
**Archaeological Scoping Report for the proposed Sekoko Waterberg Colliery,
Lephalale, Limpopo Province.**

Prepared For

Savannah Environmental (Pty) Ltd

By



HERITAGE



Contracts and Archaeological Consulting

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ACKNOWLEDGEMENT OF RECEIPT

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I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Savannah Environmental was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



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EXECUTIVE SUMMARY

Sekoko Coal (Pty) Ltd obtained a Mining Right and Environmental Authorisation for the Sekoko Waterberg Colliery in August 2011 and March 2012 respectively. In terms of these authorisations, the mining area comprises the following properties: Minnasvlakte 258 LQ, Smitspan 306 LQ, Massenbergrug 305 LQ and Remainder of Hooikraal 315 LQ. Sekoko Coal is proposing to expand the mining area to supply coal to various power stations and are proposing to include the farms Swanepoel Pan 262 LQ, Olieboomsfontein 220 LQ and Duikerfontein 263 LQ within the Mining Right area. Sekoko holds valid new order Prospecting Rights on these properties.

1: 50 000 Topographic Map: 2327 CB

EIA Consultant: Savannah Environmental (Pty) Ltd.

Developer: Sekoko Coal

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 17 December 2012

Findings of the Assessment:

This scoping study revealed that pans with exposed calcrete could contain Middle Stone Age sites within the study area. Late Iron Age cattle posts belonging to the *Letsibogo* ceramic *facies* dating to between 1550 AD and 1750 AD have been found in the area. It is however unlikely that sites belonging to this period will be found as the area is located far away from the Limpopo River to the north where these sites are concentrated. Furthermore some rock engravings at Nelsonskop have been recorded to the south east of the study area on the farm Grootfontein 501 LQ. The possibility of finding rock engravings in the study area is not excluded.

Every site is relevant to the Heritage Landscape, and based on current knowledge no site has conservation value. All sites could be mitigated either in the form of conservation of the sites within the development or by a Phase 2 study where the sites will be recorded and sampled before the client can apply for a destruction permit for these sites prior to development. This will however need to be verified during a site visit.

Disclaimer: *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The technology described in any report
- Recommendations delivered to the Client.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (2 million to 300 000 years ago)

Middle Stone Age (300 000 to 30 000 years ago)

Late Stone Age (30 000 years ago until recent)

Historic (approximately AD 1840 to 1950)

Historic building (over 60 years old)

Lithics: Stone Age artefacts

1. INTRODUCTION AND PURPOSE OF THIS REPORT

Heritage Contracts and Archaeological Consulting CC was contracted by Savannah (Pty) Ltd to conduct a Heritage Scoping Report for the proposed Sekoko Coal Mine EMP amendment. The study area is located to the north west of Lephalale in the Limpopo Province. The current mining area comprises the following properties: Minnasvlakte 258 LQ, Smitspan 306 LQ, Massenberg 305 LQ and Remainder of Hooikraal 315 LQ and were subjected to a heritage scoping study by van Schalkwyk (April 2009). Following discussions with Eskom regarding requirements for coal supply to various power stations, it has been determined that the annual output of the mine from 5 Mtpa to 10Mtpa (BID 2012). In order to accommodate this requirement, Sekoko Coal is proposing to include the farms Swanepoel Pan 262 LQ, Olieboomsfontein 220 LQ and Duikerfontein 263 LQ within the Mining Right area. Sekoko holds valid new order Prospecting Rights on these properties and these farms will form the focus of this scoping report (Figure 1). The heritage scoping report forms part of the EIA process for the proposed project.

The aim of the scoping report is to conduct a desktop study to identify possible heritage resources within the project area and to assess their importance within a Local, Provincial and National context. The study furthermore aims to assess the impact of the proposed project on non - renewable heritage resources and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage legislation.

The report outlines the approach and methodology utilized for the Scoping phase of the project. The report includes information collected from various sources and consultations. Possible impacts are identified and mitigation measures are proposed in the following report. It is important to note that no field work was conducted as part of the scoping phase but will be conducted as part of the Impact Assessment phase of the EIA.

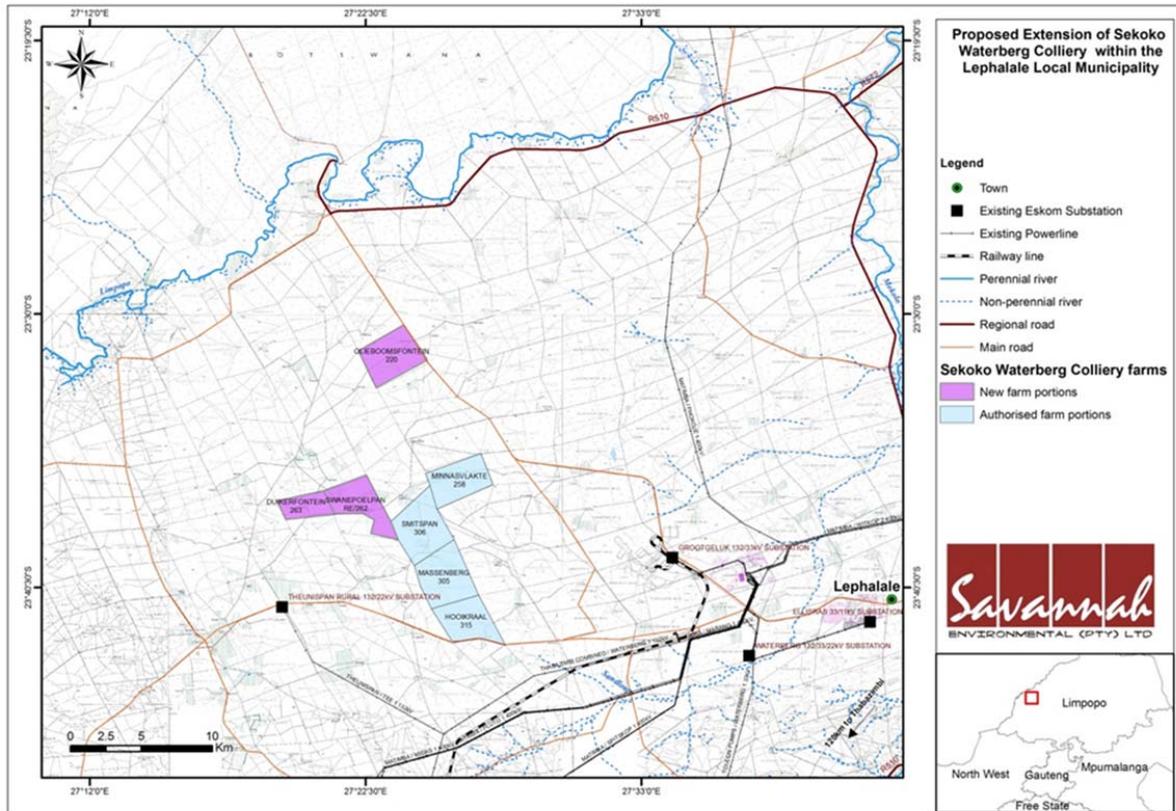


Figure 1: Location of farms forming part of the 2012 scoping study (in purple)

1.2 Terms of Reference

The main aim of this scoping report is to determine if any known heritage resources occur within the study area and to predict the occurrence of any possible heritage significant sites that might present a fatal flaw to the proposed project. The objectives of the scoping report were to:

- » Conduct a desktop study:
 - * Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
 - * Gather data and compile a background history of the area;
 - * Identify known and recorded archaeological and cultural sites;
 - * Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.
- » Report

The reporting of the scoping component is based on the results and findings of the desk-top study, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the IA Phase highlighted. Reporting will

aim to identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 development stages of the project, i.e. construction, operation and decommissioning. Reporting will also consider alternatives should any significant sites be impacted on by the proposed project. This is done to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage Legislation.

1.3 Nature of the development

The Sekoko Waterberg Colliery is located within the Lephalale Local Municipality, which forms part of the Waterberg District Municipality of the Limpopo Province. The proposed project will involve opencast and underground mining on the farms mentioned above. Coal will be mined for both the local power stations within the Waterberg area as well as for the export markets. A processing plant and various mine related infrastructure will be erected within an appropriate location within the mining area, depending on the final mining plan. Opencast mining will initiate on the farm Smitspan for the first 5 years at which stage only a 1-stage wash plant for coal processing will be required. From year 4 to 20 opencast mining will be accompanied by underground mining, at which point a 2-stage plant will be required. During this period it is highly likely that opencast and possibly underground mining will commence on other areas within the mining right boundary. The total life of mine is expected to be beyond 60 years (BID 2012).

The main infrastructure associated with the mine includes:

- » Coal storage areas and stockpiles.
- » Wash plant and associated infrastructure.
- » Water storage and reticulation infrastructure.
- » Office and maintenance area/s.
- » Power supply infrastructure including on surface substations and power lines (<11kV in capacity).
- » Ventilation fans.
- » Access roads.
- » Railway line.
- » Pipeline for water supply. Water is expected to be available from the Mokolo-Crocodile Water Augmentation Project (MCWAP) Phase 2.
- » Coal discard dumps.
- » Topsoil and spoil stockpiles.

1.4 The receiving environment

The study area is located approximately 43km to the west of Lephalale. The vegetation is predominantly Limpopo Sweet Bushveld vegetation in the Savannah biome (Mucina & Rutherford 2006). Historical imagery on Google earth indicates that the land has been fallow for a number of years and mostly used for cattle and game farming. The topography of the region is very flat, with very few features (e.g. hills, outcrops or rock shelters, rivers) that would have attracted people to settle in the area in antiquity. Only a few small hills or outcrops occur.

The geology is made up of shale, with arenite occurring to the east of the study area. All is overlain by sand, probably aeolic in origin, having being laid down from the west.

2. APPROACH AND METHODOLOGY

The assessment is to be undertaken in two phases, a desktop study as part of the Scoping phase and an Archaeological Impact Assessment as part of the Environmental Impact Assessment phase. This report concerns the scoping phase. The aim of the scoping phase is to cover archaeological and cultural heritage data available to compile a background history of the study area. The report will identify possible heritage issues or fatal flaws that should be avoided during development.

This was accomplished by means of the following phases (the results are represented in section 4 of this report):

2.1 Literature search

Utilising data for information gathering stored in the archaeological database at Wits University, published articles on the archaeology and history of the area. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

2.2 Information collection

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to further collect data from CRM practitioners who undertook work in the area to provide the most comprehensive account of the history of the area where possible.

2.3 Public consultation

No public consultation was conducted during this phase by the heritage team.

2.4 Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological sites might be located.

2.5 Genealogical Society of South Africa

The database of the genealogical society was consulted to collect data on any known graves in the area.

3. LEGISLATION

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is of importance and the following sites and features are protected:

- a. Archaeological artefacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate that includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

Section 34 (1) of the act deals with structures which is older than 60 years. Section 35(4) of this act deals with archaeology, palaeontology and meteorites. Section 36(3) of the National Heritage Resources Act, deals with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

3.1 Heritage Site Significance and Mitigation Measures

The presence and distribution of heritage resources define a Heritage Landscape. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposit;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined or is known);
- » The preservation condition of the site;
- » Potential to answer present research questions.

The criteria above will be used to place identified sites with in SAHRA's (2006) system of grading of places and objects which form part of the national estate. This system is approved by ASAPA for the SADC region. The recommendations for each site should be read in conjunction with section 11 of this report.

<i>FIELD RATING</i>	<i>GRADE</i>	<i>SIGNIFICANCE</i>	<i>RECOMMENDED MITIGATION</i>
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

4. REGIONAL OVERVIEW

4.1 General Information

4.1.1. Literature search

No previously recorded sites exist with the Archaeological databases at Wits University (2009).

4.1.2. Information collection

Several previous heritage studies were conducted in the general study area (Huffman & Van der Walt 2008a, b, 2011, 2012), Pistorius (2007), van Schalkwyk (2005a, 2005b, 2006, 2008).

4.1 3. Public consultation

No public consultation was conducted during the scoping phase relating to heritage issues.

4.1.4. Google Earth and mapping survey

Google Earth and 1:50 000 maps of the area was utilised to identify possible places where archaeological sites might be located.

4.1.5. Genealogical Society of South Africa

No grave sites are indicated within the study area.

5. Archaeological Background

5.1 Palaeontology

To our knowledge there are no visible fossil-bearing strata in the study area. A study to the west of the study area (Huffman & vd Walt 2008a, 2011) found that shale lenses that lay in between coal seams might be of interest to palaeontologists. Their date and type of plant remains in particular need to be determined. It is not known if coal seams occur within the current study area. Furthermore a fossilised elephant tooth has been found at an unnamed pan (Site 2327 CA 33a) containing MSA artefacts (Huffman & vd Walt 2011).

5.2 Earlier Stone Age

Hominids began to make stone tools about 2.6 million years ago. Known as the Oldowan industry, most of the earliest tools were rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. These early artefacts are difficult to recognize and have so far only been found in rock shelters such as the Sterkfontein Caves (Kuman, 1998); they are unlikely to occur in the study area.

At about 1.4 million years ago hominids started producing more recognizable stone artefacts such as hand axes, cleavers and core tools (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds.

No Acheulian sites are on record near the project area, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site. The presence and significance of finds can be determined by a field investigation.

5.3 Middle Stone Age

By the beginning of the Middle Stone Age (MSA), tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999). Accordingly, if there are caves in the study, they may be sites of archaeological significance.

MSA artefacts have been found in the Oliboempoort Cave to the south of Lephalale (Mason, 1962; M. van der Ryst, 2006) and in the river gravels of the Limpopo, northwest of the project area (Pistorius, 2007). A large scale survey of almost 9000ha in 2011 by Huffman and vd Walt found that Middle Stone Age sites were associated with pans and ancient drainage systems throughout the project area. It is assumed that same scenario will repeat itself in the current study area especially around large and prominent pans.

5.4 Later Stone Age

By the beginning of the Later Stone Age (LSA), human behaviour was undoubtedly modern. Uniquely human traits, such as rock art and purposeful burials with ornaments, became a regular practice. These people were the ancestors of the San (or Bushmen).

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). There is a single known rock art site to the east of the project area, on Nelsonskop 464 LQ (Pistorius, 2007, van Schalkwyk 2011).

In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Important LSA deposits have been excavated in Oliboempoort Cave (Mason, 1962) and other sites in the Waterberg to the south (Van der Ryst, 1998). Sites in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. If there are rock shelters or caves in the study area, they may contain LSA sites of significance.

5.5 The Iron Age (AD 400 to 1840)

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The first 1,000 years is called the Early Iron Age.

As mixed farmers, Iron Age people usually lived in semi-permanent settlements consisting of pole-and-daga (mud mixed with dung) houses and grain bins arranged around a central area for cattle (Huffman, 1982). Usually, these settlements with the 'Central Cattle Pattern' (CCP) were sited near water and good soils that could be cultivated with an iron hoe. For the project area, archaeological sites such as these are unlikely to occur except along river terraces.

Archaeologists have not yet resolved the role of a special pottery, known as Bambata, in the spread of pastoralism and mixed farming (Huffman, 2007). Some believe that Bambata pottery represents the vanguard of the Early Iron Age, or alternatively, Khoe pastoralists, while others believe it was acquired by LSA people through trade. This pottery has been found at Oliboempoort in LSA deposits (Mason, 1962; Van der Ryst, 2006) and is thus believed to exist in the general region.

Some Iron Age settlements are on record for the general area, for instance alongside the Matlabas River (Aukema in Huffman, 1990) and in Botswana (Biemond, 2005) and south of the Limpopo close to Steenbokpan (Huffman & vd Walt 2011). These sites are recognized by distinctive pottery known as the Letsibogo facies of Moloko (Huffman, 2007). Although unlikely due to the distance from the Limpopo it is possible that some Moloko sites could lie within the project area.

The Little Ice Age began at about AD 1300, and its impact on farming societies was particularly severe. Another major drought occurred at about AD 1650, and it is unlikely that Iron Age people lived in the project area at these times.

5.6 Cultural and Historic

Voortrekkers crossed the Vaal River in 1836, and within a few years, began to spread north. Much of the Limpopo Province contained tsetse fly, and so early Boer farmers didn't settle

immediately in the area. European settlement of the region began at the beginning of the last century. Some of the first settlers, D.P. van der Westhuizen and C. Ricks, both arrived in about 1901. The study area is close to the ox-cart route to Botswana that crossed the Limpopo a few kilometres upstream from the modern border post. Some of pans were used as outspans along the route. Because the area was not suitable for grain agriculture, African farmers did not live in the area, and labour had to come from far afield. Rather the area was used primarily for hunting. Even now, the general region is a big-game area (Huffman & vd Walt 2011).

In the town of Lephalale (Ellisras) there is a cemetery containing the graves of some of the earliest white settlers in the area. The town of Ellisras was only laid out in December 1960, and was named after two of the pioneer families in the area, Ellis and Erasmus. In 2002, the name was changed to Lephalale. This latter name is taken from the Phalala River, which is derived from the Tswana verb 'to flow' or 'one which overflows' (van Schalkwyk 2009).

With reference to the study area itself, some information has been obtained about the different farms. It seems as if they were state owned until the early part of the 20th century. Drilling activities undertaken by the "Irrigation Department" in 1920, revealed more than water and the presence of coal and oil bearing shale was established on the farms Grootegeluk and Hooikraal. This prompted an individual by the name of F.F. Pienaar to peg 50 claims on each of the farms Kringatspruit, Hooikraal, Grootegeluk and Enkelbult (Reference MM1713/20, 1920; Reference MM2827/20, 1920). What became of all of this is unknown (Van Schalkwyk 2009).

6 PROBABILITY OF OCCURRENCE OF SITES

Based on the above information, it is possible to determine the probability of finding archaeological and cultural heritage sites within the study area to a certain degree. For the purposes of this section of the report the following terms are used – low, medium and high probability. Low indicates that no known occurrences of sites have been found previously in the general study area, medium probability indicates some known occurrences in the general study area are documented and can therefore be expected in the study area and a high probability indicates that occurrences have been documented close to or in the study area and that the environment of the study area has a high degree of probability having sites.

» Palaeontological landscape

Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations exposed by road cuttings and quarry excavation: *Low -medium*.

» Archaeological And Cultural Heritage Landscape

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

Archaeological remains dating to the following periods can be expected within the study area:

» Stone Age finds

ESA: *Low-Medium Probability*

MSA: *High Probability*

LSA: *Medium- Probability*

LSA –Herder: Low Probability

» Iron Age finds

EIA: *Low Probability*

MIA: *Low Probability*

LIA: *Medium Probability*

» Historical finds

Historical period: *Medium Probability*

Historical dumps: *Medium Probability*

Structural remains: *Medium Probability*

Cultural Landscape: *Medium probability*

» Living Heritage

For example rainmaking sites: *Low Probability*

» Burial/Cemeteries

Burials over 100 years: *Medium Probability*

Burials younger than 60 years: *High Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

7. ASSUMPTIONS AND LIMITATIONS

The study area was not subjected to a field survey as this will be done in the EIA phase. It is assumed that information obtained for the wider area is applicable to the study area.

8. FINDINGS

The heritage scoping study revealed that the following heritage sites, features and objects that can be expected within the study area.

8.1. Archaeology

8.1.1 Archaeological finds

There is a medium to high likelihood of finding MSA sites scattered over the study area increasing around pans where the calcrete base is exposed. This calcrete formed during a cold period with alternating wet and dry episodes that allowed calcium carbonate to precipitate out at the top of the land surface. To the west of the study area artefacts are found imbedded in the calcrete, and so they predate the geomorphological formation. These artefact assemblages typically included radial cores, triangular points, convergent scrapers, and flakes. These sites represent what is called a Post Howison's Poort Industry and thus probably date to between 60,000 and 40,000 years ago. These Post Howison's Poort artefacts were made from quartz and quartzite pebbles that formed part of the laterite horizon found underneath the calcrete. This laterite, or fercrete, is an iron-rich formation

derived from the Waterberg sandstone to the south (Huffman & vd Walt 2011). If Early Stone Age artefacts occur in the study area, they will lay under this laterite horizon.

Some MSA sites on record are:

1. Artefacts scattered around half of pan on Swanepoelpan (S23.63131 E27.35722);
2. Artefact scatter around pan on Swanepoelpan (S23.63189 E27.35892)

These sites are of low significance.

More sites are expected around pans like on the farm Olieboomsfontein:

1. S23 31 43.2 E27 24 41.2;
2. S23 31 34.1 E27 24 25.7;
3. S23 31 23.1 E27 24 18.8.

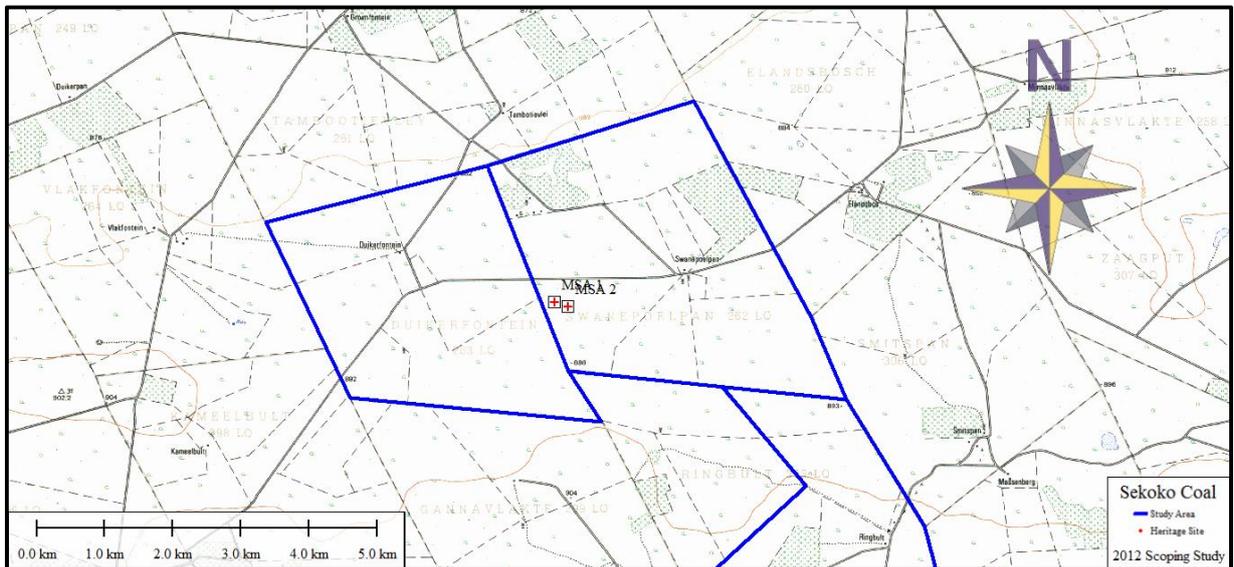


Figure 2: MSA sites on record for the study area

8.3.2 Nature of Impact

The construction and operation of the proposed project could directly impact on marked and unmarked graves.

8.3.3 Extent of impact

The project could have a low to medium impact on a local scale.

9. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES

Based on the current information obtained for the area at a desktop level it is anticipated that any sites that occur within the proposed development area will have a Generally Protected B (GP.B) field rating and all sites should be mitigatable and no red flags are identified. However sensitive areas that should rather be avoided are calcrete pans and grave sites.

10. CONCLUSIONS AND RECOMMENDATIONS

This scoping study revealed that a range of heritage sites occur in the larger region and similar sites can be expected within the study area. The most probable archaeological remains will consider of Post Howison's Poort artefacts found in association with pans like on the farm Swanepoelpan. Every site is relevant to the Heritage Landscape, but it is anticipated that few could have conservation value. The following conclusions are applicable to the following sites:

» Archaeological sites

All sites could be mitigated either in the form of conservation of the sites with in the development or by a Phase 2 study where the sites will be recorded and sampled before the client can apply for a destruction permit for these sites prior to development.

» Historical finds and cultural landscape

It is not anticipated that the built environment will be severely impacted upon as very little structures occur within the study area and are probably younger than 60 years and not protected by legislation. This assumption will how ever have to be verified in the field.

» Burials and cemeteries

Formal and informal cemeteries as well as pre-colonial graves occur widely across Southern Africa. It is generally recommended that these sites are preserved with in a development. These sites can how ever be relocated if conservation is not possible, but this option must be seen as a last resort and is not advisable. The presence of any grave sites must be confirmed during the field survey and the public consultation process.

» General

It is recommended that as part of the public consultation process the presence of graves, archaeological and historical sites should be determined.

11. PLAN OF STUDY

In order to comply with the National Heritage Resources Act (Act 25 of 1999) a Phase 1 Archaeological Impact Assessment must be undertaken. During this study sites of archaeological, historical or places of cultural interest must be located, identified, recorded, photographed and described. During this study the levels of significance of recorded heritage resources must be determined and mitigation proposed should any significant sites be impacted upon, ensuring that all the requirements of SAHRA are met.

12. LIST OF PREPARERS

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13. STATEMENT OF COMPETENCY

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource

Management (CRM) Section, member number 159: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation.

Jaco serves as a council member for the CRM Section of the Association of Southern African Association Professional Archaeologists and is also an accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa, Botswana, Mozambique, Zimbabwe and Tanzania and conducted well over 300 AIAs since he started his career in CRM in 2000. This involved several mining operations, Eskom transmission and distribution projects and infrastructure developments. The results of several of these projects were presented at international and local conferences.

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