



**TITLE: A HERITAGE SCOPING STUDY FOR REMAINING FARM AVONTUUR
487, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND:
NORTHERN CAPE REGION.**

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DECLARATION OF INDEPENDENCE:

This report has been compiled by Nkosinathi Tomose (Heritage Consultants) for NGT Project and Heritage Consultants. The views expressed in this report are entirely those of the authors and no other interest we redisplayed during the decision-making process for the project.

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EXECUTIVE SUMMARY:

NGT Projects and Heritage Consultants was appointed by Muthetshesi Projects to conduct a Heritage Desktop Study (HDS) for the proposed application for prospecting rights or Mining right for ,Diamond, on farm REMAINING farm Avontuur 487, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND: NORTHERN CAPE REGION. as part of specialists input in the Environmental Management Programme.

A standard NGT Projects & Heritage Consultants HIA entails, conducting a detailed background information search of the affected environment; a physical survey of the project foot print to identify, record/document and map out any archaeological and heritage resources along and with the development footprint. The assessment and evaluation of impacts on the identified heritage resources follows this process.

The current study is at a desktop level and it involves a historic research of the affected area and the region in which it is located. Based on the existing information or database about the study area the following conclusions and recommendations are made about the study area and the proposed development:

Conclusions:

- The current study is at a desktop level and can therefore be characterised as baseline assessment. Based on the known information about the project area it is concluded that the proposed area for Mining rights has high probability of yielding archaeological resources and other heritage resources such as built environment and landscape features and burial grounds and grave sites.

Recommendations:

- It recommended that once Mining rights have been granted to the developer a full heritage impact assessments (HIA) should be conducted to map out all archaeological and other heritage resources within the proposed development area such as historic buildings and burial grounds and graves.
- It is also recommended a Palaeontological study be conducted as part of the HIA.

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South Africa is rich in diverse forms and types of heritage, ranging from natural heritage to cultural heritage. The natural heritage includes among other things: Geological and Paleontological fossils, the various fauna and flora species that define the country. The cultural heritage dates as far back as 2.0 million years ago (mya) and it includes: Stone Age Archaeology, Iron Age Archaeology, Historical and Industrial Archaeology, the different “Political/Historic” geographies such the Imperial (early 1900s), Union (1910), the Apartheid (1962) and Democratic South Africa (1994- to date) (Tomose, 2013).12

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ABREVIATIONS

ACRONYMS	DESCRIPTION
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
ARCH	Archaeological
BEL	Built Environment & Landscape
BGG	Burial Grounds & Graves
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
Kya	Thousand years ago
LSA	Late Stone Age
LIA	Late Iron Age
MSA	Middle Stone Age
MIA	Middle Iron Age
NHRA	National Heritage Resources Act
NEMA	National Environmental Management Act
SAHRA	South African Heritage Resources Agency
WOM	Without Mitigation
WM	With Mitigation

TERMS AND DEFINITIONS

Archaeological resources

These include:

- Material remains resulting from human activities which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- Rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

Development

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

- Construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- Carrying out any works on or over or under a place;

- Subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- Constructing or putting up for display signs or boards; any change to the natural or existing condition or topography of land;
- And any removal or destruction of trees, or removal of vegetation or topsoil.

Heritage resources

This means any place or object of cultural significance.

1. INTRODUCTION

1.1. Heritage Scoping Study Aims

The current heritage scoping study is aimed at obtaining desktop information about known heritage resources in and around the area Mining rights area. The information studied includes - archaeological, built environment and landscape heritage database. The information is used to set a baseline to inform current and future heritage studies within the project area. In the current application for Mining rights it aims to inform us on whether or not a detailed HIA, or archaeological impact assessment (AIA) or a Palaeontological study are required at before the commencement of mining activities on site.

1.2. Terms of Reference for the Appointment of Archaeologist and Heritage Specialist

Muthetshlesi Projects is the lead Environmental Assessment Practitioner (EAP) managing the environmental process in the application for Mining rights. NGT Projects & Heritage Consultants (Division: NGT Heritage Solutions) is appointed as an independent and lead CRM firm to conduct a HSS (heritage scoping study) (exclusive of Palaeontological desktop study) for the proposed development. Nkosinathi Tomose (from Principal for) NGT Projects & Heritage Consultants conducted the current desktop study for the Mining rights application.

The appointment of NGT Projects & Heritage Consultants as lead and independent Cultural Resources Management (CRM) company is in terms of Section 38 of the NHRA, No. 25 of 1999,

the NEMA, No.107 of 1998 (as amended in September 2014 & the applicable 2010 Regulations). Section 38 of the NHRA, No.25 of 1999. The Mining rights application is in terms of Section 22 of the Mineral and Petroleum Resources Development Act, Act 28 of 2002.

1.3. Project Background

Flame Quip Mining Supplies-Group is applying for prospecting rights to mine Diamond on farm Avontuur 487, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND: NORTHERN CAPE REGION. (*Figure 1*). The study area covers a total of more than 5000m² (i.e. 806,734271 hectares) and triggers an HIA study in terms of the National Heritage Resources Act, No. 25 of 1999, the National Environmental Management Act, No. 107 of 1998 (as Amended in 2014) as read together with the applicable 2010 EIA regulations. The Mining rights application is in terms of Section 22 of the Mineral and Petroleum Resources Development Act, Act 28 of 2002. This study is a preliminary desktop scan of the proposed development footprint and it aims to identify cultural environmental Flaws:

- The presence of heritage resources in form of archaeological sites, built environment and landscape features, burial grounds and graves.
- Socio-cultural, economical and political issues affecting the development area and the surrounding landscape.
-

1.4. Site Location

The proposed project area is located remaining extent of farm Avontuur 487, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND: NORTHERN CAPE REGION: NORTHERN CAPE REGION. The Mining rights area can be accessed via the Main road (from the south going to town), Main (from the east), and the Main (form the north) Main (from the west) (*Figure 3*).

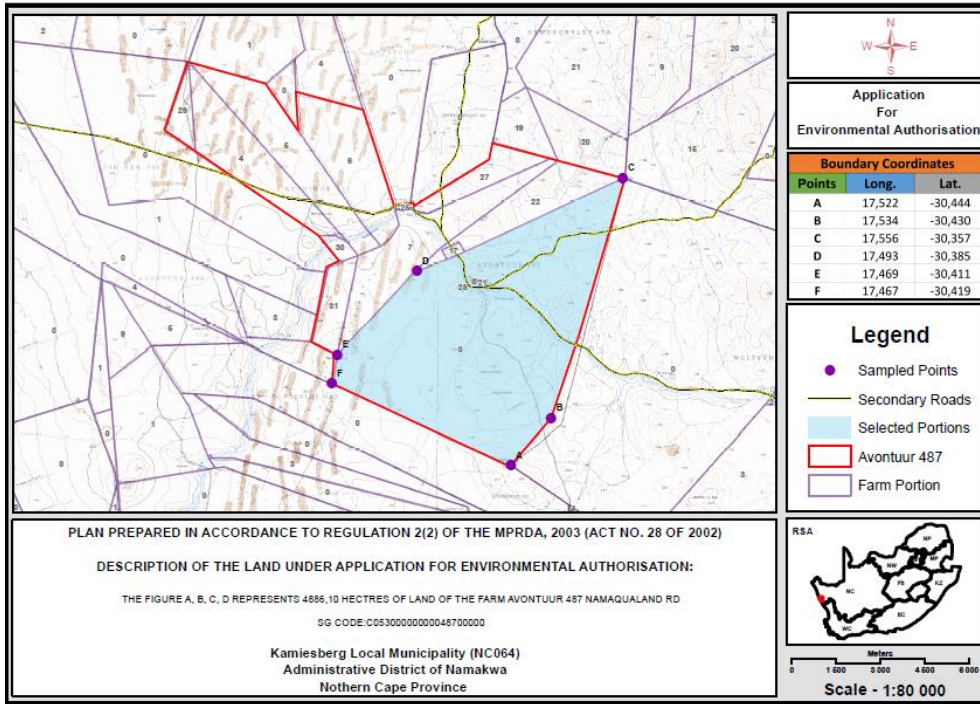


Figure 1: Map showing the Mining rights area

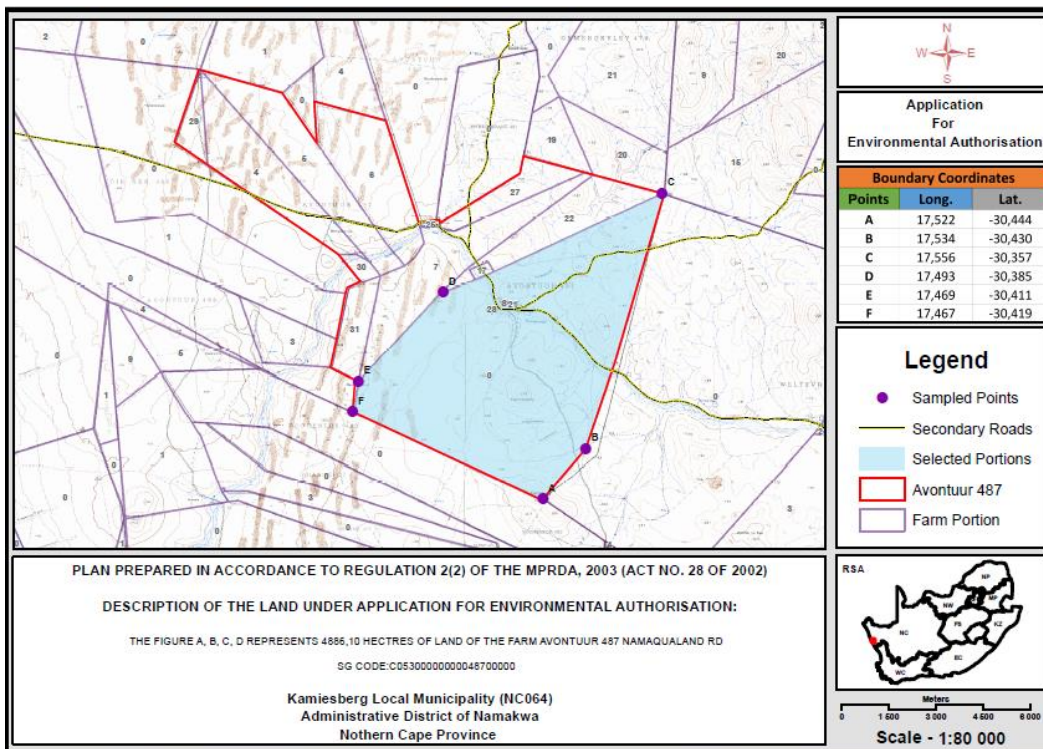


Figure 2: Arial photograph showing the location of the Mining rights footprint in relation to the Townshi.

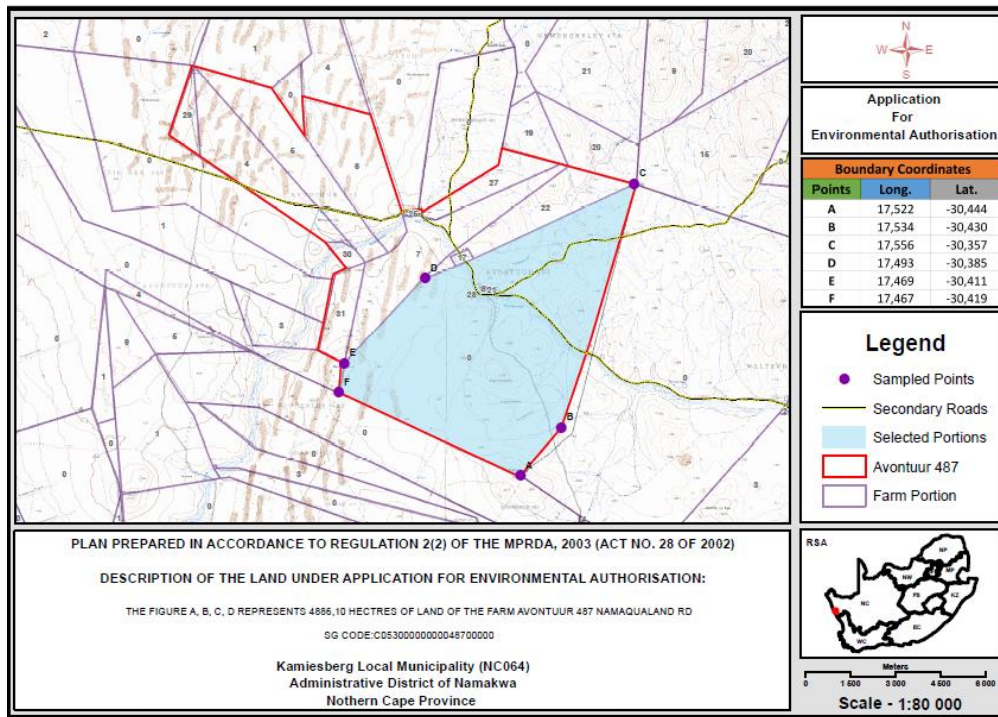


Figure 3: Arial photograph showing the location of the Mining rights footprint in relation to major roads.

1.5. Description of the Affected Environment

Table 1: Description of the affected environment for the proposed internal road construction

Location	<ul style="list-style-type: none"> remaining farm Avontuur 487, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND: NORTHERN CAPE REGION.
Surrounding Towns/Townships/Industrial Zones/ Villages	<ul style="list-style-type: none"> Namaqualand (Figure 2)
Land Uses in and around the study area	<ul style="list-style-type: none"> The predominant land use in and around the proposed area is housing in form of agricultural holdings (Figure 1, 2 & 3).

	<ul style="list-style-type: none"> • There are a number of roads that criss-cross the study area
Proposed Development	<ul style="list-style-type: none"> • Prospecting and Mining rights
Access Routes	<p>The site is accessed through the following national and provincial roads:</p> <ul style="list-style-type: none"> • municipal roads
Defining natural features	<p>Town is major defining built environment and landscape feature (<i>Figure 2</i>).</p>

1.6. Description of proposed activities: Infrastructure Proposed

Table 2: List of Proposed Activities	
Activity 1	Application for Prospecting rights
Activity 2	Application for mineral rights and mining

1.7. Needs and Desirability for the Current Study

Table 3: List of activities in-line with the project scope	
Activity 1	Desktop study to obtain information about known cultural heritage resources within and around the proposed development footprint. Using such data to set a baseline for current and future heritage studies; to inform the client if there is a need or not to conduct a detailed HIA and other heritage studies
Activity 2	Proposing heritage management measures for inclusion in the EIA and later EMP document once the rights have been granted Making recommendations to SAHRA on whether or not the project deserves to be granted a positive heritage review comment or permits

2. DESKTOP STUDY: SUMMARY OF ARCHAEOLOGY, HISTORY AND HERITAGE OF PROPOSED DEVELOPMENT AREA

South Africa is rich in diverse forms and types of heritage, ranging from natural heritage to cultural heritage. The natural heritage includes among other things: Geological and Paleontological fossils, the various fauna and flora species that define the country. The cultural heritage dates as far back as 2.0 million years ago (mya) and it includes: Stone Age Archaeology, Iron Age Archaeology, Historical and Industrial Archaeology, the different "Political/Historic" geographies such as the Imperial (early 1900s), Union (1910), the Apartheid (1962) and Democratic South Africa (1994- to date) (Tomose, 2013).

South Africa is rich in diverse forms and types of heritages and they range from natural to cultural heritage. The natural heritage includes, among other things: paleontological, geological and the various plant and animal species that define the country. The cultural heritage which dates back as far back as 2.5 million years ago (m.y.a) include: Stone Age

Archaeology, Iron Age Archaeology, Historical and Industrial Archaeology. It also includes the different "Political/Historic" geographies of South Africa such as: the Imperial (early 1900s), Union (1910), the Apartheid (1962) and Democratic South Africa (1994- to date).

2.4.1. Stone Age Archaeology:

The Stone Age Archaeology of South Africa is divided into three categories, namely: the ESA, MSA and the LSA. These Stone Age industries are well documented throughout southern Africa regions including the Northern Cape province where the current study is located. Below are detailed summaries of the traits that characterise each industry artefact and/or material culture as well as the types of industries dominant in the province.

ESA – Early Stone Age:

The ESA is dated between 2.5m.y.a and 250 k.y.a (thousand years ago) – during this period predecessors of *Homo Sapien Sapiens* started making stone artefacts. The earliest known Stone Age industry is referred to as the *Olduvan Industry*. It derives its name from the first known Stone Age industry recorded in Olduvia Gorge, Tanzania north-east Africa. Stone artefacts associated with this industry are often described as crude and rudimentary in making – they define the earliest form of Stone Age technological innovation.

The Olduvan is replaced, in the archaeological records, by the *Acheulian Industry* some 1.5 m.y.a. The Acheulian is characterised by large cutting tools (also referred to as *bifaces*) - hand axes and cleavers are the dominant forms of artefacts found in this industry.

In the Northern Cape, the earliest known ESA industry is the Victoria West Stone Industry which also spreads to the Northern Cape where it becomes dominant. The Victoria West Stone Industry was first recorded and defined by R. A. Smith in 1915 and in the Northern Cape region and it is found along the Vaal River basin. Tools found in this industry included hand axes and what Smith refers to as '*Tortoise Cores*' (Smith, 1920). This was probably Smith's reference to the peculiar feature or morphology of *Prepared Cores* – where different pieces were chipped off from a single piece of parent material to make way for the ultimate removal or shaping of a specific tool and most likely a well defined hand axe.

A. H. J., Goodwin (1935) defines the Victoria West Industry with and without cores. Meaning that hand axes and cleavers could have been produced without necessarily having to prepare a parent material to a point to which a single definable tool could be produced. The absence of prepared cores in relation to hand axes and cleaver did not mean the end to this stone tool manufacturing techniques for it become a dominant and defining feature towards the end of the ESA into the MSA. What first became known as '*Tortoise Cores*' was later defined as the transition marker between the ESA and the MSA. Therefore, the *Prepared Cored* of the Victoria West industry can be taken as the markers of transitional period in the Stone Age industry from Acheulian into the MSA, a second clearly defined phase in Stone Age technological innovation. Lycett (2009) sees the Victoria West as an evolutionary step towards the *Levallois Prepared Core Technique* which signifies the outwards spread of the Stone Age technology.

Stone artefacts dated to the above ESA industries are commonly found in open sites as secondary occurrences and/or scatters and not within their primary context. It is therefore a suggestion that, it is important during the survey phase of this to pay special attention to open air area that may potential yield some of these artefacts.

MSA – Middle Stone Age:

The MSA stone artefact replace the dominant large and often imposing hand axes and cleavers that characterise the ESA. Such a distinction or transition in archaeological records has this far be dated to 250 k.y.a. During this period, smaller artefacts define the archaeological records and the most dominant ones are flake and blade industry. This period has been defined by some in archaeological circles as a period that signifies a secondary step towards the modern human behaviour through technology, physical appearance, art and symbolism (e.g. Binneman *et al.* 2011). This industry innovation is suggested to have been at its highest during the last 120 k.y.a. With surface scatters of the flake and blade industries found throughout the southern Africa regions (Thompson & Maream, 2008). They often occur between surface and approximately 50-80cm below ground. Fossil bones may be associated with the MSA in some sites. The flakes and blade industries are often found in secondary context as surface scatters and occurrence like their predecessor industries. Malan (1949) defines the earliest MSA stone industry as the Mangosia and its distribution stretching across the Limpopo, the Qriqualand in Northern Cape, Natal, the Cape Point and the Northern Cape our region of interest in the case. The Prepared Core Technique which had become the defining technological technique of the MSA is in this industry replaced by the Micro Lithics that become a dominant feature or trait in the LSA. In the Northern Cape artefacts associated with the Mangosia industry are known to

have been made from indurate shale raw material (e.g. Binneman *et al.* 2011). They mostly occur as surface scatter. The MSA tools include flakes, blades and points. Their time sequence is often not known because they mostly occur in surface. Other industries within the MSA include:

- The Howieson's Poort which is known to have wide distribution throughout southern African including the Northern Cape province.
- The Orangia 128 to 75 k.y.a.
- Florisbad and Zeekoegat industries dated between 64 and 32 k.y.a - Florisbad is dominant in the Northern Cape province.

Most of the MSA stone artefacts are made from the following materials: fine grain quartzite, quartz, silcrete, chalcedony and hornfels (Binneman *et al.* 2011, see also Binneman *et al.* 2010a). Like the ESA artefacts, the MSA stone artefacts occur in secondary context owing to a variety of reasons. One is due to natural events and/or activities such as erosion and being wash down by water and/or riverine activities, animal and human disturbances etc. It would, therefore, be in the best interest of the author (and the involved archaeologist and heritage consultant) to pay special attention to exposed surfaces, disturbed pieces of land and along any gullies and hill foot slopes during the survey process.

LSA – Late Stone Age:

The LSA spans a period from 30 k.y.a to the historical time i.e. the last 500 years to 100 years ago. It is associated, in archaeological records, with the San hunter-gathers. This is particular important for the last 10 k.y.a whereby the San material culture dominates the archaeological records -mostly in rock shelters, caves as well as open air sites in both the interior and coastal regions. However, the San open air sites are not always easy to find because they are in most cases covered by the various forms and types of vegetation and the other contributing factor is the mobility nature of these people. They were not sedentary communities like their counterparts - e.g. the Iron Age people/communities who needed to settled the land for ploughing, grazing etc. In the coastal regions, sand dunes sometimes become impediments in locating LSA sites. Owing to all these factors the preservation state of the LSA archaeology is often poor and not easily definable (Deacon & Deacon 1999). Caves and rock shelters provide a more substantial preservation record of pre-colonial record of indigenous people's archaeology. This is in a form of stone artefacts, rock art and other material culture such as beads etc. The LSA archaeology was, however, not only dominated by the San hunter-gathers - in about 2 k.y.a the southern Africa landscape is known to have also been penetrated and occupied by the Khoekhoe pastoralists/herders who introduce sheep and cattle (e.g. Hall & Smith, 2000).

Ceramic vessels are some of the material culture that signifies the Khoekhoe material culture in archaeological records – including the depiction of sheep and cattle often found in San hunter-gather rock art (ibid). Smith and Hall (2000) give detailed descriptions of potential relations that could have taken place between the San, the Khoekhoe and later the Iron Age farmers. They also argue that the material culture of the Khoekhoe herders included among other things the art of making rock art in form of geometrics, concentric circles etc. Binneman (*et al.* 2011) asserts that the diet of this new group of people would have also included muscle collected along the muddy river banks, coastal line and riverine and terrestrial foods. Other than the material culture such as artefacts found within the LSA industries, burials or human remains become dominant in the landscape. In the coast they are often found buried underneath middens (dumpsites) (e.g. Deacon & Deacon 1999). While in the interior regions they are sporadic and can occur across various features in the landscape. In the Deneysville area a skull associated with the Khoekhoe herders or the late Iron Age people was discovered in 2008 (*Figure 5*).

The LSA archaeology is therefore rich and varied consisting of stone artefacts, other forms of material cultures such as beads (ostrich egg shell beads are dominant), pottery, rock art in form of paintings and engravings with engraving dominating the central low land and the interior regions. However, it has to be noted that the engravings are also found in the Highveld regions of the country spreading as far as the Limpopo Province. Among stone tools, bifaces still continue and are supplemented by tanged barbed arrow heads made from the various materials found with the southern Africa regions. Dark or black fine grained chalcedony would have been the most preferred form of material in the Karoo (Northern Cape regions), the Northern Cape Province and Lesotho (Humphrey, 1969).

Smithfield settlement sites are concentrated among hills and ridges in preference to flat and mountains. Smithfield was divided into three phases using scrapper size and shape (Goodwin & Van Riet Lowe 1929):

- Smithfield A – large scrapers
- Smithfield B – long and narrow scrapers
- Smithfield C – small thumbnail scrapers.

Within the broader study area Stone Age archaeological material is dated to 20 k.y.a

2.4.2. Iron Age Archaeology:

The Iron Age Archaeological is divided into two categories, namely the EIA (Early Iron Age) and the LIA (Late Iron Age). There is no clearly defined Middle Iron Age period as asserted by Tomose 2012.

The EIA communities first appear in southern African archaeological records in the 1st Millennium AD. The eastern regions of the country were their preferred regions because of their rainfall patterns – summer rainfall climates conducive for ploughing and growing crops like maize, sorghum and millet. In the interior regions, the former Transvaal areas (e.g. Limpopo and Gauteng Province) were preferred. In the Northern Cape their first evidence is documented in the south-eastern regions where they came into contact with the Xhosa and Batwana people. Most of existing evidence about the Iron Age communities in the Northern Cape dates to the 16th and 18th when they moved across the Vaal River coming to contact with the San hunter-gather people (e.g. Klatzow 1994). Numerous stone wall structures and pottery dating to this period have been recorded and lie on the frontier zone where the San people come into contact with agro-pastoralist (Thorp 1996).

Stonewalls are one major characteristic of the Iron Age people. However, they are not the only characteristic or feature of the Iron Age people. Huffman (1982), for example described cattle dug, both vitrified and unverified, as one of the Iron Age traits. He also includes pits and burials, with some located inside the cattle kraals (ibid).

Among the well known and documented areas with evidence of the Iron Age farmers in the Northern Cape region is the Ondertuins River Valley - known to have been settled by the Fokeng group of Iron Age speakers (the Sotho Speakers). The Fokeng are suggested to have later settled in **Hantam**, after dwelling the foothill of Vryheid between Piet Retief and **Hantam** (Walton 1953).

North of the Ondertuins River in what is today known as the Mpumalanga Province the Iron Age communities are known to have also practice the tradition of making rock art, especially during the last period of the Iron Age characterised by the different encounters between these communities and the colonial settlers. The Makgabeng rock art is known to have depict conflict scenes associated with the Malebogo Wars – war between Xhosa and Batwanas people and President Kruger of the ZAR.

In the Northern Cape rock art linked to the Iron Age communities by association, it is not directly executed or engraved by them. For example, in the south-eastern Orange Northern Cape recordings of cattle paintings are found, with some depicting conflict scenes – figures

include 'hour-glass' Sotho shields which Binneman (*et al.* 2011) argues could be referring to the period of unrest in southern Africa called *Imfecane* (or *Difaqane* in some literature). However, it would not be totally truthful to argue that the south-eastern Northern Cape only depict conflict scenes - paintings of sheep are and other none conflict scenes are found. One such site is known to exist on the Farm REMAINING FARM PORTION 1 AND 10 OF ZONNEKWA NO. 326, SITUATED IN THE MAGISTERIAL DISTRICT OF NAMAQUALAND: NORTHERN CAPE REGION. and is found in association with the depiction of cattle (Manhire *et al.* 1986). Other paintings include man walking with hunting dogs etc. Other than rock art, stone walls and pottery – the material culture of the Iron Age communities also includes Iron Implements, traded beads, rainmaking site features, spear sharpening groves on rock surfaces, grinding stones etc (e.g. Huffman, 2007).

In Deneysville the Iron Age archaeology is dated to 1550 and 1650 AD and is associated with the Xhosa and Batwanas people which include the **Hantam** areas (Huffman, 2002).

2.4.3. Historical Archaeology:

The Historical archaeology is a period in archaeological records that refers to the last 500 years in archaeological records. This period encapsulates the Late Stone Age, Late Iron Age, and the period of European settlers and/or "colonist" in southern Africa. The archaeological record that characterises this period includes ruminants of Stone Age industries (and material culture), the Late Iron Age material culture (e.g. pottery/ceramics, Iron Age implements etc) and built environment (e.g. elaborate stone wall settlements etc) and the settler's material culture and built environment. Towns become a dominant form of built environment and landscape features. In the Northern Cape and in the history of South Africa the town of Bloemfontein is one of the most significant interior towns that were established by the European settlers of Dutch descent – the Afrikaans communities after they Trekked from the then Cape Colony to avoid British Administration. In close proximity to the Mining rights area **Hantam** are the oldest – they were built in the 1930s with the construction of the Ondertuins River dam whose construction began in 1932 to provide jobs during the great depression. Various monuments, statues and memorials associated with this period are found across the Northern Cape province. The same is true with buildings demonstrating various architectural styles and vernacular. Also associated with colonial part of historical archaeology are two South African Wars (i.e. the First South African War and the Second South Africa War) commonly known as the Anglo-Boer Wars in 1860s and in the late 1890s to 1901. The area in

which the study area is located is known for some of South African War events and features such as block houses.

Also important is that during the last 500 years within this region there different encounters between the different Bantu language speakers (i.e. the Xhosa and Batwanas), the Xhosa and Batwanas people, the Afrikaans and English speaking settlers. In Vryheid Iron Age implements and stone walls have been identified and dated 600 years ago (e.g. *Figure 4*).



Figure 4- Iron Age implements found in the Vryheid area



Figure 5- Skull found in Vryheid years back

3. METHODOLOGY

This chapter outlines the methodologies used in conducting this heritage scoping study for the proposed internal road construction. This is done in accordance to the Terms of Reference provided by the client for the completion of this study. However, some areas of the report follow minimum standards for completion of professional HIAs (adopted for the scoping phase) as stipulated in SAHRA minimum standard (2012) such as detailed account to the archaeological and historical background of the study area and the region in which it is located in.

3.1. Legislative Requirements

The NEMA No. 107 of 1998 stipulates that before any development in South Africa is granted permission to proceed, an impact assessment must be completed. The impact assessment evaluates the potential impacts of the proposed development on both the natural and cultural environments. This HSS fulfils the requirements of NEMA, of 1998 (as Amended, 2014) and the NHRA, No. 25 of 1999.

3.2. Methodology

This chapter outlines the methodologies used in conducting this heritage scoping study for the proposed internal road construction. This is done in accordance to the Terms of Reference provided by the client for the completion of this study. However, some areas of the report follow minimum standards for completion of professional HIAs (adopted for the scoping phase) as stipulated in SAHRA minimum standard (2012) such as detailed account to the archaeological and historical background of the study area or region affected.

3.2.1. Step I - Literature Review (Desktop Phase)

The background information search of the proposed area of development was conducted following the receipt of the appointment letter and sites maps from the client. Sources used in this study included, but not limited to:

- Published academic papers and HSS studies conducted in and around the region where the current development will take place.
- A review and assessment of relevant environmental and heritage legislations such as the NEMA (together with the 2010 EIA Regulations) and the NHRA.

3.2.2. Step II – Physical Survey

There was no physical survey of the proposed development area. The HSS relied heavily on Google Earth in locating the study area within the landscape.

3.2.3. Step III – Data Consolidation and Report Writing

All the data captured on the development area by means of a desktop study is used to give inputs on the heritage fabric of the study area and inform conclusions and recommendations made in this HSS. There is no detail assessment of impacts of the proposed development since there was not physical survey to map out heritage resources.

3.3. Assessment of Site Significance in Terms of Heritage Resources Management Methodologies

The study is limited to desktop phase and there was no assessment of site significance in terms of heritage resources methodologies and there was also no grading of sites.

3.4. Methodology for Impact Assessment in terms of Environmental Impact Assessment Methodologies including Measures for Environmental Management Plan Consideration:

The Basic Assessment Methodology assists in evaluating the overall effect of a proposed activity on the environment. The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the Basic Assessment & Environmental Impact Assessment. There was no assessment of these impacts against environmental parameters.

4. ASSUMPTIONS AND LIMITATIONS

The following exclusions or limitations have direct consequence to the study and its results:

4.1. Assumptions

The current study is a screen; it is limited to desktop review of the affected environment. The review assisted NGT to develop a baseline database about the study area. This process involves searching for potential heritage and archaeological resources that are known to occur in the region and which may be identified within the development footprint based what is known about the region in which the study area is located. Based on the known heritage database about Deneysville, Refengkgotso and the Vaaldam it is assumed that the affected area will definitely result to the identification of archaeological, historic and heritage resources.

4.2. Exclusions

The following exclusions or limitations have direct consequence to the study and its results:

- There were no detailed deeds search for the stands which the proposed roads upgrades will affect. Therefore, we do not know whose properties will be adversely affected by the proposed development.
- There was no physical survey of the proposed development area and such we do not know if the proposed project will have any impact on know heritage resources.
- There was not heritage public participation for the study and as such we do not know if the proposed development will have affected any cultural areas or places declared to be cultural landscape.

4.3. Uncertainties

There are no uncertainties about the project area, it is more likely to yield heritage resources and the client needs to take note of that.

5. FINDINGS

5.1. Results of the Desktop Search

The desktop review of the study area and its surrounding landscape has yielded information about the archaeology, history and heritage of **Hantam**.

5.2. Cadastral Search

The assessment of Google Earth database and the maps provided by the client show presence of built environment within the Mining rights area.

5.3. Deeds Search

No deeds search was conducted as part of this study.

5.4. Results of background research and HIA's conducted in and around the proposed development area

6. DISCUSSION

Based on archaeological and historical database search about the project area we know that the areas contain archaeological resources dating as far back to the Late Stone Age period, some 20k.y.a. The Iron Age people are dated to 60 years ago and the material culture includes Iron Age implements and stone walls. A human skull was discovered in 2008 and was associated with either Xhosa and Batswana herders or the Xhosa and Batswana people. It is also known that the area has historic built environment and landscape infrastructure associated with the construction of the mine in 1932 and the establishment of village and the **Hantam**. Based on the available database about the broader study area, the probability of discovering the above mentioned within the Mining rights is very high. Therefore, the physical survey of the Mining rights area is required to confirm their absence or presence.

7. CONCLUSIONS

- The current study is at a desktop level and can therefore be characterised as baseline assessment. Based on the known information about the project area it is concluded that the proposed area for Mining rights has high probability of yielding archaeological resources and other heritage resources such as built environment and landscape features and burial grounds and grave sites.

8. RECOMMENDATIONS

- It is recommended that once Mining rights have been granted to the developer a full heritage impact assessments (HIA) should be conducted to map out all archaeological and other heritage resources within the proposed development area such as historic buildings and burial grounds and graves.
- It is also recommended a Palaeontological study be conducted as part of the HIA.

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