, all but guaranteed that the Khoekhoen would be pushed back and that the landscape, once teeming with wildlife, would irreversibly stripped of its natural fauna and flora.

According to historic records, the Khoekhoen favoured the Swartland as grazing land as it was far better suited to raising cattle than the depleted soils of the Table Mountain sandstones. The Berg River served as a corridor of permanent water and as such had a strong pull over the movement and settlement of people.

By the 19<sup>th</sup> century vast tracts of the Swartland were under wheat cultivation reaching an unsustainable climax in the 1930's when sheet erosion caused by years of poor plowing practice brought wheat farming to its knees and caused many of the poorer landowners to be displaced and their land consolidated. It was not until the universal implementation of contour plowing and modern fertilizers that farming became sustainable again. The indigenous Renosterveld plant communities have disappeared save a few small patches of land where remnant communities have survived. Hence, over the last 200 years the Swartland became transformed from a game rich wilderness to a vast historic landscape of wheat cultivation, farmsteads and small towns.

Like most of the Swartland Towns, Moorreesberg is a "kerksdorpie". The town of Moorreesburg is named after the Rev. HA Moorrees and was founded as a new Dutch Reformed parish on the farm Hooikraal in 1890. This was followed by a small school, post office and constabulary. The railway from Malmesbury was extended to the town in 1902.

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<sup>2</sup> Molsbergen, 1916:45-62 & Mosop 1931: 6-11, in Rookmaker, L.C. *Zoological Exploration of Southern Africa*

Apparently farmers in the area had been endeavouring to establish the church to service the community since the mid-19<sup>th</sup> century. Messrs F Warnich and Dirk Kotze, then owners of the farm Hooikraal, each relinquished a piece of their land for church purposes. Over a period of many years the Moorreesburg Dutch Reformed Church purchased additional land for the growth of the town (the Church Council was effectively the Town Council). Moorreesburg is essentially a late 19<sup>th</sup>-early 20<sup>th</sup> century town that eventually became known as a regional center for wheat farming. A claim to fame that the town has is its association with the founding days of the company "Tiger Oats"<sup>3</sup>.

### **3.2 Potential heritage indicators**

#### **Palaeontology**

No known palaeontological resources are present in this area as it is all underlain by Malmesbury Shale. The shales are among the oldest rocks in the Cape Province and pre-date most life forms. This means that they are very unlikely to contain fossil remains. The superficial deposits in the project area are soils that are derived from unfossiliferous Malmesbury shale. Later fossils are known from the calcareous deposits on the West Coast near Hopefield and Duynefontein emanating from sediments relating to the Springfontein formation (Halket 2016), however there are no Springfontein or calcareous deposits in the study area.

#### **Archaeology**

The environment within the study area has been transformed by agriculture for more than 2 centuries. *In-situ* archaeological resources are extremely sparse, although it is expected that at least some Early Stone Age artefacts may be present in the fields. These would likely be of very low significance. It is also possible that Later Stone Age sites may be found along water courses but it is unlikely that turbines would be placed in proximity to these areas. It is possible that some historical archaeological resources may be present close to the various farmsteads in the project area which will be protected by a 500 m buffer. Archaeological impacts are expected to be of low significance. Impacts are expected to be local and of low significance. No no-go areas have been identified.

#### **Built environment**

A survey of deeds of the land parcels involved indicate that all the land that makes up the study area derives from 3 parent farms Swartfontein, Biesjiesfontein and Tontelfontein were formalized as grants from quitrent farms in 1818-1835. Thus it is possible that the farms were inhabited and worked before this time.

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<sup>3</sup> Athiros, G and L, and Turner, M. 2011 Riebeeck Castle. Tokai: Historical Media.

Many farm building complexes occur in the area with at least 14 complexes of farm buildings occurring on or close to the study area. The conservation status of these buildings needs to be assessed during the EIA process. Although there is a high likelihood that they are greater than 60 years of age, all appear to have been adapted and modified over time.

### **Graves and graveyards**

Farm graveyards are known to occur in the area. Given the shale substrate, isolated unmarked pre-colonial graves are very unlikely to occur.

### **Landscape**

The cultural landscape is one of agriculture (wheat and livestock) with farmsteads and blue gum plantations dotted around and on the various hills. The gum plantations, although not very tall, add vertical components to the landscape, increase the visual clutter and will help to a limited degree with mitigation of visual impacts. The impact is likely to be acceptable and of medium to low significance.

### **Visual concerns**

This is probably the most significant aspect of the project in heritage terms. The proposed project will be visible from the N7 which can be considered a significant scenic route. The proposed facility, which is situated within the context of the highly manicured Swartland landscape may not necessarily pose a major visual or aesthetic impact and would need to be assessed in detail during the EIA process.





**Figure 1** Preliminary assessment of location of areas of heritage significance.

#### **4. Assessment of Impacts**

The proposed development site is not sensitive in terms of archaeological material and marginally sensitive in terms of built environment. It lies adjacent to a scenic route and a town which will experience impacts although these may not necessarily be negative.

##### **4.1 Archaeology**

The study area is not archaeologically sensitive therefore rescue excavations of archaeological material or other mitigation is unlikely to be necessary for any development of the site, internal power line routes or substation sites. Generally the impact of the proposed activity on archaeological material will be very low.

##### **Nature of impacts**

The main cause of impacts to archaeological sites is 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 archaeological artefacts, the artefacts are relatively meaningless once removed from the area in which they were found. In the case of the proposed activity the main source of impact is likely to be the construction of access roads, lay-down areas and excavation of the footings the turbines.

### **Extent of impacts**

It is expected that impacts will be limited (local). There is a chance that the deep excavations for bases could potentially impact buried archaeological material, similarly excavation of cable trenches and clearing of access roads could impact material that lies buried in the surface sand. Potential impacts caused by power line and proposed access roads are similarly likely to be limited and local. The physical survey of the study area has shown that archaeological material is insignificant and dispersed, which means that the extent of impacts is likely to be highly localised (if at all), with no regional implications for heritage of this kind.

### **Significance of impacts**

In terms of the information that has been collected, indications are that impacts to pre-colonial archaeological material will be limited. In terms of buried archaeological material, one can never be sure of what lies below the ground surface, however indications are that this is extremely sparse and that impacts caused by the construction of footings and other ground disturbance is likely to be negligible.

### **Status of impacts**

The destruction of archaeological material is usually considered to be negative; however opportunities for the advancement of science and knowledge about a place can result provided that professional assessments and mitigation is carried out in the event of an unexpected find. In this case there is so little material on site that there will be no opportunity to benefit therefore the impact will be neutral.

Table 1

<b>Impact</b>			
<b>Disturbance of archaeological material</b>			
<b>Issue</b>	<b>Nature of Impact</b>	<b>Extent of Impact</b>	<b>No-Go Areas</b>
Archaeology	Disturbance, destruction.	Local	None
<b>Description of expected significance of impact</b>			
The project area lies in an intensively farmed area meaning that any existing archaeological material is out of context. Significance of the impact is likely to be very low, of limited (local extent). Duration of impact is very low.			

**Gaps in knowledge & recommendations for further study**

The project area must be subject to a physical survey to establish presence of any heritage resources. This represents a site specific gap in knowledge. Impacts to archaeology are not reversible.

**4.2 Colonial period heritage**

Colonial period heritage – that is buildings and historical sites of significance have not been identified within the boundaries of the study area.

**Nature of impacts**

Historic structures 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.

**Extent of Impacts**

Direct or indirect impacts are not expected.

**Significance of impacts**

Given that there are no structures or historical sites within the study area that are likely to be physically impacted, the significance of any impacts is very low. Furthermore, there are no heritage resources that are likely to ever be publically celebrated.

**Status of impacts**

Within the boundaries of the proposed wind energy facility, impacts are considered improbable. The overall status is considered to be neutral.

Table 2

<b>Impact</b>			
<b>Destruction of protected structures</b>			
<b>Issue</b>	<b>Nature of Impact</b>	<b>Extent of Impact</b>	<b>No-Go Areas</b>
Built environment	Damage or illegal demolition of structures, farm buildings.	Local	All farm yards

**Description of expected significance of impact**

While it is evident that there are structures in the project area that are generally protected in terms of the NHRA, none are listed or formally graded. Significance of impacts are expected to be low, local and of short duration.

**Gaps in knowledge & recommendations for further study**

Structures in rural areas around Moorreesburg have not been graded. Farms in the project area need to be evaluated and assigned a field grading where appropriate. Damage to structures is reversible but with loss of authenticity,

**4.3 Cultural landscape and sense of place****Nature of impacts**

Cultural landscapes are highly sensitive to cumulative impacts and large scale development activities that change the character and public memory of a place. In terms of the National Heritage Resources Act, a cultural landscape may also include a natural landscape of high rarity value, aesthetic and scientific significance. The construction of a large facility can result in profound changes to the overall sense of place of a locality, if not a region. It is felt that of all landscapes in South Africa the presence of wind turbines in the study area are compatible with the manicured and swept quality of the surrounds, meaning that although the turbines will be highly visible from within and close to the site, including the N7, the sense of change or diminishment of the significance of the landscape will be minimal, and not necessarily overly negative in status.

**Extent of impacts**

Wind Turbines are without doubt conspicuous structures which will affect the atmosphere of the "place". While this impact may be considered local in terms of physical extent, there may be wider implications in terms of the change in "identity" of the area and the cumulative effect this could have on future tourism potential. The impact of the proposed activity will be local but with a moderate contribution to cumulative impacts.

**Significance of impacts**

The impact of the proposed activity is expected to be of a medium-low significance.

**Status of impacts**

The status of the impact is neutral-negative (without mitigation).

Table 3

<b>Impact</b>			
Change to the overall cultural landscape, setting and character			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Landscape quality	Destruction of setting and change of character.	Local	As per VIA
<b>Description of expected significance of impact</b>			
The impact on "setting" of WEF's are very variable depending on context. While the construction of such facilities in rural natural areas can be devastating to the setting of a place, the impact in person-made manicured landscapes is less so. The impact is likely to be of low-medium significance, local in extent but of long duration. It is reversible.			
<b>Gaps in knowledge &amp; recommendations for further study</b>			
The project area and surrounds need to be visited and assessed in terms "setting". This will involve assigning a landscape field grade to be assessed during EIA phase.			

#### 4.4 Accumulative Impacts

Cumulative impacts relate mainly to changes in character to the landscape. The nearest existing WEF is that at Hopefield which is not visible from the project area. Neither is the Gouda facility or those on the Vredenberg Peninsula or Darling area. In the present situation Hopefield will not result in a significance cumulative impact, however this could change if the densification of wind energy projects in the Swartland continues. At present the density is tolerable and the addition of the Hartebeest facility is unlikely to have a significant impact. Needless to say, it would be undesirable to allow this kind of industry to proliferate here to the extent that wind turbines become a dominant and ever present element of the landscape.

## 5. MITIGATION AND CONSERVATION

### 5.1 Palaeontological Heritage

No specific measures required.

### 5.2 Archaeological Heritage

The distribution of archaeological heritage will need to be determined by a field survey. It is expected that much of the impacts to surface archaeological heritage (pre-colonial

and colonial) will be controllable through avoidance of sensitive areas in the unlikely event that any have survived. If for any reason mitigation by avoidance is not feasible, the usual process is to record and sample the archaeological site before its destruction is permitted.

No archaeological material has been previously recorded in the project area and the expected impacts are likely to be of very low or no significance.

### **5.3 Un-identified archaeological material and graves**

There is always a chance that archaeological material and graves may be exposed during excavations for the facility and access roads. The impacts are likely to be of low significance as such finds are infrequent in this landscape.

All archaeological material is protected by Section 38.5 of the National Heritage Resources Act and it is an offence to destroy material. Archaeological material may only be altered or removed from its place of origin under a permit issued by the South African Heritage Resources Agency. If archaeological material (including graves) is uncovered, all work must cease in that area, while the relevant heritage authorities are notified. Rescue mitigation may be required, for the cost of the developer. Human graves can occur anywhere on the landscape. It is best that these are not disturbed. In the event of an accidental disturbance, the find site must be left as undisturbed as possible (i.e. treated as a forensic site) and an archaeologist contacted immediately. The archaeologist will invoke the necessary procedure for exhumation if needed.

### **5.4 Built Environment**

It is not expected that the built environment will be directly impacted by the proposal unless it becomes necessary to demolish structures (farm houses, sheds, kraals, etc) that are greater than 60 years of age. It is anticipated in most instances it will be possible to avoid direct impacts. If any farm buildings, including sheds and old kraals, are threatened by development, an assessment of their heritage significance will be required. Indirect impacts include the visual intrusion of the proposed construction on historic buildings. This can only be assessed during the survey of the properties and suitable mitigation proposed which will occur during the EIA process.

Similarly, while it is generally possible to avoid historic farm graveyards, those graveyards belonging to the farm workers are sometimes difficult to identify as they may lack headstones and fences. Exhumation of graves is generally not recommended due to the lengthy legal processes which are required and it is preferable that they are avoided.

### **5.5 Cultural landscape and sense of place**

It is important that the Visual Impact Assessment takes into consideration the aesthetics of the site and assess the impact of the proposal on the cultural landscape and the

scenic qualities of the gravel road passing through the proposed facility. These are the visual qualities which are required by Heritage Western Cape when they ask for a visual impact assessment. It is therefore important that the visual specialist consult with the heritage practitioner.

## **6. ASSESSMENT OF ALTERNATIVES**

Alternatives that have been proposed for the facility include:

- Site layout alternatives:
  - » 25 turbine layout
  - » 40 turbine layout
- Grid connection alternative:
  - » Alternative 1: A connection to the existing Moorreesburg 132/66kV substation at 132kV via a 3.5km 132kV line.
  - » Alternative 2: A connection to the existing Moorreesburg 132/66kV substation at 66kV via a 3km 132kV line.

Impacts associated with the alternatives proposed will be assessed during the EIA phase

Pending the findings of the visual impact assessment, indications are that there are no heritage resources identified in the project area that would preclude a 40 turbine layout.

The likely impact of the both of the proposed grid connections is extremely low and there is no reason in heritage terms to favour one over the other. Other environmental considerations should indicate the favourable alternative

## **7. PROPOSED SCOPE OF STUDY FOR THE EIA**

The completion of a "Notice of Intent to Develop" (NID) to Heritage Western Cape will elicit comments on further heritage studies for the area. It is likely that they will request a Heritage Impact Assessment, including a desktop Palaeontological Impact Assessment, an Archaeological Impact Assessment and a Visual Impact Assessment.

It is recommended:

ACO will undertake to complete a heritage impact assessment (HIA) as part of the EIA for the proposed facility. This will include:

- Engage with consultants who have specialist regional knowledge of the area;
- Conduct a field survey of the proposed facility footprint tailored to the varying sensitivities and methods required;
- Map, record and photograph any heritage sites or objects offered protection by the NHRA or any other object or place considered significant by the ACO team;

- Produce an illustrated report describing the findings, defining areas of sensitivity, any further work required and suggesting mitigatory actions for reducing impacts to heritage resources;
- Make recommendations regarding the preferred project alternatives for implementation

### **7.1 Suitability of the site for the proposed activity**

Overall, the site is well suited to the proposed activity due to:

- 1 The known scarcity of archaeological resources.
- 2 The manicured person-made nature of the landscape which is aesthetically better suited to wind turbines than wild or natural rural areas.
- 3 The lack of any provincial heritage sites.
- 4 The fact that it is paleontologically sterile.



## **Tim Hart, abbreviated Curriculum Vitae**

After graduating from UCT with my honours degree in 1984 I joined the Southern Methodist University (SMU Dallas Texas) team undertaking Stone Age research in the Great Karoo. After working in the field for a year I registered for a MA degree in pre-colonial archaeology with support from SMU. On completion of this degree in 1989 I commenced working for the ACO when it was based at UCT. This was the first formal unit of its kind in RSA.

In 1991 I took over management of the unit with David Halkett. We nursed the office through new legislation and were involved in setting up the professional association and assisting SAHRA with compiling regulations. The office developed a reputation for excellence in field skills with the result that ACO was contracted to provide field services for a number of research organisations, both local and international. Since 1987 in professional practise I have has been involved in a wide range of heritage related projects ranging from excavation of fossil and Stone Age sites to the conservation of historic buildings, places and industrial structures. To date the ACO Associates CC (of which I am co-director) has completed more than 2000 projects throughout the country ranging from minor assessments to participating as a specialist in a number of substantial EIA's as well as international research projects. Some of these projects are of more than 4 years duration

Together with my colleague Dave Halkett I have been involved in heritage policy development, development of the CRM profession, the establishment of 2 professional bodies and development of professional practice standards. Notable projects I have been involved with are the development of a heritage management plan and ongoing annual mitigation for the De Beers Namaqualand Mines Division, heritage management for Namakwa Sands and other west coast and Northern Cape mining firms. Locally, I was responsible for the discovery of the "Battery Chavonnes" at the V&A Waterfront (now a conserved as a museum), the discovery of a massive paupers burial ground in Green Point (now with museum and memorial), the fossil deposit which is now the subject of a public display at the West Coast Fossil Park National Heritage Site as well as participating in the development of the Robben Island Museum World Heritage Site. I have teaching experience within a university setting and have given many public lectures on archaeology and general heritage related matters. I am presently running a NLF funded project (R1.2m) to research the historic burial grounds of Green Point.

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