

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
PROPOSED UITKYK SAND MINE
REMAINDER OF PORTION 3 OF THE FARM HONING
KLIP 101
VREDENBURG**

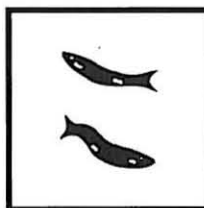
Prepared for

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Executive summary

A Phase 1 Archaeological Impact Assessment of the proposed Uitkyk sand mine on the Remainder of Portion 3 of the Farm Honing Klip No. 101 Vredenburg has identified no significant impacts to pre-colonial archaeological material that will need to be mitigated prior to proposed development activities.

The study site is situated immediately east of the town of Vredenburg and borders on the industrial area and the Hopefield Road (R45) along the south west. The proposed sand mining application area is about 160 ha in extent. It is estimated that more than 90% of the proposed mining area has already been transformed as a result of many years of agricultural activity.

The following findings were made:

- A few dispersed, Later Stone Age tools were documented during the study.

The archaeological remains have been rated as having low local significance.

The following recommendations are made:

- Should any unmarked human remains be disturbed, exposed or uncovered during sand mining operations, these should immediately be reported to the archaeologist or the South African Heritage Resources Agency (Dr A. Jerardino 021 462 4502).

The above measures must be included in the Environmental Management Plan (EMP) for the proposed project.

Table of Contents

	Page
Executive summary	1
1. INTRODUCTION	3
Background and brief	3
2. TERMS OF REFERENCE	3
3. THE STUDY SITE	4
4. STUDY APPROACH	9
Method	9
Constraints and limitations	9
Identification of potential risks	9
Results of the desk top study	9
5. LEGISLATIVE REQUIREMENTS	10
The National Heritage Resources Act	10
Archaeology (Section 35 (4))	10
Burial grounds and graves (Section 36 (3))	10
6. FINDINGS	11
6.1 Mine Area 1	11
6.2 Mine Area 2	11
6.3 Mine Area 3	11
6.4 Mine Area 4	11
6.5 Mine Area 5	11
7. IMPACT STATEMENT	11
8. RECOMMENDATIONS	11
9. REFERENCES	12

1. INTRODUCTION

1.1 Background and brief

Amathemba Environmental Management Consulting, on behalf of Uitkyk Sand Mine BK requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for a proposed sand mining operation on Portion 3 of the Farm Honing Klip 101, situated in Vredenburg on the Cape West Coast.

Proposed temporary mining operations will entail the removal of a, relatively thin layer of sand at an average depth of ± 1 m, in a number of discreet ($n = 5$) Mining Areas. Available top soil will be removed prior to mining and will be stored until it can be replaced after mining. All mined areas will be rehabilitated after sand mining operations and will revert back to agricultural land. The palaeosurfaces that underlies the sand has a thin capping of Ferricrete (or `Koffieklip) (Amathemba 2008). Mining will therefore not penetrate or intersect any limestone or associated sediments. An underlying clay layer will be the mine-limiting layer.

The extent of the proposed development (nearly 160 ha) falls within the requirements for an archaeological impact assessment as required by Section 38 of the South African Heritage Resources Act (No. 25 of 1999).

The aim of the study is to locate and map archaeological heritage sites/remains that may be negatively impacted by the planning, construction and implementation of the proposed project, to assess the significance of the potential impacts and to propose measures to mitigate against the impacts.

2. TERMS OF REFERENCE

The terms of reference for the archaeological study were:

- to determine whether there are likely to be any archaeological sites of significance within the proposed Mine Application areas;
- to identify and map any sites of archaeological significance within the proposed Mine Application areas
- to assess the sensitivity and conservation significance of archaeological sites within the proposed Mine Application area;
- to assess the status and significance of any impacts resulting from the proposed development, and
- to identify mitigatory measures to protect and maintain any valuable archaeological sites that may exist within the proposed Mine Application areas

3. THE STUDY SITE

A locality map is illustrated in Figure 1.

An aerial photograph of the proposed site is illustrated in Figure 2.

The study site is situated immediately east of the town of Vredenburg and borders on the Vredenburg industrial area and the Hopefield Road (R45) along the south west. The Veldriff road (R399) cuts through the north western part of the farm. It is estimated that more than 90% of the proposed site has been transformed as a result of many years of agricultural activity. Virtually no natural vegetation occurs on the property and it is surrounded by vast tracts of similarly transformed farmland (Figures 11-22). There are no significant landscape features occurring on the proposed site, although a few small granite domes occur near Mining Areas 1 and 2. There are no buildings or structures in the proposed mine application area. A large portion of the farm is currently being mined for sand, while significant areas have already been rehabilitated and restored back to farmland. The predominant land use of the surrounding properties is agriculture and industry. There is a municipal sewerage works east of the farm.

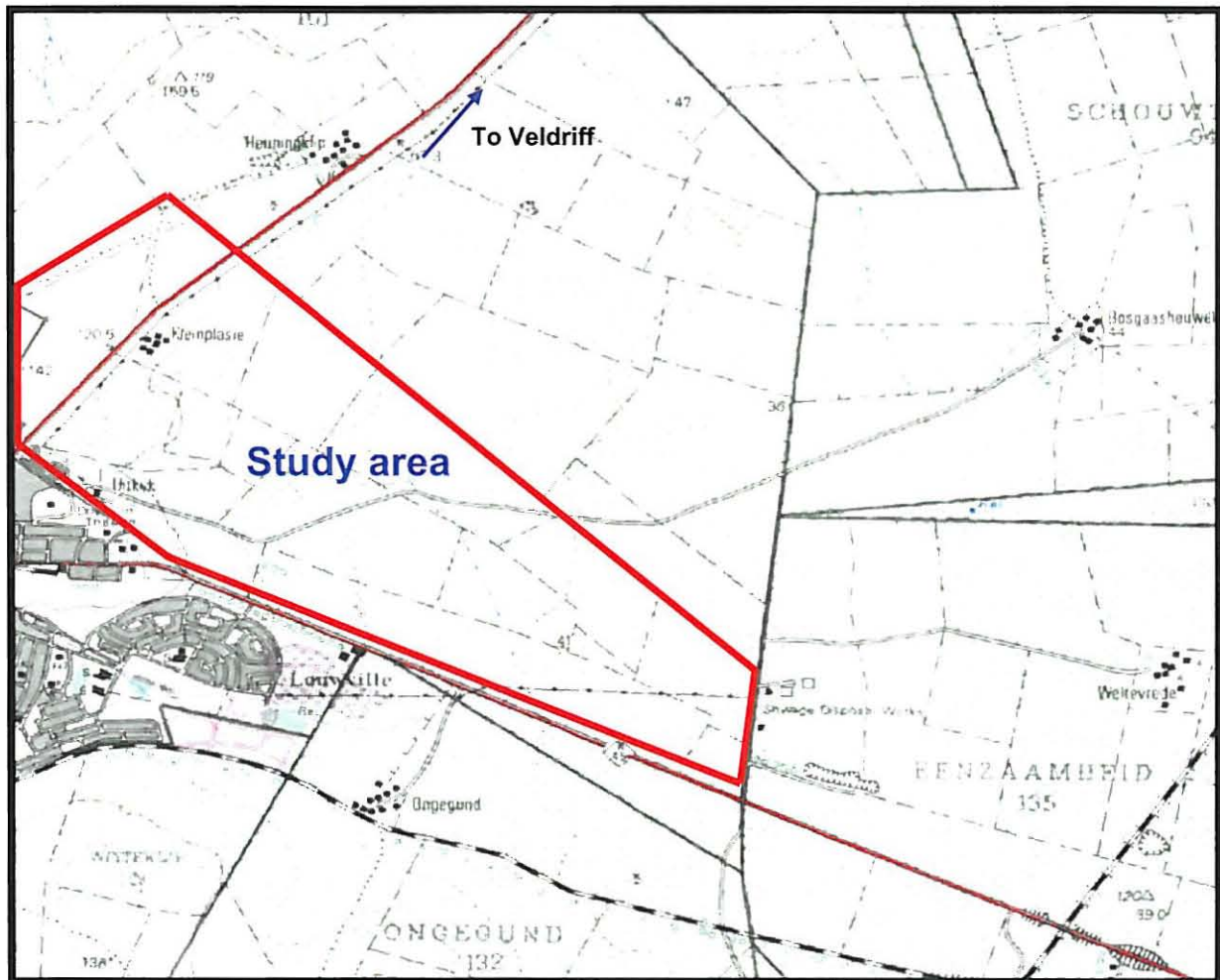


Figure 1. Locality Map (321 CA & CC Veldriff)

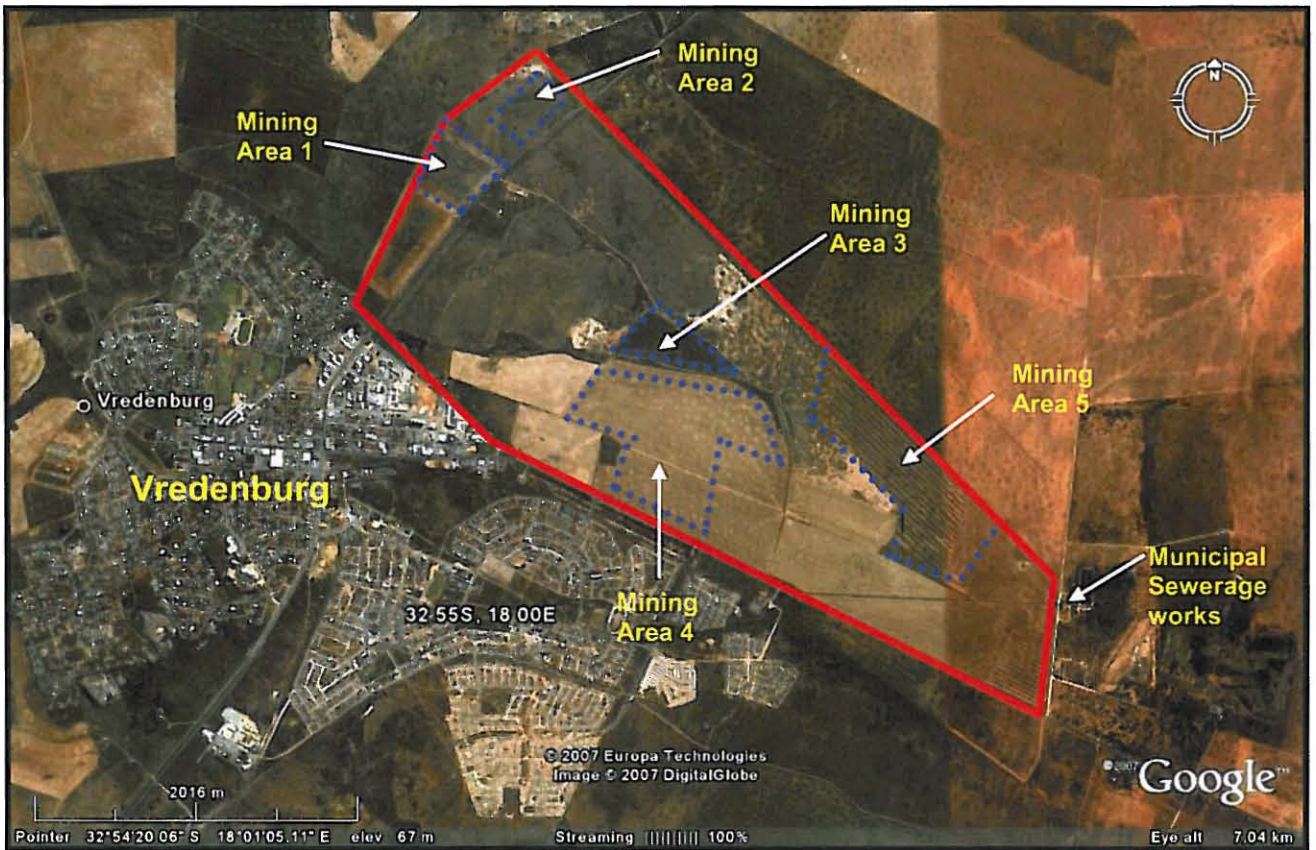


Figure 2. Aerial photograph of the study site and the approximate boundaries of each of the proposed Mine Areas



Figure 3. Mine Area 1. View facing south



Figure 4. Mine Area 1. View facing north east



Figure 5. Mine Area 1. View facing west



Figure 8. Mine Area 2. View facing south



Figure 6. Mine Area 1. View facing north east



Figure 9. Mine Area 2. View facing east



Figure 7. Mine Area 1. View facing east



Figure 10. Mine Area 2. View facing north east



Figure 11. Mine Area 2. View facing south



Figure 14. Mine Area 3. View facing north east



Figure 12. Mine Area 3. View facing north east



Figure 15. Mine Area 4. View facing west



Figure 13. Mine Area 3. View facing north



Figure 16. Mine Area 4. View facing east



Figure 17. Mine Area 4. View facing east



Figure 20. Mine Area 5. View facing south



Figure 18. Mine Area 4. View facing north



Figure 21. Mine Area 5. View facing north east



Figure 19. Mine Area 5. View facing south



Figure 22. Mine Area 5. View facing east

4. STUDY APPROACH

4.1 Method

The approach followed in the archaeological study entailed a survey of the proposed five mine application areas (see Figure 2). Archaeological remains were documented using a Geko 201 GPS unit set on map datum wgs 84.

The site visit and assessment took place on the 12th June, 2008.

A desktop study was also undertaken.

4.2 Constraints and limitations

There were no constraints or limitations associated with the study.

4.3 Identification of potential risks

It is unlikely, given the extremely disturbed nature of the receiving environment, but unmarked human burials may be uncovered or exposed during sand mining operations.

4.4 Results of the desk top study

The Saldanha Bay/Vredenburg coastal region is exceptionally rich in archaeological sites (Kaplan 1993). Its richness is determined largely by its unique rocky shoreline formation which was favoured by both Later Stone Age (LSA) hunter-gatherers and Khoi herders in the past, as it offered greater opportunities for the exploitation of marine foods, while the local shales and granites provided vital nutrients for domestic stock.

Research focusing on the Khoekhoe herder economy around 2000 years ago in the Vredenburg Peninsula has, significantly, identified large numbers of sites up to several kilometres from the shoreline (Sadr *et al* 1992). Many of these sites, comprising substantial shellfish deposits with pottery and stone tools, are centered round the numerous large granite outcroppings that are ubiquitous in the Vredenburg, Paternoster and the St. Helena Bay area.

It is interesting to note that relatively large numbers of Later Stone Age tools, including a segment and a backed bladelet, were documented during a baseline study of a proposed sand mining operation on the Farm Willemsfontein No. 1079, situated alongside the Veldriff Road, about 1 km to the north of the subject property (Kaplan 2006). The tools were documented in heavily worked farmlands. The large, prominent, granite outcrops on the farm Honing Klip 101 (west of the Veldriff Road) are also known to support several archaeological sites (Smith *et al* 1991).

It is also well established that vertebrate fossils and archaeological occurrences in the Langebaan Limestone (calcrete) formations and associated deposits in the Saldanha Bay/Vredenburg area, are extremely valuable sources of information on the sedimentary, chronological, palaeoenvironmental and palaeoecological context of the development of modern human behaviour during the Middle Stone Age (MSA) and perhaps even the Early Stone Age (ESA) (Avery 1997).

Middle Pleistocene occurrences and the recovery of human remains in the limestone deposits at Sea Harvest, in Saldanha Bay, for example, has provided some of the earliest evidence we have in the world for the human exploitation of coastal resources, more than 100 000 years ago (Grine & Klein 1993; Volman 1978). Beside evidence of well preserved bone, ostrich eggshell, ochre and MSA stone implements, the Hoedjiespunt limestone sediments in Saldanha Bay also contains evidence of early modern human about 125 000 years ago (Berger & Parkington 1995).

With regard to even more ancient fossil sites, earthworks at the Saldanha Steel Project exposed rare and previously unknown crocodylian and other fossil remains from the Miocene Period, from deposits underlying calcareous formations during excavations for descaling pits (Roberts 1997a).

Several fossil hyena lairs have also provided glimpses of past Pleistocene (1.6 million – 200 000 years) faunas, including herbivores and carnivores, at Hoedjiespunt and Sea Harvest (Roberts 1997a).

An EIA for the proposed Alpha Saldanha Cement Project in Saldanha Bay revealed the presence of an unusual Mid-Miocene (~ 11-12 million years) fauna, including the shell of a giant extinct ostrich like bird (Kaplan 1999; Roberts 1997b).

The reasons for the abundance of fossil archaeological and palaeontological remains in the Saldanha – Vredenburg area is in part related to the highly calcareous character of the aeolianites (fossil dunes) and shallow marine sediments. Bones and implements are readily preserved by the rapid carbonate cementation of the strata in which they become entombed.

5. LEGISLATIVE REQUIREMENTS

5.1 The National Heritage Resources Act (Act No. 25 of 1999)

The National Heritage Resources (NHR) Act requires that "...any development or other activity which will change the character of a site exceeding 5 000m², or the rezoning or change of land use of a site exceeding 10 000 m², requires an archaeological impact assessment"

The relevant sections of the Act are briefly outlined below.

5.2 Archaeology (Section 35 (4))

Section 35 (4) of the NHR stipulates that no person may, without a permit issued by HWC, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

5.3 Burial grounds and graves (Section 36 (3))

Section 36 (3) of the HHR stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

6. FINDINGS

6.1 Mine Area 1 (S 32° 53 22.1 E 18° 01 12.8)

One quartz chunk was counted in Mine Area 1.

6.2 Mine Area 2 (S 32° 53 12.5 E 18° 00 34.9)

One large, snapped silcrete flake, two quartz flakes and one quartz chunk were counted in Mine Area 2.

6.3 Mine Area 3

No archaeological remains were counted

6.4 Mine Area 4 (S 32° 54 37.5 E 18° 01 24.9)

One silcrete core, on a silcrete nodule was found in Mine Area 4

6.5 Mine Area 5 (S 32° 54 16.4 E 18° 01 49.6)

One broken quartzite cobble was found in Mine Area 5.

The archaeological remains have been rated as having low local significance

7. IMPACT STATEMENT

The Phase 1 Archaeological Impact Assessment of a proposed sand mining operation on the Remainder of Portion 3 of the Farm Honing Klip No. 101 Vredenburg has identified no significant impacts to pre-colonial archaeological material that will need to be mitigated prior to proposed development activities.

Proposed mining operations will not penetrate or intersect any limestone or associated sediments. The probability of locating any fossil archaeological and palaeontological remains is therefore, likely to be **low**.

8. RECOMMENDATIONS

With regard to proposed sand mining operations on Remainder of Portion 3 of the Farm Honing Klip No. 101 in Vredenburg, the following recommendations are made:

- Should any unmarked human remains be disturbed, exposed or uncovered during sand mining operations, these should immediately be reported to the archaeologist or the South African Heritage Resources Agency (Dr A. Jerardino 021 462 4502).

These measures must be included in the Environmental Management Plan (EMP) for the proposed project.

9. REFERENCES

- Davey, S. 2008. Uitkyk Sand Mine Scoping Report. Prepared for Uitkyk Sand Mine BP. Amathemba Environmental Management Consulting,
- Avery, G. 1997. Alpha Saldanha Cement Project: archaeological potential of limestone and other calcareous deposits. Report prepared for Mark Wood Consultants.
- Berger, L.R., & Parkington, J.E. 1995. A new Pleistocene hominid-bearing locality at Hoedjiespunt, South Africa. *American Journal of Physical Anthropology* 98:601-609.
- Grine, F.E., & Klein, R.G. 1993. Late Pleistocene human remains from the Sea Harvest site, Saldanha Bay, South Africa. *South African Journal of Science* 88:145-152.
- Kaplan, J. 2006. Phase 1 Archaeological Impact Assessment proposed sand mining on the Farm Willemsfontein No. 1079 consisting of Portion 1 of the Farm Jakhalsfontein 98, Portion 1 of the Farm Rouwkoop No. 97 and Portion 1 of the Farm Honing Klip No. 101, Vredenburg. Report prepared for Pro-earth consulting. Agency for Cultural Resource Management.
- Kaplan, J. 2005. Phase 1 Archaeological Impact Assessment Portion of Portion 7 of the Farm Witteklip 123 Vredenburg. Report prepared for Chand Environmental Consultants. Agency for Cultural Resource Management.
- Kaplan, J. 1993. The state of archaeological information in the coastal zone from the Orange River to Ponta do Ouro. Report prepared for the Department of Environmental Affairs and Tourism. Agency for Cultural Resource Management.
- Roberts, D.L. 1997a. Fossil occurrence at the Saldanha Steel site. Report prepared for Saldanha Steel Project (Pty) Ltd. Pretoria. Council for Geoscience Geological Survey.
- Roberts, D.L. 1997b. Palaeontological impact assessment Alpha Saldanha Cement Project. Report prepared for Mark Wood Consultants. Pretoria: Council for Geoscience Geological Survey.
- Sadr, K., Gribble, J. & Euston-Brown, G. 1992. The Vredenburg Peninsula survey, 1991/92. In Smith, A.B. & Muti, B (eds) *Guide to archaeological sites in the south western Cape*. Department of Archaeology, University of Cape Town.
- Smith, A.B., Sadr, K., Gribble, J. & Yates, R. 1991. Excavations in the southwestern Cape, South Africa, and the archaeological identity of prehistoric hunter-gatherers within the last 2000 years. *South African Archaeological Bulletin* 46:71-91.
- Volman, T.P. 1978. Early archaeological evidence for shellfish collecting. *Science* 201:911-913.