

**PHASE 1 HERITAGE IMPACT ASSESSMENT FOR A MINE PROSPECTING RIGHT
APPLICATION ON THE PORTION 0 OF MATTHEUS GAT 139, PORTION 0 OF GEMSBOK
VLAKTE 140 AND PORTION 0, 3 AND 5 OF SCUIT KLIP 92 SITUATED WITHIN MAGISTERIAL
DISTRICT OF KENHARDT, NORTHERN CAPE PROVINCE**



PREPARED FOR: ELSICLOX (Pty) Ltd

PREPARED BY: VALERINE MOLO

DATE: JULY 2022

DECLARATION OF INTEREST


I, Valerine Molo, declare that –

- I act as an independent specialist;
- I am conducting any work and activity relating to the Prospecting Right and Environmental Authorisation Application for prospecting of Beryllium Ore, Quartz Ore, Lithium Ore, Bismuth Ore, Diamonds and Tantalum/ Niobium on portion 0 of Mattheus Gat 139, Portion 0 of Gemsbok Vlake 140 and Portion 0, 3 and 5 of Scuit Klip 92 situated within magisterial district of Kenhardt, Northern Cape Province.
- even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, including the relevant Heritage Legislation (National Heritage Resources Act no. 25 of 1999), the Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment (SAHRA and the CRM section of ASAPA), regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.



Valerine Molo

REPORT PREPARED BY:

| | |
|-----------------------|--|
| Report Author | Ms Valerine Molo |
| Qualifications | Higher Certificate In Heritage Studies – Sol Plaatje University. Bachelor of Arts (Heritage Studies, History & Psychology) – Sol Plaatje University. Postgraduate Diploma Heritage Management – Rhodes University. |
| Contact Number | 065 893 4951 |
| E-mail address | molovalerine@gmail.com |
| Signature |  |

EXECUTIVE SUMMARY

The aim of the survey was to locate, identify, evaluate and documents sites, objects and structure of cultural significance found within the area of the proposed development and to assess the significance thereof and to consider alternatives and plans for the mitigation of any adverse impacts.

As no sites, features, graves or objects of cultural heritage significance were identified in either of the study area. There would be no impact for the prospecting mining right application.

The survey did not find any archaeological artefacts and paleontological remains. However it should be kept in mind that archaeological deposits usually occur below ground level.

Therefore, from an archaeological and cultural heritage resources point of view it is recommended that the proposed Prospecting Right and Environmental Authorisation Application, for prospecting of Beryllium Ore, Quartz Ore, Lithium Ore, Bismuth Ore, Diamonds and Tantalum/ Niobium be allowed to continue without any further heritage mitigations.

If any archaeological material or human burials are uncovered during the course of the development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

PURPOSE OF THE STUDY

To comply with relevant legislations, the applicant Elsiclox (Pty) Ltd requires information on the heritage resources that occur within or near the proposed site and their heritage significance. The objective of the study is to document the presence of archaeological and historical sites of significance to inform and provide guidance on the proposed development activities.

Apart from contributing towards the preservation of the heritage resources, the study provide information and awareness of the types of archaeological and heritage sites that occur within the proposed study area. The document enables the applicant to align their functions and responsibilities to advance development activities and at the same time minimizing potential impact on archaeological and heritage sites.

The study is conducted in line with the National Heritage Resources Act of 1999 (Act No. 25 of 1999). The Act protects heritage resources through formal and general protection. The Act provide that certain developmental activities require consents from relevant heritage resources namely South African Heritage Resources Agency (SAHRA). In addition to heritage legislations, the South African Heritage Resources Agency (SAHRA) has developed minimum standards used in impact assessment, while these local standards, are operational they are strengthened by the International Council of Monuments and Sites (ICOMOS) published guideline for assessing impacts.

The Burra Charter of 1999, requires a cautious approach to the management of sites; it sets out firmly that the cultural significance of heritage places must guide all decisions. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (Section, 34), archaeological sites and materials (Section 35) and graves and burial sites (Section, 36). To comply with the legislation, the applicant requires information on the heritage resources, that occur in the area proposed for development and their significance. This will enable the Applicant to take pro-active measures to limit the adverse effects that the prospecting activities could have on such heritage resources.

ABBREVIATION OF TERMS

| | |
|---------------|---|
| APHP | Association of Professional Heritage Practitioners |
| ASAPA | South African Archaeological Professional Association |
| CRM | Cultural Resources Management |
| DMR | Department of Mineral Resources |
| EIA | Early Iron Age |
| EMP | Environmental Management Plan |
| ESA | Early Stone Age |
| GPS | Geographical Positioning System |
| HIA | Heritage Impact Assessment |
| HMP | Heritage Management Plan |
| ICOMOS | International Council of Monuments and sites |
| LIA | Late Iron Age |
| LSA | Late Stone Age |
| MIA | Middle Iron Age |
| MSA | Middle Stone Age |
| NASA | National Archives of South Africa |
| NBKB | Ngwao-Boswa Ya Kapa Bokoni |
| NHRA | National Heritage Resources Agency |
| PRHA | Provincial Heritage Resources Authority |
| SAHRA | South African Heritage Resources Agency |
| SAHRIS | South African Heritage Resources Information System |

DEFINATION OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter (*Burra Charter*):

“Aesthetic value” Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

“Alter” any action affecting the structure, appearance or physical properties of a place or object, whether by a way of structural or other works, by painting plastering or other decoration or any other means;

“Background scatter” Artefacts whose spatial position is conditioned more by natural forces than by human agency.

“Conservation” in relation to heritage resources, includes protection maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance

“Conservation Management Plan” A policy aimed at the management of a heritage resource and that is approved by the Heritage Resources Authority setting out the manner in which the conservation of a site, place or object will be achieved

“Cultural Significance” As defined in the NHRA means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

“Development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future wellbeing, including-

(a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;

(b) carrying out any works on or over or under a place;

(c) subdivision or consolidation of land comprising a place, including the structures or airspace of a place;

(d) construction or putting up for display signs or hoardings;

(e) any change to the natural or existing condition or topography of land; and

(f) any removal or destruction of trees, or removal of vegetation or topsoil.

“Expansion” means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

“Heritage agreement” means an agreement referred to in section 42,

“Heritage Impact Assessment” A report compiled in response to a proposed development that must meet the minimum requirements set out in the NHRA and should be submitted to a heritage resources authority for consideration.

“Heritage site” means a place declared to be a national heritage site by SAHRA or site declared to be a provincial Heritage site by a PHRA

“Historic value” Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

“Holocene” The geological period spanning the last approximately 10-12 000 years.

“Hominid” a group consisting of all modern and extinct great apes (i.e. gorillas, chimpanzees, orangutans and humans) and their ancestors.

“Improvement” in relation to heritage resources includes repair, restoration and rehabilitation of a place protected in terms of this Act.

“Interested and Affected Parties” Individuals, organisations or communities that will either be affected and/or have an interest in a development or the resulting impacts of a development.

“Management” in relation to heritage resources includes the conservation, presentation and improvement of a place protected in terms of this Act.

“Scientific value” Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period.

“Social value” Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

“Rarity” Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

“Representivity” Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

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1. INTRODUCTION

This heritage specialist report has been prepared in support of a mine prospecting right application for Elsiclox (Pty) Ltd on portion 0 of Mattheus Gat 139, Portion 0 of Gembok Vlakte 140 and Portion 0, 3 and 5 of Scuit Klip 92 with a potential of prospecting of Beryllium Ore, Quartz Ore, Lithium Ore, Bismuth Ore, Diamonds and Tantalum/ Niobium.

The proposed prospecting area is situated within magisterial District of Kenhardt, Khai-Ma Local Municipality under Namakwa District Municipality, Northern Cape Province. Refer to locality map below on figure 1.

Section 38 of the National Heritage Resources Act (Act No 25 of 1999) sets out the procedures for screening for the possible occurrence of heritage resources that may be affected by the proposed activities, and on the basis of which appropriate mitigation measure will be prescribed. The Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the proposed prospecting activities.

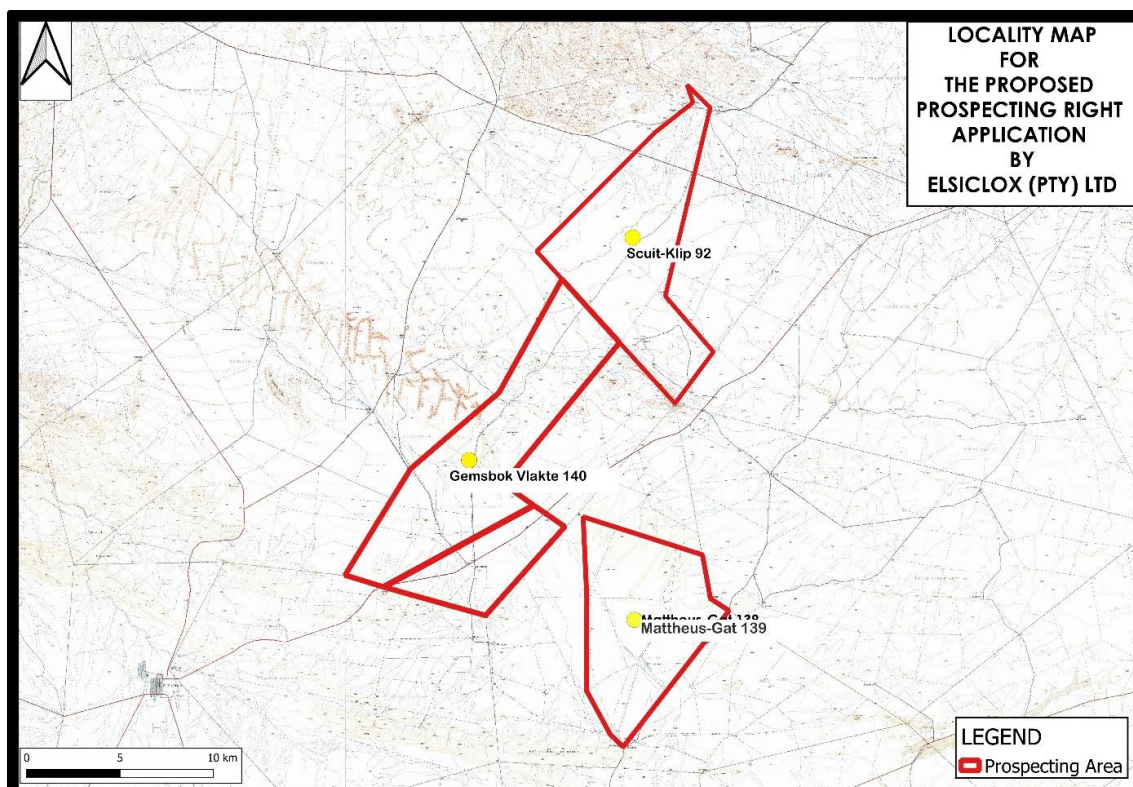


Figure 1: Locality Map

2. BACKGROUND

To comply with relevant legislations, the applicant Elsiclox (Pty) Ltd requires information on the heritage resources that occur within or near the proposed site and their heritage significance. The objective of the study is to document the presence of archaeological and historical sites of significance to inform and provide guidance on the proposed development activities.

Apart from contributing towards the preservation of the heritage resources, the studies provide information and awareness of the types of archaeological and heritage sites that occur within the proposed study area. The document enables the applicant to align their functions and responsibilities to advance development activities and at the same time minimizing potential impact on archaeological and heritage sites.

The study is conducted in line with the National Heritage Resources Act of 1999 (Act No. 25 of 1999). The Act protects heritage resources through formal and general protection. The Act provide that certain developmental activities require consents from relevant heritage resources namely South African Heritage Resources Agency (SAHRA). In addition to heritage legislations, the South African Heritage Resources Agency (SAHRA) has developed minimum standards used in impact assessment, while these local standards, are operational they are strengthened by the International Council of Monuments and Sites (ICOMOS) published guideline for assessing impacts.

The Burra Charter of 1999, requires a cautious approach to the management of sites; it sets out firmly that the cultural significance of heritage places must guide all decisions. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (Section, 34), archaeological sites and materials (Section 35) and graves and burial sites (Section, 36). To comply with the legislation, the applicant requires information on the heritage resources, that occur in the area proposed for development and their significance. This will enable the

Applicant to take pro-active measures to limit the adverse effects that the prospecting activities could have on such heritage resources.

3. TERMS OF REFERENCE

The terms of references for the study were to undertake a Heritage Impact Assessment relating to the proposed development and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

4. RELEVANT LEGISLATION

Three (3) sets of legislation are relevant for the purposes of this study in as far as they contain provisions for the protection of tangible and intangible heritage resources including burials and burial grounds.

4.1 The National Heritage Resource Act (25 of 1999)

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodian of the heritage resources and makes provision for the undertaking of heritage resources impact assessment for various categories of development as determined by section 38.

It also provides for the grading of heritage resources (Section, 7) and the implementation of a three-tier level of responsibility and functions from heritage resources to be undertaken by the State, Provincial and Local authorities, depending on the grade of heritage resources (Section, 8).

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

i) Historical remains

Section 34 (1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant Provincial Heritage Resources Authority.

ii) Archaeological remains

Section 35(3) Any person who discovers archaeological and paleontological materials and meteorites during development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum.

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority-

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in, sell for private gain, export or attempt to export from republic any category of archaeological or paleontological material or object or any meteorite; or
- bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

Section 35 (5) When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or paleontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order
- carry out an investigation for obtaining information on whether an archaeological or paleontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or paleontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Subsection 35(6) the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or paleontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

iii) **Burial grounds and graves**

Section 36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (a) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (b) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36 (6) Subject to the provision of any person who during development or any other activity discover the location of a grave, the existence of which was

previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (l) carry out an investigation for obtaining information on whether such grave is protected in terms of this act or is of significance to any community; and if such grave is protected or is of significance, assist any person who or community which is a direct descendant to decide for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

iv) Cultural Resource Management

Section 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development;

- Must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

4.2 The Human Tissue Act (65 of 1983)

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

4.3 The National Environmental Management Act (NEMA) (No 107 of 2003)

Section 24 of NEMA states that activities which may impact on the environment, socioeconomic conditions and the cultural heritage must be investigated and assessed prior to authorisation, permitting and implementation. Environmental management is a much broader undertaking to cater for cultural and social needs of people. Any disturbance of landscapes and sites that constitute the nation's cultural

heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied (Section 2(2)(iii) of NEMA).

5. METHODOLOGY

5.1 Source of Information

5.1.1 Literature study

The report is based on an intensive search through existing literature for data on the heritage sensitivity of the broader area around the targeted property. The resort to a desktop assessment was in consideration of the imperative to meet set project deadlines, whilst arrangements for access to the property were being made. Heritage Impact Assessment studies conducted in the broader area are the principal source of data.

These reports have been carefully selected taking into account factors such as distance from the target of the present study, and spatial distribution of the reference studies within a radius of 50-100km from the study area. Using this information the potential yield of the property could be reasonably predicted by extrapolation. Extrapolation is a scientific method of building a hypothesis by estimating or predicting results by assuming that what is known and has been established about a particular situation is likely to apply more or less for a neighbouring area/quantity that is unknown.

In August 2021 this author conducted a ground survey for a heritage impact assessment on a numbers of farms with a footprint of 23 000 Ha situated near Kenhardt Town.

Matenga, E. 2021. *Phase 1 Heritage Impact Assessment & Palaeontological Desktop Assessment for a Mine Prospecting Right Application on Portion 1, 2 & the Remaining Extent of the Farm Drieboom Leegte No 345; Portion 1, 2, 3 and the Remaining Extent of Farm Groot Zwart Bast No 189 and Portions 3, 5 & 8 of the Farm Jagt Kolk No 244 near Kenhardt Town, within the Kai-Ma Local Municipality, Northern Cape.*

The recent study heritage by the author on neighbouring properties provides near empirical data and justifies a high confidence rating for the conclusions of this report. It was found that Stone Age artefacts are widely distributed on the farms comprising scrapers, blades, cores and flakes typologically dating to the Middle Stone Age/Late Stone Age period. A hand-axe was found on the farm Groot Zwart Bast which dates to the ESA (Figures 2). MSA to LSA lithics are ubiquitous. The scattered occurrence of the artefacts seems to suggest general hunter-gatherer activity in the region now known as Bushmanland. No further action was deemed necessary after the sites had been recorded.

A number of buildings and structures were recorded. Of particular interest were the principal dwellings occupied by farm owners which are of a superior quality compared to other farm buildings. Three burial grounds were recorded on the farms Drieboom Leegte 245 and Groot Zwart Bast 189. Burial grounds are protected in terms of Sections 3 and 36 of the National Heritage Resources Act (No 25/1999). A 100 m servitude must be reserved around them.



Figure 2 Surface finds including a handaxe found on the Remaining Extent of the Farm Groot Zwart Bast N0.189, c. 14 km southeast of the Remainder of Barst Vley 192 near Kenhardt Town.

Table 1: Ranking of sites recorded on neighbouring properties in August 2021

| GRADE | RANKING | SIGNIFICANCE | NO OF SITES |
|-------|----------------|--|------------------|
| 1a | National | Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 1, 2 or 3A heritage resources, and burial grounds | 3 Burial Grounds |
| 1b | Burial Grounds | Grave are sacred and their treatment is a sensitive issue. | |
| 2 | Provincial | Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential 2 heritage resources | 0 |

| | | | |
|----|-------|---|----|
| 3A | Local | Of high intrinsic, associational and contextual heritage value within a national, provincial and local context, i.e. formally declared or potential Grade 3A heritage resources | 0 |
| 3B | Local | Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources | |
| 3C | Local | Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources | 55 |
| | | TOTAL | 58 |

A number of other heritage impact studies have been undertaken in the recent past in the broader area encompassing Kenhardt, Marydale and Copperton, and a few of the reports are cited here:

Pelser, A. J. 2011. *A report on an archaeological impact assessment (AIA) for the Proposed Solar Energy Plant on Klein Zwart Bast 188, Kenhardt District, Northern Cape.* This study was undertaken for the establishment of the Aries Power Plant which has been commissioned, and is situated on an adjacent property east of the farms which are the subject of the current study. A number of archaeological sites, features and objects were identified and recorded in the area, dating from the Early to Later Stone Ages, as well as the Historical period. Although some finds were more localized the whole area was covered by scatters of Stone Age artefacts.

Orton, J. 2019. *Heritage Impact Assessment: Scoping and Environmental Impact Assessment for the Proposed Development of the Skeerhok PV2 solar energy facility on Gemsbokbult 120/9, Kenhardt Magisterial District, Northern Cape Province.*

The farm Gemsbokbult 120/1 is situated 20 km north of Kenhardt. Stone artefacts date ESA, MSA and LSA. Of important significance are LSA sites which are commonly located along the margins of pans. Small rock outcrops were quarried as a source of stone material for making stone tools

Orton, J. 2020. *Heritage Impact Assessment: Proposed Access Road on the Remainder and Portion 4 of the Farm Onder Rugzeer 168, Kenhardt Magisterial District, Northern Cape Province.*

The farm Onder Rugzeer lies 15 km north of Kenhardt. The survey revealed background scatter stone artefacts to be present all over the study area. Denser scatters of artefacts were rare, but three were noted along Option C. All are of low to very low cultural significance. No graves were seen and the chances of graves occurring are considered to be negligible.

6. HISTORICAL AND ARCHAEOLOGICAL CONTEXT

6.1 Brief History of Kenhardt

Kenhardt is a small Karroo town situated about 120 km southeast of Upington, the largest town in the area. It was founded in 1868 on the north bank of the Hartebees, a shallow river, with the riverbed filled with sand. Kenhardt became a municipality in 1909. The Kenhardt landscape is arid and one of the fascinating features are desert aloes (*Aloe karasbergensis Pillans*) which grow up to several metres and a rounded crown.

This region contains very little vegetation, primarily very low shrubs and yellow grass among a rocky desert kind of landscape. If you travel south from Kenhardt towards Brandvlei, you will pass through a huge landscape of yellow grass lands and rocky desert like areas for the next 145 km and more.

Places of interest includes:

- **Giant Camelthorn Tree** -This tree is about 500–600 years old. It is under this tree which Magistrate Jackson set up his camp in 1868.
- **Old Library Building**- The old library was built in 1897, and it was used until 1977. In 1978 it was declared a national monument, currently it is used by Sanlam as their office.
- **Verneukpan**- A vast dry pan on which Sir Malcolm Campbell tried, in Bluebird 1, to set a new world land-speed record in 1929.

6.2 Appearance of Hominids

South Africa has yielded a very good record of fossil hominids, proto-humans which appeared in South Africa more than 3 million years ago. Three famous sites in Gauteng, Limpopo and Northwest Provinces have been collectively named the Cradle of Humankind and inscribed as a serial UNESCO World Heritage Site. No hominid sites have been reported in the vicinity of the study area.

6.3 The Early Stone Age

The Early Stone Age may date back more than 2 million years. Much of the Karoo in the Northern Cape is covered by gravels from which ESA artefacts have been found. These artefacts are generally very well weathered and have been described as background scatters in that their distribution is conditioned more by geological actions than human actions (Orton 2013, p7).

A good profile of the Stone Age in the Northern Cape has been reconstructed from many heritage impact assessments that have been conducted in recent years. Locales along and adjacent to the Orange – Vaal River systems have yielded evidence of great interest. Further north the Wonderwerk Cave has become a benchmark for the characterisation of the Stone Age. Excavations reveal a long sequence of occupation spanning the Early (ESA), Middle (MSA) and Later Stone Ages.

6.3.1 Middle Stone Age (MSA) [250 000 yrs. – 30 000 yrs. BP]

The Middle Stone Age (MSA), dates from 250 000 years to 40 000 years ago, marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. A number of field surveys have been carried out on the Ghaap Plateau and the Orange-Vaal River basin confirming significant hunter gatherer activity in the area from the MSA onwards.

6.3.2 Later Stone Age (LSA) [40 000 yrs. to ca2000 yrs. BP]

LSA technology is characterised by micro lithic scrapers and segments made from very fine-grained rock. The ephemeral pans in the Northern Cape, also present in the

locality of the present study hosted hunter gatherer communities as evidenced by a comparatively high density of LSA lithic found on the edges of these pans.

Rock art, in the form of engravings (petroglyphs), is widely known from the Karoo (Orton 2013, p10) with examples nearest to the study area on the farm Springbokoog (80km to the south, Driekopseiland 180km to the ENE), and the farm Katlani 236 (150km ENE). Various subjects are depicted in both stylized and naturalistic motifs including humans and animals.

The upper Karoo region of the Northern Cape is now referred to as Bushmansland in recognition of the strong archaeological and historical footprint of hunter-gatherer communities identified to the San and the Khoikhoi, with a cultural distinction being made between the two as hunter-gatherers and hunter-gatherer pastoralists respectively.

6.4 The Iron Age Culture [ca. 2000 yrs. BP]

The Iron Age culture supplanted the Stone Age at least 2000 years ago, associated with the earliest farming communities keeping domestic animals such as cattle, sheep, goat and chickens, and using several metals and pottery (Huffman 2007). The transition to the Iron Age appears to coincide with the spread of Bantu speakers from the north into Southern Africa.

Around the beginning of the 2nd millennium, radical changes in the Iron Age culture occurred signifying the transition to the Later Iron Age. Subsequently the Iron Age people built stonewalled settlements present in a large swathe of territory straddling the Northern Cape, Northwest Province, Limpopo Province and the Free State. One such site Dithakong near Kuruman.

6.5 Early contact with the Boers

In the early 19th century, a number of traders, hunters, explorers and missionaries transited the area. A few can be named here - PJ Truter's and William Somerville (arriving in 1801), Donovan, Burchell and Campbell, and James Read (arriving around 1870). Subsequently, a large number of Great Trek Boers from the Cape Colony and

established commercial farms in the area. They came into contact with local people who included the Khoisan, Korana, Tswana and Griqua (Van der Walt 2012).

7. FINDINGS OF THE DESKTOP ASSESSMENT

7.1 General observations

It is an established fact that Stone Age material is widely distributed on the plains, ridges and valleys of the upper Karroo area north and south of the Orange-Vaal Rivers.

Other heritage resources that might occur in the broader areas are:

- Rock engravings (petroglyphs) dating from the Middle Stone Age to Later Stone Age periods
- Rock Paintings from the Middle Stone Age to Later Stone Age periods
- Buildings and objects associated with modern commercial farming from the 19th century
- Graves, burial grounds and human bones.

7.2 Risk Assessment of the findings

Table 2: Evaluation Criteria

| EVALUATION CRITERIA | RISK ASSESSMENT |
|---------------------------------|--|
| Description of potential impact | Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics. |
| Nature of Impact | Negative impacts can both be direct or indirect. |
| Legal Requirements | Sections 34, 35, 36, 38 of National Heritage Resources Act No. 25 (1999). |
| Stage/Phase | Prospecting for minerals (test pits, drilling); Mining Phase |
| Extent of Impact | Test pits, excavations and ground clearing can result in damage and destruction of archaeological resources above and below the surface. |
| Duration of Impact | Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated. |

| | |
|--|---|
| Level of significance of impacts before mitigation | Medium. |
| Mitigation measures | If archaeological or other heritage relics deemed of high significance are found during the exploration phase, heritage authorities will be advised immediately and a heritage specialist will be called to attend. |
| Level of significance of impacts after mitigation | Low. |
| Cumulative Impacts | None. |
| Comments or Discussion | None. |

7.3 Findings

The investigation of the proposed prospecting area did not find any sensitive heritage and archaeological sites, the pictures below show the view of the proposed prospecting area. Although no archaeological remains were found, it is possible that some significant features may be buried beneath the ground. Should buried archaeological materials and burials be encountered during the process of development the prospecting activities must be stopped.

Pictures showing the overview of prospecting area



8. CONCLUSION AND RECOMMENDATIONS

The aim of this survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area of the proposed development and to assess the significance thereof and to consider alternatives and plans for the mitigation of any adverse impacts.

- As no sites, features or objects of cultural heritage significance were identified in the either of the study areas, there would be no impact from the proposed development.

In light of the findings of the desk assessment, the mine prospecting can go ahead. The study is mindful that some important discoveries may be made during prospecting. If this happens operations should be halted, and the provincial heritage resources authority or SAHRA notified in order for an investigation and evaluation of the finds to take place.

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