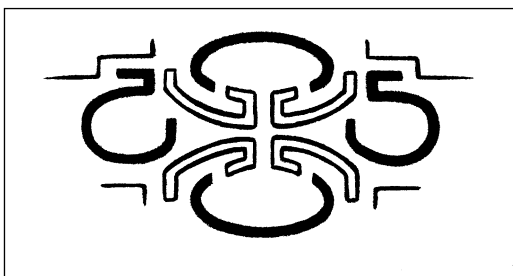


**Cultural Heritage Impact Assessment:
Phase 1 Investigation for a Basic Assessment of the Proposed Expansion to Pestana
Kruger Lodge outside the Kruger National Park, Nkomazi local Municipality, in the
Ehlanzeni District Municipality, Mpumalanga Province**



For

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Date:	September 2019
Version:	1 (Final Report)

Executive Summary

This report contains a comprehensive heritage impact assessment investigation in accordance with the provisions of Section 38 of the *National Heritage Resources Act* (Act No. 25 of 1999) and focuses on the survey results from a cultural heritage survey as requested by NuLeaf Planning and Environmental Pty (Ltd). In terms of the 2014 Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act 107 of 1998 (NEMA), the Project Applicant hereby gives notice of its intention to apply for Environmental Authorisation from the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) as the competent authority, for the proposed extensions to Pestana Kruger Lodge outside the Kruger National Park, in Mpumalanga Province.

As a result of the investigation of the survey footprint note that no archaeological (Stone Age and Iron Age) or historical settlements, structures, features, assemblages or artefacts were recorded during the survey.

It is therefore recommended, from a cultural heritage perspective, that the proposed extensions to Pestana Kruger Lodge may proceed.

Also, please note:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

Definitions and abbreviations

Midden:	Refuse that accumulates in a concentrated heap.
Stone Age:	An archaeological term used to define a period of stone tool use and manufacture
Iron Age:	An archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture
LIA:	Late Iron Age sites are usually demarcated by stone-walled enclosures
NHRA:	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA:	South African Heritage Resources Agency
SAHRIS:	South African Heritage Resources Information System
PHRA-G:	Provincial Heritage Resources Authority - Gauteng
GDARD:	Gauteng Department of Agriculture and Rural Development
HIA:	Heritage Impact Assessment
DMR:	Department of Mineral Resources
I&APs:	Interested and Affected Parties
CoH WHS	Cradle of Humankind World Heritage Site

Coetzee, FP

HIA: Proposed Expansion at Pestana Kruger Lodge, Mpumalanga

I, Francois Coetzee, hereby confirm my independence as a cultural heritage specialist and declare that I do not have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of the listed environmental processes, other than fair remuneration for work performed on this project.

A handwritten signature in black ink, appearing to read 'F. Coetzee', is centered on a light green rectangular background.

Francois P Coetzee

Cultural Heritage Consultant

Accredited Archaeologist for the SADC Region

Professional Member of ASAPA (CRM Section) Reg no: 28

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1. Introduction and Terms of Reference

NuLeaf Planning and Environmental (Pty) Ltd an independent environmental consultant was contracted by Pestana Kruger Lodge to undertake a Basic Assessment (BA) process provided for in Regulation 19 read with Appendix 1 of GN R326 of 4 December 2014 of the 2014 EIA Regulations, as amended published under NEMA will be followed for the application for Environmental Authorisation. In terms of the 2014 Environmental Impact Assessment (EIA) Regulations published in terms of Section 24(5) of the National Environmental Management Act 107 of 1998 (NEMA), the Project Applicant hereby gives notice of its intention to apply for Environmental Authorisation from the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA) as the competent authority, for the proposed extensions to Pestana Kruger Lodge outside the Kruger National Park, in Mpumalanga Province. This cultural heritage survey forms part of this Environmental Impact Assessment (EIA) application process.

2. Objectives

The general objective of the cultural heritage survey is to record and document cultural heritage remains consisting of both tangible and intangible archaeological and historical artefacts, structures (including graves), settlements and oral traditions of cultural significance.

As such the terms of reference of this survey are as follows:

- Identify and provide a detailed description of all artefacts, assemblages, settlements and structures of an archaeological or historical nature (cultural heritage sites) located on the study area,
- Estimate the level of significance/importance of these remains in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value,
- Assess any impact on the archaeological and historical remains within the area emanating from the development activities, and
- Propose recommendations to mitigate heritage resources where complete or partial conservation may not be possible and thereby limit or prevent any further impact.

3. Description of Physical Environment of Study Area

The heritage survey focussed on an area at the existing Pestana Kruger Lodge situated adjacent to the Crocodile River. The lodge is located approximately 800 m north east from Malelane Gate, Kruger National Park and 5 km north of Malelane, west of Komatipoort.

Farm Name(s) and Portions	The following portions and farms: <ul style="list-style-type: none"> • Riverside 173 JU <ul style="list-style-type: none"> ○ Portion 21
Size of Survey Area	22 hectares
Magisterial District	Nkomazi local Municipality Ehlanzeni District Municipality
1:50 000 Map Sheet	2531BC
1:250 000 Map Sheet	2530
Central Coordinates of the Development	31.538534°E 25.461290°S

Table 1: Physical Environment

The survey area falls within the Savanna Biome, particularly the Lowveld Bioregion and more specifically the Granite Lowveld (SV1 3). This vegetation type occurs in Limpopo and

Mpumalanga Provinces, Swaziland and marginally also KwaZulu-Natal: A north-south belt on the plains east of the escarpment from Thohoyandou in the north, interrupted in the Bolobedu area, continued in the Bitavi area, with an eastward extension on the plains around the Murchison Range and southwards to Abel Erasmus Pass, Mica and Hoedspruit areas to the area east of Bushbuckridge. Substantial parts are found in the Kruger National Park spanning areas east of Orpen Camp southwards through Skukuza and Mkuhlu, including undulating terrain west of Skukuza to the basin of the Mbyamiti River. It continues further southward to the Hectorspruit area with a narrow westward extension up the Crocodile River Valley past Malelane, Kaapmuiden and the Kaap River Valley, entering Swaziland between Jeppe's Reef in the west and the Komati River in the east, through to the area between Manzini and Siphofaneni, including the Grand Valley, narrowing irregularly and marginally entering KwaZulu-Natal near Pongola (Mucina & Rutherford 2006).

The survey area is located south of the Kruger National Park, bordering the Crocodile River on the western side. Infrastructure consists of a lodge (main building with clusters of rooms) with all the associated infrastructure (roads, power lines and fences) The region is characterised by extensive agricultural fields, a golf course and a stream that runs through the property.

Komatipoort normally receives about 427 mm of rain per year, with most rainfall occurring mainly during mid-summer. The region receives the lowest rainfall (1 mm) in July and the highest (83 mm) in January. The monthly distribution of average daily maximum temperatures calculates to an average midday temperatures for Komatipoort range from 25°C in June to 31.6°C in January. The region is the coldest during June when the mercury drops to 9°C on average during the night (SA Explorer 2019).

Current Zoning	Agricultural Tourism
Economic activities	Farming and tourism
Soil and basic geology	A large proportion of Nkomazi is underlain with quartz monzonite (30.7%) to the south and central region. Basalt is the second most dominant (16.5%) geology type, located to the east. The north-western part is predominantly underlain with arenite and lava. The least occurring geology types are ultramafic rocks, granophyre, gabbro and dolorite. The municipal area is regarded as high potential agricultural soils, 75.3% as medium potential agricultural soils and 15.3% as very low potential soils. Most of the agriculture activities (grazing and irrigation) take place on medium potential land (Nkomazi Local Municipality IDP 2016/17).
Prior activities	Livestock farming and agriculture
Socio Economic Environment	Nkomazi municipality is mostly a rural municipality as a result the municipality suffers from a high rate of unemployment as it is struggling to attract investments. Other factors contributing to the high employment rate is the shortage of skills and illiteracy rates. As it generally applicable throughout the country, unemployment is at the heart of poverty within the municipality and the fight against poverty should begin with addressing the unemployment challenges as well as the manner in which local citizens relate to the economy. The latest official statistical information suggests that unemployment rate has been on a downward trend. In 2007 the total unemployment rate of Nkomazi was approximately 34.2%

	<p>which can be attributed to the 26% and 43% of males and females respectively. According to the 2011 STATS SA Census the total unemployment rate in the municipality is at 34% with 26.8% being males and 42.5% being females. This trend in unemployment can be attributed to the following: Growth of the informal sector in the trade sector, the possible outmigration as well as programmes favourable to females (women empowerment). It can thus be deduced that 34% of the 71% poverty rate can be attributed to unemployment. Thus by putting in place strategies that will fight unemployment Nkomazi would have halved the fight against poverty, thereby coinciding with the national targets of halving poverty by 2014. As such the unemployed population is an untapped resource in the fight against poverty, thus this should be the basis of Nkomazi's poverty strategy thereby promoting self-employment and small business development (Nkomazi Local Municipality IDP 2016/17).</p>
Evaluation of Impact	<p>An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits NHRA (Act No. 25 of 1999, Section 38(3d)): Positive</p>

Table 2: Socio-economic environment

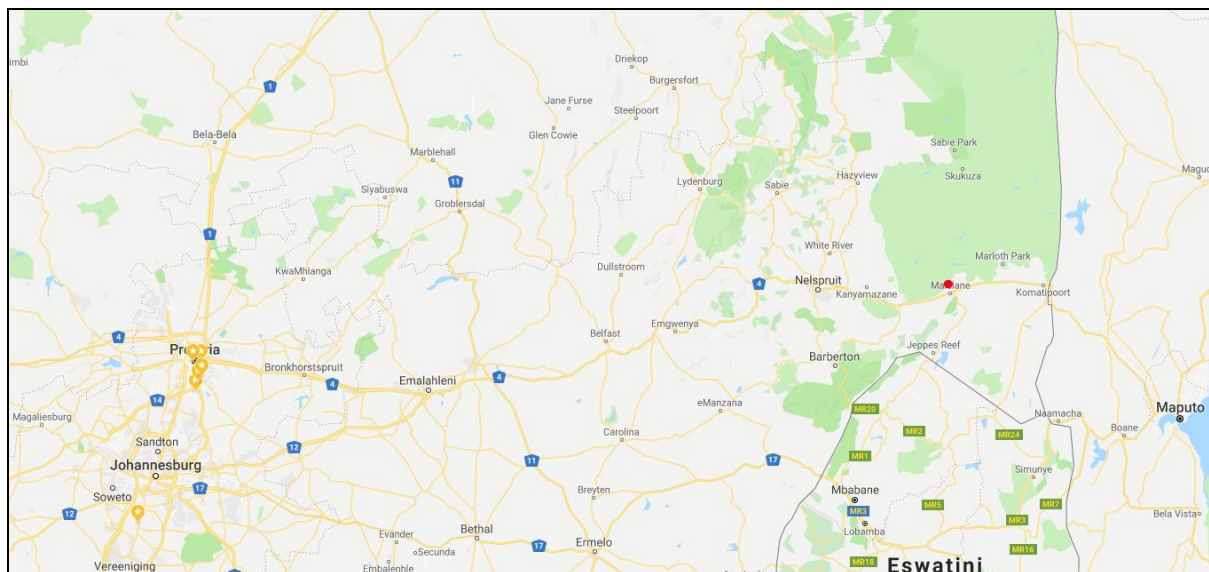


Figure 1: Regional context of the survey footprint located north of Malelane (indicated by the red area)



Figure 2: Local context of the survey area located north of Malelane (indicated by red area)

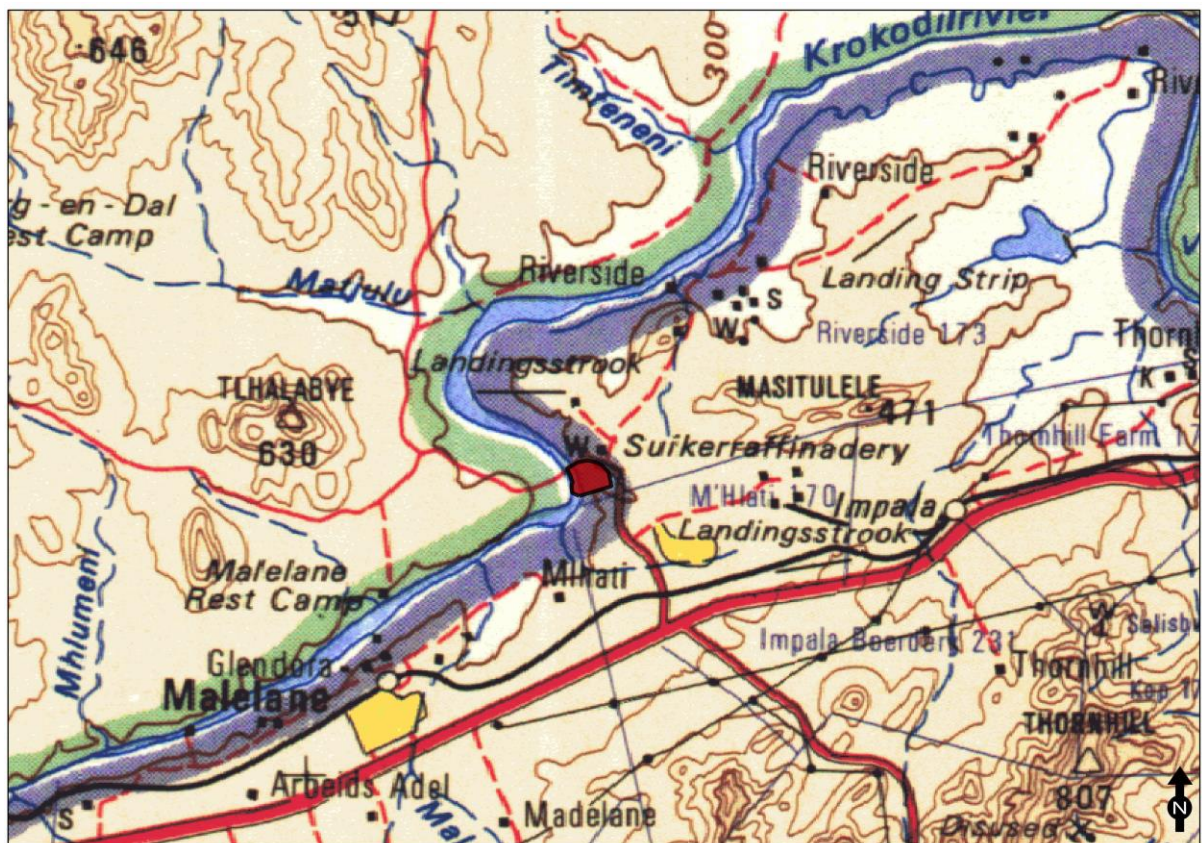


Figure 3: Regional context of the survey footprint with the extent of the farm Riverside 173 JU as indicated on the 1:250 000 topographic map (2530)



Figure 4: Local context of the survey footprint as indicated on the 1:50 000 topographic map (2531BC)



Figure 5: Regional context of survey area as indicated on Google Earth Pro (2019)



Figure 6: Detail of survey area indicating the existing Pestana Kruger Lodge as indicated on Google Earth Pro (2019)



Figure 7: General view of the stream running through the survey footprint



Figure 8: General view of the eastern section of the survey footprint



Figure 9: General view of existing infrastructure in the southern section of the survey footprint



Figure 10: General view of existing infrastructure in the central section of the survey footprint



Figure 11: General view of existing infrastructure in the western section of the survey footprint



Figure 12: General view of existing infrastructure in the western section of the survey footprint



Figure 13: General view of the western section of the survey footprint



Figure 14: General view of existing infrastructure in the northern section of the survey footprint



Figure 15: General view of existing infrastructure in the western section of the survey footprint

4. Proposed Project Description

The proposed development entails the expansion of Pestana Kruger Lodge. All associated civil infrastructure (water, electricity and waste treatment) will be included.

5. Legal Framework

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE APPLIED
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	
The National Environmental Management Act (Act No. 107 of 1998)	Section 24 Section 28
The National Water Act (Act No. 36 of 1998)	
Air Quality Act (Act No. 39 of 2004)	
National Forests Act, Act of 84 of 1998	
The National Heritage Resources Act (Act No. 25 of 1999)	Section 38, 34, 35, 36
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	-
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	-
The National Water Act (Act No. 36 of 1998)	
Mine Health and Safety Act (Act No. 29 of 1996) (MHSA)	
Biodiversity Act (Act 10 of 2004)	
World Heritage Convention Act (Act No. 49 of 1999)	
National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	
National Infrastructure Plan	
Nkomazi Local Municipality Integrated Management Plan 2016/2017	

Table 3: Legal framework

- The 2014 EIA Regulations, as amended in April 2017 and its associated Listing Notices [Listing Notice 1 (GN R327) and Listing Notice 3 (GN R324)] specify the activities that require a Basic Assessment. The activities triggered by the proposed development include the following listed activities:

Number and date of the relevant Listing Notice:	Activity Number(s) (in terms of the relevant Listing Notice):	Description of each listed activity as per the detailed project description
GN R.327 (Listing Notice 1)	12(ii) (c)	The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more where such a development occurs(c) within 32 metres of a watercourse.
	27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.
	48(i) (c)	The expansion of (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more where such expansion occurs(c) within 32 metres of a watercourse, measured from the edge of a watercourse.
GN R. 324 (Listing Notice 3)	12 (f) (ii) (iii)	The clearance of an area of 300 square meters or more of indigenous vegetation in (f) Mpumalanga (ii) critical biodiversity areas(iii) on land zoned open space, conservation or had an equivalent zoning.
	14 (ii) (c); (f) (i) (ff) (hh)	The development of (ii) infrastructure or structures with a physical footprint of 10 square meters or more where such development occurs (c) within 32 m of a watercourse in (f) Mpumalanga (i) outside urban areas in (ff) critical biodiversity areas and (hh) areas within 10 kilometres of a national park as identified in terms of NEMPAA.
	17 (f) (i) (ee) (gg)	The expansion of a resort, lodge, hotel, tourism or hospitality facilities where the development footprint will be expanded and the expanded facility can accommodate an additional 15 people or more in (f) Mpumalanga (i) outside urban areas in (ee) critical biodiversity areas within (gg) areas within 10 kilometres of a national park as identified in terms of NEMPAA.
	23 (ii) (c); (f) (i) (ee) (gg)	The expansion of (ii) infrastructure or structures where the physical footprint is expanded by 10 square meters or more where such expansion occurs (c) within 32 meters or a watercourse in (f) Mpumalanga (i) outside urban areas in (ee) critical biodiversity areas and (gg) areas within 10 kilometres of a national park as identified in terms of NEMPAA.

Table 4: Lister activities according to NEMA (Act No. 107 of 1998)

- Section 38 of the NHRA (Act No. 25 of 1999) stipulates that the following activities trigger heritage survey:

Development criteria in terms of Section 38(1a-e) of the NHRA (Act No. 25 of 1999)	Yes/No
Construction of road, wall, powerline, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 m ² in extent	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 m ²	No
Any other development category, public open space, squares, parks, recreation grounds	Yes

Table 5: Activities that trigger Section 38 of the NHRA

- Field rating system as recommended by SAHRA:

Field Rating	Grade	Significance	Recommended Mitigation
National Significance	Grade I	High significance	Conservation by SAHRA, national site nomination, mention any relevant international ranking. No alteration
Provincial Significance	Grade II	High significance	Conservation by provincial heritage authority, provincial site nomination. No alteration whatsoever without permit
Local Significance	Grade III-A	High significance	Conservation by local authority, no alteration whatsoever without permit from provincial heritage authority. Mitigation as part of development process not
Local Significance	Grade III-B	High significance	Conservation by local authority, no external alteration without permit from provincial heritage authority. Could
Generally Protected A	Grade IV-A	High/medium significance	Conservation by local authority. Site should be mitigated before destruction. Destruction permit required from
Generally Protected B	Grade IV-B	Medium significance	Conservation by local authority. Site should be recorded before destruction. Destruction permit required from provincial heritage authority.
Generally Protected C	Grade IV-C	Low significance	Conservation by local authority. Site has been sufficiently recorded in the Phase 1 HIA. It requires no further recording before destruction. Destruction permit

Table 6: Field rating system to determine site significance

- Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and they are valuable, finite, non-renewable and irreplaceable.
- All archaeological remains, features, structures and artefacts older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999, Section 34 & 35)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory (see **Section 38**). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.
- Cognisance will also be taken of the Mineral and Petroleum Resources Development Act (Act No 28 of 2002) and the National Environmental Management Act (Act No 107 of 1998) when making any recommendations.
- Human remains older than 60 years are protected by the NHRA, with reference to Section 36. Human remains that are less than 60 years old are protected by the Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act No. 61 of 2003 as well as local Ordinances and regulations.
- With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise.
- The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3, and the Australian ICOMOS (International Council on Monuments and Sites) Charter (also known as the Burra Charter) are used when

determining the cultural significance or other special value of archaeological or historical sites.

- A copy of this report will be submitted on SAHRIS as stipulated by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), Section 38 (especially subsection 4) and the relevant Provincial Heritage Resources Authority (PHRA).
- Note that the final decision for the approval of permits, or the removal or destruction of sites, structures and artefacts identified in this report, rests with the SAHRA (or relevant PHRA).
- World Heritage Convention Act (Act No. 49 of 1999), the National Environmental Management: Protected Areas Act (Act No. 57 of 2003) and the associated regulations for the proper administration of special Nature Reserves, National Parks and World Heritage Sites.

6. Study Approach/Methodology

Geographical information (ESRI shapefiles) on the proposed prospecting areas was supplied by NuLeaf Planning and Environmental. The most up-to-date Google Earth images and topographic maps were used to indicate the survey area. Topographic maps were sources from the Surveyor General. Please note that all maps are orientated with north facing upwards (unless stated otherwise).

The strategy during this survey was to survey most of the survey footprint. Most areas were surveyed by conducting intuitive pedestrian (foot) surveys. The survey area is mostly characterised by existing infrastructure associated with the current lodge and recreational facilities.



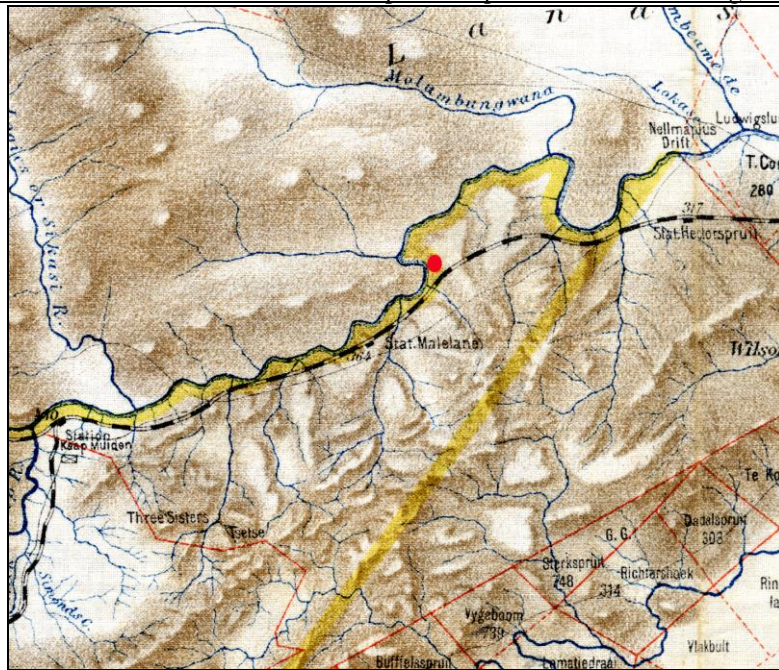


Figure 18: Jeppes Map dating to 1899 indicates an approximate location for the survey area as the area was only surveyed in 1919

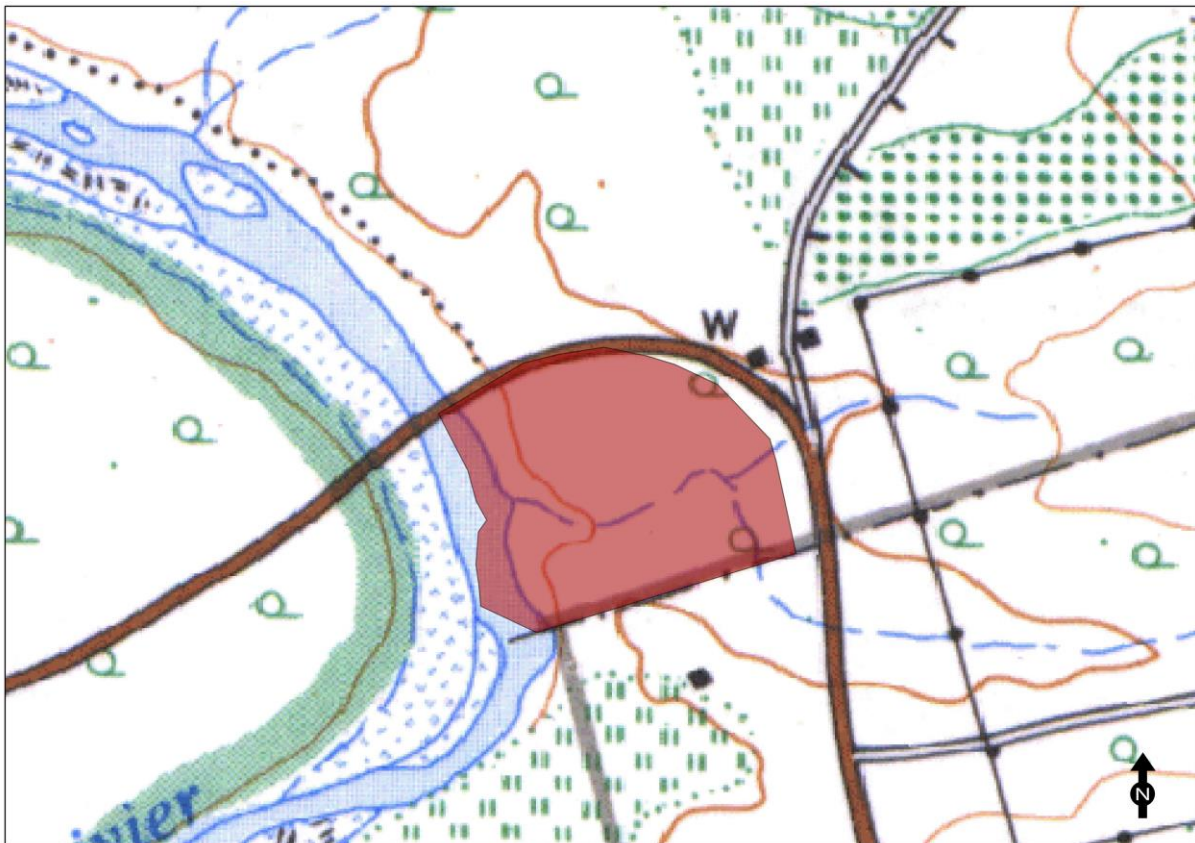


Figure 19: General location of the survey area as indicated on the 1:50 000 topographic map 2531 BC (1970)

6.2 Palaeontological sensitivity

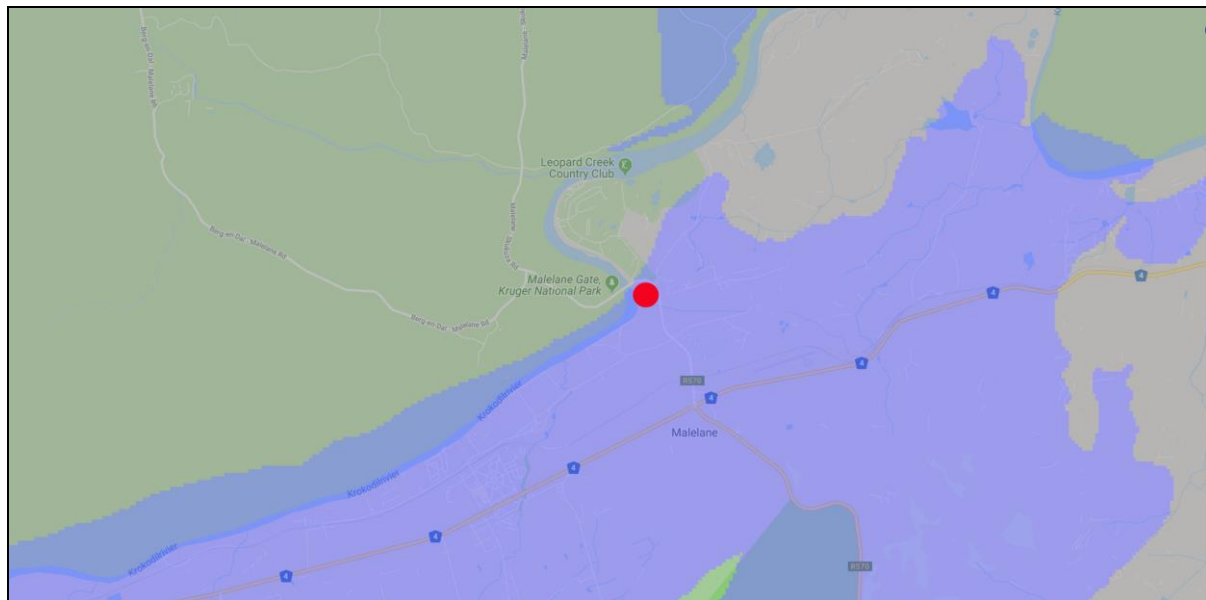


Figure 20: Palaeontological sensitivity map from the SAHRIS database (September 2019)

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	Will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

The palaeontological sensitivity map was extracted from the SAHRIS database and clearly shows blue (low) sensitivity. As a result no palaeontological study will be required however a protocol for finds is required for the survey footprint.

6.3 Site visits

The field survey was conducted on 5 August 2019.

6.4 Social interaction and current inhabitants

The local lodge manager was consulted regarding intangible heritage and the location of known heritage remains.

6.5 Public Consultation and Stakeholder Engagement

The EAP will be conducting a Public Participation Process, and afford any and all persons interested and/or affected by the proposed development an opportunity to register and participate in the process. A 30 day registration period is allowed for, as well as, an opportunity to ask questions, submit concerns etc. The EAP will then prepare a Draft Basic

Assessment Report (BAR), inclusive of specialist reports and a draft Environmental Management Programme (EMPr), which describes both the project and the environment and assesses the anticipated impact of the project on the environment, and makes recommendations in terms of mitigation and management. Once complete, the Draft BAR will be circulated to all registered I&APs who are entitled to submit written comments in respect thereof. A 30 day comment period is allowed for in terms of Regulation 40 (1) of the 2014 EIA Regulations. Once all comments from registered I&APs have been addressed, the EAP will submit the Final BAR to the Competent Authority for consideration.

6.6 Assumptions, restrictions, gaps and limitations

No severe physical restrictions were encountered as the survey area was fairly accessible. As a result not all areas were investigated in detail, as it was relatively easy to determine which areas will probably not yield archaeological and historical remains.

6.7 Methodology for assessment of potential impacts

All impacts identified during the EIA stage of the study will be classified in terms of their significance. Issues were assessed in terms of the following criteria:

- The **nature**, a description of what causes the effect, what will be affected and how it will be affected;
- The **physical extent**, wherein it is indicated whether:
 - 1 - the impact will be limited to the site;
 - 2 - the impact will be limited to the local area;
 - 3 - the impact will be limited to the region;
 - 4 - the impact will be national; or
 - 5 - the impact will be international.
- The **duration**, wherein it is indicated whether the lifetime of the impact will be:
 - 1 - of a very short duration (0–1 years);
 - 2 - of a short duration (2-5 years);
 - 3 - of a medium-term (5–15 years);
 - 4 - of a long term (> 15 years); or
 - 5 - permanent.
- The **magnitude** of impact, quantified on a scale from 0-10, where a score is assigned:
 - 0 - small and will have no effect;
 - 2 - minor and will not result in an impact;
 - 4 - low and will cause a slight impact;
 - 6 - moderate and will result in processes continuing but in a modified way;
 - 8 - high, (processes are altered to the extent that they temporarily cease); or
 - 10 - very high and results in complete destruction of patterns and permanent cessation of processes;
- The **probability** of occurrence, which describes the likelihood of the impact actually occurring and is estimated on a scale where:
 - 1 - very improbable (probably will not happen);
 - 2 - improbable (some possibility, but low likelihood);
 - 3 - probable (distinct possibility);
 - 4 - highly probable (most likely); or
 - 5 - definite (impact will occur regardless of any prevention measures);
- The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- The **status**, which is described as either positive, negative or neutral;

- The degree to which the impact can be reversed;
- The degree to which the impact may cause irreplaceable loss of resources; and
- The degree to which the impact can be mitigated.

The significance is determined by combining the criteria in the following formula:

$S = (E+D+M) \times P$; where:

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

Points	Significance Weighting	Discussion
< 30 points	Low	Where this impact would not have a direct influence on the decision to develop in the area.
31-60 point	Medium	Where the impact could influence the decision to develop in the area unless it is effectively mitigated.
> 60 points	High	Where the impact must have an influence on the decision process to develop in the area.

7. The Cultural Heritage Sites

7.1 Isolated occurrences

Isolated occurrences are artefacts or small features recorded on the surface with no contextual information. No other associated material culture (in the form of structures or deposits) was noted that might provide any further context. This can be the result of various impacts and environmental factors such as erosion and modern developments. By contrast archaeological sites are often complex sites with evidence of archaeological deposit and various interrelated features such as complex deposits, stone walls and middens. However, these isolated occurrences are seen as remains of erstwhile complex or larger sites and they therefore provide a broad indication of possible types of sites or structures that might be expected to occur or have occurred in the survey footprint.

No isolated finds were recorded.

7.2 Heritage sites

None

8. Locations and Evaluation of Sites

None

9. Management Measures

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

9.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the NHRA (Act No. 25 of 1999), Section 51. (1).

9.2 Control

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

10. Recommendations and Conclusions

Please note that no Stone Age, Iron Age or historical settlements, structures, features, assemblages or artefacts were recorded during the survey.

It is therefore recommended, from a cultural heritage perspective that the proposed expansions to Pestana Kruger Lodge may proceed.

Also, please note:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* **NHRA (Act No. 25 of 1999)**, Section 36 (6)).

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Addendum 1: Archaeological and Historical Sequence

The table provides a general overview of the chronological sequence of the archaeological periods in South Africa.

PERIOD	APPROXIMATE DATES
Earlier Stone Age	more than 2 million years ago to >200 000 years ago
Middle Stone Age	<300 000 years ago to >20 000 years ago
Later Stone Age (Includes hunter-gatherer rock art)	<40 000 years ago up to historical times in certain areas
Early Iron Age	c. AD 200 - c. AD 900
Middle Iron Age	c. AD 900 – c. AD 1300
Late Iron Age (Stonewalled sites)	c. AD 1300 - c. AD 1840 (c. AD 1640 - c. AD 1840)

< = less than; > = greater than

Archaeological Context

Stone Age Sequence

Concentrations of Early Stone Age (ESA) sites are usually present on the flood-plains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large concentrated deposits ranging from pebble tool choppers to core tools such as handaxes and cleavers. The earliest hominins who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore kill sites.

Middle Stone Age (MSA) sites also occur on flood plains, but are also associated with caves and rock shelters (overhangs). Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom preserve. Limited drive-hunting activities are also associated with this period.

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

The following chronological sequence was recently established by prominent Stone Age archaeologists (Lombard et al 2012):

Later Stone Age

- Age Range: recent to 20-40 thousand years ago
- General characteristics: expect variability between assemblages, a wide range of formal tools, particularly scrapers (microlithic and macrolithic), backed artefacts, evidence of

hafted stone and bone tools, borers, bored stones, upper and lower grindstones, grooved stones, ostrich eggshell (OES) beads and other ornaments, undecorated/decorated OES fragments, flasks/flask fragments, bone tools (sometimes with decoration), fishing equipment, rock art, and ceramics in the final phase.

○ **Ceramic or Final Later Stone Age**

- Generally < 2 thousand years ago
- MIS 1
- Contemporaneous with, and broadly similar to, final Later Stone Age, but includes ceramics
- Economy may be associated with hunter-gatherers or herders

Technological characteristics

- Stone tool assemblages are often microlithic
- In some areas they are dominated by long end scrapers and few backed microliths; in others formal tools are absent or rare
- Grindstones are common, ground stone artefacts, stone bowls and boat-shaped grinding grooves may occur
- Includes grit- or grass-tempered pottery
- Ceramics can be coarse, or well-fired and thin-walled; some times with lugs, spouts and conical bases; sometimes with decoration; sometimes shaped as bowls
- Ochre is common
- Ostrich eggshell (OES) is common
- Metal objects, glass beads and glass artefacts also occur

○ **Final Later Stone Age**

- 100 – 4000 years ago
- MIS 1
- Hunter-gatherer economy

Technological characteristics

- Much variability can be expected
- Variants include macrolithic (similar to Smithfield [Sampson 1974]) and/or microlithic (similar to Wilton) assemblages
- Assemblages are mostly informal (Smithfield)
- Often characterised by large untrimmed flakes (Smithfield)
- Sometimes microlithic with scrapers, blades and bladelets, backed tools and adzes (Wilton-like)
- Worked bone is common
- OES is common
- Ochre is common
- Iron objects are rare
- Ceramics are absent

○ **Wilton**

- 4000 – 8000 years ago
- MIS 1
- At some sites continues into the final Later Stone Age as regional variants (e.g. Wilton Large Rock Shelter and Cave James)

Technological characteristics

- Fully developed microlithic tradition with numerous formal tools
 - Highly standardised backed microliths and small convex scrapers (for definition of standardisation see Eerkens & Bettinger 2001)
 - OES is common
 - Ochre is common
 - Bone, shell and wooden artefacts occur
- **Oakhurst**
 - 7000 – 12 000 years ago
 - MIS 1
 - Includes Albany, Lockshoek and Kuruman as regional variants

Technological characteristics

- Flake based industry
 - Characterised by round, end, and D-shaped scrapers and adzes
 - Wide range of polished bone tools
 - Few or no microliths
- **Robberg**
 - 12 000 to 18 000 years ago
 - MIS 2

Technological characteristics

- Characterised by systematic bladelet (<26mm) production and the occurrence of outils ecailles or scaled pieces
 - Significant numbers of unretouched bladelets and bladelet cores
 - Few formal tools
 - Some sites have significant macrolithic elements
- **Early Late Stone Age**
 - 18 000 – 40 000 years ago
 - MIS 2-3
 - Informal designation
 - Also known as transitional MSA-LSA
 - Overlapping in time with final Middle Stone Age

Technological Characteristics

- Characterised by unstandardised, often microlithic, pieces and includes the bipolar technique
- Described at some sites, but not always clear whether assemblages represent a real archaeological phase or a mixture of LSA/MSA artefacts

Middle Stone Age

- Age Range: 20 000 – 30 000 years ago
- General characteristics: Levallois or prepared core techniques (for definitions see Van Peer 1992; Boeda 1995; Pleurdeau 2005) occur in which triangular flakes with convergent dorsal scars, often with faceted striking platforms, are produced. Discoidal systems (for definition see Inizan et al. 1999) and intentional blade production from volumetric cores (for definition see Pleurdeau 2005) also occur; formal tools may

include unifacially and bifacially retouched points, backed artefacts, scrapers, and denticulates (for definition see Bisson 2000); evidence of hafted tools; occasionally includes marine shell beads, bone points, engraved ochre nodules, engraved OES fragments, engraved bone fragments, and grindstones.

- In the sequence below we highlight differences or characteristics that may be used to refine interpretations depending on context.
- **Final Middle Stone Age**
 - 20 000 – 40 000 years ago
 - MIS 3
 - Informal designation partly based on the Sibudu sequence

Technological characteristics

- Characterised by high regional variability that may include, e.g. bifacial tools, bifacially retouched points, hollow-based points
- Triangular flake and blade industries (similar to Strathalan and Melikane)
- Small bifacial and unifacial points (similar to Sibudu and Rose Cottage Cave)
- Sibudu point characteristics: short, stout, lighter in mass compared to points from the Sibudu technocomplex, but heavier than those from the Still Bay
- Can be microlithic
- Can include bipolar technology
- Could include backed geometric shapes such as segments, as well as side scrapers

Sibudu

- 45 000 – 58 000 years ago
- MIS 3
- Previously published as informal late Middle Stone Age and post-Howieson's Poort at Sibudu
- Formerly known post-Howieson's Poort, MSA 3 generally, and MSA III at Klasies River

Technological characteristics

- Most points are produced using Levallois technique
- Most formal retouch aimed at producing unifacial points
- Sibudu unifacial point (type fossil) characteristics: faceted platform; shape is somewhat elongated with a mean length of 43.9 mm, a mean breadth of 26.8 mm and mean thickness of 8.8 mm (L/B ratio 1.7); their mean mass is 11.8 g (Mohapi, 2012)
- Some plain butts
- Rare bifacially retouched points
- Some side scrapers are present
- Backed pieces are rare

• **Howieson's Poort**

- 58 000 – 66 000 years ago
- MIS 3-4

Technological characteristics

- Characterised by blade technology
- Includes small (<4 cm) backed tools, e.g. segments, scrapers, trapezes and backed blades
- Some denticulate blades
- Pointed forms are rare or absent

- **Still Bay**
 - 70 000 – 77 000 years ago
 - MIS 4-5a

Technological characteristics

- Characterised by thin (<10 mm), bifacially worked foliate or lanceolate points
- Semi-circular or wide-angled pointed butts
- Could include blades and finely serrated points (Lombard et al. 2010)

- **Pre-Still Bay**
 - 72 000 – 96 000 years ago
 - MIS 4-5

Technological characteristics

- Characteristics currently being determined / studied

- **Mossel Bay**
 - 77 000 to —105 000 years ago
 - MIS 5a-4
 - Also known as MSA II at Klasies River or MSA 2b generally

Technological characteristics

- Characterised by recurrent unipolar Levallois point and blade reduction
- Products have straight profiles; percussion bulbs are prominent and often splintered or ring-cracked
- Formal retouch is infrequent and restricted to sharpening the tip or shaping the butt

- **Klasies River**
 - 105 000 to —130 000 years ago
 - MIS 5d-5e
 - Also referred to as MSA I at Klasies River or MSA 2a generally

Technological characteristics

- Recurrent blade and convergent flake production
- End products are elongated and relatively thin, often with curved profiles
- Platforms are often small with diffused bulbs
- Low frequencies of retouch
- Denticulate pieces

- **Early Middle Stone Age**
 - Suggested age MIS 6 to MIS 8 (130 000 to —300 000 years ago)
 - Informal designation

Technological characteristics

- This phase needs future clarification regarding the designation of cultural material and sequencing
- Includes discoidal and Levallois flake technologies, blades from volumetric cores and a generalised toolkit

- **Earlier Stone Age**

- Age range: >200 000 to 2 000 000 years ago
- General characteristics: early stages include simple flakes struck from cobbles, core and pebble tools; later stages include intentionally shaped handaxes, cleavers and picks; final or transitional stages have tools that are smaller than the preceding stages and include large blades.
- In the sequence below we highlight differences or characteristics that may be used to refine interpretations depending on context.

- **ESA-MSA transition**
- 200 to —600 thousand years ago
- MIS 7-15

Technological characteristics

- Described at some sites as Fauresmith or Sangoan
- Relationships, descriptions, issues of mixing and ages yet to be clarified
- Fauresmith assemblages have large blades, points, Levallois technology, and the remaining ESA components have small bifaces
- The Sangoan contains small bifaces (<100 mm), picks, heavy and light-duty denticulated and notched scrapers
- The Sangoan is less well described than the Fauresmith
- **Acheulean**
 - 300 thousand to —1.5 million years ago
 - MIS 8-50

Technological characteristics

- Bifacially worked handaxes and cleavers, large flakes > 10 cm
- Some flakes with deliberate retouch, sometimes classified as scrapers
- Gives impression of being deliberately shaped, but could indicate result of knapping strategy
- Sometimes shows core preparation
- Generally found in disturbed open-air locations
- **Oldowan**
 - 1.5 to >2 million years ago
 - MIS 50-75

Technological characteristics

- Cobble, core or flake tools with little retouch and no flaking to predetermined patterns
- Hammerstones, manuports, cores
- Polished bone fragments/tools

Iron Age Sequence

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoralist settlements during the **Early Iron Age** (EIA). Diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. The first phase of the Early Iron Age, known as **Happy Rest** (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of **Diamant**

is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the **Eiland** tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. These sites are usually located on low-lying spurs close to water.

The **Late Iron Age** (LIA) settlements are characterised by sites without stone walls (Early Moloko settlements such as Icon (AD 1350 – 1500) and stone-walled sites such as Madikwe (AD 1500 – 1700) and Buispoort (AD 1700 – 1800) situated on defensive hilltops. This occupation phase has been linked to the arrival of ancestral Tswana speakers and in the northern regions of South Africa with associated sites dating between the sixteenth and seventeenth centuries AD. The terminal LIA is represented by late 18th/early 19th century settlements with multichrome Moloko pottery commonly attributed to the Sotho-Tswana. These settlements can in many instances be correlated with oral traditions on population movements during which African farming communities sought refuge in mountainous regions during the processes of disruption in the northern interior of South Africa, resulting from the so-called *difaqane* (or *mfecane*).



Figure 21: General location of Iron Age settlements in the regions along the Crocodile River (after Bergh 1998)

Most of the archaeological sites occurring in the region are dated to the later (stone walled) phase of the Late Iron Age (c. AD 1640 - AD 1830s) also known as the Late Moloko. These sites all conform to a general settlement layout that forms part of a certain worldview. As such, the livestock enclosures are situated in the central area of a settlement. The court (kgotla) is also located in this central area and is associated with men (men are usually also buried here). The surrounding scalloped walling is where the houses are situated and is

associated with women. This type of settlement layout is generally known as the Central Cattle Pattern (CCP).

By nature of the topography of the region, the archaeological sites are mostly situated on high laying plateau and foothills. All the stone walls are built with the dry-walling technique as no evidence was found that the surfaces were plastered with an agent (i.e. dagma (cattle dung mixed with mud)).

Ethno-archaeological sequence in the Kruger National Park

Both Early and Later Iron Age settlements have been recorded in the Park by various archaeological researchers. Radiocarbon dates indicate occupation from approximately the beginning of the 5th Century until historic times. Contact situations between the hunter-gatherers and the migratory agropastoralists seem to have been initially symbiotic. The earliest dates for Iron Age occupation are found near Letaba, followed by settlement of the Sabie and Crocodile river areas. The agropastoralists migrating into the Park brought with them a variety of domestic plants as well as domestic animals but still gathered veld foods and hunted actively. They lived in settled villages where they practised mining, smelting and working of iron, copper and gold and manufactured pottery. Decorations on the pottery are culturally diagnostic elements which are used by archaeologists to identify periods and traditions

The southern region of the Park is associated with the Early Iron Age through the following complexes or industries (Meyer 1986):

- Mutlumuvi Complex
- Sites associated with Eiland pottery
- Sites associated with Lydenburg pottery
- Sites associated with the Sabie site
- Mahlambamadube Industry
- Shirimantanga Industry

The southern region of the Park is associated with the Late Iron Age through the following complexes or industries (Meyer 1986):

- Ngwenya Industry
- Nsikazi Industry

During the 18th century, after defeating the Nhlangu and BaPai, the Ngomane, a Shangaan-Tsonga group, settled and dominated the southern regions of the present-day Kruger National Park (Meyer 1986:212-213). During this time the area was also influenced by the military presence of Swazi, Eastern Sotho and Tsonga groups (Meyer 1986:242).

In 1725, De Cuiper and his companions, the first known Europeans to travel through this area, encountered dense concentrations of people with large cattle herds. A hostile group north of the Crocodile River, probably the Ngomane, would not allow the party to continue into their territory (Eloff 1990:31).

After the 10th century trade became an important element of the economy. Items such as game products (including ivory and animal furs), iron, copper and gold, were exported and salt, grain, cattle, sea shells as well as glass beads and textiles from the East imported. Although ivory was a major trade item, documents on trade with the East Coast also refer to leopard skins, tortoise shells and slaves. Gold is specifically mentioned in documents relating to the twelfth century. Although the Arab traders controlled the trade until the 16th century, they used local people as porters and agents. Various trade routes went through the Park. One

of these continued from Lydenburg through Pretoriuskop and the Matalhapoort to Delagoabaai. A footpath from Delagoabaai northwards went through Compos Corvo, Progresso de Guedes and Castilhopolis (subsequently used as overnight stops by Nellmapius), through the later Furley's drift at the Nkomati, Tengamanzi on the Crocodile and continued through Pretoriuskop to the area which later became known as Pilgrims Rest.

Accounts by travellers from 1725 to 1838 describe, as mentioned above, a significant presence of agropastoralists in the area which would subsequently become the Kruger National Park. When the Kruger National Park was proclaimed in 1902 the black settlers were removed and resettled in neighbouring areas.

Although ancient mine activities occur in the Kaap Valley, there is no documentary evidence that the Portuguese were actively involved in the mining and trade before the 18th century. The expedition of 1725 led by De Cuiper aimed to establish a connection with the Monomotapa gold fields.

A transport road to Delagoa Bay is indicated on old maps as 'De oude Wagenweg' or the 'oudste weg naar Delagoabaai (De Vaal 1990:240). This road was used by the Trichard commission in 1835 in order to find a route to Delagoa Bay, (also previously investigated by Potgieter in 1834. It passed Pretoriuskop, south of Shitlhavekop, crossed the upper reaches of the Mbyamiti (a tributary of the Crocodile River), passing Kwaggaspan and south of Renoster- and Siyalukop and then through the Lebombo mountains to Delagoa. However, the route was for various reasons not favoured, and in particular because it lacked sufficient watering points for cattle during winter and the route was ultimately discontinued (De Vaal 1990:249).

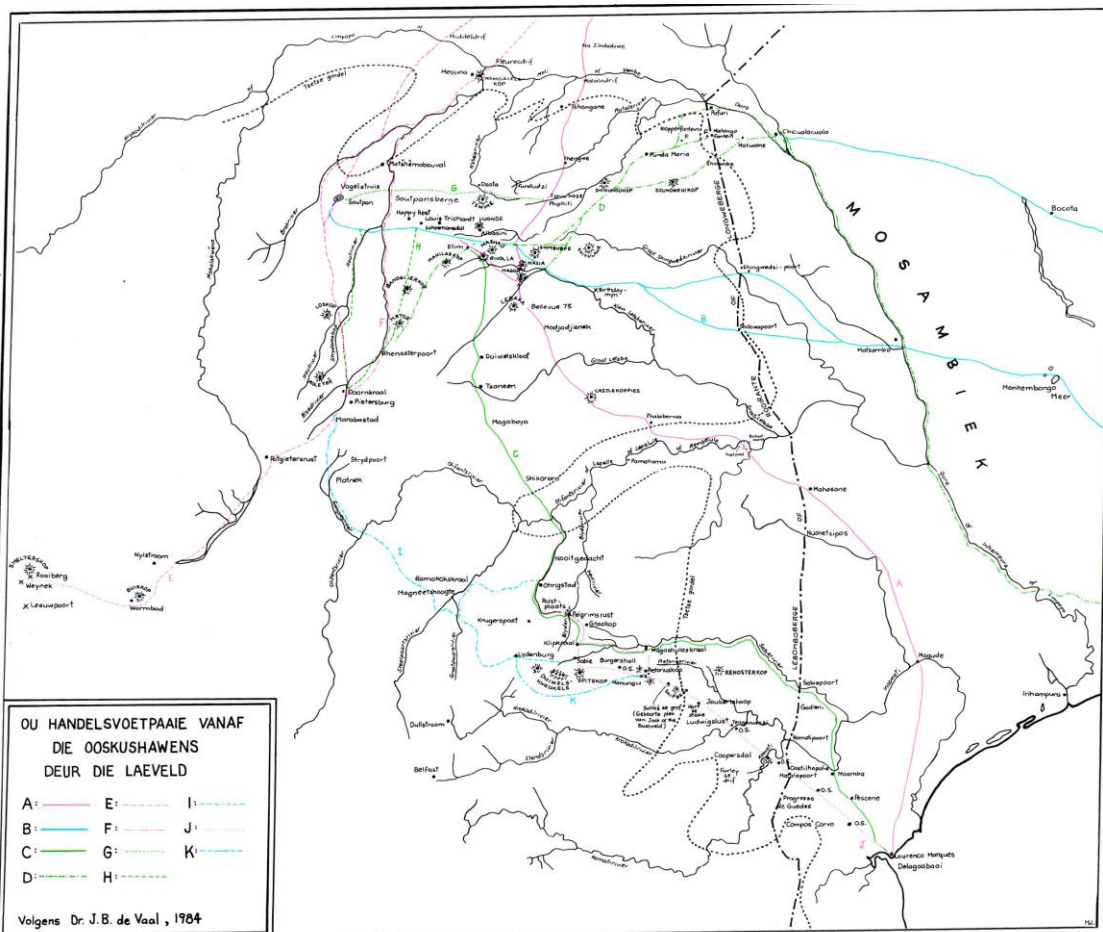


Figure 22: Trade route J passes to the south of the farm Tenbosch (U de V Pienaar 1990)

João Albasini was a well-known trader and elephant hunter who established a trading post at Magashulas Kraal north of Pretoriuskop, where he also built a house. By 1846 he was one of only a few white people living within this area. Albasini played a major role in the trade between the Voortrekkers and the Portuguese. He also established cattle outposts with assistants, and built small shops at some of these, namely at the posts of his assistants Manungu and that of Josekhulu southeast of Skipberg (also known as Langkop by the transport drivers). The Delagoa transport route went passed Skipberg and through the Lebombo mountain range. Manungu administered the trading post and looked after Albasini's cattle between 1845 - 1853. Archaeological investigations have shown that Manungu's outpost on the eastern side of the present Manungukop was used as an overnight stop on the ox-waggon transport route.

Accounts by hunters and other travellers report the presence of immense herds of game in the area, 'particularly between the Lebombos and Ship Mountain' (Scully 1907 quoted by U de V Pienaar 1990). Thomas Hart, who supervised an outpost station for Nellmapius on the trading route from Pilgrims Rest to Delagoa Bay, had a small house and enclosures for his numerous pet animals near the Josekhulu Spruit. Hart was murdered by a robber-band during the Sekhukhune war in 1876 and his buildings destroyed. The mutilated remains of Hart were ultimately buried there. Another well-known trader/hunter in this area was Sandeman who hunted in the Pretoriuskop-Skipberg area on his way to Delagoa Bay. He visited Thomas Hart's station and described the scene of destruction left after the murder of the latter.

Nellmapius was appointed by President Burgers to establish a route from the gold fields to Delagoa Bay. A concession was awarded in 1875 to build a road with overnight stations from the Lydenburg gold fields to Lourenço Marques. Pretoriuskop was the second station. Joubertshoop, the station of Thomas Hart, was 25.6 km southeast of Pretoriuskop. The next station 27.2 km on, was on the righthand bank of the Crocodile River. The crossing on the Crocodile became subsequently known as Nellmapius Drift.

The adventures of the transport driver Percy FitzPatrick and his dog, Jock, are well-known. Commemorative plaques have been constructed on their transport route from Lydenburg through Pretoriuskop to Delagoa Bay, which also falls within the proposed Concession area (See Map 2). A clue to the long-lost site where Jock was born was found in the following reference of FitzPatrick in *Jock of the Bushveld*: 'We had rested through the heat of the day under a big tree on the bank of a little stream; it was the tree (near Ship Mountain) under which Soltké praid and died' (FitzPatrick quoted by U de V Pienaar (1990:263).

Addendum 2: Description of the Recorded Sites

A system for grading the significance of heritage sites was established by the NHRA (Act No. 25 of 1999) and further developed by the South African Heritage Resources Agency (SAHRA 2007) and has been approved by ASAPA for use in southern Africa and was utilised during this assessment.

An example of the assessment criteria used:

A. GENERAL SITE DESCRIPTION				
Site type				
Site Period				
Physical description				
Integrity of deposits or structures				
Site extent				
B. SITE EVALUATION				
B1. HERITAGE VALUE	Yes	No		
Historic Value				
It has importance to the community or pattern of South Africa's history or precolonial history.				
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.				
It has significance relating to the history of slavery in South Africa.				
Aesthetic Value				
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.				
Scientific Value				
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.				
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.				
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.				
Social Value				
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).				
Tourism Value				
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.				
Rarity Value				
It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.				
Representative Value				
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.				
B2. REGIONAL CONTEXT				
Other similar sites in the regional landscape.				
C. SPHERE OF SIGNIFICANCE		High	Medium	Low
International				
National				
Provincial				
Local				
Specific community				
D. FIELD REGISTER RATING				
National/Grade 1 [should be registered, retained]				
Provincial/Grade 2 [should be registered, retained]				
Local/Grade 3A [should be registered, mitigation not advised]				

Local/Grade 3B [High significance; mitigation, partly retained]	
Generally Protected A [High/Medium significance, mitigation]	
Generally protected B [Medium significance, to be recorded]	
Generally Protected C [Low significance, no further action]	
E. GENERAL STATEMENT OF SITE SIGNIFICANCE	
Low	
Medium	
High	
F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT	
None	
Peripheral	
Destruction	
Uncertain	
G. RECOMMENDED MITIGATION	
H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS	
I. PHOTOGRAPHS	

Addendum 3: Surveyor General Farm Diagram

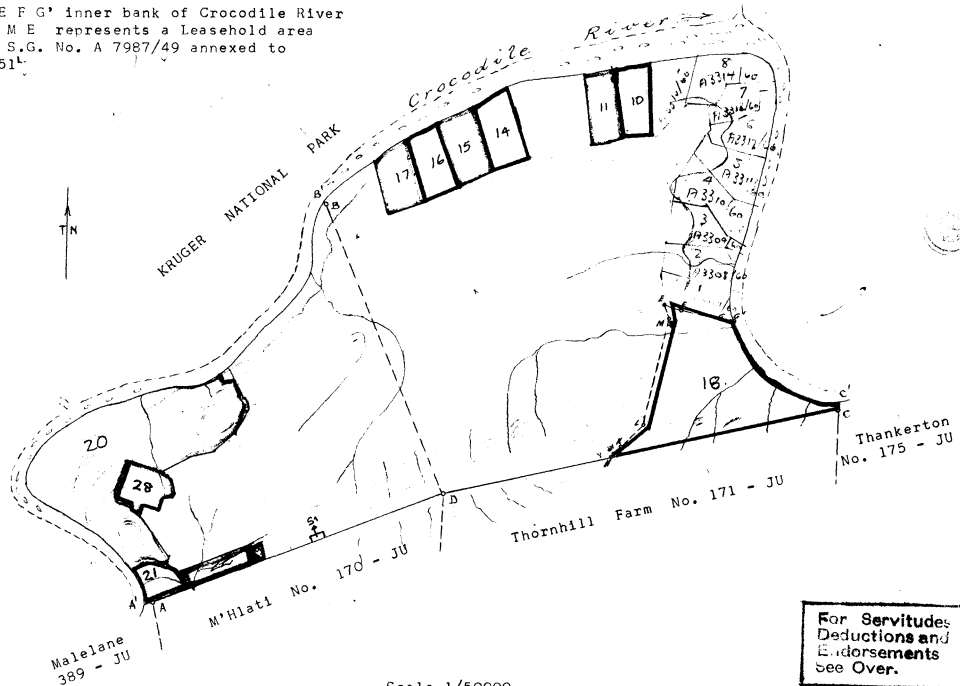
SIDES	Cape Feet.	ANGLES.	CO-ORDINATES.	
			Y	X
AB	17873.5	A 46.14.40	A + 114821.0	- 162857.3
BC	22676.8	B 91.33.00	B + 131053.8	- 170338.2
CD	16557.1	C 34. 8.10	C + 122123.0	- 191182.6
DA	12765.8	D 188. 4.10	D + 118980.0	- 174926.6
		dAA 180. 1.40		
		cdB 103.35.30		

S. G. No. A 2511/60

Approved.

C. H. West
Surveyor General.

The figure E F G' inner bank of Crocodile River
C' C H J K L M E represents a Leasehold area
Vide diagram S.G. No. A 7987/49 annexed to
Deed No. 23/51



The figure A' inner bank of river C' C D A A' represents
4289.0600 Morgen of land, being the farm RIVERSIDE No. 173 Registration Division JU comprising:-
1. The figure A' inner bank of river B' D A A' representing Portion α of the farm RIVERSIDE No. 168, - JU
in extent 1447 Morgen 444 Square Rods. Vide Diagram S.G.No. A 979/19, Deed of Grant No. 336/1919.
2. The figure B' inner bank of river C' C D B' representing Portion β of the farm RIVERSIDE No. 168, - JU
in extent 2841 Morgen 192 Square Rods. Vide Diagram S.G.No. A 980/19, Deed of Grant No. 336/1919.
situate in the District of BARBERTON. PROVINCE OF TRANSVAAL.

Compiled in June, 1960,

by me,

C. H. West
Land Surveyor.

This diagram is annexed to Deed of No. dated in favour of	The existing diagrams are as quoted above.	S.G. File No. 15438/481/60
		Survey Records No. Compilation No. JU-40

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Figure 23: Surveyor General's sketch of the farm Riverside 173 JU as surveyed in 1919

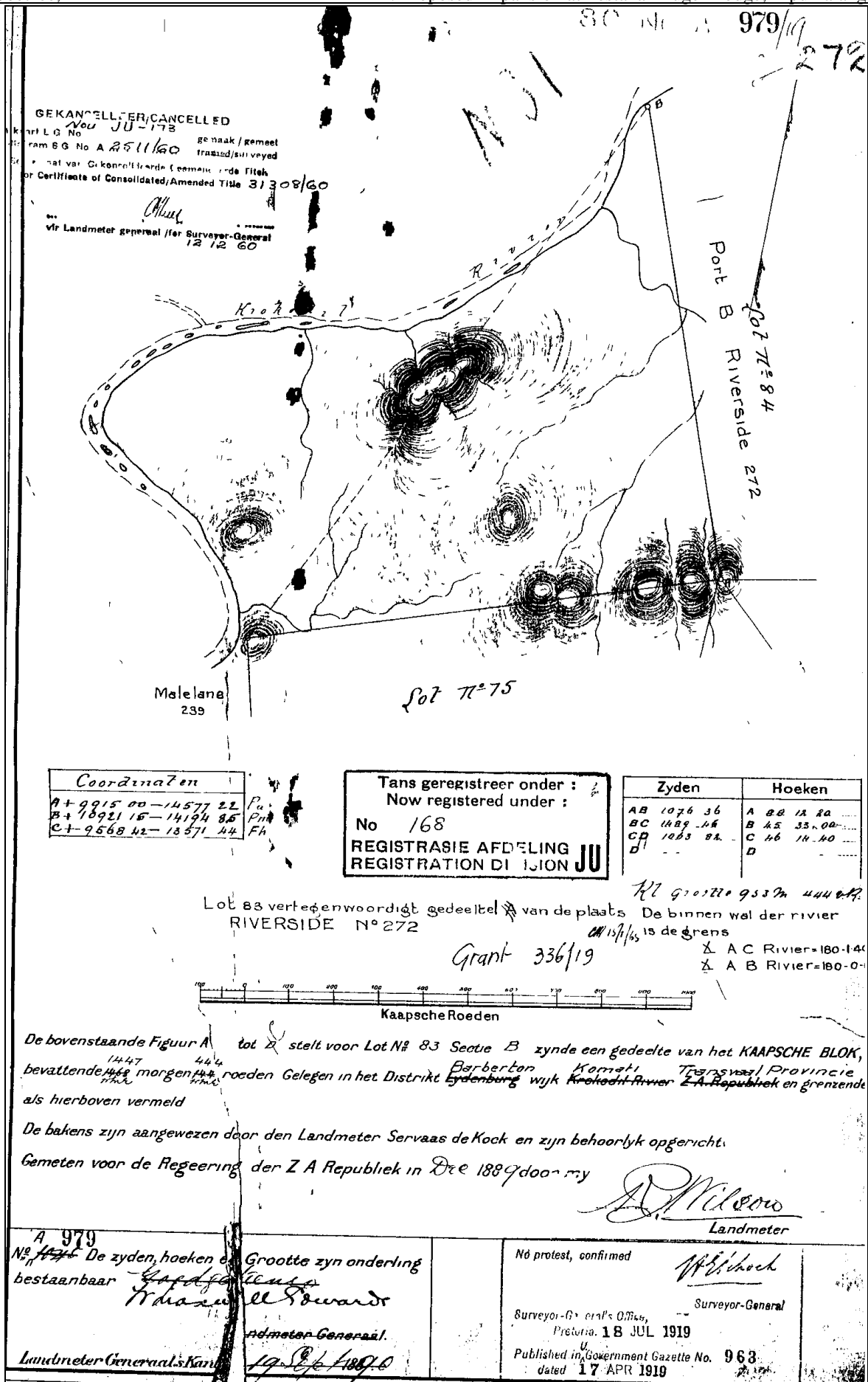


Figure 24: Surveyor General's sketch of the farm Riverside 173 JU as surveyed in 1919

Addendum 4: Relocation of Graves

Marked graves younger than 60 years do not fall under the protection of the NHRA (Act No. 25 of 1999) with the result that exhumation, relocation and reburial can be conducted by an undertaker. This will include logistical aspects such as social consultation, purchasing of plots in cemeteries, procurement of coffins, etc. Other legislative measures which may be pertinent include the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925), Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act No. 61 of 2003, Ordinance on Exhumations (Ordinance No. 12 of 1980) as well as any local and regional provisions, laws and by-laws that may be in place.

Marked graves older than 60 years are protected by the NHRA (Act No. 25 of 1999) and as a result an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. Note that unmarked graves are by default regarded as older than 60 years and therefore also falls under the NHRA (Act No. 25 of 1999, Section 36).

The relocation of graves entails the following procedure:

- Notices of intent to relocate the graves must be put up at the burial site for a period of 60 days. This should contain contact information where communities and family members can register as interested and affected parties. All information pertaining to the identification of the graves must be documented for the application of a SAHRA permit. All notices must be in at least 3 languages, of which English is one. This is a requirement by law.
- These notices of intention must also be placed in at least two local newspapers and have the same information as above.
- Local radio stations can also be used to try contact family members. This is not required by law, but can be helpful.
- During this time (60 days) a suitable cemetery must be identified near to the development or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account.
- Once the 60 days have passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been issued, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any remains and any additional objects found in the grave.

Information needed for the SAHRA permit application

- The permit application must be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- A letter of permission from the landowner granting permission to the developer to exhume and relocate the graves.

- A letter (or proof of purchase of the plots) from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.

Graves are generally be classified into four categories. These are:

- Graves younger than 60 years;
- Graves older than 60 years, but younger than 100 years;
- Graves older than 100 years; and
- Graves of victims of conflict or of individuals of royal descent.