

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
PROPOSED SAND MINING ON THE
FARMS WITDAM 80 AND MESECH 78
MELKBOSSTRAND**

Prepared for

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**MAY
2007**

Executive summary

Malans Quarry (Pty) Ltd requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for a proposed sand mining operation on the Farm Witdam 80 and Mesech 78, situated in Melkbosstrand.

The proposed mining site consists of two properties and is about 537 ha in extent, of which **only** 104 ha will be mined. Access to the site is off the N7, via the entrance to the farm Keert de Koe. The farm has previously been ploughed and it is surrounded by vast tracts of similarly transformed farmland. The predominant land use of the surrounding properties is agriculture.

The proposed mine area is divided into Camps (1-8). The camps are divided into blocks of approximately 2-3 ha in size and serve as an indication of how mining will be conducted.

The aim of the study is to locate and map archaeological heritage sites and 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.

The following findings were made.

Camp 1: No archaeological heritage remains were located in Camp 1.

Camp 2: No archaeological heritage remains were located in Camp 2.

Camp 3: No archaeological heritage remains were located in Camp 3.

Camp 4: A dispersed scatter of Early Stone Age (ESA) tools was located in Camp 4. A very small outcropping of silcrete and several Later Stone Age (LSA) flakes were also documented in north western corner of the proposed site. The remains occur in a disturbed context and have been rated as having low local significance.

Camp 5: Large numbers of LSA tools (mostly flakes, chunks and shattered pieces of stone) were documented on the steep slopes of a large hill on the northern bank of the Sout River. The hill is also associated with extensive outcroppings of silcrete, and was clearly targeted by Later Stone Age people as a quarry site for raw material. LSA quarry sites are rare in the Western Cape landscape and have been rated as having high local significance.

Relatively large numbers of LSA tools, including a scraper, an adze and backed artefacts, were also documented on the southern bank of the Sout River, on loose sandy soils, in Camp 5. LSA and ESA tools were also found on spoil dumps associated with several test excavations that have been conducted in the area.

Camp 6: Outcroppings of silcrete occur on a vegetated dune ridge in Camp 6. LSA tools including flakes and an adze were documented on the dune ridge, while a few tools occur on loose sandy soils in the surrounding agricultural lands.

Camp 7: No archaeological heritage remains were located in Camp 7.

Camp 8: No archaeological heritage remains were located in Camp 8.

The impact of proposed sand mining operations on important archaeological heritage remains in Camps 1-4 and Camps 7 and 8 is rated **low**.

The impact of proposed sand mining operations on important archaeological heritage remains in Camps 5 and 6 is rated **high**.

With regard to proposed sand mining operations on the Farms Witdam 80 and Mesech 78, the following recommendations are made:

- Proposed sand mining operations in Camps 1-4 and Camps 7 and 8 should be allowed to proceed.
- Evaluation of the conservation worthiness of the archaeological remains in Camp 5 will require shovel testing, before sand mining activities take place. If the sites are found to have depth and integrity, they will have to be sampled by way of controlled archaeological excavation.
- No sand mining operations or any associated mining activities must be allowed to take place on, or near the silcrete outcroppings that occur in Camps 5 and 6.
- A buffer of at least 30 metres between the silcrete outcrops and sand mining operations in Camp 5 is recommended. These include Blocks 6, 7 and the northern portion of Block 9.
- A total station survey of the silcrete outcropping in Camps 5 and 6, including mapping of artefact scatters, must be undertaken, prior to any sand mining operations taking place.
- Vegetation clearing operations in Camps 5 and 6 must be monitored by a professional archaeologist
- Sand mining operations in Camps 5 and 6 must be monitored by a professional archaeologist.
- Should any unmarked human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to the South African Heritage Resources Agency (Att: Dr A. Jerardino (021) 462 4502), or Heritage Western Cape (Att: Mr N. Ndlovu (021) 483 9687).

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

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1. INTRODUCTION

1.1 Background and brief

Malans Quarries (Pty) Ltd requested that the Agency for Cultural Resource Management conduct a Phase 1 Archaeological Impact Assessment for a proposed sand mining operation on the Farm Witdam 80 and Mesech 78 situated near Melkbosstrand, on the Cape West Coast.

The mine area is divided into Camps (1-8). The camps are divided into blocks of approximately 2-3 ha in size and serve as an indication of how mining will be conducted. No more than one block will be cleared and mined at a time. Available top soil will be removed prior to mining and will be stored until it can be replaced after mining. Existing farm roads will be used, and no new access roads will be built.

The extent of the proposed development (about 104 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 mining camps;
- to identify and map any sites of archaeological significance within the proposed mining camps;
- to assess the sensitivity and conservation significance of archaeological sites within the proposed mining camps;
- 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 mining camps

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 subject property (currently zoned Agriculture) is located in Melkbosstrand about 20 kms north of Cape Town. The nearest town to the proposed site is Philadelphia. Access to the site is off the N7, via the entrance to the Farm Keert de Koe. An alternative access road is the R304 (old Mamre Road) to Atlantis. Much of the farm has been used for grazing and dry land cultivation. The sandy soils are deep and loose and have been ploughed for many years. Virtually no natural vegetation occurs on the property and the farm is surrounded by vast tracts of similarly transformed farmland. The predominant land use of the surrounding properties is wheat farming. Significant landscape features include the upper reaches of the Sout River that flows through Camps 5 and is infested with alien vegetation. Most importantly, extensive silcrete outcroppings are situated within Camps 5 and 6. These landscape features have influenced the archaeological visibility in this area. For the most part, the proposed site constitutes a very disturbed and transformed landscape (Figures 3-25).

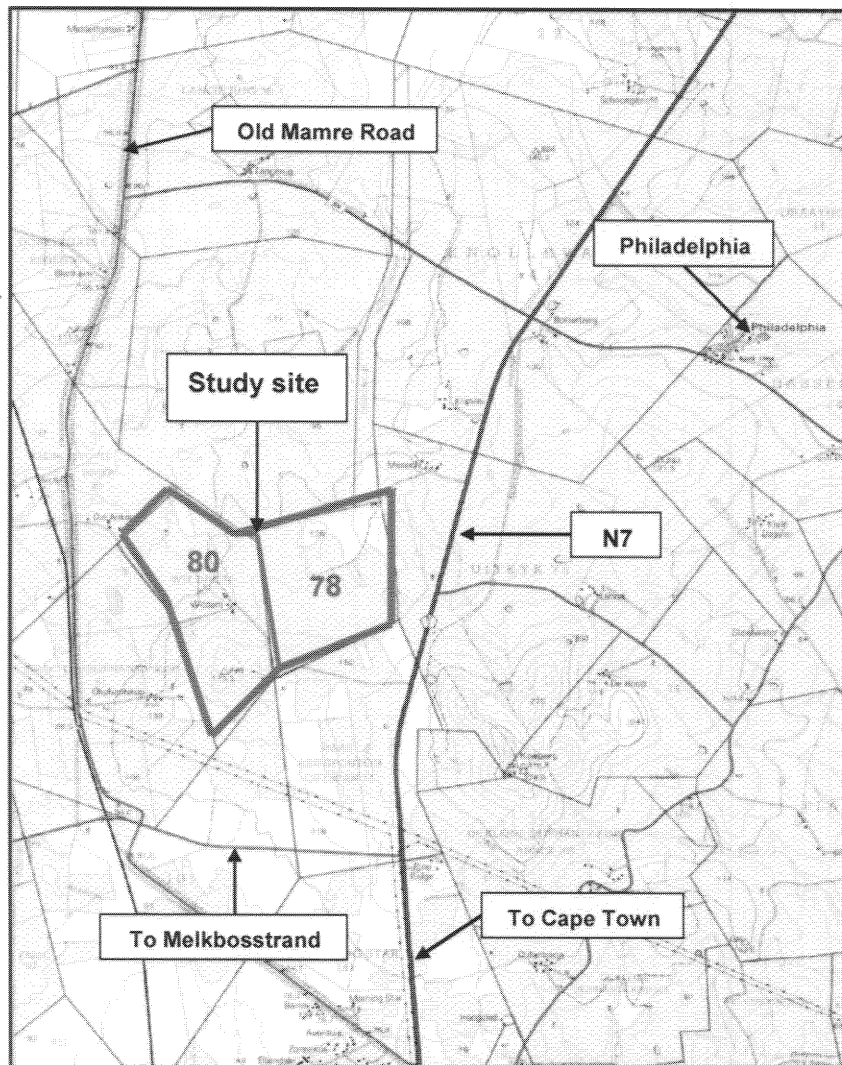


Figure 1. Locality map (3318 DA Philadelphia)

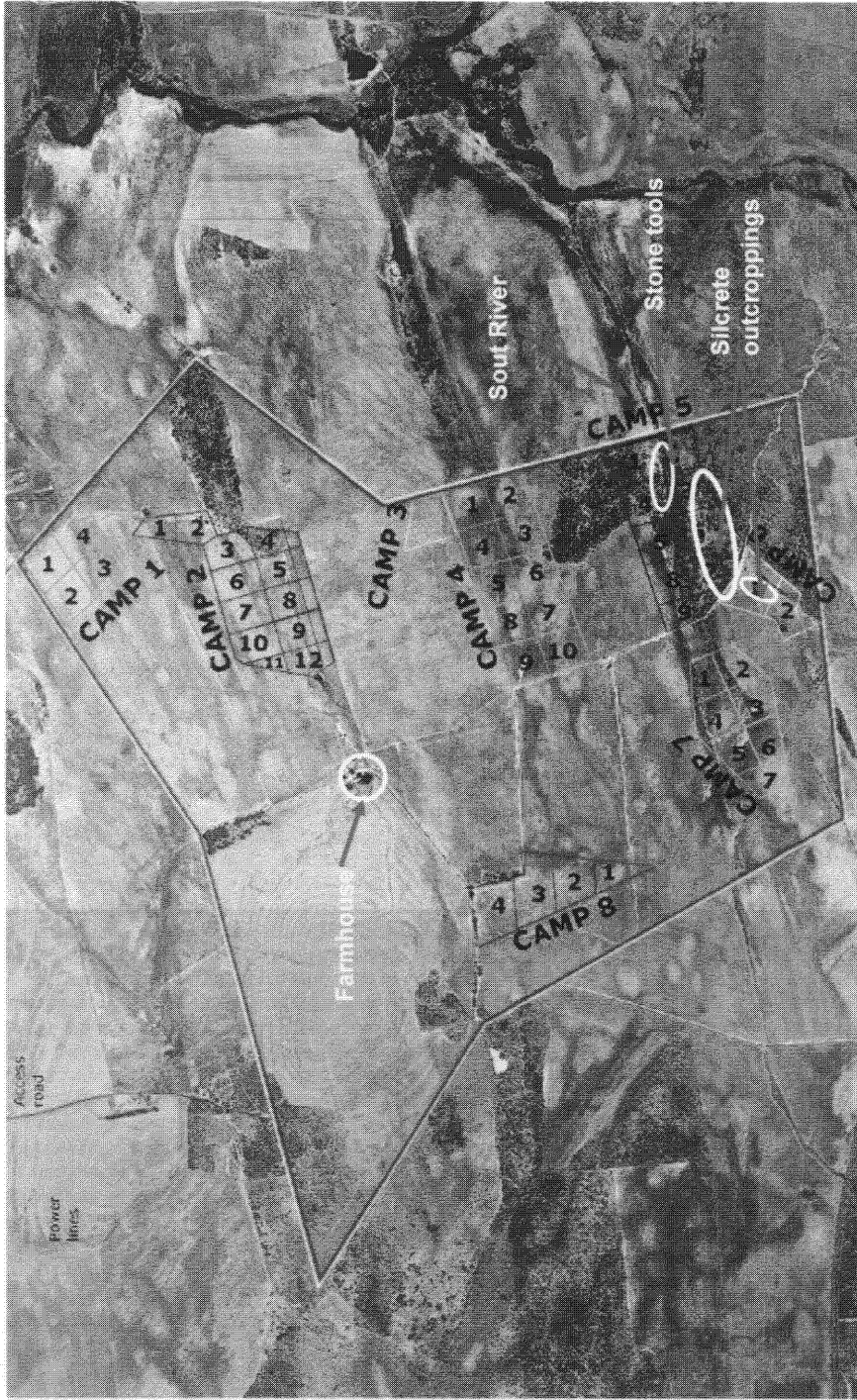


Figure 2. Aerial photograph of the study site indicating the proposed mining Camps and Blocks

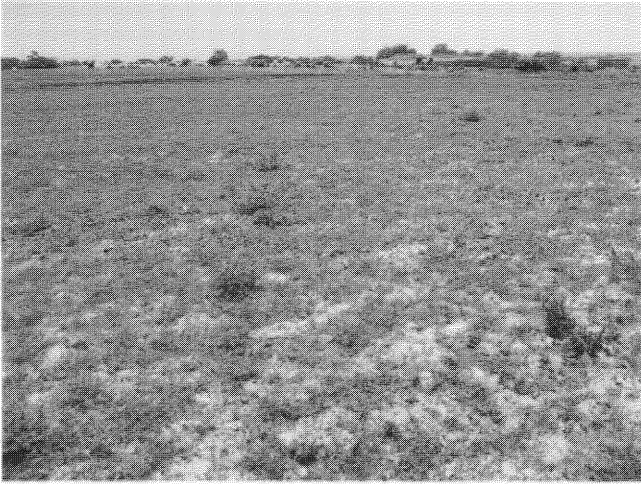


Figure 3. Camp 1. View facing south west

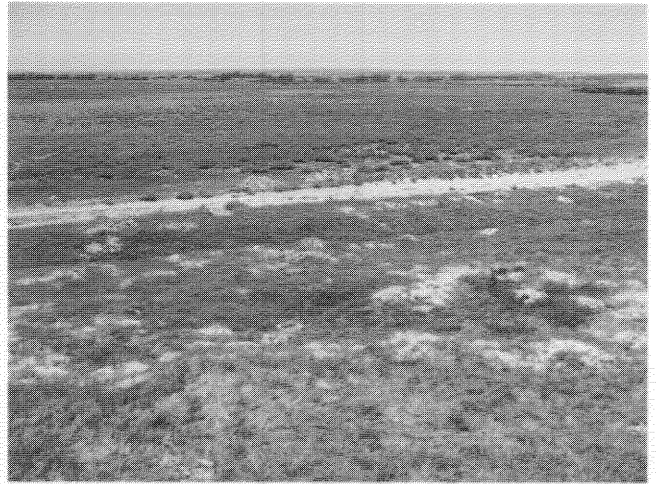


Figure 6. Camp 2. View facing south west

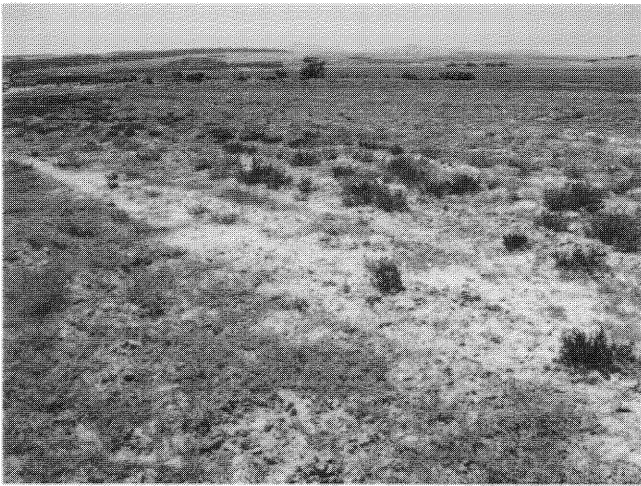


Figure 4. Camp 1. View facing north west



Figure 7. Camp 2. View facing north east

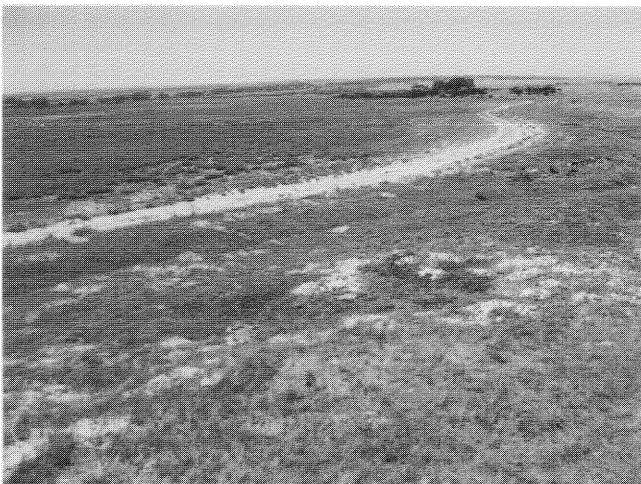


Figure 5. Camp 2. View facing west



Figure 8. Camp 2. View facing east. Arrow indicates Koeberg Hill

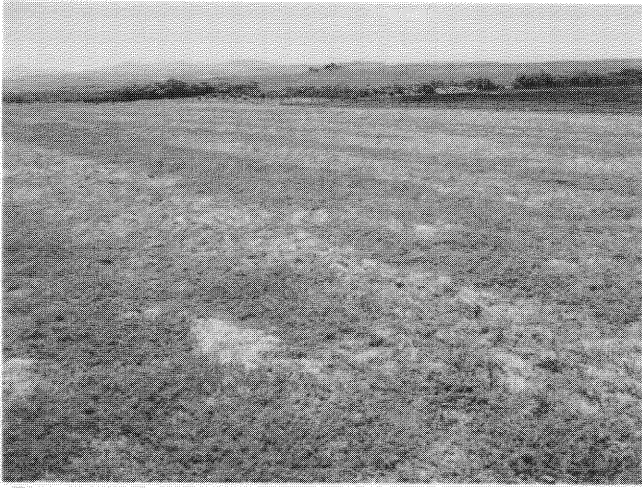


Figure 9. Camp 3. View facing north west



Figure 12. Camp 4. View facing east.

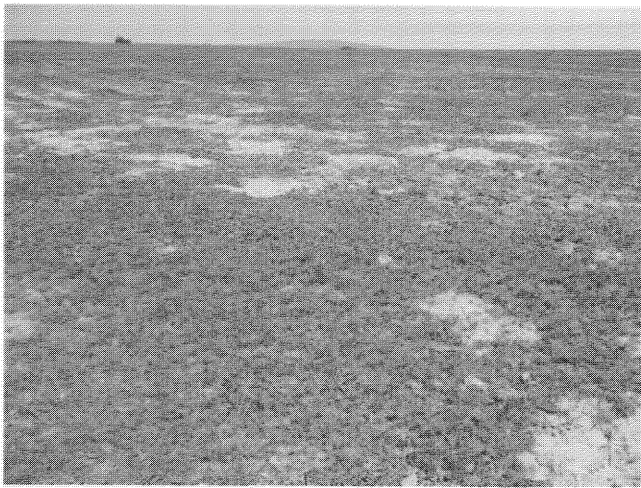


Figure 10. Camp 3. View facing south

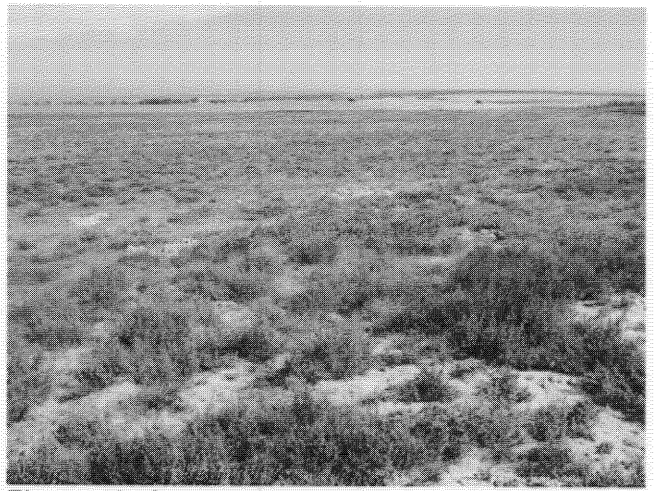


Figure 13. Camp 4. View facing south west



Figure 11. Camp 4. View facing west

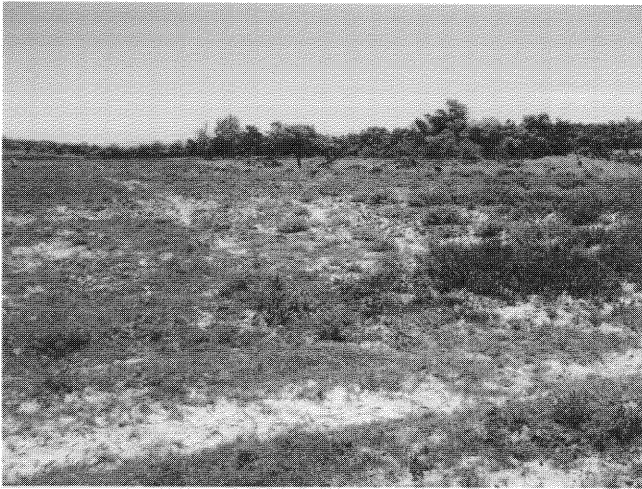


Figure 14. Camp 5. View facing west

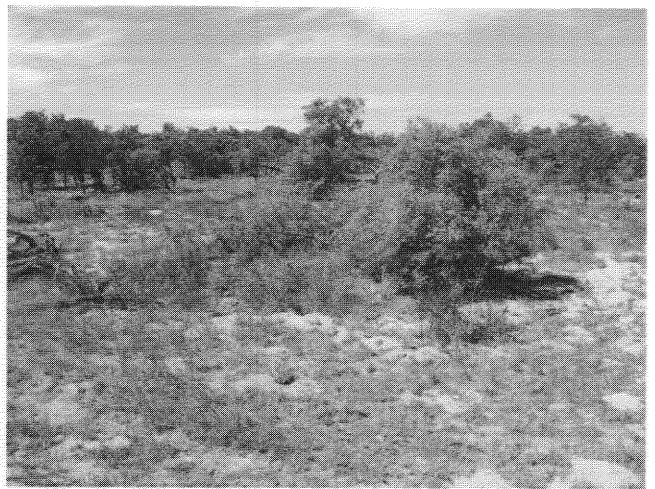


Figure 17. Camp 5. View facing east



Figure 15. Camp 5. View facing south west

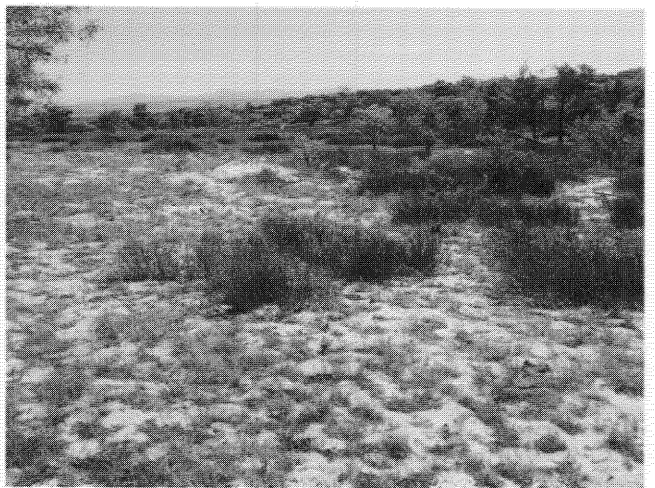


Figure 18. Camp 5. View facing east

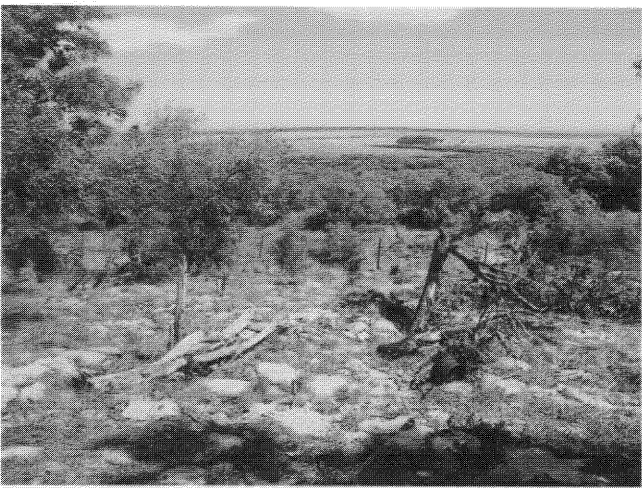


Figure 16. Camp 5. View facing west

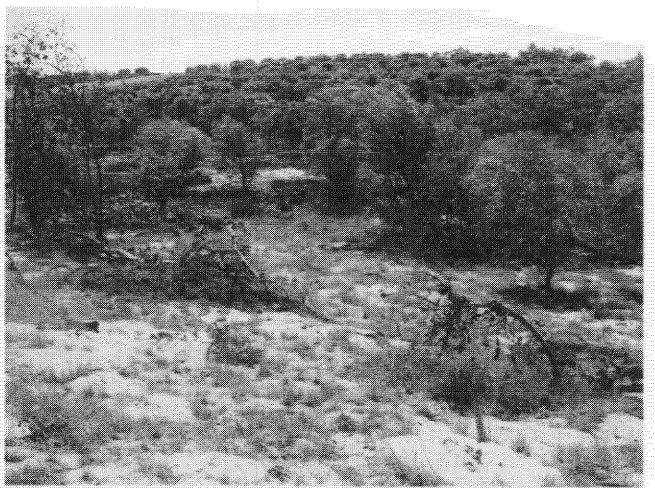


Figure 19. Camp 5. View facing south east

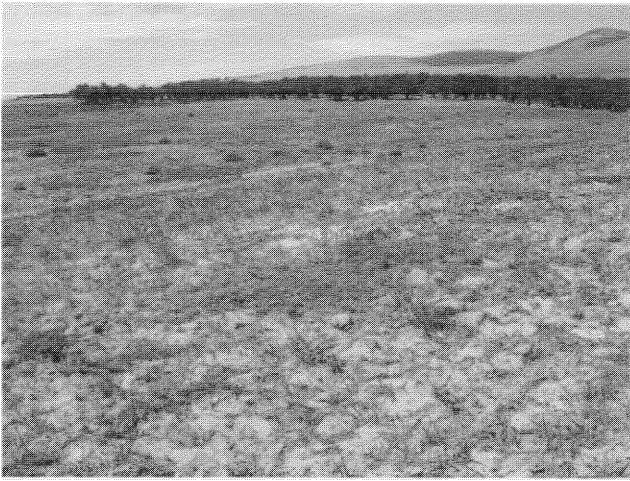


Figure 20. Camp 6. View facing east

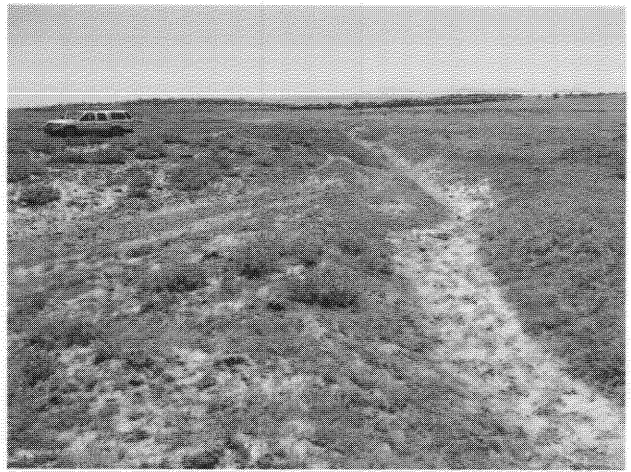


Figure 23. Camp 7. View facing west

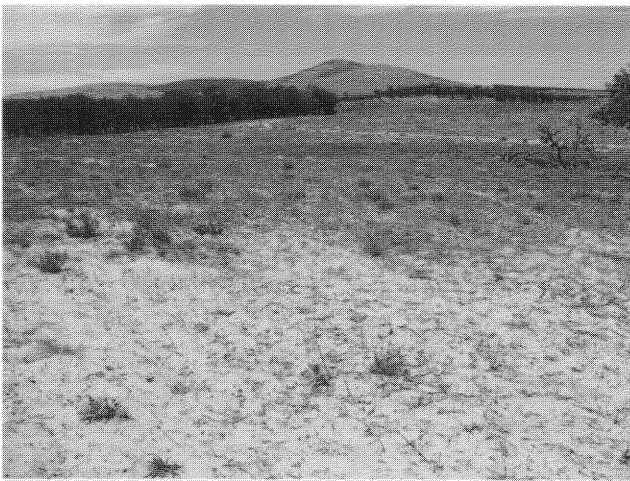


Figure 21. Camp 6. View facing north east

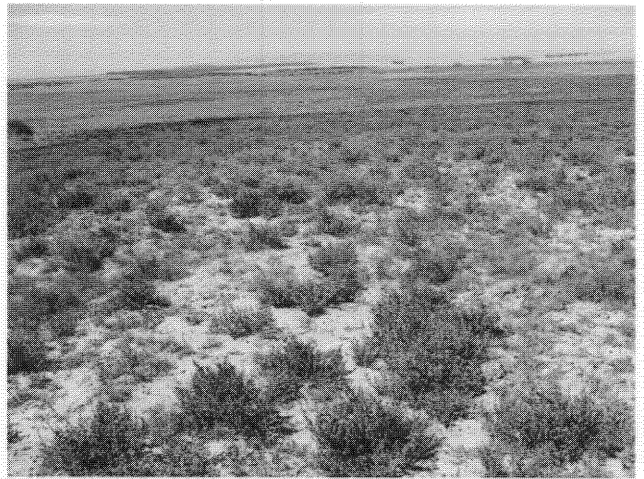


Figure 24. Camp 8. View facing north



Figure 22. Camp 7. View facing east. Arrow indicates Koeberg Hill

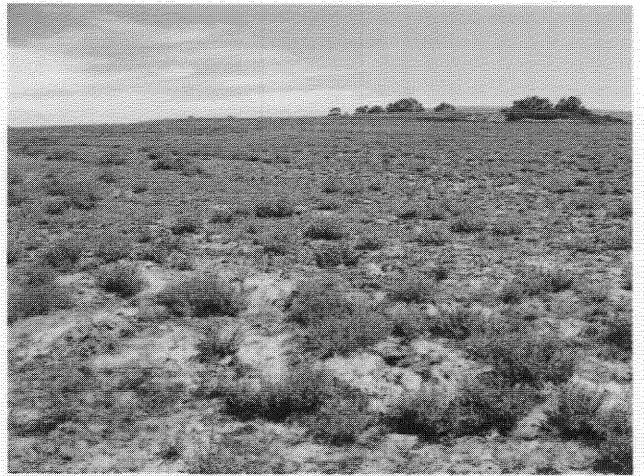


Figure 25. Camp 8. View facing south east

4. STUDY APPROACH

4.1 Method

The approach followed in the archaeological study entailed a foot survey of each of the proposed mining Camps (refer to Figure 2).

The site visit and assessment took place on the 20th and 21st of February, 2007.

A desktop study was also undertaken.

Archaeological heritage remains were recorded using a Garmin Geko 201 GPS unit set on wgs 84.

4.2 Constraints and limitations

There were no constraints or limitations associated with the study, although much of Camp 5 is infested with alien vegetation, resulting in low archaeological visibility.

4.3 Identification of potential risks

Potentially important archaeological heritage remains will be impacted by proposed sand mining operations in Camp 5 and Camp 6.

Unmarked human burials may be also be uncovered during sand mining operations in Camp 5 and Camp 6.

4.4 Results of the desk top study

Archaeological sites are well represented in the coastal zone of the study area (Kaplan 1993), where large numbers of Later Stone Age (LSA) sites have been documented (Rudner 1968; Kaplan 1997, 1998a,b,c, 1999, 2002a), some of which have been examined in more detail (Deacon & Goosen 1997; Kaplan 1998d,e, 2000a, 2004; Sealy *et al* 2004). There are numerous historical accounts (both written as well as visual) of 'Strandlopers' (Khoi entrepreneurs in the trade between the Dutch and the Khoi) peopling Table Bay before and shortly after the arrival of Dutch settlers at the Cape in 1652 (Smith 1983). Recent research has also identified several possible Khoi sites in Table Bay (Kaplan 2004; Sealy *et al* 2004).

At least 17 unmarked Khoisan burials have been found or uncovered from the coastal dunes between Milnerton and Melkbosstrand (Abrahams 1988; Deacon & Goosen 1997; Kaplan 1998a, Kaplan 2000, Kaplan 2002a; 2006, Yates 2001). Importantly, several burials associated with bored stones, stone artefacts and ostrich eggshell beads have been excavated on the farm Groot Oliphantskop (Kaplan 1996) which is situated alongside the subject property.

LSA sites have also been documented north of the Diep River alongside the N7 (Kaplan 2000b). Middle Stone Age (MSA) artefacts have been found in the Parklands/Garden City area (Kaplan 2000c).

Stone tools, bored stones, pottery and ostrich eggshell have been documented on the farms Blaauwberg (west of the N7), Groot Oliphantskop, Vaatjie and Brakkuil alongside the R304 (Kaplan 1996, 2000d), all within 1 km of the subject property.

And ancient Early Stone Age (ESA) tools have been found on the farms Vaatjie, Witdam and Brakkuil (Kaplan 2000d).

Rare, LSA silcrete quarry sites have been recorded on the farms Groot Oliphantskop (Kaplan 1996) and Vissershok (Kaplan 2002b).

According to Mr P Stoffberg, a 4th generation farmer on the subject property, the name 'Keert de Koe' was given to the farm by Jan van Riebeek, when cattle, allegedly stolen by Khoi herders, were gathered at the foot of the Koeberg Hill.

5. LEGISLATIVE REQUIREMENTS

The following section provides a brief overview of the relevant legislation with regard to the archaeology of the Farms Witdam 80 and Mesech 78, Melkbosstrand.

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

The following findings were made.

Camp 1 (S° 33 41 390 E° 18 30 763)

No archaeological heritage remains were located in Camp 1.

Camp 2 (S° 33 41 596 E° 18 31 362)

No archaeological heritage remains were located in Camp 2.

Camp 3 (S° 33 41 238 E° 18 31 698)

No archaeological heritage remains were located in Camp 3.

Camp 4 (S° 33 41 618 E° 18 31 861)

A thin, dispersed scatter of highly weathered ESA tools was located in loose sandy soils in Blocks 2 and 7 (refer to Figure 2) in Camp 4. The tools in Block 2 comprise several flakes, chunks and at least one large round core (Figure 26), while those in Block 7 comprise one core, one chunk and three flakes, including a heavily retouched flake. One MSA flake was also found in block 7. The tools are all in a yellow coloured quartzite. The surrounding area has been ripped and deep ploughed and the remains occur in a severely disturbed context.

Two very small outcroppings of grey coloured silcrete (one being tractor damaged) were also documented in Block 2, near the base of a large sand dune (Figure 27). One silcrete core and one silcrete chunk were documented near the outcrop. The scatter of ESA tools described above was located in the same area.

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

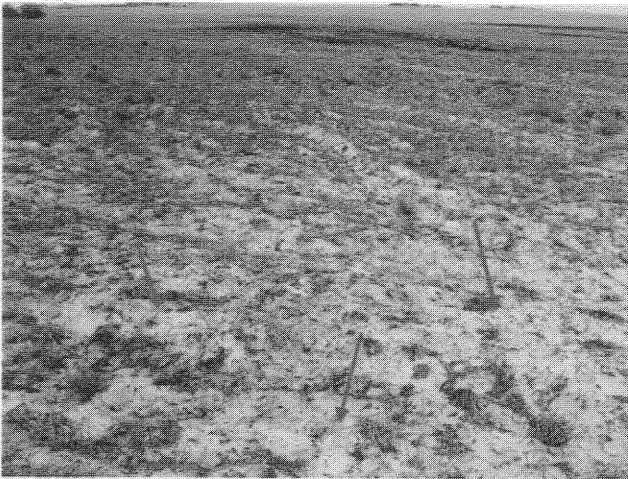


Figure 26. Camp 4. Scatter of ESA tools in Block 2. View facing east. Arrow indicates tools

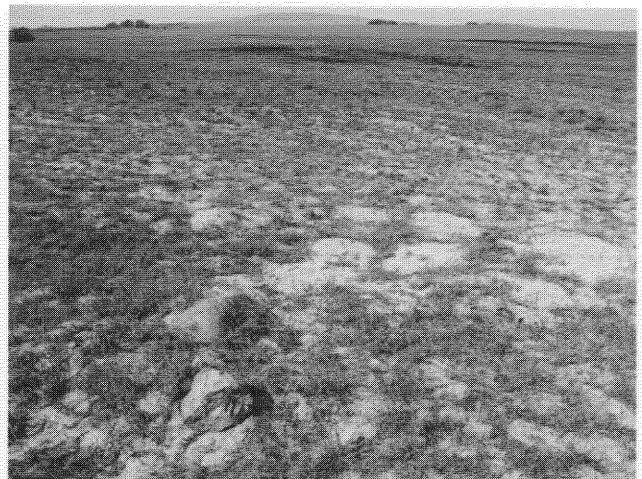


Figure 27. Camp 4. Silcrete outcropping in Block 2. View facing east

Camp 5 (S° 33 41 161 E° 18 32 340)

Hundreds, if not thousands, of silcrete stone artefacts, mostly flakes, chunks and shattered pieces of stone, occur on the steep, south facing slopes of a large hillock on the northern banks of the Sout River, inside Mining Blocks 6, 7 and 9 (refer to Figure 2). The hillock is associated with extensive outcroppings of silcrete; a very desirable raw material used for making stone artefacts, and was clearly targeted by Later Stone Age people (Figures 28-30). The hill is heavily infested with alien and natural vegetation and pioneer grasses. Outcroppings of silcrete and LSA tools were also documented among thick stands of Port Jackson near the gravel road (Figures 31 and 32).

These rare outcroppings of silcrete remains have been rated as having high local significance

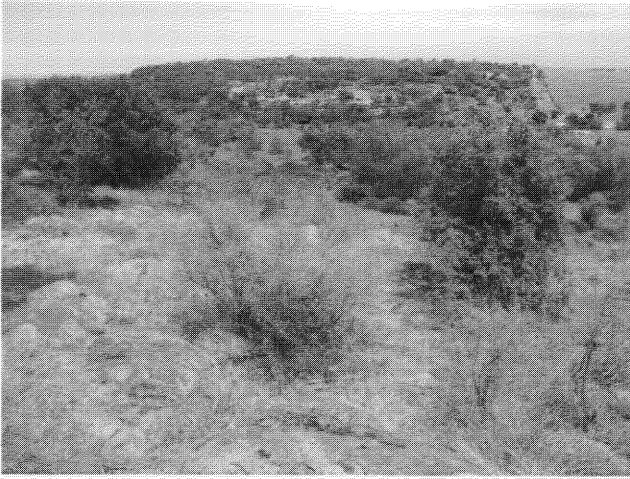


Figure 28. Silcrete hill. View facing south over Camp 5



Figure 31. Silcrete outcrops near gravel road



Figure 29. Scatters of stone artefacts on south facing slopes of hill

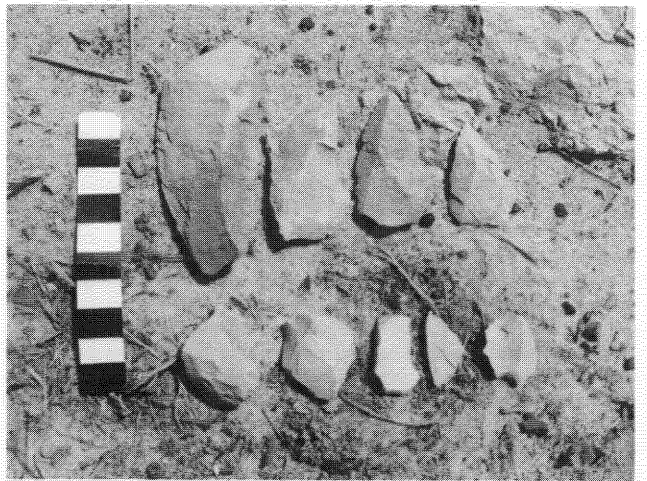


Figure 32. Collection of stone tools found near the gravel road. Scale is in cm

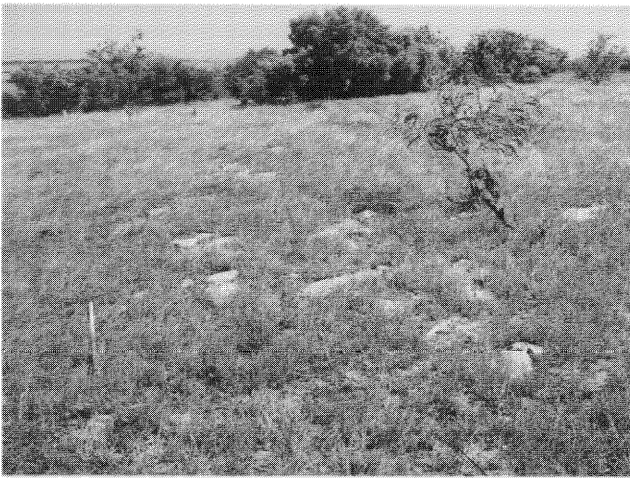


Figure 30. Silcrete hill. View facing west

LSA tools, including thin pressure flakes, chunks and cores, and (a few) formal tools such as a thumbnail scraper, an adze and backed bladelets ($n = 2$) in both red and grey silcretes, were documented on the southern and lower northern banks of the Sout River, on loose sandy soils, in Blocks 1, 4 and 5 (refer to Figures 18 & 19), in Camp 5. A few quartz flakes, chunks and cores ($n = 2$) were also found. These tools are very thinly and unevenly scattered over the surrounding landscape, however. Dune mole rat activity and animal burrowing is extensive over this area.

LSA tools, including a few ESA artefacts were also found on several spoil dumps associated with a number of test excavations that have been conducted in the Camp 5 area. The ESA tools (on the northern banks) are associated with river gravels and some Koffieklip that underlie the softer sandy wind blown deposits.

As previously indicated, much of the area surrounding Camp 5 is infested with alien vegetation, resulting in low archaeological visibility.

Although most of the artefacts documented along the banks of the Sout River appear to occur in a disturbed context, their presence does indicate that there is probably more archaeological material lying underneath the windblown sands.

It is interesting to note that LSA tools in silcrete, including scrapers and adzes, ostrich eggshell and pottery, were documented among wind deflated dunes on the south bank of the Sout River on the Farm Brakkuil, about one kilometer downstream from Camp 5 (Kaplan 2000d).

The archaeological heritage remains have been provisionally rated as having potentially high local significance

Camp 6 (S° 33 41 410 E° 18 32 473)

Outcroppings of silcrete, probably an extension of the outcroppings that occur in Camp 5, also occur on a heavily infested dune ridge in Camp 6 (refer to Figure 2). LSA tools, including flakes, chunks, cores and an adze, were also documented among soft white sands on the dune ridge, alongside a wide strip of deep sandy soils that has been ripped and ploughed (Figure 32). Several tools were also found in the ploughed lands.



Figure 32. Silcrete outcroppings occur on the elevated dune ridge to the left of the plate

The outcroppings of silcrete have been rated as having high local significance

Camp 7 (S° 33 41 560 E° 18 32 267)

No archaeological heritage remains were located in Camp 7.

Camp 8 (S° 33 42 031 E° 18 31 750)

No archaeological heritage remains were located in Camp 8.

7. IMPACT STATEMENT

The impact of proposed sand mining operations on archaeological heritage remains in Camps 1-4, 7 and 8 is likely to be **low**.

The impact of proposed sand mining operations on archaeological heritage remains in Camps 5 and 6 is likely to be **high**.

Unmarked human burials may also be uncovered or exposed in Camps 5 and 6 during sand mining operations.

8. RECOMMENDATIONS

With regard to proposed sand mining operations on the Farms Witdam 80 and Mesech 78, the following recommendations are made:

- Proposed sand mining operations in Camps 1-4 and Camps 7 and 8 should be allowed to proceed.
- Evaluation of the conservation worthiness of the archaeological remains in Camp 5 (Blocks 1, 4 & 5) will require shovel testing, before sand mining activities take place. If the sites are found to have depth and integrity, they will have to be sampled by way of controlled archaeological excavation.
- No sand mining operations or any associated mining activities must be allowed to take place on, or near the silcrete outcroppings that occur in Camps 5 and 6.
- A buffer of at least 30 metres between the silcrete outcrops and sand mining operations in Camp 5 is recommended. These include Blocks 6, 7 and the northern portion of Block 9.
- A total station survey of the silcrete outcropping in Camps 5 and 6, including mapping of artefact scatters, must be undertaken, prior to any sand mining operations taking place.
- Vegetation clearing operations in Camps 5 and 6 must be monitored by a professional archaeologist
- Sand mining operations in Camps 5 and 6 must be monitored by a professional archaeologist.
- Should any unmarked human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to the South African Heritage Resources Agency (Att: Dr A. Jerardino (021) 462 4502), or Heritage Western Cape (Att: Mr N. Ndlovu (021) 483 9687).

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

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