

ARCHAEOLOGICAL IMPACT ASSESSMENT OF PROPOSED DALSKROON DEVELOPMENT

(Portion 29 of Farm Kruisvallei 187, Tulbagh)

Prepared for

Resource Management Services

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Declaration:

Mr Tim Hart and Dr Lita Webley are independent specialist consultants who are in no way connected with the proponent, other than delivery of consulting services.

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Lita Webley (PhD) is an archaeologist with 30 years of working experience. Having served previously as Director of the Albany Museum, she is familiar with the history of the area and local heritage issues. She is also accredited with Principal Investigator status with the Association of Professional Archaeologists of Southern Africa.

Liesbet Schietecatte (MA, MSC) is an archaeologist with 10 years working experience at the ACO offices.

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

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
PHS	Provincial Heritage Site
SAHRA	South African Heritage Resources Agency

Executive summary

The Archaeology Contracts Office of the University of Cape Town was appointed by Resource Management Services to conduct an archaeological impact assessment of Portion 29 of Farm Kruisvallei 187, Tulbagh.

The study has shown that the area contains scattered Early Stone Age artefacts throughout in apparently relatively high density. While the material is of fairly low significance and will not affect the development proposal, mitigation in the form of in-situ analysis of artefacts in two 50x5m sampling strips is recommended.

The site is suitable for the proposed activity.

There are no preferred layouts recommended.

CONTENTS

1	Introduction.....	7
1.1	The development proposal	7
1.2	The receiving environment	8
2	Archaeological background	8
3	Method	9
3.1	Restrictions	10
4	Heritage legislation	10
5	Assessment of Impacts	15
5.1	The way in which archaeological heritage can be impacted, and mitigation.....	15
5.2	Archaeological findings.....	15
5.2.1	Significance	16
5.3	Assessment of impacts.....	16
5.3.1	Mitigation	16
6	Other sources of risk	17
7	Future requirements	17
8	References	17

1 Introduction

The Archaeology Contracts Office of the University of Cape Town was appointed by Environmental Resource Management Services on behalf of the Dalskroon Development Company to complete an archaeological impact assessment of the proposed development area consisting of 32 hectares of Portion 29 of Farm Kruisvallei 187, Tulbagh (figure 1).

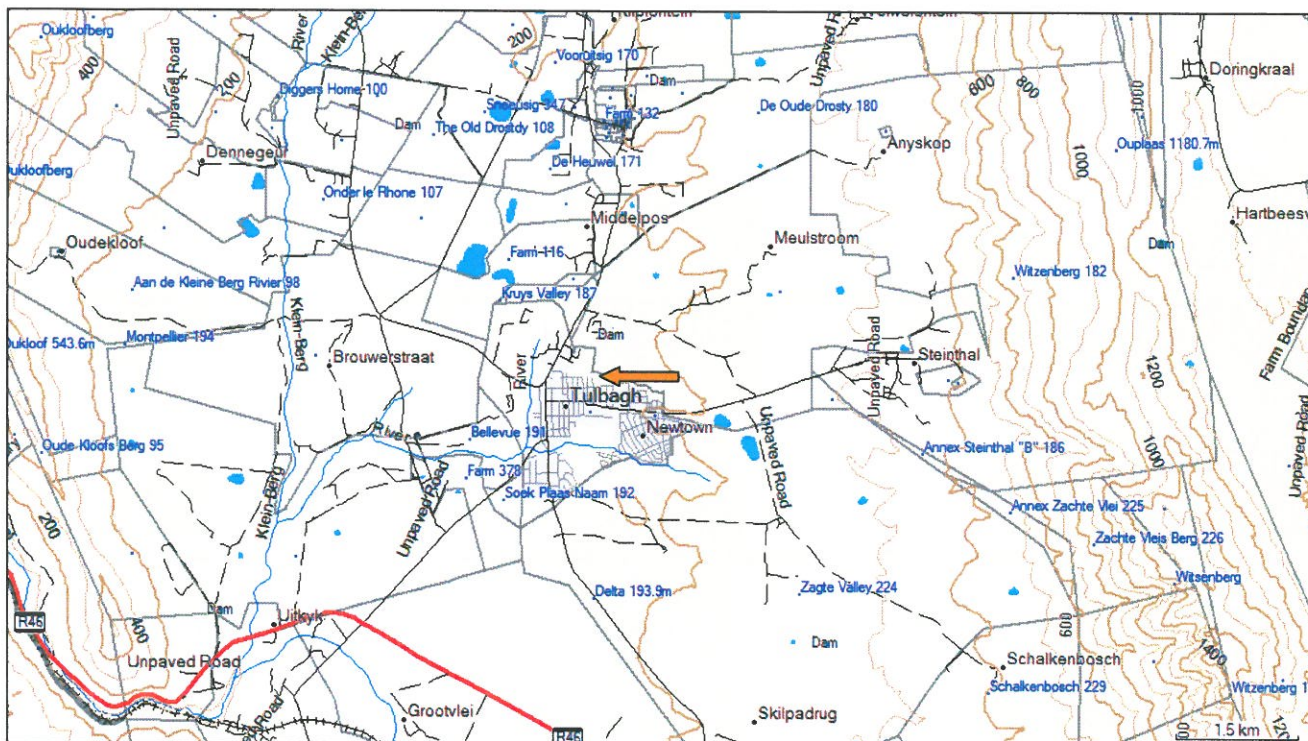


Figure 1 Location of the study area

The terms of reference required the ACO to provide a description of the environment that may be affected by the activity and the manner in which the archaeological aspects of the environment may be affected by the proposed activity, that is:

- A survey is required of all affected areas and a recording of any archaeological sites and features protected under Section 35 of the NHRA;
- Any finds are to be mapped on a site plan or 1:50 000 map and given a GPS co-ordinate.

A separate general heritage impact assessment has been prepared by heritage consultant, Mr Henry Aikman, hence this assessment confines itself to archaeological heritage only.

1.1 The development proposal

The Dalskroon Development Company (Pty) Ltd proposes to develop a Senior's Village Development in Tulbagh in the Western Cape. The extent of the proposed site consists of Portion 29 of Farm Kruisvallei 187 (32ha), Tulbagh. It is proposed to construct 416 retirement

units, including single residential, group housing, town housing and apartments. A range of recreational and community facilities are also proposed as well as open space network. The proposed development, known as Dalskroon, will share certain services (i.e. pipeline, dams, waste water treatment works, etc.) with the adjacent proposed development, Waverenskroon.

The following **activities** are proposed for the Dalskroon development:

- Construction of approximately 416 units, which include single residential, town, group housing and apartments (construction phased over a nine year period);
- Construction of a convenience shop, doctors rooms, hairdresser and laundry (520m²);
- Construction of a frail care centre, chapel and dining room and hall (1100m²);
- Recreational and leisure activities such as bowls, tennis, putt-putt, croquet, petanque, a greenhouse and gardening, play and braai areas;
- Infrastructure related to roads, bulk services and parking areas; and
- Small scale riverine plots for agriculture (feasibility being investigated).

1.2 The receiving environment

The study area consists of old farm lands and wheat fields on the northern physical urban edge of Tulbagh, a small town in the Boland. The landscape is, without exception transformed by years of agriculture and deep plowing. The basal soils are shale derived and the landscape may be described as rolling wheat lands interrupted by shallow valleys, rivulets, groves of trees and occasional farm buildings. Rivulets from the Witzenberg Mountains have incised shallow valleys into the landscape, and also deposited large quantities of quartzite boulders and cobbles which strew the wheat lands of today. Being situated in the fertile basal soils of the Tulbagh Valley, the study area is highly transformed. According to Aikman (2009) the first farms were established in the 1720's and the area has been farmed ever since. The study area is, in a part, used as grazing land or wheat farming. There is evidence of plowing throughout, as well as various earthmoving activities associated with the construction of dams on the property. Indications are that the Dalskroon site is has not been ploughed in recent years.

2 Archaeological background

Limited archaeological research in the area has been undertaken by archaeologists in any formal sense, however a number of relevant observations have been made. Hart (1987) conducted a survey of the riverine area from Porterville to Die Mond (Vier-en-Twintig Rivieren) noting the presence of continuous scatters of stone artefacts of Pleistocene Age. Hart (1987:412-414) comments: "Middle and Early Stone Age material was so widely spread in most quadrants that, were sampled, single sites could not really be defined, but particularly dense areas could be distinguished and recorded". This scattering of artefacts is attributed to

“massive sheet erosion” which had “moved a good deal of topsoil, exposing the rocky B and C horizons”. Impact Assessment surveys completed in the Swartland since have confirmed that almost the entire Berg River Valley shows evidence of occupation by very early humans (*Homo erectus*, *Homo ergaster*) who roamed the area since over a million years ago. The shale based soils that are characteristic of the Swartland and Tulbagh Valley are extremely fertile compared with the sand stone derived soils of the Cape Fold Belt Mountains. It was these areas that supported the largest amount of game animals in the prehistoric past which may explain why the area was so popular for early people.

About 2000 years ago the economic order changed with appearance in the Western Cape of herder groups with sheep and later cattle. The Swartland was favoured by Khoi Khoi herding groups as the soils of the area were suitable for supporting herds of cattle. The arrival of herding peoples and domesticated animals in the Cape resulted in an apparent transformation of the way the landscape was used. The more powerful groups of Khoi Khoi herders displaced the San into the more marginal areas of the Cape Fold Belt mountains. Herder sites, such as at those at Kasteelberg (Sadr *et al.* 2003), show occupation between 1800 and 1600 years ago. European explorers had contact with many of the Khoi Khoi groups along the coast. These peoples included the CochoqQua, whose territory stretched from Saldanha Bay to Vredenburg, and the ChariGuriQua or GuriQua who occupied the lower Berg River area, St. Helena Bay and points around Piketberg. One of the reasons why the Dutch settled at the Cape was to access the herds of cattle kept by the Khoi Khoi. This was first achieved by friendly trade, however it was not long before disputes over land commenced after *Free Burghers* began to encroach on traditional communal grazing lands. By the early 1700's the Dutch colonists have prevailed.

While the Tulbagh Valley was in the past a perfect grazing area for prehistoric Khoi Khoi, the ephemeral archaeology of these people is seldom found as years of agriculture has been very destructive. Smith (2009) comments that there are a number of reasons for the paucity of Khoi Khoi archaeological heritage. The low density of the human population and mobility of both hunters and herders across the landscape may have had a low impact on the environment and left very little behind. More recently, Arthur (2008) has discovered that deep, sub-surface ploughing practised in the 1950s and 1960s has contributed to the disappearance of herder sites. The site known as Kasteelberg along with a number of other highly ephemeral scatters on the Vredenberg Peninsula and Berg River is potentially the only Western Cape Khoi Khoi archaeological heritage identified so far (Fauvelle-Aymar, F-X., Sadr, K., Bon, F. & Gronenborn, D. 2006).

3 Method

The study area was searched by Tim Hart (MA), Lita Webley (PhD) and Liesbet Schietecatte (MA, MSc). Any archaeological material found that fell under the general protections of the National Heritage Resources Act was recorded and a co-ordinate taken using a Garmin hand held GPS (datum WGS 84).

3.1 Restrictions

Visibility on site was very variable. Most areas that were used recently as wheat fields could be easily searched, however dense grass cover obscured lands used for grazing, particularly on the Dalskroon development area.

During the course of the study adverse weather conditions set in which restricted the use of photographic equipment, and at times the ability of the team to carry out the survey. Use of an off-road vehicle did assist significantly under these circumstances. Due to the conditions, intense coverage of the landscape was not possible, however the consistency of the findings of the study over a wide area of landscape indicates that the archaeology of the area has a homogenous character and the observations may be considered relevant and generally reflective of the situation.

4 Heritage legislation

The basis for all heritage impact assessments is the National Heritage Resources Act, 1999 (NHRA), (Act No. 25 of 1999). This act prescribes the manner in which heritage is assessed and managed. In the case of Environmental Impact Assessments in the Western Cape, the guidelines published by the Provincial Department of Environmental Affairs and Development Planning are directly based on the provisions of the NHRA (Winter and Baumann, 2005).

Loosely defined, *heritage is that which is inherited*. The NHRA 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 NHRA 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; and
- Graves and grave yards.

Section 38 of the NHRA requires that Heritage Impact Assessments (HIAs) are required for certain kinds of development such as rezoning of land greater than 10 000 m² 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 5 000 m². "Standalone HIAs" are not required where an EIA is carried out as long as the EIA contains an adequate HIA component that fulfils Section 38 provisions.

Heritage Western Cape (HWC) is responsible for the management and protection of all provincial heritage sites (grade 2), generally protected heritage and structures (grade 3a-grade 3c) in the Western Cape Province.



Figure 2 Layout of the proposed development.

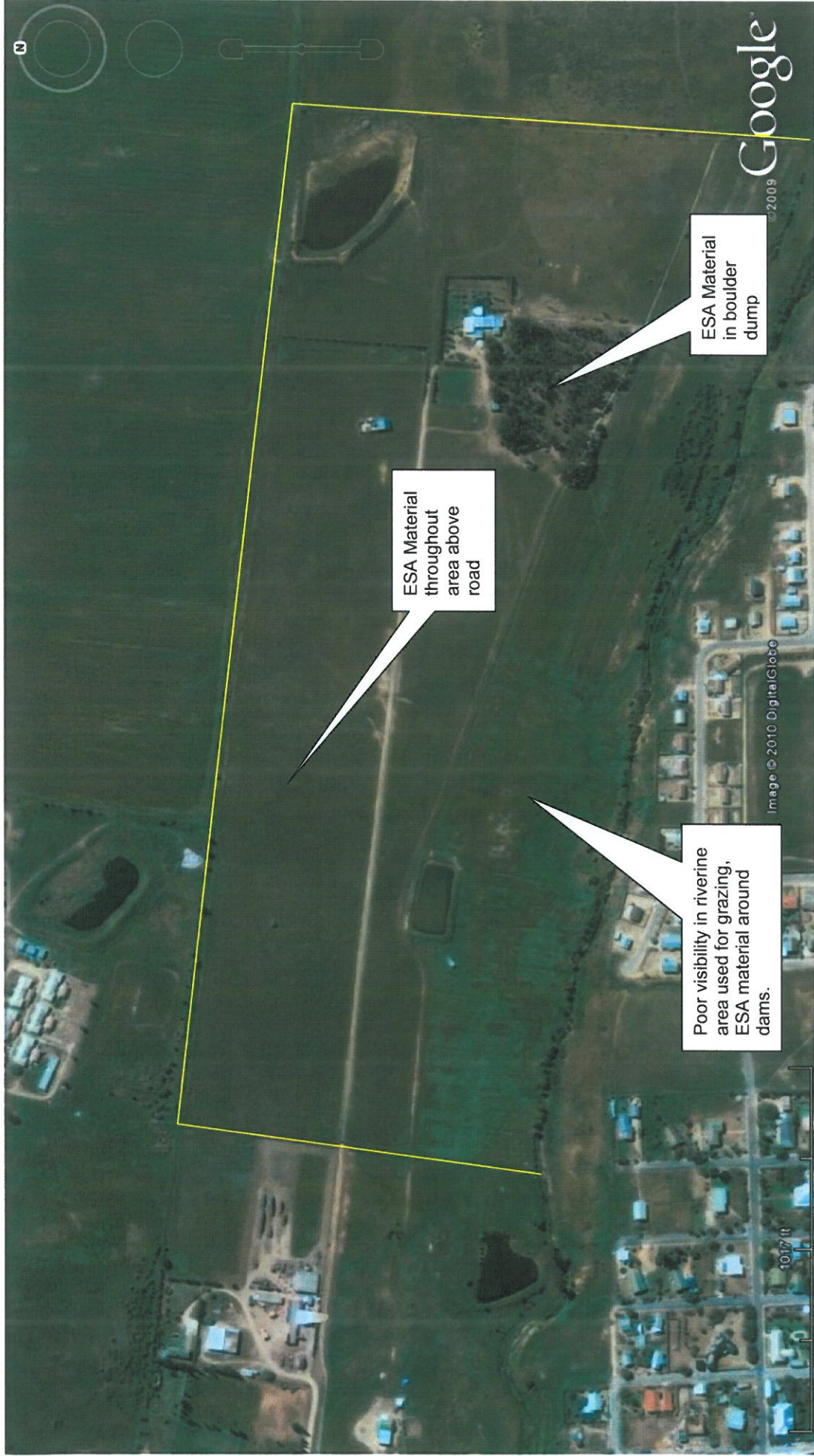


Figure 3 Archaeological observations in the development area.

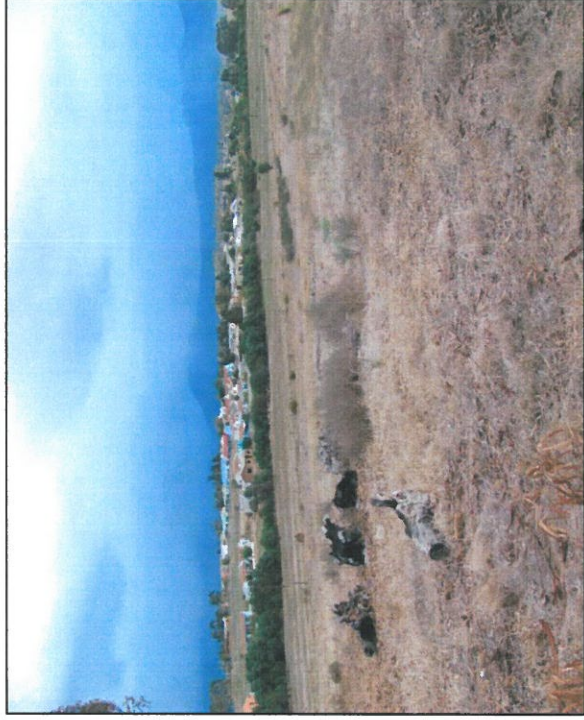


Figure 4 Top left – boulder dump containing ESA artefacts collected from lands. Top right – Various ESA irregular cores. Bottom left – ESA Hand axe (bi-face). Bottom right – view over the study area towards Tulbagh.

5 Assessment of Impacts

5.1 The way in which archaeological heritage can be impacted, and mitigation

Destruction of tangible heritage (structures, archaeological sites, fossils) almost always takes place during the construction process of development activities rather than during the operational phases as the main source of impact to heritage is due to the disturbance of undisturbed ground or landscape and/or demolition of structures and places protected by the NHRA and/or valued by a community. Invariably the kinds of impacts resulting are irreversible, irreplaceable and of permanent duration as heritage resources are finite – unlike plants and animals they are unable to reproduce themselves.

Archaeological sites (including shipwrecks) and graves are highly fragile and context sensitive, which means that their value is very easily destroyed when the landscape in which they are situated is disturbed by bulk excavation, installation of services and roads.

Mitigation can be achieved through scientific recording, sampling or excavation - however these are also destructive processes. In general, full rectification of heritage impacts is not normally possible in the case of archaeology unless the archaeological sites can be conserved in their entirety. The best that can be achieved is the sampling of the archaeological material so that a representative sample of the find is conserved in perpetuity. The process is slow, exacting and can be expensive. The end result is always the loss of the archaeological site as a permanent heritage resource; the gain is the rescue of knowledge provided that the archaeological sampling is done according to suitable standards. Archaeologists prefer to conserve where ever possible in the interests of sustainable heritage management.

5.2 Archaeological findings.

The survey revealed that Early Stone Age (ESA) archaeological material was ubiquitously scattered throughout the study area. No meaningful individual scatters or sites could be discerned, although under better vegetation conditions a detailed point plotting study may discern some spatial patterning, however the material is far too numerous to undertake this level of work for an impact assessment.

Interestingly it was noted that the material was all ESA with very little evidence of any Middle Stone Age presence. The artefacts are characteristically large and robust enough to survive years of plowing. Cobbles of quartzite (which are numerous in the fields) appear to have been selected for working into stone tools. The material seen in the study area contained the entire spectrum of tools types that would be expected – irregular cores, radial cores, large retouched flakes, classic bi-faces or handaxes.

The sample of artefacts has been biased by the fact that the fields have been cleared of large

stones which means that many of the larger artefacts have been moved into boulder dumps on the edges of fields and in a prominent grove of bluegum trees (see figure 3).

The scatters may be described as dense with approximately 1- 3 artefacts per sqm throughout.

5.2.1 Significance

The material, on account of its loss of context and the fact that it is relatively common is not unique and does not warrant extensive conservation measures. The high density of the material, and the fact that it is exclusively ESA is unusual, and cannot be ignored, especially as much of the study area will fall under fairly dense development (see figure 2). Some mitigation measures are therefore required subject to the approval of the heritage authority.

5.3 Assessment of impacts

The impact of the proposed activity will be local, and of permanent duration, but of relatively low significance. The essence of the impact in archaeological terms will be the further confusing of the archaeological context and potential loss of some of the material. The site will be also sterilized of any future heritage research opportunities.

Table 1. Summary of impacts ESA material

	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	Local	High	Medium	Negative	Low	Medium	High
With Mitigation	Local	Low	Low	Neutral - positive	Low	High	High

5.3.1 Mitigation

Mitigation will involve making a detailed record of the material before development commences.

It is suggested that the sampling takes the following form. An archaeologist should be contracted to obtain the necessary permits from HWC for the documentation of material. It is suggested that all material within two strips of 50x5m be recorded through in-situ analysis and photography of the artefacts. Material within 5 sqm blocks within each strip could be collected in one spot for convenient analysis and photography and then re-scattered within the same block. Each 50 m strip would contain 10 blocks.

The sampling strips should not be close or adjacent to each other but some distance apart within the study area (to test for spatial variability) with strip location selection at the

discretion of the contracted archaeologist. The northern half of the study area (away from the river and up slope) is recommended.

6 Other sources of risk

Human remains can be found almost anywhere on the landscape. (see below).

7 Future requirements

- The archaeological material consisting of scatters of ESA artefacts must be sampled by an archaeologist who is familiar with this kind of material in advance of construction work commencing. The work should not require more than a day or two to complete.
- Human remains can occur at any place on the landscape, but are particularly likely to be found on or close to archaeological sites. They are regularly exposed during construction activities along the west and south coasts. Such remains are protected by a plethora of legislation including the Human Tissues Act (Act No 65 of 1983), the Exhumation Ordinance of 1980 and the National Heritage Resources Act (Act No 25 of 1999). In the event of human bones being found on site, SAHRA must be informed immediately and the remains removed by an archaeologist under an emergency permit. This process will incur some expense as removal of human remains is at the cost of the developer. Time delays may result while application is made to the authorities and an archaeologist is appointed to do the work.

8 References

Aikman, H, 2009. Heritage Impact Assessment of Dalskroon development. Report prepared for Resource Management Services.

Arthur, C. 2008. *The Khoekhoen of the Breede River, Swellendam: an archaeological and historical landscape study*. Unpublished M.Phil Thesis, UCT.

Fauvelle-Aymar, F-X., Sadr, K., Bon, F. & Gronenborn, D. 2006. The visibility and invisibility of herders' kraals in southern Africa, with reference to a possible early contact period Khoikhoi kraal at KFS 5, Western Cape. *Journal of African Archaeology* 4 (2): 253-271.

Hart, T. 1987. Porterville survey. In: Parkington, J. & Hall, M. (eds) *Papers in the Prehistory of the Western Cape, South Africa*. Oxford: BAR International Series 332: 403-423.

Sadr, K. & Smith, A.B. 1991. On ceramic variation in the south-western Cape, South Africa. *South African Archaeological Bulletin* 46: 107-115.

Smith, A.B. 2009. Eskom Gamma-Omega 765Kv Transmission Line: Archaeological Desktop Survey prepared for Eskom. *Department of Archaeology, University of Cape Town*

Smith, A.B., Sadr, K., Gribble, J. & Yates, R. 1991. Excavations in the South-western Cape, South Africa, and the archaeological identity of prehistoric hunter-gatherers within the last 2000 years. *South African Archaeological Bulletin* 46: 71-91.

Walk paths for attention HWC

Points are perceived areas of high density, however material is so numerous throughout that these are not necessarily indicative.

