

**PROPOSED WIND ENERGY FACILITY ON THE FARMS SCHUITJES  
KLIP 22, HONING KLIP 101, ZANDFONTEIN 105, KLIPRUG 282  
AND HOLVLEI 120 NEAR VREDENBURG, SALDANHA BAY  
MUNICIPAL AREA, WESTERN CAPE**

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

DEA ref no 12/12/20/2119

Prepared for

Aurecon South Africa (Pty) Ltd

On behalf of

IPD Power (Pty) Ltd

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## EXECUTIVE SUMMARY

ACO Associates CC have been appointed by Aurecon South Africa (Pty) Ltd on behalf of the client, IPD Power (Pty) Ltd, to undertake a Heritage Scoping level report, as part of the EIA process, for the establishment of a wind energy facility on the farms Schuitjes Klip 22, Honing Klip 101, Zandfontein 105, Kliprug 282 and Holvlei 120 near Vredenburg, Saldanha Bay municipal area, western Cape.

The project components include approximately 150 wind turbines, with a capacity of some 438 Megawatts MW, substation/s, access roads and a maintenance/control building/s, two power lines inking to the Eskom 400 kVA grid that runs across the north-western portion of Farm 5. The entire site measures approximately 6100 Ha, spread over 5 land parcels forming 4 distinct spatially separate sites of 534, 595, 1976, 1630, 1363 Ha respectively. At this stage, no alternative sites have been proposed for the facility.

Historically, the Saldanha wind farms form 4 clusters made up of as follows: Dawidsfontein and Schuitjesklip, Besters Kraal and Zandfontein, Honingklip and Holvlei, and finally Kliprug. For the most part these farms have their origins as early 19th century quitrents, but as in the case of Kliprug, it is clear that an earlier loan farm predated the 1832 grant. Only the Honingklip homestead has been identified as having heritage significance. Although it is not officially declared it could possibly be graded as 3A or 3B.

The proposed sites lie on the Vredenburg Peninsula, close to the towns of Saldanha, Vredenburg, St Helena, Jacobs Bay and Paternoster. The Vredenburg Peninsula has a rich archaeological and palaeontological history. The unique geological sequence and context resulting from fluctuations in sea level resulting from a series of marine trans- and regressions, which due to quirks of erosion, makes the Vredenburg peninsula a repository of deposits dating from the period known as the late Tertiary (24-1.7 Ma). One of the richest Late Miocene faunal deposits (approx 5 Ma) in the world is found at Langebaanweg (Langebaan Fossil Park). More recent Pleistocene (>200 Ka) faunas are found at the so-called Sea Harvest site at Saldanha Bay. Rare fossil human remains have also been documented at Hoedjies Punt and the so-called "Saldanha Man" was recovered from the nearby town of Hopefield. All these occurrences point towards a tendency for organic remains in the area to remain generally well preserved in the calcareous sands. There is much documented evidence of human use of the area from the Early, Middle and Late stone ages, in numerous archaeological reports and published material. The more recent colonial period, is less well described although we know the peninsula was a focus of attention in terms of the exploitation of marine products.

As such we would expect pre-colonial sites to be present in the area, relating to both San hunter gatherers and Khoe-khoen pastoralists. The potential for such sites is always greater along the coastal strip, but ample evidence supports the use of the inland areas by early pastoralists who settled on the peninsula after 2000BP. They seem to have particularly favoured the numerous granite outcrops for settlement.

There is a high possibility of encountering palaeontological traces in surface, near surface and deep deposits. The presence of calcrete or calcified sands is often

associated with fossil remains. The presence of fossil human remains adds to the already sensitive nature of some parts of the area.

The construction of the proposed turbines, substation, control building, power line/s and associated infrastructure may result in the physical destruction of above and below ground heritage resources and visual impacts will almost certainly impact the broader cultural landscape.

It is therefore recommended that if the project proceeds to the EIA Phase, the ToR should be as follows:

Undertake a Heritage and Archaeological Impact assessment of the site in accordance with the requirements of Section 38(3) of the NHRA which would include:

- Undertaking field work to verify results of the desktop investigation with respect to archaeological, cultural and historic sites;
- Undertaking palaeontological work (desktop and/or fieldwork) to verify results of desktop investigation;
- Documenting (GPS coordinates and map) all visible sites, objects, structures and palaeontological resources identified on the candidate sites;
- Liaising with the VIA specialist in terms of visual impacts on significant heritage sites;
- Submitting the relevant application form (NID), as required by South African Heritage Resources Agency and Heritage Western Cape (to be done at scoping stage);
- Compiling a report which would include:
  - Identification of archaeological, cultural and historic sites, and palaeontological sites or features within the proposed development areas;
  - Assess the sensitivity and significance of archaeological, cultural and historic sites and palaeontological remains in/on the site;
  - Evaluation of the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources and palaeontological remains, in terms of the scale of impact (local, regional, national), magnitude of impact (low, medium or high) and the duration of the impact (construction, up to 10 years after construction (medium term), more than 10 years after construction (long term));
  - Recommendation of mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance and palaeontological remains;
- The preparation of a heritage resources management plan which includes recommendations on the management of the objects, sites or features and palaeontological remains, and also guidelines on procedures to be implemented if previously unidentified heritage resources are uncovered

during later developments in the area;

- Consideration of relevant guidelines; and
- Cognisance must be taken of the Department of Environmental Affairs and Development Planning guideline: "Guideline for involving heritage specialists in EIA processes<sup>1</sup>.

**Declaration:**

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

David Halkett (MA) is an archaeologist with 23 years of working experience in heritage throughout southern Africa. He is accredited with Principal Investigator status with the Association of Professional Archaeologists of Southern Africa.

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<sup>1</sup> Winter, S. & Baumann, N. 2005. Guideline for involving heritage specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 053 E. Republic of South Africa, Provincial Government of the Western Cape, DEA&DP.

## **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

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**Figure 1:** Locality map, supplied by Aurecon (Pty) Ltd. Affected land parcels shown in blue and numbered 1-5.



## **1.1 Development Proposals**

The project components include approximately 150 wind turbines, with a capacity of some 438 Megawatts, substation/s, access roads and a (maintenance/control building/s?), two power lines inking to the Eskom 400 kVA grid that runs across the north-western portion of Farm 5. The entire site measures approximately 6100 Ha, spread over 5 land parcels forming 4 distinct spatially separate sites of approximately 534, 595, 1976, 1630, 1363 Ha respectively. At this stage, no alternative sites have been proposed for the facility.

## **1.2 Terms of Reference**

The 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 and to identify any potential fatal flaws.

The heritage practitioner is required to:

- Provide a description of the affected environment;
- Provide a description of the heritage issues identified during the scoping process;
- Identify possible fatal flaws (heritage);
- Provide recommendations regarding a methodology to be adopted in assessing potentially significant impacts in the EIA phase, i.e. a plan of study for the EIA.

## **2. LEGISLATION**

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. 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:

- Cultural landscapes
- 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.

Section 38 of the NHRA requires that Heritage Impact Assessments (HIA's) are required for certain kinds of development such as rezoning of land greater than

10 000 sq m in extent or exceeding 3 or more sub-divisions, or for any activity that will alter the character or landscape of a site greater than 5000 sq m.

## **2.1 Wind Energy Guidelines**

A pilot study commissioned by the Provincial Government of the Western Cape "Towards a Regional Methodology for Wind Energy Site Selection in the West Cape region" (CNdv Africa 2006) is the only locally available policy guideline. The study looked at landscape character rather than at the "cultural landscape" or "heritage" but concluded that wind energy facilities can have a profound impact on the landscape in terms of quality of place. In general terms it recommends a buffer of at least 500 m between a wind turbine and heritage sites. Neither SAHRA nor HWC have developed policies with respect to heritage and renewable energy but Heritage Western Cape have recently issued two comments with respect to the impact of wind farms on heritage sites which will have implications for the proposed facility. This is discussed further below.

## **3. RECEIVING ENVIRONMENT**

### **3.1 The cultural landscape**

The various farms as shown in Figure 1 are distributed across the entire Vredenburg peninsula but are clustered more around the towns of Vredenburg and Saldanha. The area consists mainly of a modified agricultural landscape interspersed with patches of indigenous vegetation on the numerous granite extrusions of the underlying Vredenburg pluton, covered with successions of older and more recent sands. The remaining natural vegetation is variously described as Strandveld or West Coast Renosterveld. Sheep and cattle graze the wheat stubble and natural vegetation. In years past, fishing played a major role in the region and the small towns of St Helena, Saldanha and Paternoster all had thriving fishing communities and fish processing facilities. The Sea Harvest factory at Saldanha is one of the few remaining vestiges of this activity.

Vredenburg is a thriving town that along with Saldanha, form the centre of the local economy. The construction of industrial facilities such as the oil storage depot, iron ore smelter, heavily mineral separation plant and development of the iron ore export terminal has meant an influx of people and resultant increase in urbanisation and industrialisation. The bay has been modified by the construction of a substantial breakwater linking Hoedjiespunt to Marcus Island to ensure safe anchorage for the numerous bulk carriers and tankers docking there. To the north, St Helena has also been experiencing an increase in development no doubt to some degree anticipating increased demand for housing.

Between Vredenburg, St Helena and Paternoster, however the landscape is still more agricultural in nature with vistas over farmland to the sea. This area epitomises the traditional farming landscape, superimposed on the older landscape used by pre-colonial people.

### **3.2 Pre-colonial Archaeology**

The West Coast of South Africa has been settled for at least 100 000 years. There are shell middens dating to the Middle Stone Age (MSA) both on, and to

the north and south of the Vredenburg peninsula (Halkett & Hart 1993, Halkett et al 2003, Klein et al. 2004, Berger and Parkington 2005a,b). Associated with these middens are MSA stone artefacts and an anatomically modern human tooth from the Sea Harvest site (Grine & Klein 1993), and other anatomically modern post-cranial remains from Hoedjiespunt, all clearly older than 50 000 years. The presence of the so-called Saldanha skull fragment and the not infrequent finds of distinctive ESA artefacts such as handaxes, attests to a much more ancient use of the area, although, the coastline might have been less familiar at that time.

Hunter-gatherers living on the west coast of South Africa during the latter part of the Holocene made use of the coastal resources (perhaps seasonally). Archaeological excavations at sites such as Duyker Eiland on the coast near Britannia Bay (Robertshaw 1979) confirm the importance of shellfish such as mussel and limpet in the diet forming a dependable and easily accessible protein resource during these times. In addition, the excavations of other sites on the Vredenburg peninsula (see Malan et al in prep) have confirmed the importance of coastal resources such as seals, marine birds, crayfish and beached whales. We know this peninsula was particularly attractive to hunter-gatherers, and later pastoralist groups because of its wealth of marine and terrestrial resources. Archaeologists have postulated that the first pastoralist groups (with cattle, sheep and pottery) entered South Africa along the West Coast some 2000 years ago (Smith 2006).

The most important pastoralist site on the Vredenburg peninsula (and arguably in South Africa) is that of Kasteelberg, which is located on the farm Rooiheuvel (Smith 2006). The hill is part of a granite batholith standing 187m above sea level and surrounded by agricultural lands. A site survey by Sadr et al. (1992) identified at least 36 discrete occupation areas around the hill ranging from Middle Stone Age scatters to Later Stone Age sites with pottery (Figure 2). It would appear that Kasteelberg was the focus of settlement for over the last 2000 years. At least 10 sites have been excavated around the hill and there are more than 100 bedrock grinding grooves on the flat rocks around the site.

Kasteelberg was identified in the late 1990's as a site worthy of declaration as a National Monument under the old legislation (National Monuments Act of 1969, as amended), but changes in legislation at the time interrupted the process. Heritage Western Cape is now considering reopening the process for declaration of the Kasteelberg site complex as a provincial heritage site.

Other important archaeological sites in the vicinity of Kasteelberg include Witklip, a small shelter below a granite boulder situated on the western outskirts of Vredenburg (Figure 2). Excavations by Smith (2006) suggest that this was a hunter-gather settlement dating to between 3000 and 500 BP. The site of Heuningklip, an open shell midden site on a granite hill to the east of Vredenburg (Figure 2), also contains a number of bedrock grooves similar to Kasteelberg.

The sites around Kasteelberg on the Vredenburg Peninsula predominantly date to the period of the Later Stone Age, although earlier material dating to the mid - late mid Holocene is found in the area and probably represent the debris of early San hunter gatherers. The survey of the Vredenburg Peninsula by Sadr (2009) has identified at least 99 archaeological sites (Figure 2) predominantly around

granite koppies but many more have been found in open wheat fields during commercial archaeological impact assessment surveys (Webley & Orton 2010).

### **3.3 Colonial Archaeology**

Historical research shows that during the 18<sup>th</sup> century the Vredenburg peninsula formed part of the traditional grazing lands of the Cochoqua, a Khoekhoen pastoralist group. Smith (2006) has postulated a seasonal transhumant cycle between the coast and the interior which was disrupted by Dutch settlement. The Saldanha Bay area was the focus of intense competition between French and Dutch interests during the 17<sup>th</sup> and 18<sup>th</sup> centuries, with a number of military outposts established in the area to provide protection for fishing and sealing interests. One such post was established at St Helena Bay although its exact position is still unknown. A later post was also established in the area and became known Soldantenpost. (Sleigh 1993).

No historical archaeological research has been conducted on the Vredenburg Peninsula and Phase 1 Archaeological Impact Assessments do not necessarily discuss historical remains relating to the colonial period or the built environment. Recent research (Malan et al, in prep) shows that during colonial times there was in fact a thriving industry based on marine products centred on the Vredenburg peninsula. Much of the product was returned to the settlement in Cape Town to feed its growing population.

The early 19<sup>th</sup> century quitrent grants include Zandfontein (1816) and Honingklip (1816) with a second wave of quitrent grants taking place in the 1830's that included Dawidsfontein, Hollenvallei/Holvlei and Klipfontein. Klipfontein's survey diagram shows the outline of a typical circular loan farm, with its centre more or less near the coast (probably at a spring). Dawidsfontein was surveyed in 1818, but was only granted in 1831. It too shows the outline of an earlier circular loan farm. Schuitjesklip was surveyed in 1834, but only granted in 1844. The assessment of the farm history by Harriet Clift is presented in Appendix 1.

### **3.4 Palaeontology**

An extensive bibliography relating to the Langebaanweg fossils and general area is presented in Hendey (1982) who also gives a summary (perhaps dated now) of the geology of the area. Dr John Pether (2008, 2010) made the following comment in relation to the ore terminal expansion project at the Port of Saldanha and the proposed West Coast One wind energy facility: *Little detail is known of the wider Saldanha-area coastal plain due to the lack of natural exposures although some widely spaced information has come from Dept of Water Affairs (DWA) boreholes. However, nearly every excavation made in the past into the "fossil" dunes and beaches in the area has yielded fossils of one kind or another. Unfortunately, other than some ad hoc recoveries, many "windows of opportunity" in the area were missed and lost.*

Dr Pether presented a detailed assessment of the West Coast One wef , which lies to the north of land portions 4 and 5. No red flag issues were identified there.

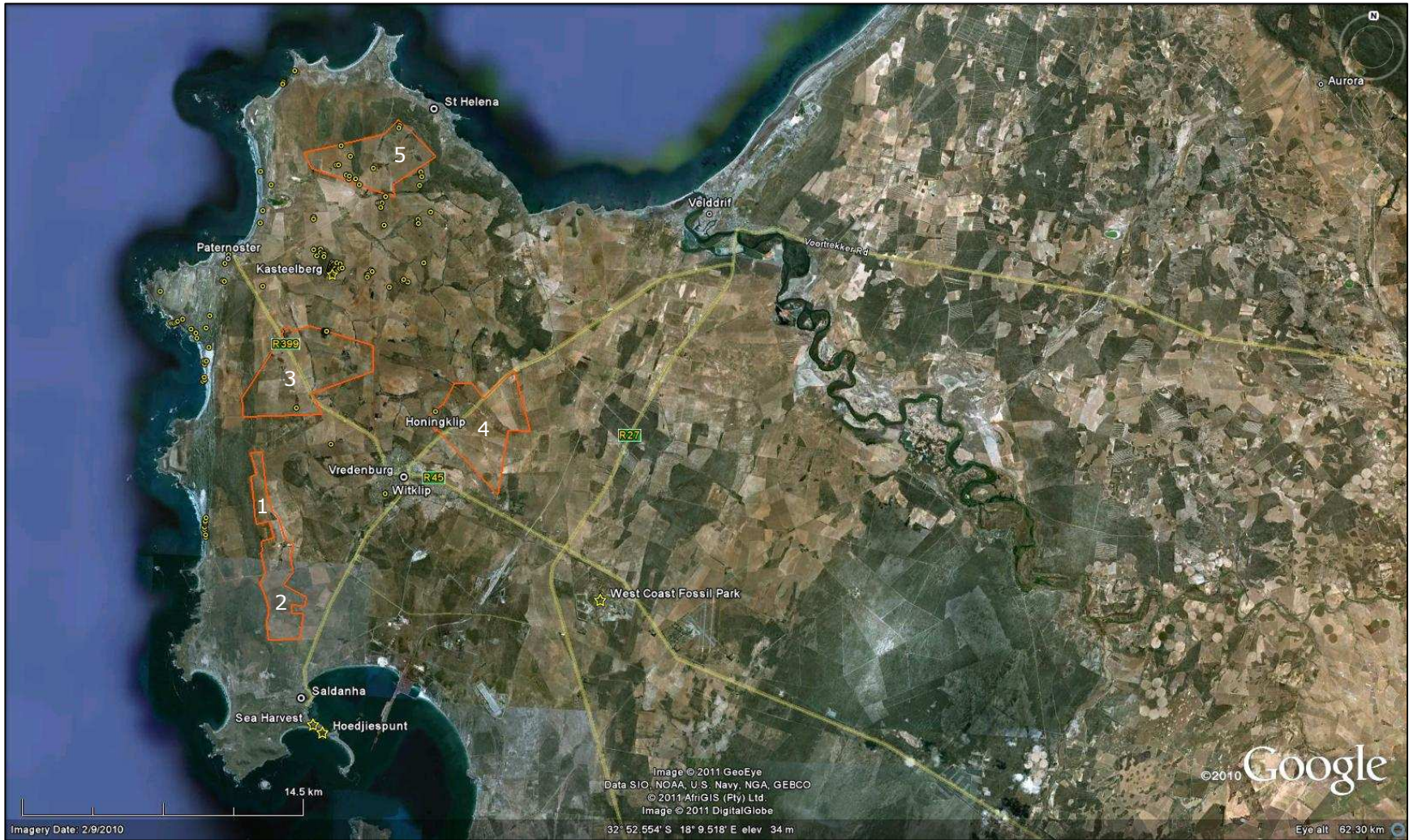


Figure 2: The proposed wind energy locations (numbered orange polygons) in relation to archaeological sites (yellow circles) found during the Sadr survey (not a comprehensive survey). The important site complex of Kasteelberg, the West Coast Fossil Park, The Sea Harvest and Hoedjiespunt sites are marked by stars. Many sites found during impact assessments are not plotted but are located mostly on the coast.

Soft deposits sandwiched between hard calcrete successions often erode where calcrete is exposed due to erosion. The subsequently formed cavities often became the dens of brown hyenas in which they raised pups, and in so doing, introduced the bones of scavenged and predated animals. An example of such a site is Hoedjiespunt (HDP1) at Saldanha Bay (Berger and Parkington 2005a,b). Brown hyenas also became the unwitting collectors of the bones ancient humans and as such, the possibility of bone accumulations in the calcretes always signals some need for effective monitoring of earthworks in the event that palaeontological material is present.

Effective palaeontological mitigation at development sites is likely to have substantial palaeontological heritage/scientific benefits.

## **4. METHODOLOGY**

This study has been commissioned as a scoping assessment that attempts to predict the possible range of impacts and identify issues in terms of accumulated knowledge of the area. The sources of information are primarily published archaeological research reports and unpublished Archaeological and Palaeontological Heritage Impact Assessments for the general area. A site inspection has not been carried out for the purposes of this scoping study.

### **4.1 Restrictions and assumptions**

The study area has not been subject to a field survey as this will be conducted during the course of the EIA.

## **5. FINDINGS**

### **5.1 Palaeontology**

The Vredenburg Peninsula and surrounding areas are known to be rich in palaeontological resources. The area is potentially sensitive and it will be necessary to conduct a Palaeontological Impact Assessment as part of the EIA process.

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

Palaeontological material can be destroyed by bulk earthmoving, and excavation. As it can occur on both the surface and in deeper contexts. Natural exposures e.g. due to erosion, and man-made interventions such as open cast mines, quarries and deep road cuttings often present opportunities for palaeontologists to examine buried sediments and rock strata. But erosion can result in palaeontological resources being at the surface. In short, provided that palaeontologists can use the opportunity arising from major construction works to adequately sample and record profiles and exposed palaeontological material as part of the environmental management process, a potential negative impact can be transformed into a positive opportunity to increase the levels of knowledge about a locality and the presence of ancient species of fauna and flora.

### **5.1.2 Extent of impact**

We believe that there is a likelihood that palaeontological material will be impacted by the proposed activities. The extent of the impact must be determined during the EIA. There are unlikely to be any fatal flaws in respect of the proposed wef.

## **5.2 Pre-colonial and Colonial Archaeology**

There is a considerable database of existing pre-colonial archaeological sites for the Vredenburg peninsula and we would thus anticipate archaeological sites on the properties concerned. Due to the vagaries of human settlement, we cannot easily predict the numbers or precise locations although, areas around, and on granite extrusions (koppies) are known to have been favoured by LSA people. It is also possible that archaeological scatters (including shell, ceramic and lithics) may be recovered in ploughed lands. Middle and Early Stone Age sites may be buried below the surface. Many significant MSA Sites that we know of today have been discovered as a result of natural or human interventions on the landscape. Sites of these periods are commonly associated with older sands and/or calcretes which abound on the Vredenburg peninsula.

### **5.2.1 Nature of impact**

The construction of turbines, a substation, power line control building and associated infrastructure (roads and laydown areas) on any of the farms may result in the physical destruction of both above and below ground pre-colonial archaeological sites. Pre-colonial graves seldom show traces on the surface and thus may be impacted.

### **5.2.2 Extent of impact**

The proposed wind energy facility on the farms may impact on archaeological sites which have regional and perhaps national or even international significance. There is a chance that the deep excavations for the turbine bases as well as the foundations for the substation and control building/s could potentially impact significant buried archaeological material. Similarly, the construction of access roads could impact material that lies buried in the surface sand.

## **5.3 Colonial Period Heritage**

While information on the historical settlement of this area is more limited, it is possible that given the age of the land grants, remains dating to the 18<sup>th</sup> and 19<sup>th</sup> centuries may be uncovered. Aside from farms and their associated structures, other possible features may include graves and graveyards and those related to extraction and processing of lime for early cement e.g. lime kilns. We know that fishing was important to this period and the early settlements related to such activities were probably located on the shoreline, an area that will not be impacted by this project. Some farm/land owners were also involved with fishing, especially in the less productive times of the year.

A potentially significant building, one of few on the Vredenburg Peninsula, exists on Honing Klip (Fransen 2004). Apparently the house and outbuildings have been considerably altered and while we have not seen it, Fransen's description suggests that a grading of either 3A or 3B may be applicable.

### **5.3.1 Nature of Impact**

The construction of the turbines and associated infrastructure may result in impacts to colonial heritage. It is also possible that sub-surface historical material (including graves) may be impacted by construction activities.

### **5.3.2 Extent of the Impact**

The construction of turbines in or in close proximity to historical buildings and farm structures, including graveyards, may have a local or regional impact on the built environment.

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

Inland of the coastal zone, the Vredenburg peninsula is comprised predominantly farm lands used for grazing and wheat production. The rolling farmlands are interspersed with granite koppies which dominate the skyline. These farms provide the rural character of the Vredenburg peninsula which is being rapidly eroded by coastal housing developments and industrial facilities, particularly south of Vredenburg.

Wind Energy Facilities are a new concept in South Africa, but are relatively common in Europe and North America. In Europe there is a trend towards discouraging large "wind parks" due to the visual impact they have on landscape. Instead, small clusters of turbines – up to 8 – are generally considered more acceptable. At present, South Africa does not have well developed guidelines to address the impact of wind farms on the landscape. These need to be urgently work-shopped at the level of the South African Heritage Resources Agency.

### **5.4.1 Nature of impacts**

The height of turbines means that they will in all likelihood be visible for considerable distances on the Vredenburg peninsula. The proposed activity is essentially a visual intrusion that is very difficult to mitigate, but given the variable nature of the present landscape with respect to development, the presence of turbines may be more easily incorporated into some areas of the peninsula than others.

The nature of the impact will need to be informed by a visual impact assessment that takes into account the impact on heritage sites.

### **5.4.2 Extent of impacts**

The extent of the visual impact, particularly on the towns of Vredenburg, St Helena and Saldanha and the approach roads will need to be assessed by a visual impact specialist.



## **6. MITIGATION AND CONSERVATION**

### **6.1 Pre-colonial and colonial archaeological heritage**

It is expected that much of the impacts to surface archaeological heritage (pre-colonial and colonial) will be controllable through avoidance of sensitive areas (micro-siting). If for any reason avoidance is not feasible, some form of mitigation may be required. Mitigation usually involves some physical intervention and as such would require a permit to be issued by the relevant Provincial Heritage Authority, HWC. An Archaeological Impact Assessment must be undertaken as part of the EIA.

#### **6.1.1 Unidentified archaeological material, unmarked graves**

There is always a chance that sub-surface archaeological material may be exposed during construction. A monitoring program may be required to mitigate such eventualities. The high likelihood of finding such material means that this will be a recommendation to be implemented during the EMP. Mitigation may require temporary suspension of construction activities at the affected locations until mitigation is completed.

### **6.2 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, etc) that are greater than 60 years of age. It is anticipated in most instances, that it will be possible to adjust turbine locations to avoid impacts. If any farm buildings, including sheds and old kraals, are directly 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 in the proposed areas as well as on adjoining properties, including those of Grade 3A significance. This must be assessed by a Heritage specialist during the EIA survey and suitable mitigation proposed.

An inventory of the built environment (including graveyards) should be made as part of the EIA process. Of particular interest are the farm buildings on Honing Klip which are some of the earliest remaining on the peninsula. Farm owners and workers must be consulted with respect to the positions of graveyards, as these can become obscured through lack of maintenance.

### **6.3 Palaeontology**

Much of the resource will not be visible at the surface, and predicting the presence of material will only be feasible in the most general of senses although may be possible in some situations due to previous exposures. Mitigation would generally be in the form of a clearly defined monitoring program of all invasive activities and a establishing a clearly defined sampling and conservation strategy in the event of material being found during the construction phase. Sampling will

require the issue of a permit by HWC. A Palaeontological Impact Assessment should be undertaken as part of the EIA.

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

This is perhaps the most difficult heritage impact to address. There is no doubt that the wind turbines will affect the landscape qualities of the Vredenburg peninsula. It is possible that turbines will be visible from the major towns and from most major roads of which the R43 which connecting Vredenburg with Paternoster, may be considered a scenic route. It may be that some areas will incorporate wind energy facilities more readily due to the prevailing industrialisation of parts of the landscape. The extent of this visual impact will need to be assessed during the EIA process by a Visual Impact specialist.

### **7. CONCLUSIONS**

The large number of Archaeological Impact Assessments (SAHRA 2009 database and more recent studies - see bibliography) which have been undertaken along the Vredenburg Peninsula is a reflection of the degree to which archaeological (and palaeontological) sites have come under threat from development, and inevitably has resulted in loss of resources. From an archaeological perspective, the coastal zone is particularly sensitive, although the archaeological surveys of Sadr on both coastal and inland areas of the peninsula (Sadr 2009) and an archaeological research programme focussed on Kasteelberg, Witklip and Heuningklip (Smith 2006), indicate that the interior of the Vredenburg peninsula is equally rich in archaeological heritage. The main concentration of pastoralist sites at Kasteelberg is under consideration as a provincial heritage site since the Vredenburg area contains some of the most distinctive herder sites yet found along the coast. An archaeological site at Paternoster has also been declared a Provincial Heritage Site (April 2009).

The area has attracted international attention due to the presence of Middle Stone Age sites and those that show evidence of early use of marine resources and archaeological and palaeontological sites that contain ancient human remains from that time.

Equally important are the palaeontological resources of the broader area. Of international importance is the faunal deposits at the Langebaan Fossil Park, parts of which is a declared Provincial Heritage Site. Although not impacted directly by this proposal, it is an indication of the types of deposits that exist in the area. Consequently, the Vredenburg peninsula is an area where there is a strong possibility of finding evidence of fossil faunas, and/or evidence for marine transgressions and regressions, and a range of other preserved remains.

Construction activities may have significant impacts on the below-ground heritage and built environment of the area and specialist input will be required to assess the potential impacts more fully during the EIA process.

In terms of the natural and cultural landscape qualities of the site, significant impacts are expected in some of the locations. The degree and nature of the impact is going to depend on how the wind turbines are arranged on the

landscape, and the ability of the topography to absorb their presence. This is an issue which will need the involvement of a VIA specialist.

That fact the Heritage Western Cape is considering the proclamation of the archaeological complex at Kasteelberg as a Provincial Heritage Site must be considered as a factor that may require protracted negotiation with the heritage authority on the issue of placing turbines. HWC have recently required multi kilometre buffers around historic farms, and we would expect the same to be true for a PHS.

### **7.1 Terms of reference for the EIA**

- A field survey will be required to determine whether there are any above ground archaeological remains which will be negatively impacted by the development;
- A Paleontological study will be required to determine if fossil material is present on, or likely to be encountered below surface on the proposed sites and assess the impact of the proposed facilities;
- An assessment of the built environment of the affected farms (including buildings, sheds, kraals, graveyards) in order to determine significance and the impact of the proposed facilities;
- In terms of the cultural landscape and sense of place of the area, significant impacts are expected. The degree and nature of the impact is going to depend on how the wind turbines are arranged on the landscape, and the ability of the topography to absorb their presence. This is an issue which will need the involvement of a VIA specialist in the EIA phase.

These are expressed as the ToR for the EIA in the Executive Summary.

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- Unpublished Archaeological/Palaeontological/Heritage Assessments arranged by nearest town
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## Appendix 1

### Historical background information on land grants Harriet Clift

#### Saldanha farms

The Saldanah wind farms form 4 clusters: (1) Dawidsfontein and Schuitjesklip (2) Bestekraal and Zandfontein (3) Honingklip and (4) Holvlei and Kliprug. For the most part these farms originate as early 19<sup>th</sup> century quitrents, but as in the case of Kliprug, it is clear that an earlier loan farm predated the 1832 grant.

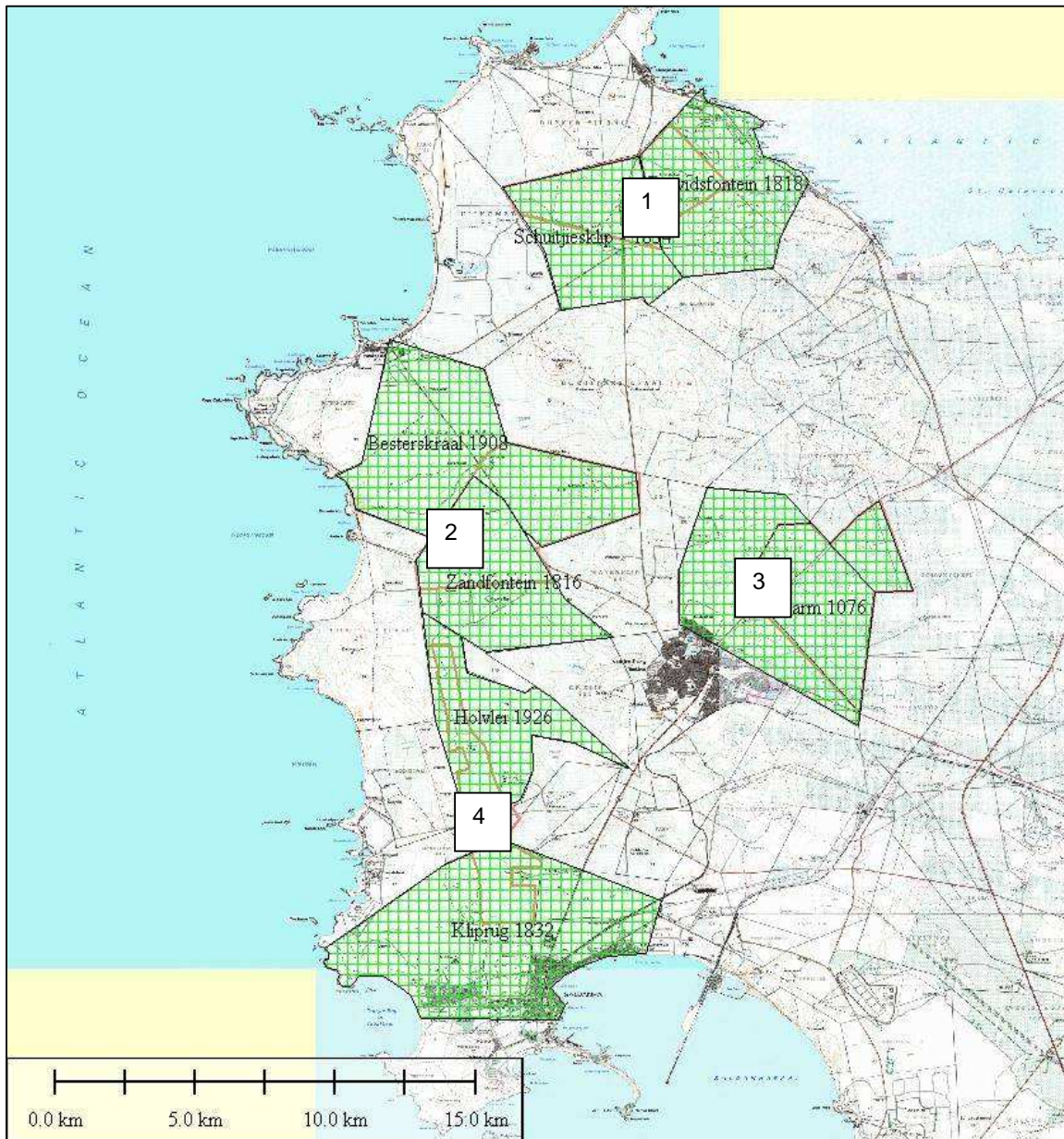


Figure 1: The historic farms are indicated by the hatched green shading. The proposed land parcels for the wef can be traced back to the original grants

### **18<sup>th</sup> century:**

The Saldanah Bay area is well known in the early history of the settlement at the Cape in terms of its safe anchorage, a source of fresh water as well as the number of VOC outposts associated with cattle herding. In 1750, Hendrick Cloete (of Groot Constantia) was granted in freehold, 60 morgen of land (further south, closer to the Langebaan lagoon) which appears to have been part of a defunct cattle post. (He paid the VOC 100 Rixdollers for the grant. OCF 3.7). Similar grants were issued to Martin Melk and Johannes Kruiwagen (1776 and 1744) in the vicinity of Velddrif.

### **19<sup>th</sup> century:**

Early 19<sup>th</sup> century quitrent grants include Zandfontein (1816) and Honingsklip (1816). Of these three farms, only the Honingsklip homestead has been identified as a heritage site in Fransen (2004). Although it is not officially declared (is not a provincial heritage site) Fransen (2004) has rated it fairly highly according to his rating system and it may be the equivalent of a 3A. The dwelling house has a 1831 date (the farm is clearly much older). The werf consists of the dwelling as well as a number of outbuildings (Fransen 2004:341).

A second wave of quitrent grants took place in the 1830s: Dawidsfontein, Hollenvallei/Holvlei and Klipfontein. Klipfontein's survey diagram shows the outline of a typical circular loan farm, with its centre more or less near the coast (probably at a spring – the diagram is very unclear). Dawidsfontein was surveyed in 181, but was only granted in 1831. It too shows the outline of an earlier circular loan farm. Schuitjesklip was surveyed in 1834, but only granted in 1844.

### **20<sup>th</sup> century:**

As with elsewhere, the 20<sup>th</sup> century is characterised by the subdivision of farms.

### **Comments**

The homestead at Honingsklip (Farm 1076) is a potential problem area. It is the only historic farmhouse on the Vredenburg peninsula (in addition to Patrysborg) which has been identified by Fransen (2004) as a heritage site, and in addition to that, one with a fairly high local if not provincial heritage significance (will have to be ground truth-ed).

### **Sources**

Deeds Office (see Deeds summaries below).

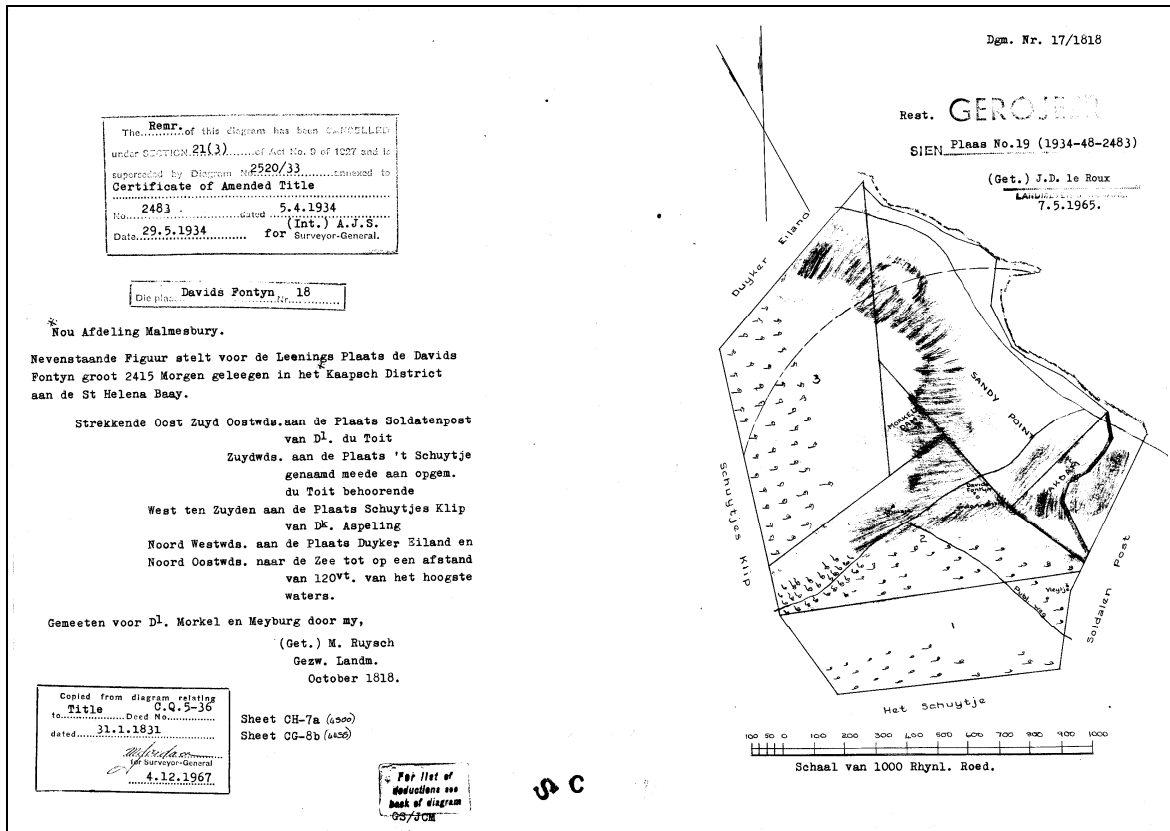
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**DEEDS SUMMARIES:**

**Cluster 1: Dawidsfontein and Schuitjiesklip**

**Dawidsfontein: Farm 18, Malmesbury**

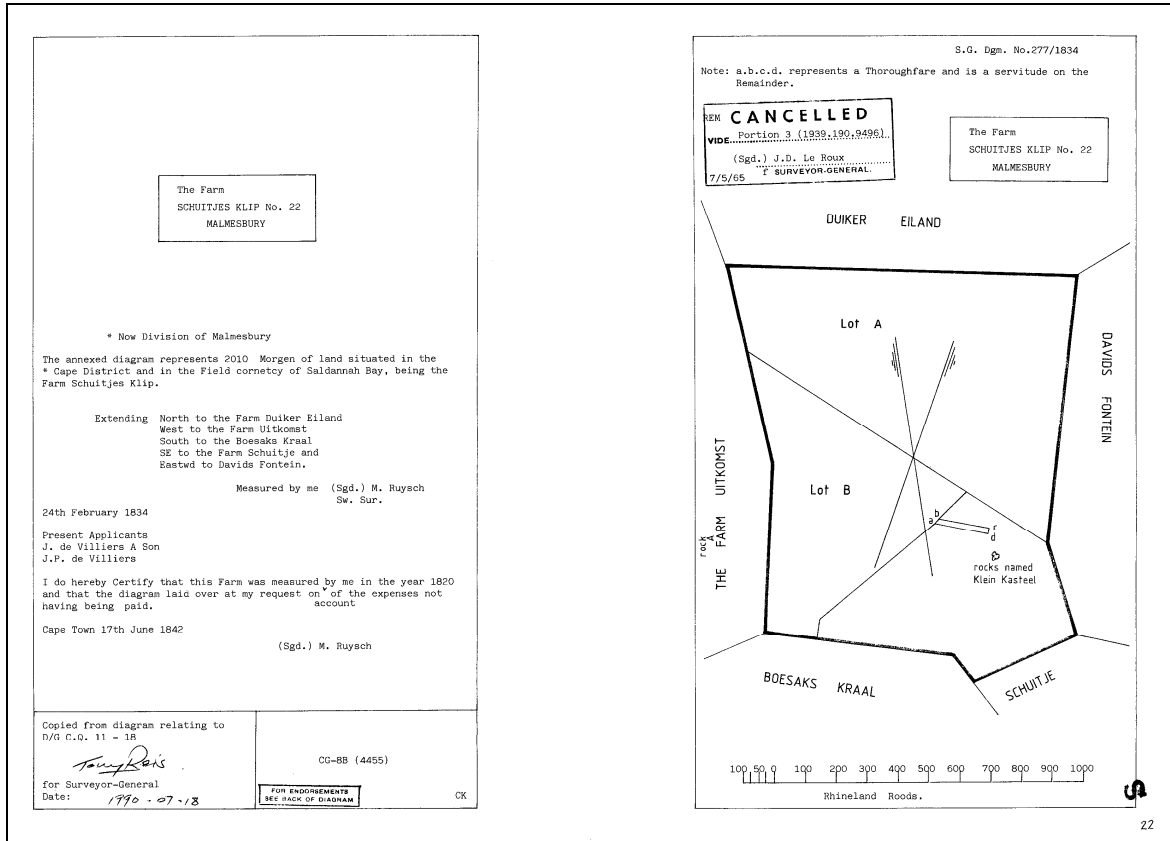
Farm No	Diagram	Deed	Date	Extent	From	To	Comments
18	17/1818	Cape Quit 5.36	31/01/1831	2415M	Grant	Daniel Johannes Morkel and 2 others	<b>Farm subdivided post 1866.</b>
Unclear the exact devolution of these two portions of the farm. No remaining portions.							
18/7		6038	27/02/1912	599M 303 SR	HJC Stephan	Johan Hendrick Andries Heyns	Morkels Dam
18/9	359/1926	3829	26/04/1826	99M 592SR	JHA Heyns	Johannes GF Pienaar	Annex Kaffer Schuitje



Survey diagram 17/1818, probably had its roots in an earlier loan farm.

## Schuitjiesklip: Farm 22, Malmesbury

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
22	277/1834	Cape Quit11.18	1/07/1844	2010M	Grant	Gideon Joshua Hugo, Guillaume Johannes du Toit, Ferdinand Henry Strubens and Johannes Marthinus de Villiers	<b>Rocky outcrop shown</b>
22/1/1		11	2/05/1865	1005M	GJ Hugo and 3 others	John McLachlan, Charles McLachlan, Jacob Frederick McLachlan and James McLachlan	
22/1/1		2430	11/06/1891	1005M	I Morrison	Johan Carel Stephan and Hendrick Rudolph Stephan	
22/1/1		7428	16/10/1908	1005M	Firm of Stephan Bros	Henry John Stephan	
22/1/1		2050	31/03/1911	1005M	HJC Stephan	Johannes Gideon Frederick Pienaar	
22/1/1		6196	24/07/1930	1005M	Est JCF Pienaar	Adriaan Pienaar	
22/1/1		5408	28/04/1945	1005M	A Pienaar	Albertus Wynand bester and 3 others	
22/1/1		13988	13/08/1895	1005M	AW Bester and others	Thomas Nicolas Johannes Bester	
22/1/1		1086	29/01/1979	1005M	THJ Bester	Johannes Jacobus Pieter Bester and Thomas Nicolas Johannes Bester	½ shares

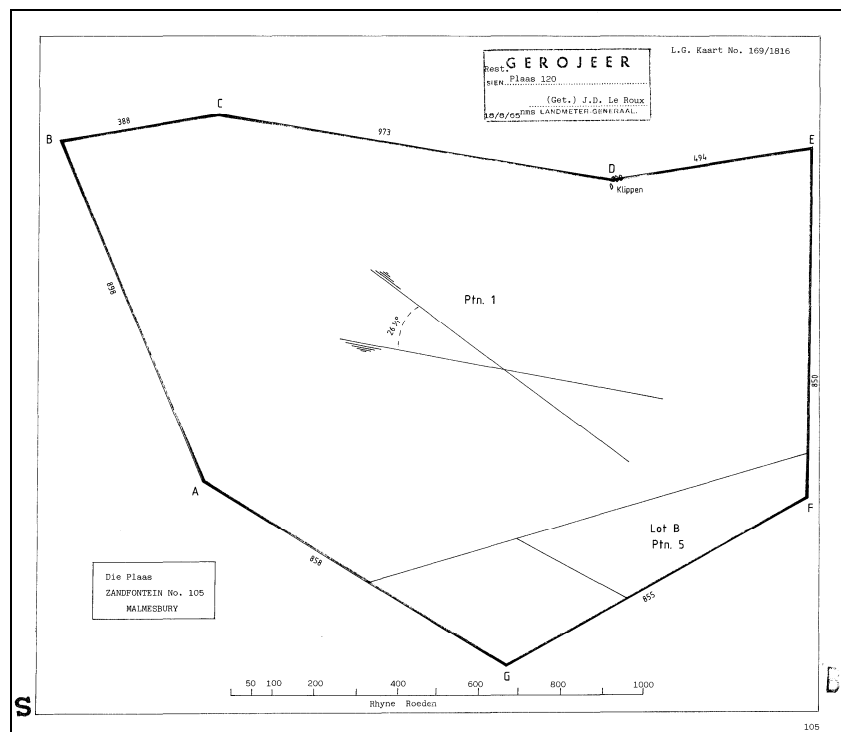


Survey diagram 277/1834. Other than a rocky outcrop names "Klein Kasteel" no features are indicated.

**Cluster 2: Zandfontein and Bestekraal**

**Zandfontein: Farm 105, Malmesbury**

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
105	169/1816	Cape Quitrent 2.64	1/07/1816	2822M	Grant	Nicolaas Everhardus Mostert and Johannes Tobias Laubscher	
105/1		387	27/10/1857	2466M 5SR	Est NE Mostert	Jan Nicolaas Louw Heydenrich and Jacob Frederick Constant Heydenrich	
105/1		399	21/05/1873	2466M 5SR	JNL Heydenrich	Jacob FC Heydenrich	
105/1		2830	27/05/1895	2466M 5SR	JFC Heydenrich	Ernest Frederick Heydenrich	1/3 shares
105/1		2831	27/05/1895	2466M 5SR	JFC Heydenrich	Johannes Cornelius Heydenrich	1/3 shares
105/1		2832	27/05/1895	2466M 5SR	JFC Heydenrich	Jacob Hendrick Heydenrich	1/3 shares
105/1	Subdivided in 1905: Portion 4 as follows to						
105/1/4		1837	4/03/1905	1090M 149SR		Johannes Cornelius Smit Heydenrich	



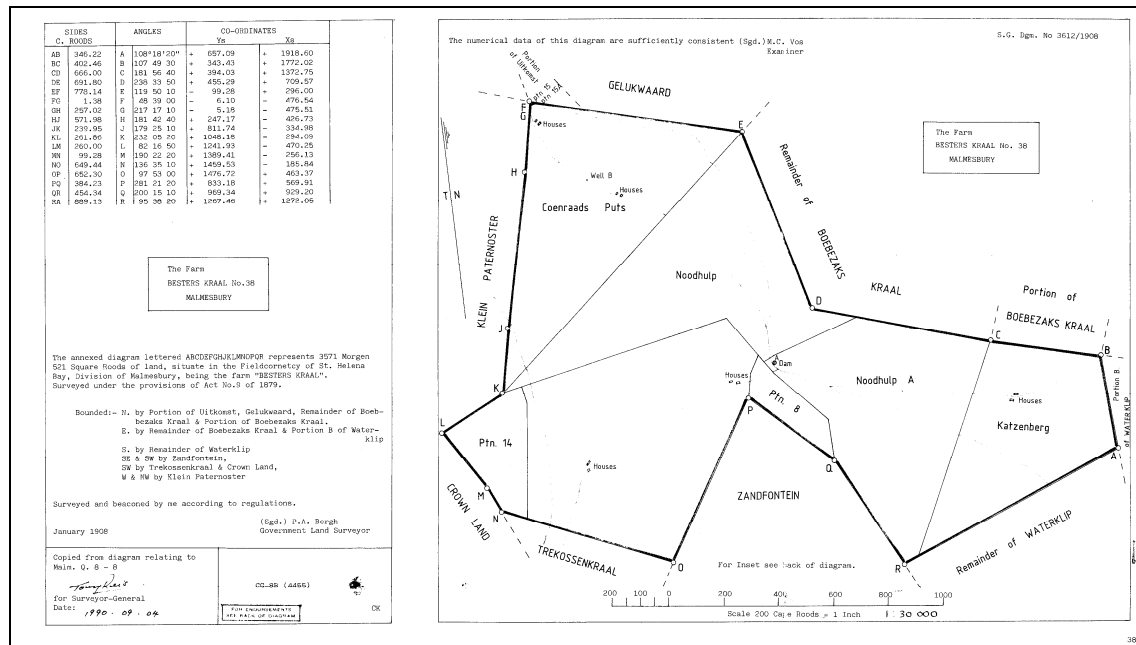
Survey diagram 169/1816

## Besterskraal: Farm 38, Malmesbury

Comprising: Rem Farm Noodhulp 296, Rem of Portion of Noodhulp, Lot C of Waterklip, Farm 297, Ptn of Waterklip, Farm 297, Whole of Farm 298\*\*\*

\*\*\*The farm numbers have been incorrectly transcribed in the deeds summary book. Farms 296, 297 and 298 are further south, closer to Langebaan Lagoon. No indication is given on the survey diagram of the component parts of the amended grant.

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
38		MalQuit 8.8	5/04/1909	3571M 521SR	Amended Grant	Coenraad Johannes Walters	Besterskraal

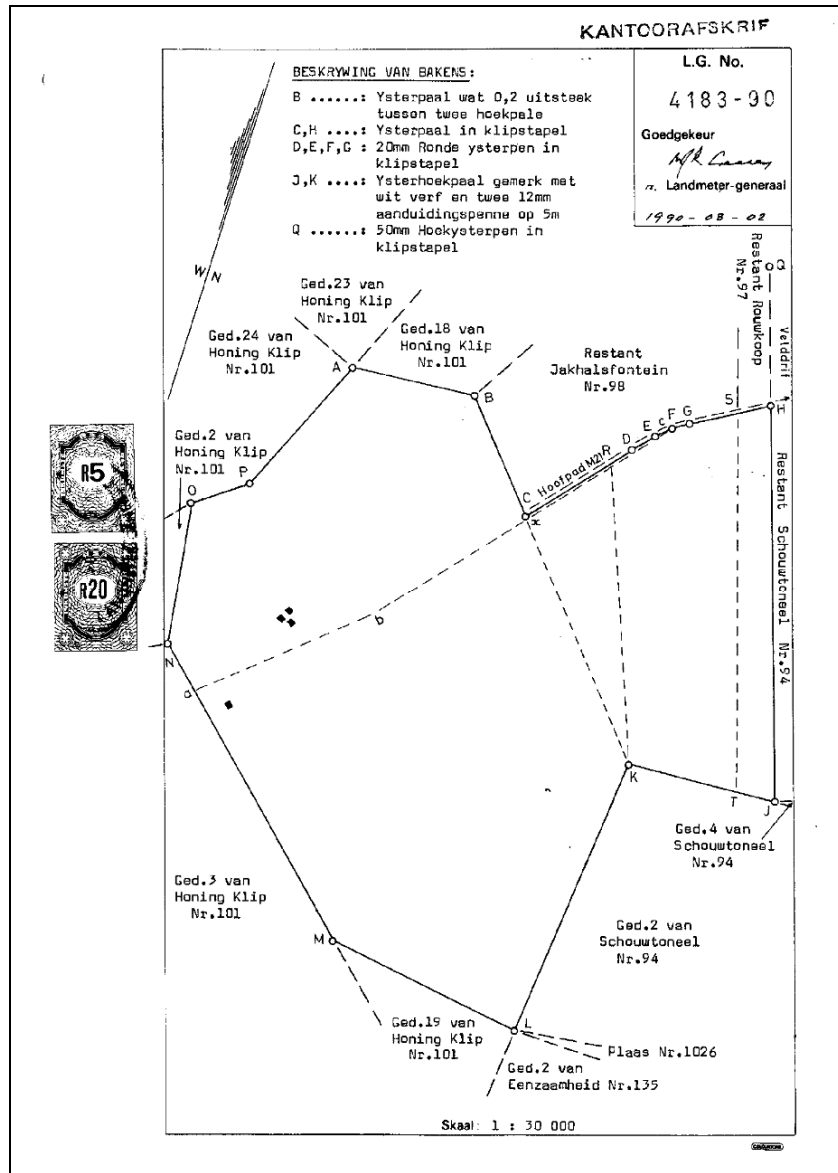


Survey diagram 3612/1908 showing the subsequent subdivision of the farm Besterskraal. Subdivisions all date to the early 20<sup>th</sup> century.

### Cluster 3: Honingklip

#### Farm 1076:

More is a configuration dating to 1990s. It contains a portion of Jakhalsfontein, and a portion of the farm Rouwkoup. More significantly it contains the remainder of portion 1 of Honingklip (Farm 101 – see below) which contains the historic homestead.



Survey diagram 4183/1990. The dashed line abx represents an electrical servitude dating to the 1950's.

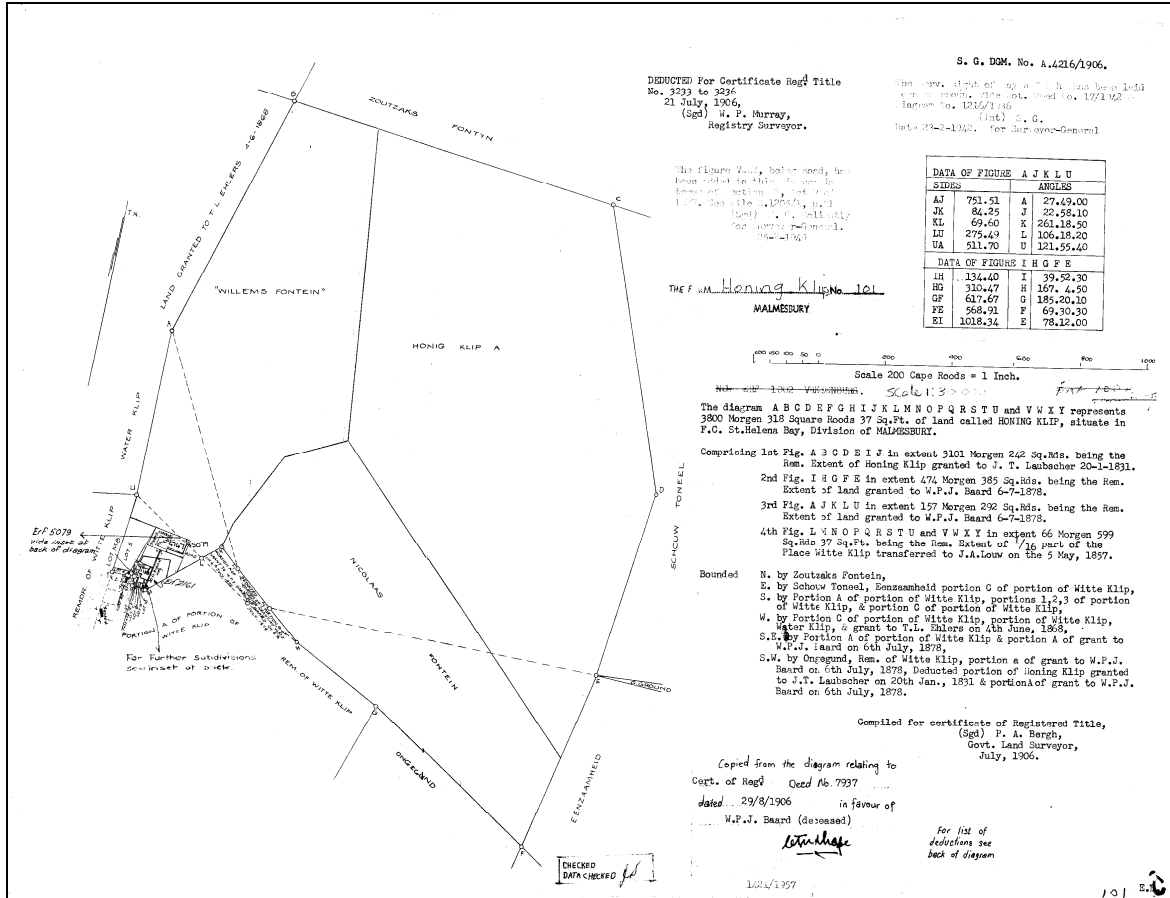


## Honingklip: Farm 101, Malmesbury

Comprising: Rem Honingklip Farm 96, Portion 2 Witteklip, Farm 123/2, Lot 649, Farm 99, Lot 647, Farm 100

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
123	168/1816	Cape Quitrent 2.63	1/07/1816	2920M 526SR	Grant	Nicolaas Everhardus Mostert and Johannes Tobias Laubscher	<b>Witteklip</b>
123/2		286	15/05/1857	187M 300SR	N Mostert and another	Jacobus Adriaan Louw	
1061, Vredenburg		264	16/10/1884		Est WPS Baard	Church Wardens, Vredenburg	Town Vredenburg
Rem 123/2		7937	29/08/1906	66M 599SR	CCT	Est Willem Petrus Baard	Multiple subdivisions in the 1870s remainder incorporated in the consolidation
96		Cape Quitrent 5.29	20/01/1831	3106M 488SR	Grant	Johannes Tobias Laubscher	<b>Honingklip</b>
1061, Vredenburg		264	16/10/1884		Est WPS Baard	Church Wardens, Vredenburg	Town Vredenburg
Rem 96		7937	29/08/1906		CCT	Est Willem Petrus Baard	
100		Malmesbury Quitrent 2.9		479M 241SR	Grant	Willem Petrus Johannes Baard	<b>Lot 647</b>
1061, Vredenburg		264	16/10/1884		Est WPS Baard	Church Wardens, Vredenburg	Town Vredenburg
Rem 96		7937	29/08/1906		CCT	Est Willem Petrus Baard	
99		Malmesbury Quitrent 2.10	6/07/1878	171M 309SR	Grant	Johannes Tobias Laubscher	<b>Lot 649</b>
1061, Vredenburg		264	16/10/1884		Est WPS Baard	Church Wardens, Vredenburg	Town Vredenburg
Rem 99		7937	29/08/1906		CCT	Est Willem Petrus Baard	
<b>101</b>		<b>7937</b>	<b>29/08/1906</b>	<b>3800M 318SR</b>	<b>Certificate of Consolidated Title</b>	<b>Est Willem Petrus Jacobus Baard</b>	<b>Honingklip</b>
101/2			1907	986M 500SR		Willem Petrus Jacobus	Willemsfontein

101/19				82M		Baard Christiaan Pieter Alexander Bester	Driefontein
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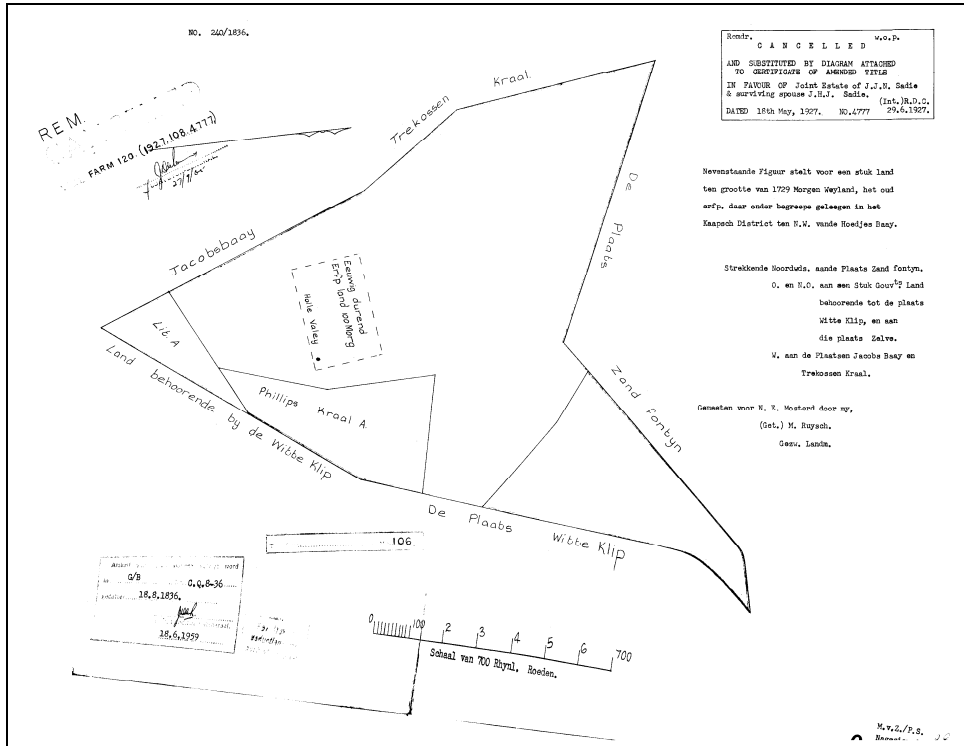
Survey diagram A4216/1906. The town of Vredenburg is situated on part of this farm. Honingklip had been divided into Willemsfontein, Nicolaasfontein (Driefontein?) and Honingklip A.

## Cluster 4: Holvei and Kliprug

### Holvei: Farm 120, Malmesbury

Comprising: Rem Hollevalley Farm 106/1, Rem Zandfontein Farm 105 (see previous), Rem Portion Witteklip (see previous), Lot C Jacobsbaai, Farm 108

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
106	240/1836	Cape Quit 8.36	18/08/1836	1729M	Grant	Nicolaas Everhardus Mostert	
106/1		387	27/10/1859	288M 223SR	FX Jurgens	Johan Nicolaas Louw Heydenrich and Jacob Frederick Constant Heydenrich	Remainder to Johan Michiel Sadie
		399	21/05/1873	288M 223SR	JNL Heydenrich	Jacob FC Heydenrich	
		2830	27/05/1895	288M 223SR	JFC Heydenrich	Ernest Frederick Heydenrich	
		2831	27/05/1895	288M 223SR	JFC Heydenrich	Johannes Cornelius Heydenrich	
		2832	27/05/1895	288M 223SR	JFC Heydenrich	Jacob Hendrick Heydenrich	
		1835	4/03/1905	288M 223SR	Insolvent Est EF Heydenrich and others	Insolvent Est EF Heydenrich	
108	225/1819	Cape Quit 5.41	31/01/1831	2200M	Grant	Schalk Willem van de Merwe and Willem Adolph Marais	
120	B878/1826	4777	18/05/1927	1868M 568SR	Certificate of Amended Title	Joint est Jacob Johannes Nicolaas Sadie and Jacomina Hedrika Josephine Sadie (brn Stofberg)	
120/1		9731	29/09/1927	933M 401SR	Est JJN and JHJ Sadie	Johan Michiel Sadie	
120/1		9733	29/09/1927	933M 401SR	JM Sadie	Hendrick Jacobus Bester	
120/1		6612	16/10/1933	933M 401SR	Est HJ Bester	SA Lewens Assuransie Maat Bpk	
120/1		18583	26/09/1947	933M 401SR	SA Lewens Assuransue Maat Bpk	Nicolaas Hendrick Laubscher	
120/1		22923	1/11/1966	933M 401SR	Est NH Laubscher	Pieter Paul Laubscher	Portion sold to Portlands Cement

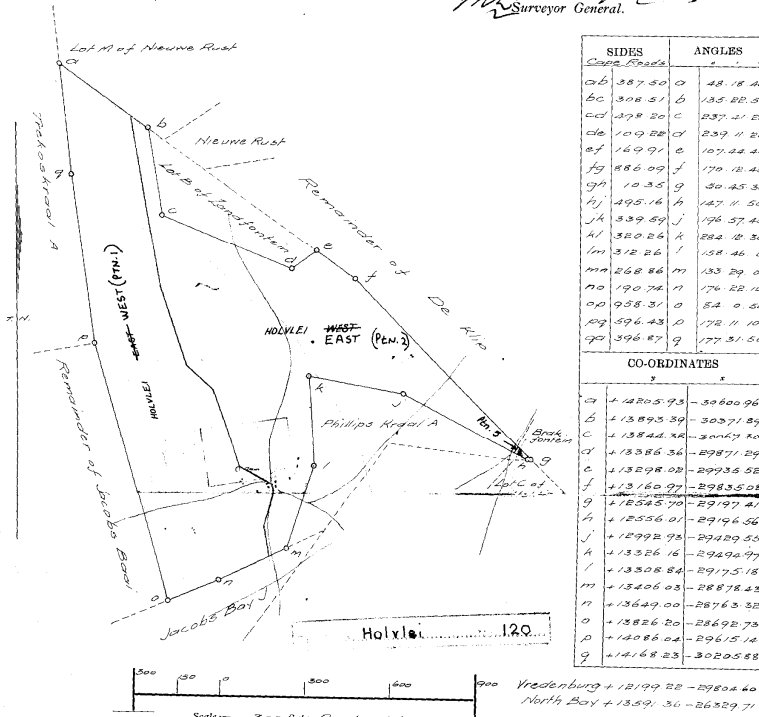


Survey Diagram 240/1836 of farm Hollevlei

TRIPPLICATE

No. B878 / 1926

Approved *[Signature]*  
Surveyor General.



The above figure *abcdefghijklmnopq* represents  
 1868 Morgen 586 Sq. rods Sq. feet of land situate in the Division of  
 Malmesbury, Field Cornetcy of St Helena Bay, being the farm  
HOLVLEI

Rem **CANCELLED**  
 VIDE... Form 1087 (C.O.T. 35806/22)  
 1927.06.17  
 SURVEYOR GENERAL.

For list of  
 deductions see  
 book of diagram

Bounded as indicated above

I certify that this diagram belongs to  
 the deed issued this day  
 in favour of Estee J. J. N. Sadi  
 13-5-1927.

1927.108.4777.

Surveyed and beaconed by me according to Regulations.

*[Signature]*  
 Government Land Surveyor  
 August 1922

Survey diagram B878/1926 of Holvlei. Original boundaries are barely discernable.

## Klipfontein: Farm 282, Malmesbury

Farm No	Diagram	Deed	Date	Extent	From	To	Comments
282	166/1832	Cape Quit 6.64	31/12/1832	3923M	Grant	?	<b>Inlcudes earlier loan farm -centre probably fresh water source on the farm Hoedjies Bay</b>

N.B. by nevenstaande Figuur is nog gevoegd het strookje Land A.B.C.D. ten grootte van 31 Morgen makende uit het geheel tezamen 3923 Morgen.

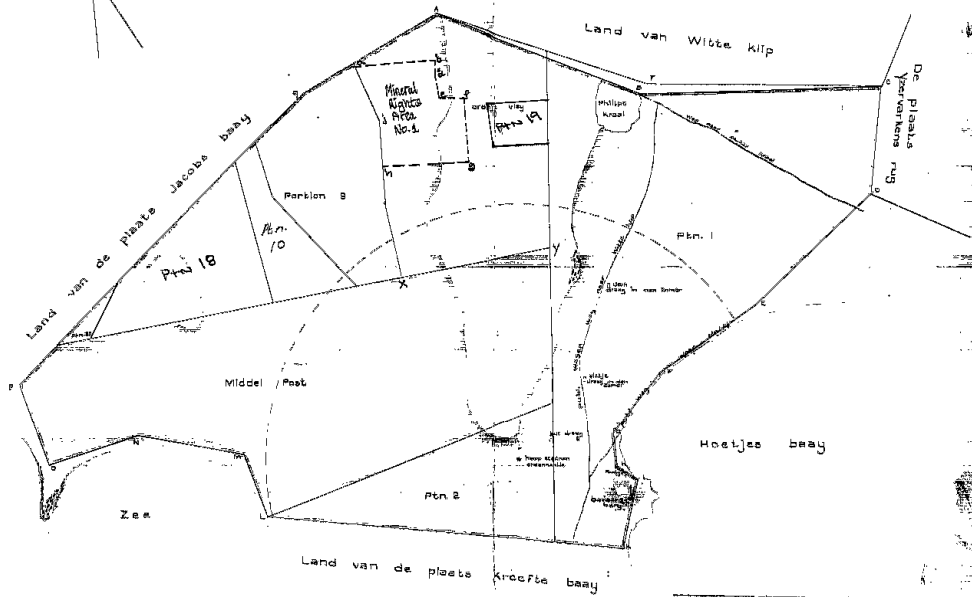
3360/1750ha

(Get.) M. Ruysch,  
Geww. Landm.

Nevenstaande Figuur A.B.C.D.E.F.G.H.I.K.L.M.N.O.p.q. stelt voor de Heenings plaats gend. de Kliprug gelegen in het Kaapskol District naby de Hoetjes Baay inhoudende 3892 Morgen.

Strekkende Noord-west ten Noorden aan het Land van de plaats gend. de Jacobabaay  
Oostwds. aan de plaats Yzerkrans rug  
Zuid-Oostwds. naar de Zee  
Zuidwds. meede naar de Zee en aan de plaats de Kreefte baay  
en West ten Zuiden wederom naar de Zee

Gemeten voor Wm. van Schoor & Co  
door my,  
(Get.) M. Ruysch,  
Geww. Landm.



Copied from diagram relating  
Title No. 2, 6-64  
to Decree No. 31.12.1832  
dated 31.12.1832  
For Surveyor-General  
7.12.1967

CG-8DD(442)  
CG-2EB(342)

For list of  
Modifications see  
Back of Diagram

DR/JOK

The Farm... Kliprug... No. 282

Malmesbury

