



Wide Investment 100 Pty (Ltd)

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT SPECIALIST STUDY
REPORT FOR THE PROPOSED DEVELOPMENT OF PROSPECTING RIGHTS
OF IRON ORE AND MANGANESE ON REMAINING EXTENT OF
MASHWENING 557 IN KATHU, WITHIN THE LOCAL MUNICIPALITY OF
GAMAGARA, JOHN TAOLO GAETSEWE DISTRICT. NORTHERN CAPE.**

July 2013

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

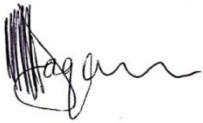
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INDEPENDENCE

I, Munyadziwa Magoma declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organisation.

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EXECUTIVE SUMMARY

Vhubvo Archaeo-Heritage Consultant Cc has been requested by Wide Investment 100 (Pty) Ltd to conduct an Archaeological Impact Assessment (AIA) Study for the proposed prospecting right in the magisterial district of Kathu within Gamagara Local Municipality of John Taolo Gaetsewe District, Northern Cape Province. The aim of the survey was to identify and document archaeological sites and objects. Also built structures over 60 years old, sites associated with oral histories, burial grounds, graves and cultural landscapes within the footprint of the area in which the prospecting of manganese and iron is proposed.

During the past, prospecting was physical labour, and involves traversing, panning, sifting and outcrop investigation, looking for signs of minerals. The methods used entails combing through the countryside, mostly through creek beds and along ridgelines and hilltops, often on hands and knees looking for signs of mineral. However, today prospecting for minerals have been innovated and entails mapping, non-invasive and invasive prospecting activities. These methods minimise impact on the landscape.

In order to familiarise with the area proposed for prospecting, a background study was first undertaken and relevant institution were consulted. These studies entails review of archaeological and heritage impact assessment conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor were searched. The University of Pretoria's Library and the National Archives (Pretoria) were also visited. These investigations were conducted to determine if there are any known sites, of archaeological or historical around the area. Eventually, a field study was planned for two days. This was in consideration of the extent of the site. Thus, the survey was conducted on the 15th and 16th of July 2013 by a team of two archaeologists. Nearby farm owners and farm dwellers/ workers were consulted and their involvement was of significance.

The findings on this report have been informed by desktop data review, aerial survey, oral interview and field survey. This study was conducted as part of the specialist input for the Environment Management Plan exercise. The proposed development consists of prospecting for manganese and iron ore, hence, the environment will not be permanently or significantly altered. Analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area predicted that archaeological sites, cultural heritage sites, historic structures, (isolated) artefacts, historical mining and burial grounds (especially dating to the historical era) were supposed to be present on the affected landscape. The field survey was conducted to test this hypothesis and verify this forecast within the proposed approximately 1680ha area proposed for prospecting.

The archaeology of the area around the proposed site is rich and varied, and it covers a long span of human history. Nonetheless, from the AIA, HIA, HMP and excavation conducted in the region, it is clear that some areas are richer than others, and not all sites are of equally significant. However, the area around the Kathu is rich of archaeological material, dating to the Stone Age (especially Middle Iron Age), and historical building, some of which are associated with early missionaries. A discussion of these has been offered in this report.

The report makes the following observations:

- The prospecting area is located on an easily reachable area. Some sections of the project area are situated on previously disturbed land portions, while some portions of the proposed prospecting site were not accessible because of thick vegetation cover or steep hill. It is important to note that the area at large is under intense force caused by mining activities. In fact the neighbouring portions are engulfed by mining activities, this has resulted in access roads and powerlines that cut across the proposed area, causing disturbance. Furthermore, the western section of the proposed area is disturbed due to industrial activities related to mining.
- The study identified Middle Stone Age (MSA) scatters. These noted MSA scatters cannot be interpreted as a site. Some of this scatters were noted in a disturbed area, southeast of the noted industrial plant. Nonetheless, these were recorded by means of photographs, GPS locations, and site descriptions.
- Several historic structures were noted. However, these abandoned structures are in ghastly conditions. From the design, it is clear that some dates to the time when white settlers first moved to the locale.

The report makes the following recommendations:

- The noted scatters of Stone tools are of low to medium significance. As such, if the prospecting team would like to commission their service in such an area, monitoring is recommended. This will determine and ensure whether densities are universally low.
- The field study manages to spot historic farm settlements, although they were in appalling conditions as a result of abandonment, and subsequently looting, these structures are protected by the National Heritage Resources Act, Act 25 of 1999, in the basis of both their age (being over 60 years of age) and aesthetic value. As such, any form of altering on this structure will require a permit from PHRA.

Should construction work commence for this project:

- The developer should induct field worker about archaeology, and steps that should be taken in the case of exposing archaeological materials. Although the area is vehemently disturbed, it should be noted that archaeological material may still be encountered during subsurface construction work (Klapwijk 1973).

- If archaeological materials are uncovered, work should cease immediately and the SAHRA be notified, in the mean time, activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the PHRA/ SAHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LIA	Late Iron Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency
SACC	South African Council of Churches

GLOSSARY 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*):

Archaeological 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 artifacts, human and hominid remains, and artificial features and structures.

Chance Finds means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Cultural Heritage Resources Same as **Heritage Resources** as defined and used in the National Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or graves and their associated materials; geological or natural features of cultural importance or scientific significance. **Cultural Heritage Resources** also include **intangible resources** such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural Significance also encompasses the complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Environment The surroundings within which humans exist and that are made up of: i. the land, water and atmosphere of the earth;

ii. micro-organisms, plant and animal life;

iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and,

iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, social, cultural, historical and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental impact assessment An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the environment. The EIA includes an evaluation of alternatives. As well as recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and environmental management and monitoring measures.

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;

Fabric means all the physical material of the place including components, fixtures, contents and objects.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or **Burial Ground**(historic).

Heritage impact assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact the positive or negative effects on human well-being and / or on the environment.

In Situ material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Interested and affected parties Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation means all the ways of presenting the cultural significance of a place.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;

Public participation process A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters

Setting means the area around a place, which may include the visual catchment.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Use means the functions of a place, as well as the activities and practices that may occur at the place.

1. Introduction

Vhubvo Archaeo-Heritage Consultant Cc was requested by Wide Investment 100 (Pty) Ltd to conduct the archaeological study for the proposed prospecting of manganese and iron ore in the Magisterial district of Kathu, Northern Cape, subject to the SAHRA APM Minimum Standards for the Archaeological & Palaeontological Components of Impact Assessment Reports of 2012, which clearly specifies the required content of a Phase 1 AIA report. The proposed area measures approximately 1679.509Ha.

Vhubvo Archaeo-Heritage Consultant Cc has been requested by to conduct an Archaeological Impact Assessment (AIA) Study for the proposed prospecting right in the Magisterial of Kathu

Prospecting is the first stage of the geological analysis for minerals and is also known as fossicking. This stage is followed by the exploration stage, providence that prospected minerals are economical viable. Although this kind of project has a potential to impact on archaeological material and cultural resources, by virtue of the nature of activities associated with prospecting, the impact is very minimal. This report discusses the results of the survey, and eventually recommendations are given.

Wide Investment 100 (Pty) Ltd submitted maps, and all relevant materials related to the locality and extent of the area proposed for prospecting right, and this was assumed to be true. In addition, the farm proprietor indicated the points of the farm.

2. Purpose of the AIA study

The purpose of this archaeological impact assessment study was to conduct an archaeological survey, and have an understanding of the archaeological and cultural sensitivity of the area proposed for prospecting rights. This study is used to integrate archaeological material or cultural resources with the impact of planning proposals, in-order to provide a detailed and holistic framework for decision making, and for the implementation of a coherent set of appropriate actions for the conservation and preservation of material or resources if found. Impact assessments highlight many issues facing sites in terms of site management, conservation, monitoring and maintenance and the environment in and around the site. Thus this archaeological impact assessment involves the following:

- Taking responsibility to ensure protection of identified cultural and heritage resources that may be affected by the proposals. Thus, as a result of an impact assessment, proposals may be modified to avoid or minimize harm,
- Identification and recording of heritage resources that will be affected by the proposed development,
- Decision-makers who provide a basis for decisions on whether a proposal safeguards cultural heritage,

- All participants in determining the basis for cultural heritage management and monitoring if a proposal proceeds,
- Incorporation of all stakeholders' views in assessment and decision-making processes,
- To identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed mining development project. This study should include the identification of gravesites.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Take responsibility for communicating with the SAHRA and other authorities in order to obtain the relevant permits and authorization with reference to heritage aspects where applicable.

3. Methodology

Background Study introduction

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this archaeological impact assessment, the following tasks were conducted: 1) site file search, 2) literature review, 3), consultations, 4) completion of a field survey assessment and 5) analysis of the acquired data, finally a report on these was produced.

To understand the archaeology of the prospecting area, a background study was undertaken and relevant institutions were consulted. These studies entails review of archaeological and heritage impact assessment studies that have been conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor and History Resource Centre were searched. The University of Pretoria's Library collection was also pursued, and finally, through the National Archives, Pretoria, the proposed farms were located and investigated. These investigations were fundamental in shading light about the archaeology of the prospecting area, as well as the compilation of this report.

Physical survey

The field survey was conducted on the 15th and 16th of July 2013. A systemic survey of the area as indicated by Burke and Smith (2004) resulted in the maximum coverage of the area. This survey was conducted by two Vhubvo archaeologists. The survey was conducted on foot, and also by a slow moving vehicle, where situation permit. The study targeted river valleys and foothills where Stone Age and Iron Age communities are known to have preferred. Thus, mountainous area may yield caves, which in turn may contain archaeological material. No excavations or sampling was undertaken, since a permit from heritage authorities is required to disturb a heritage resource. The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the stream banks exposed by natural erosion forces. In addition, no material were collected, the noted material were recorded within the area where they were found.

Documentation

The general project area was documented. This documentation included taking photos through a 10.1 mega-pixel Sony Cybershort Digital Camera and Nikon Coolpix L110. Plotting of finds was done by a hand-held Garmin etrex Venture HC and Tom-Tom GPS. The descriptions of the shape of the area was sketched and described (it is available on request).

➤ *Oral Interview*

Oral interview was conducted with local farm owner and farm workers. The information provided was critical in the compilation of this report.

Restrictions

Most sections of the survey area could not be adequately surveyed because of among others, thick vegetation cover, ground-cover and sloppy mountainous areas. This limited our survey to some extent.

4. Sites location and description

The proposed development of prospecting is located in Kathu, a small developing town in the Northern Cape, Kathu is also the biggest in the Gamagara Local Municipality, alongside Shesheng, Dibeng, Dingleton and Olifantshoek. Kathu is nicknamed the iron ore capital of the Northern Cape province, and it means "town under the trees", after the Camel Thorn forest found in the area. The phrase "the town under the trees" was coined in the early 1990. The meaning of the word "Kathu" has anecdotically been attributed to a porridge brewed by the local population from the powder found in the pods of the Camel Thorn trees. It has been argued that the town has one of the five largest open-cast iron ore mining operations in the world. Kathu was initially founded in the late 1960's due to iron ore mining activity in the Kalahari, and is situated between Upington and Vryburg.

The project area is located on remaining extent of Mashwening 557 in the magisterial district of Kathu, Northern Cape Province. It is surrounded by mining activities which is hype in the area. As such, there are several access roads and path ways to the site. The project area falls in the northern section of the Northern Cape Province, about 50km to Kuruman, which is famous as a mission station and also for its 'eye'. The small town of Kathu is north and approximately 20km away. The Orange River flows through the province, forming the borders with the Free State in the southeast and with Namibia to the North West. The area's topography is varied and mostly characterised by flat section, also adulating slopes and rolling hills. Rocky outcrops also occur throughout the proposed area.

Summary of Project Location Details

Province:	Northern Cape
Local Municipalities:	Gamagara
District Municipality:	John Taolo Gaetsewe
Farm name/affected properties:	Remaining extent of Mashwening 557
Extent	1679.509Ha
Description of proposed development:	Prospecting for manganese and iron ore
Map:	1:50 000
Map Reference:	2723CA

Table 1: Coordinates of the prospecting area.

Site	Latitude	Longitude
Point A	-4061.080	3082291.860
Point B	-8426.519	3081273.528
Point C	-9615.605	3086117.595
Point D	-5443.480	3085266.850

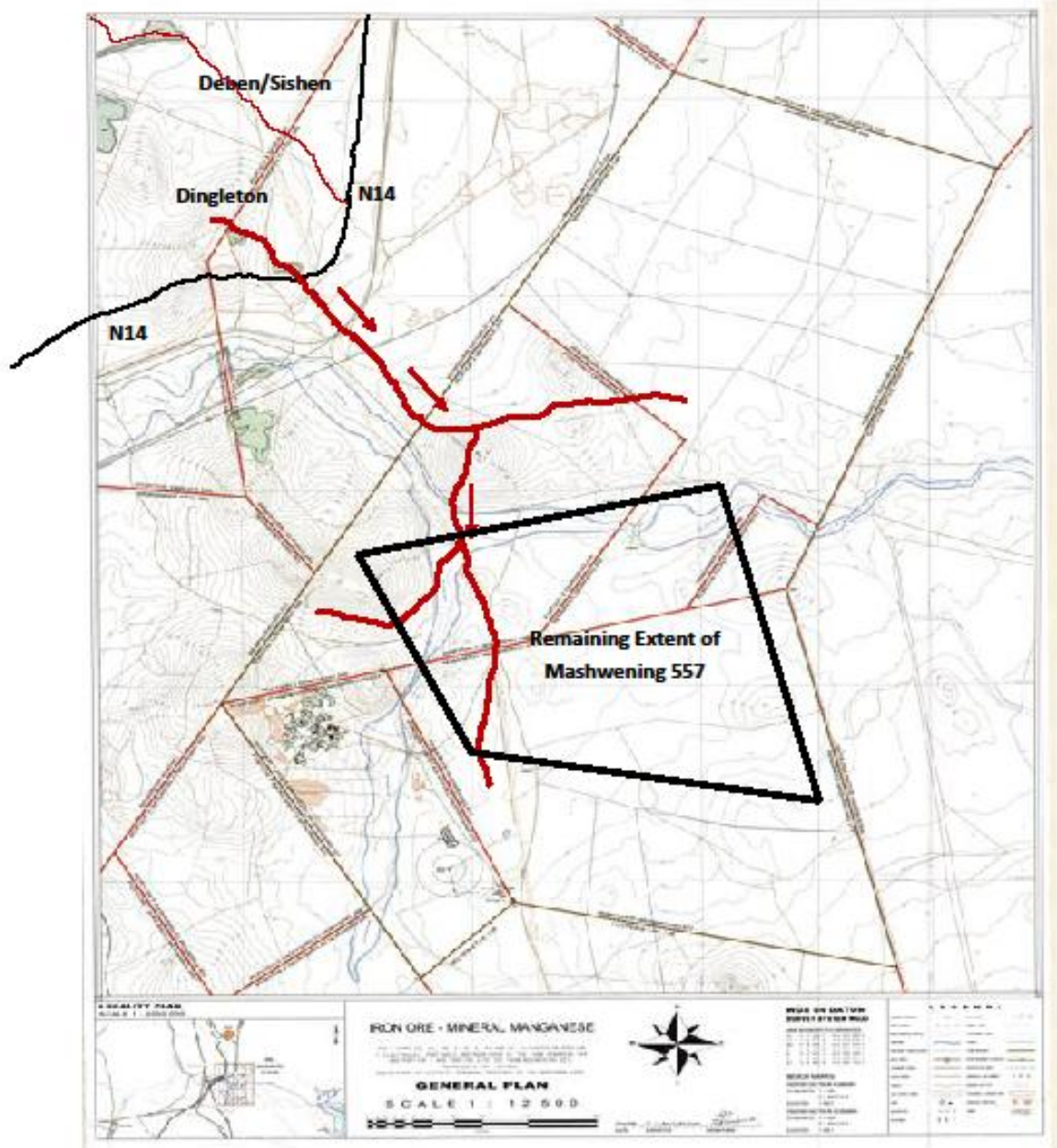


Figure 1: Locality map showing direction to the proposed site.

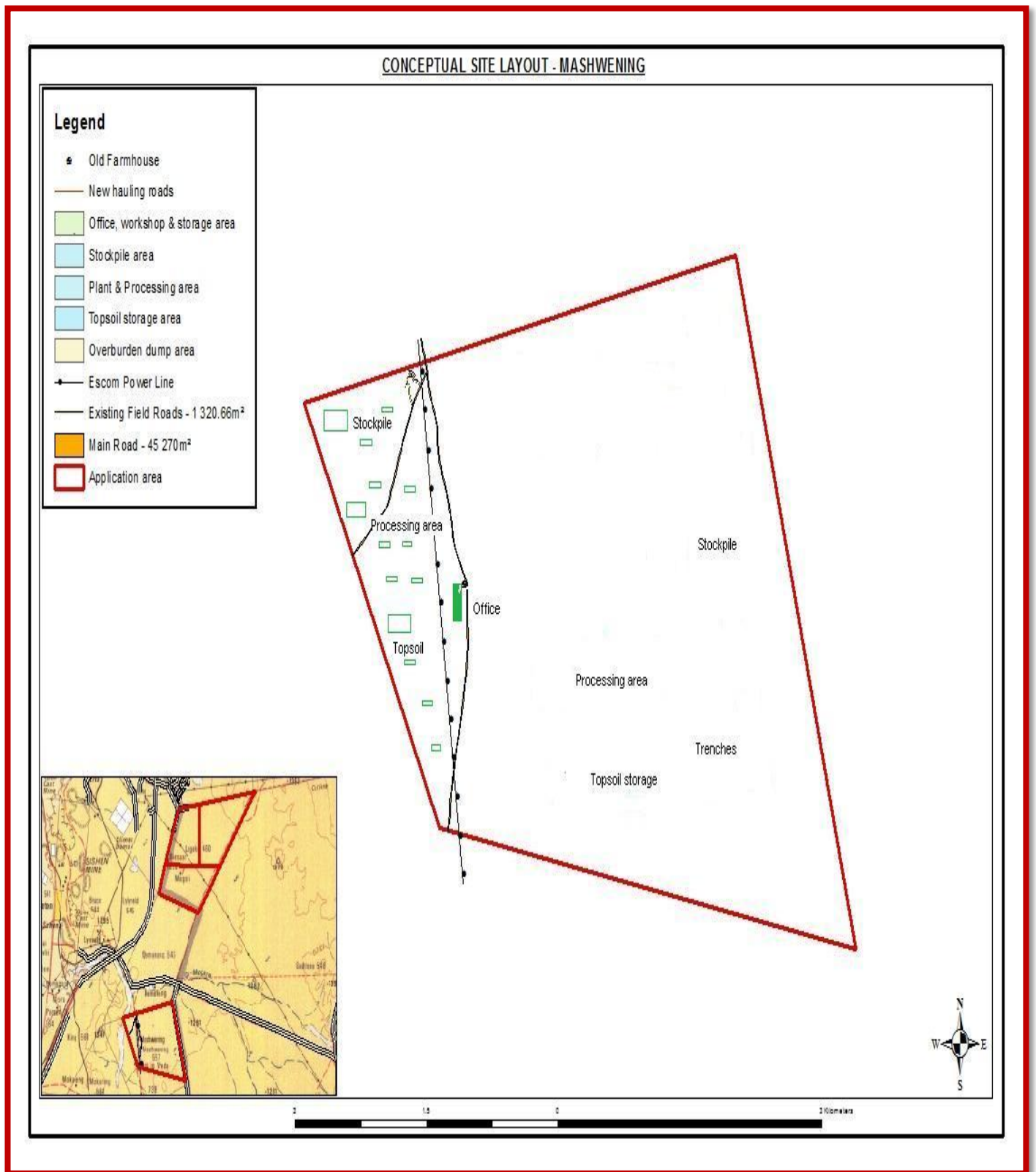


Figure 2: Locality map of the area proposed for prospecting of iron and manganese.



Figure 1: View of the northern area of the proposed prospecting site.



Figure 2: View of the area which is on the northwestern section of the proposed area.



Figure 3: Note some of the infrastructure on the proposed area.



Figure 4: An overview of the western section of the proposed area.



Figure 5: View of clearing pertained by the nearby mines to create access road.



Figure 6: View of the main road which cut across the proposed area.



Figure 7: View of some of the mining activities noted on the neighbouring portions.



Figure 8: View of farming activities noted on the eastern section of the proposed area.

5. Nature of the proposed project

The main objective of the exploration programme is aimed at the search for base metals Iron Ore (Fe) and Manganese Ore (Mn). The success of any exploration programme is based on the quality of the exploration procedures.

6. Applicable heritage legislation

Several Acts exist for the protection and preservation of both cultural and natural resources, these include the National Environment Management Act, No. 107 of 1998; Mineral Amendment Act, No 103 of 1993; Tourism Act, No. 72 of 1993; Cultural Institution Act, No. 119 of 1998, and the National Heritage Resources Act, Act 25 of 1999, Section 38 (1) of this Act requires the conduction of Heritage Impact Assessment in case of:

- (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50 m in length; and*
- (c) *any development or other activity which will change the character of an area of land, or water -*
 - (i) *exceeding 5 000 m² in extent;*
 - (ii) *involving three or more existing erven or subdivisions thereof; or*
 - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority;*
- (d) *the re-zoning of a site exceeding 10 000 m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

Section 3 of the national heritage resource Act (25 of 1999) lists a wide range of national resources that qualify as part of South Africa national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources had to be identified:

- (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 natural features of cultural significance*
- (e) *Geological sites of scientific or cultural importance*
- (f) *Archaeological and paleontological sites*
- (g) *Graves and burial grounds including-*
 - (i) *ancestral graves*
 - (ii) *royal graves and graves of traditional leaders*
 - (iii) *graves of victims of conflict*
 - (iv) *graves of individuals designated by the Minister by notice in the Gazette*
 - (v) *historical graves and cemeteries; and*
 - (vi) *other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983)*
- (h) *Sites of significance relating to the history of slavery in South Africa*
- (i) *moveable objects, including -*

- (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens
- (ii) objects to which oral traditions are attached or which are associated with living heritage
- (iii) ethnographic art and objects
- (iv) military objects
- (v) objects of decorative or fine art
- (vi) objects of scientific or technological interest; and
- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Section 3 of the National Heritage Resources Act (No. 25 of 1999) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following:

- (a) Its importance in the community, or pattern of South Africa's history
- (b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage
- (c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage
- (d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects
- (e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group
- (f) Its importance in demonstrating a high degree of creative or technical achievement at particular period
- (g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- (h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) Sites of significance relating to the history of slavery in South Africa.

Other sections of the Act with relevance are the following:

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.

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 palaeontological site or any meteorite

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

- 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 formal cemetery administered by a local authority; or
- bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

7. Degrees of significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. Large sites, for example, may not be very important, but a small site, on the other hand, may have great significance as it is unique for the region.

Significance rating of sites

(i) High

(ii) Medium

(iii) Low

This category relates to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, thus its regional significance is high, but there is heavy erosion of the greater part of the site, therefore its significance rating would be medium to low. Generally speaking, the following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a do not touch situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios permits will be required from the National Heritage Resources Agency (SAHRA) as per the relevant law, namely the National Heritage Resources Act (Act 25 of 1999) destruction of any heritage site may only take place when a permit has been issued by SAHRA or its provincial equivalent should this exist. The following table is used to grade:

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

Table 2: Grading and rating systems of identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

8. Discussion of (Pre-) History of the area around the proposed site

Introduction

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless, the earliest form of culture known in South Africa is the Stone Age. These prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. Noteworthy that the time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman & Meyer 1999, Mitchell 2002, Robbins *et al.* 1998)

Stone Age period

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period where little is known about. These may be due to many factors which includes, though not limited to retrieval techniques used, reliance on secondary, at times unknown sources, and the fact that few fauna from this period has been analysed (Chazan 2003). According to Robbins *et al.* (1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and was basically hunters and gatherers, this era is identified by large stone artefacts.

The Middle Stone Age overlap with the EIA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. This period is marked by smaller tools than in ESA and characterized by the production of food and the introduction of domestication of animals. Many MSA sites have evidence for control of fire, prior to this, rock shelters and caves would have been dangerous for human habitation due to predators. MSA people made a wide range of stone tools from both coarse- and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces.

Microlithic Later Stone Age period began around 35 000 and extend to the later 1800 AD. According to Deacon (1984), LSA is a period when human being refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with this period. Moreover, large quantity of art and ornaments were made during this period. Prehistoric rock art in Northern Cape is found in the form of both paintings and engravings. Rock paintings and engravings are generally found on cave and shelter walls in the coastal regions and in mountain ranges along Postmansburg to Danielskuil (Boshier and Beaumont 1974).

Numerous cluster of Stone Age sites have been noted near and around Kathu (Beaumont 2007; Beaumont and Morris 1990; Beaumont and Vogel 2006; Kaplan 2008; Thackeray *et al.* 1981). However, it was in 2012, when a paper published in the Journal of Science about a site in Kathu, *Kathu pan 1*, that people took notice of the significance of the area. Jayne Wilkins and Michael Chazan reveal evidence of 500 000 year-old stone points (excavated by Peter Beaumont in 1979-1982). They argued that this point represent the earliest stone-tipped spears yet found. This conclusion, based partly on experimental comparison of use wear, is taken to indicate that human ancestors used stone-tipped weapons for hunting 200 000 years earlier than previously thought. This site is approximately 30km north-west of the proposed site, and is one of the eleven sites in the Kathu Pan which were excavated by Peter Beaumont between 1978 and 1990. The pan is a shallow depression with internal drainage and high water table, covering an area of about 0.3km. Most of them are filled in sinkholes that formed within calcretes of the Tertiary-aged Kalahari Group. *Kathu Pan 1* preserves the longest lithostratigraphic and archaeological sequence of the sites, documenting a history of human occupation at the pan through the ESA, MSA, and LSA.

Several other sites dating to the Stone Age are known to exist around the larger geographical area of the proposed right for prospecting of manganese and iron ore. The most well-known of all is Wonderwerk Cave in the Kuruman Hills, this site which is about 50km east of the proposed area, and constitutes a very large cave, extends for almost 140m into the base of a low foothill on the eastern flank of the Kuruman Hills. Wonderwerk Cave has been the subject of a number of archaeological investigations since the first published description by Malan and Wells in 1943 (Thackeray *et al.* 1981). Another site Blinkklipkop

(Tsantsabane), this site is about 35km south of the proposed area, and it appears that activities at the site began 1200 B.P. Lithic artefacts, including crudely worked scrapers and miscellaneous pieces were found in the site, this site was marred by debate in the 1970 and 1980, with faunal material analysed and reanalysed, with contradictory results. Not far away from Blinkklipkop, there is another site, Doornfontein, dates to the same time range as Blinkklipkop. Results of excavations at the Blinkklipkop speculate that mining began some time before A.D. 800. The mining was probably conducted by Khoi and San people before the seventeenth century. Also, the Tswana people appear to have utilised the area. The excavations also provide evidence for the presence of domestic animals and pottery in the Northern Cape Province by A.D. 800.

Additional Later Stone Age material and Middle Stone Age are known to exist from Lylyfeld, Demaneng, Mashwening, King, Rust and Vrede, Paling, Gloucester and Mount Huxley to the north. Rock engraving sites are known from Beeshoek and Bruce (Morris 2005). Black Rock and Gloria Mines near the town of Hotazel, revealed several sites with material dating to the Early to Later Stone Age (Kusel 2009; Pelser and Van Vollenhoven 2011).

Iron Age and Historical period

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, there have been a debate about the use of the name. Other archaeologists have argued that the word “Iron Age” is problematic and does not precisely explain the event of what happened in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). Nonetheless, in South Africa this period can be divided into two phases. Early (200 - 1000 A.D) and Late Iron Age (1000 - 1850 A.D). Huffman (2007) has indicated that a Middle Iron Age (900 - 1300 A.D) should be included. According to Huffman (2007:361), until the 1960s and 1970s most archaeologists had not yet recognised a Middle Iron age. Instead they began the Late Iron Age at AD 1000. The Middle Iron Age (AD 900–1300) is characterised by extensive trade between the Limpopo Confluence and the East Coast of Africa. This has been debated, with other researchers, arguing that the period should be restricted to Shashe-Limpopo Confluence.

According to Schapera (1952:6) the Kgalagadi, who are believed to have originated somewhere in the vicinity of the Great-Lakes of East-Africa, were the first group of the Tswana to have encountered the San in Northern Cape and North West Province (Levitas 1983). However, Breutz (1989:1) argued that since from oral tradition it is stated that they originated from the area were “the sun stood on the other side”, it means they lived north of the equator, which would probably be southern Sudan, and not Great Lakes, which is on the Equator. Levitas (1983:168) argued that the name Kalahari was derived from the Kgalakgari people.

The Rolong and Tlhaping group of the Tswana were the next to arrive, on arrival they absorbed the Kgalagadi and San people who were found in the area (Schapera 1652). The Tlhaping were referred to as Briqua (goat people) by the Khoi people, and they ate fish which is unusual among the Bantu-speaking people (Breutz 1989:11). Breutz (1989) and Levitas (1983) indicated that these groups arrived between 1200 and 1350. According to Maggs (1972), the area around the proposed area is associated with the Tlhaping group. Dithakong which was an important Batlhaping capital during the time of Chief Molehebangwe, is about 60km of the proposed area. The early traveller accounts refer to an impressively large town consisting of mud houses, traces of which have yet to be located archaeologically. However, stone walls dating to the Late Iron Age period has been documented. According to Maggs (1972:57), Dithakong is unique in the quality of the historical and ethnological information of the Tswana. This site appears to be the only area in which there is direct archaeological evidence for settlement in the form of stone walling.

During the past the Batswana settlements were not static. For example, the Batlhaping capital was first at Nokaneng around the year 1775. However, in 1801 it was at Dithakong on the Mashoweng River, and then at Kuruman. At around 1806 they returned to Dithakong but settled a short distance from the previous site. In 1812 people were contemplating returning to Nokaneng with an intermediate stop at Kuruman, where they re-established themselves in 1817. Thus in 1820 when Kuruman was the capital and comprised 25 wards, Dithakong was of similar size. Thus, the capital had moved three times in twenty years and suffered one major split which removed about half of its population. The reasons for these movements are not clear. This mobility presents a problem in the interpretation of the archaeological evidence and it helps to explain why many Iron Age sites have shallow accumulation of waste material (Maggs 1972). Nonetheless, in the 1920s, the capital of the Batlhaping was permanently moved to Kuruman, which is about 50km north-east of the proposed area.

In 1801 William Anderson and Cornelius Kramer, of the London Missionary Society, established a station among the Griqua at Leeuwenkuil. The site proved to be too arid for cultivation, and in about 1805 they moved the station to another spring further up the valley and called it Klaarwater. Their second choice was little better than their first, and for many years a lack of water prevented any further development. The name of the settlement was changed later to Griquatown or Griekwastad in Afrikaans. From 1813 - 17 July 1871, the town and its surrounding area functioned as Waterboer's Land. Waterboer himself lived in a "palace", which in reality was a house with six rooms. A monument for Waterboer was later erected near the town's hospital.

9. Survey findings and discussion

Introduction

The proposed development consists of prospecting for minerals and precious stones in Gamagara Local Municipality of John Taolo Gaetsewe District, Northern Cape Province. The proposal will not significantly and permanently alter the environment. In general, this project aims to check for commercially viable minerals and precious stones, through surveys and drilling, which will be conducted at reasonably intervals. It is anticipated that this exploration activity will not contribute to any significant impact on known cultural resources. Furthermore, the prospecting area is surrounded by mining activities, and is marked by access roads, power lines, boundary-fence lines, historical residential infrastructure, associated infrastructure and industrial activities. Nonetheless, since they might be the movement of heavy vehicles and machinery for drilling purposes, archaeological materials might be compromised, if available. Hence, this study is presenting its findings.

In accordance with the National Heritage Legislation, no prospecting activity was conducted by the Wide Investment 100 (Pty) Ltd prior to this archaeological assessment. Given the nature of the proposed prospecting activities, it is not likely to adversely impact on any archaeological material of the area. However, it should be indicated that if one of the prospecting sampling sites fall on the site where stone tools were recorded, a professional archaeologist should be made available to monitor and document all chance finds.

Table 2: Overview of the findings.

Name of the resource	Co-ordinates	Description/Condition	Significance
Stone tools	s27° 51' 58.4'' e23° 03' 34.6''	Scattered	Low to Medium
Stone tools	s27° 52' 23.4'' e23° 03' 15.7''	Scattered	Low to Medium
Cape structure	s27° 51' 56.5'' e23° 03' 26.9''	Abandoned and in poor condition	Low to Medium
Structure 2	s27° 51' 57.4'' e23° 03' 27.4''	Abandoned and in poor condition	Low
Structure 3	s27° 51' 53.0'' e23° 03' 31.1''	Abandoned and in poor condition	Low
Structure 4	s27° 51' 47.1'' e23° 03' 29.7''	Abandoned and in poor condition	Low to Medium
Pest maintenance	s27° 51' 56.5''	Abandoned	Low

structure	e23° 03' 26.		
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Stone Age

The background study revealed that the area was inhabited by descendants of the Khoisan and early colonial settlers. During site survey scatters of stone tools were observed to occur sporadically. However, these were found in densities of 0 - 1 and 1 - 2. The stone tools were identified in two different areas. (1. At an even area characterised by shrubs and grass, this area is nearby the dry water course which extends towards the southern section of the project area (2. And also near the area where there is a small artificial holding water barrier, this area is disturbed, and it appears some of the materials might have been moved from elsewhere to demarcate the dam. The surface finds were viewed to be of low significance since they occurred in low densities. No stratified sites, usually located in rock shelters or caves were noted in the area proposed for prospecting. There is however a possibility of some unknown sites that might exist in the project area.



Figure 9: View of the area where scatters of stone tools with a density of 1 - 2 were noted.



Figure 10: View of Early to Middle Stone tools, noted on the area depicted on plate 9 above..



Figure 11: Middle Stone tools, these were also documented on the area depicted above.



Figure 12: View of the artificial dam, it is not clear whether this resulted from a borrow pit or it was initial a dam. Scatters of Stone tools with a density of 0 – 1 were noted in this area.



Figure 13: View of Middle Stone Age tools noted from the template depicted on Figure 12.



Figure 14: View of some of the Middle Stone Age tools noted on the area shown on template 12.

Iron Age

The survey did not identify any sites dating to the Iron Age period, this is synonymous with other Archaeological/ Heritage survey in the area. In addition, it was also evident from the background studies. Thus, the proposed area was not permanently occupied by the Iron Age people, until the Late Iron Age, with the arrival of the Bathlaping group. More so, such occupation was nomadic, this might explain the absent of Iron Age sites in the area of the proposed site.

Based on the field study results and field observations, it is the considered opinion of the author that the project area has very little potential to yield Iron Age sites.

Burial grounds and cemetery

In terms of the Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority: a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves; b) destroy, damage, alter, exhume or 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.

In addition to the formal protection of graves, all graves which are older than 60 years and which are not already located in a cemetery (such as ancestral graves in rural areas), are protected. Communities, which have an interest in the graves, must be consulted before any disturbance can take place. The graves of victims of conflict and those associated with the liberation struggle will have to be included, cared for, protected and memorials erected in their honour where practical.

Note that four categories of graves can be identified. These are:

- Graves younger than 60 years;
 - Graves older than 60 years, but younger than 100 years;
 - Graves older than 100 years; and
 - Graves of victims of conflict or of individuals of royal descent
- Burial grounds or place of burial is mostly associated with Iron Age people, and historic era. Nonetheless, there was no grave or place of burial that were noted on the area proposed for development. This was also confirmed by farm owners and labourer. Although no burial sites or graves were identified in the area proposed for development, there is always the possibility of encountering previously unidentified burial sites in any landscape in South Africa. The construction team must watch out for possible chance finds in the project area. In the event that burial sites are encountered during construction they are still protected by applicable legislations and they may not be disturbed.

National/ provincial heritage sites and landmarks

There are no listed monuments and land marks in the project area.

Historical period sites

Several structures dating to the historical era were documented, these structures are scattered across the proposed area. Most of them are in bad condition, wherein several cracks are visible. These cracks have vertical orientation, which indicates differential movement between the two sets of foundations. In some places the cracks has a 60 degree inclination, which shows that the founding system has subsided. This is in the areas where additions were made to the original building. In several positions, cracks could be located where it was previously repaired. These cracks have not surfaced as yet, but a new crack has formed in close proximity. It is the undersigned's opinion that the building can only be restored if all additions are upgraded to fit and compliment the original design, which is not possible.

Nonetheless, in other structures, the structural stability is not in jeopardy. Hence, the building can be repaired, and in such an instance, reutilisation is recommended.



Figure 15: View of the classical Cape Dutch design documented on the site.



Figure 16: View of structure number two. This structure which is constructed of lime stone is one of the earliest structures in the Northern Cape, and dates to the earliest arrival of the white settlers in the region. Further right of the plate, is another structure which was probably used as a store room for farming equipment.



Figure 17: View of the depleted structure constructed of lime bricks.



Figure 18: An overview of structure number four, this abandoned structure is also in poor condition, and has been looted on.



Figure 19: View of the historical cattle pests' maintenance structure.

Natural and contemporary cultural sites

No significant natural heritage will be affected by the proposed mining development.

Application

In the absence of confirmable archaeological or physical cultural resources along the larger project receiving environment, it is recommended that the project be exempted from any further archaeological assessment studies. However, it should be indicated that if one of the prospecting sampling sites fall on the site where stone tools were recorded, a professional archaeologist should be made available to monitor and document all chance finds. This will also aid in the establishment of whether the densities are universally low, or not.

The Environmental Control Officer or any person responsible for site management should be aware of the indicators of sub-surface sites, this may include the following:

- Bone concentrations, either animal or human,
- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate),
- Ceramic fragments, including potsherds,
- Bone concentrations,
- Stone concentrations that appear to be formally arranged (may indicate the presence of an underlying burial),
- Fossilised remains of fauna and flora, including trees.

All construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the mean time, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff member and professional archaeologist.

Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA or a professional archaeologist.

10. Concluding remarks

A thorough background study and survey of the proposed prospecting was conducted and findings were recorded in line with SAHRA guidelines. Thus, it is recommended that PHRA/ and or SAHRA approve the proposed project to proceed on condition that the recommended measures as laid in this report are adhered to.

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Also, Google earth and Wikipedia.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining *site significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics 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?

APPENDIX 2: GRAVE

A grave is a place of interment and includes all that is associated with such a place, and should be avoided by all means possible unless when totally impossible. If accidental found during construction, the constructor should immediately halt construction and notify SAHRA, the nearest Police Station and a Museum (preferably where there is an Archaeologist), or an independent Archaeologist, so that the discovery can be speedily investigated and facilitated. In the mean time a buffer of about ten meters from the grave should be maintained, and if the grave is to be relocated, the correct procedure which involve, notification, consultation and permit application should be followed. If the grave is less than 60 years of age, it is subject to provision of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the ordinance on excavations (ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925). Permission must also be sought from the descendent (where known), the national department of health, provincial department of health, premier of the province and local police. Furthermore permission must also be sought from the landowners before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the human tissues act (Act 65 of 1983 as amended). This act states that a survey and an evaluation of cultural resources should be undertaken in areas where development, which will change the face of the environment, is to be made.

APPENDIX 3: HERITAGE MANAGEMENT PLAN INPUT INTO PROJECT EMP

- Protection of archaeological sites and land considered to be of cultural value;
- Protection of known physical cultural property sites against vandalism, destruction and theft; and
- The preservation and appropriate management of new archaeological finds should these be discovered during construction.

No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on site, a registered heritage specialist or SAHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform SAHRA.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the SAHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
Same as construction phase.								
Operational Phase								
Same as construction phase.								

