



PGM Resources Holdings (Pty) Ltd

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT SPECIALIST STUDY
REPORT FOR THE PROPOSED DEVELOPMENT OF PROSPECTING RIGHTS
OF ZINK ON PORTION 5, OF THE FARM KARABEE 50, PORTIONS 1, 2, 3, 4,
5, 6, 7, 9, 10, 11, 12, 13, 13, 14, 16, 17 AND REMAINING EXTENT OF THE FARM
PRIESKA POORTS 51 IN THE MAGISTERIAL DISTRICT OF PRIESKA,
WITHIN THE SIYATHEMBA LOCAL MUNICIPALITY OF NORTHERN CAPE.**

August, 2013

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

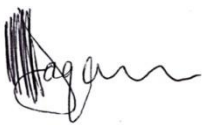
MunyadziwaMagoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and currently completing his MA at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of Association for southern African Professional Archaeologists (ASAPA) and AmafaaKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), and the International Council of Archaeozoology (ICAZ). He has more than seven years' experience in Cultural Resources Management, having worked for different CRM organisations and government heritage authorities. Munyadziwa has completed over hundred Archaeological Impact Assessments (AIA) in several provinces of the Republic of South Africa. The AIA projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessment (HIA) for the alteration to heritage buildings, and the relocation of graves. His detailed CV is available on request.

INDEPENDENCE

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

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

Dr Ndukuyakhe Ndlovu is a PhD graduate from Newcastle University in the United Kingdom. Previously, he attained a BA Degree (Archaeology and Geography), BA Honours (Geography – Environmental Management and Climatology), Postgraduate Diploma in Science, and MA (Anthropology). Dr Ndlovu is currently employed as a Senior Lecturer in the Department of Anthropology and Archaeology at the University of Pretoria. He has over ten years' experience in heritage management in South Africa, having worked for both national and provincial heritage authorities in various capacities. During that period, he reviewed over hundred Archaeological Impact Assessments, Heritage Impact Assessments, Palaeontological Impact Assessments, as well as the processing of all kinds of archaeological permits. In his most recent position, Dr Ndlovu worked as the Manager of Archaeological Collections for the University of the Witwatersrand. Dr Ndlovu has an interest in issues around the ownership of heritage, its management, the involvement of Indigenous communities in archaeology, southern African rock art, and the transformation of the archaeological discipline to represent the racial spectrum of South Africa. Dr Ndlovu's publications, in national and international peer-reviewed publications, have focused on his experiences as an African archaeologist in South Africa, the need to transform ideological paradigms, the effectiveness of heritage legislation, the incorporation of indigenous approaches in his work, and the ownership of heritage resources in South Africa.

Dr Ndlovu is currently the Assistant Editor for the South African Archaeological Bulletin and serves on the ICOMOS SA Board, AmafaaKwaZulu-Natali Council, and is a World Archaeological Congress Executive Member where he represents the East and Southern Africa region.

INDEPENDENCE

I, Dr Ndukuyakhe Ndlovu, declare that this report has been prepared independently of any influence as may be specified by all relevant department, institution and organization.

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EXECUTIVE SUMMARY

VhubvoArchaeo-Heritage Consultant Cc has been requested by PGM Resources Holdings(Pty) Ltd to conduct an Archaeological Impact Assessment (AIA) Study for the proposed prospecting right in the Magisterial District of Prieska with Siyathemba Local Municipality of Northern Cape Province. The aim of the survey was to identify and document archaeological sites, and cultural resources and any structures of historical significance that may be affected by the proposed prospecting for zink. The study also covers built structures over 60 years old, sites associated with oral histories, burial grounds, graves and cultural landscapes within the footprint of the proposed prospecting of zink.

Previous prospecting methods for minerals involved traversing, panning, sifting and outcrop investigation, looking for signs of minerals. The methods used entailed combing through the countryside, mostly through creek beds and along ridgelines and hilltops, often on hands and knees looking for signs of mineral (source). However, prospecting for minerals has been significantly transformed through various innovations and now involves mapping, non-invasive and invasive prospecting activities. As a direct result, the new prospecting methods have drastically reduced the impact of prospecting on the environment.

The findings of this AIA have been informed by desktop study and field survey. The desktop study, through SAHRIS, publication avenues, the University of Pretoria's Library, and the National Archives (Pretoria), entailed reviewing archaeological and heritage impact assessments conducted around the Prieska area. Due to the size of the project area the field survey lasted two days from the 17th to the 18th of August 2013. A team of three archaeologists assisted by a student conducted the survey. Farm owners and farm dwellers/ workers were consulted and their involvement assisted in locating some graves that were recorded during the site survey. These investigations (desktop study and survey) were conducted to determine if there are any known sites of archaeological or historical significance within the proposed site of interest.

The proposed activity involves prospecting for zink in the Preska area of the Northern Cape. 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 likely to be present on the affected landscape. The field survey was conducted to test this hypothesis and verify this forecast within the proposed area of approximately 20 000ha where the proposed prospecting would be undertaken. The site can be accessed through N12 West, R357 South, R403 and R386 East. In terms of the zoning; the area is currently zoned for agriculture. The nearby residential areas would be Prieska and Douglas. Considering

the evident level of disturbance in some sections of the prospecting area, it became clear that the possibility of finding sites of significant archaeological (or other forms of heritage) value was minimal.

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 Archaeological Impact Assessment (AIA), Heritage Impact Assessment (HIA), Heritage Management Plan (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 Prieska is rich in archaeological material dating to the Stone Age, and historical buildings, some of which are associated with early white settlers. A discussion of these has been offered in this report.

The report makes the following observations:

- Although the prospecting area is accessible, entry to some sections of the project area is highly restricted. This is because some farms are permanently locked and the study team could not access these areas.
- Some sections of the project area are also heavily disturbed due to infrastructure developments.
- Several historical farm structures that are characteristic of historical Dutch –English architecture were recorded in the project area.

The report makes the following recommendations:

- The field study recorded historic farm settlements and remains of abandoned structures, although some were in appalling conditions as a result of abandonment, and subsequently looting, these structures are still protected by the National Heritage Resources Act, Act 25 of 1999, on 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 the Provincial Heritage Resources Authority (PHRA).

Should prospecting work commence after being granted a positive decision:

- The developer should induct the prospecting team about archaeology, and steps that should be taken in the event of archaeological resources being accidentally exposed during prospecting. Although some sections of the project area are 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 PHRA and SAHRA be notified. No work should resume until appropriate management provisions have been put in place. The same applies to the discovery of human remains which should be reported to SAHRA (021 462 4502) and nearest police station.

- 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.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	v
ACRONYMS AND ABBREVIATIONS	- 9 -
GLOSSARY OF TERMS.....	- 10 -
2. Purpose of the AIA study	- 13 -
3. Methodology	- 14 -
4. Sites location and description	- 15 -
5. Nature of the proposed project.....	- 20 -
6. Applicable heritage legislation	- 20 -
7. Degree of significance	- 22 -
8. Discussion of (Pre-) History of the Northern Cape and areas around the prospecting site.....	- 24 -
9. Survey findings and discussion	- 28 -
10. Discussion	- 33 -
11. Concluding remarks	- 34 -
APPENDIX 1: SITE SIGNIFICANCE.....	- 39 -
APPENDIX 2: GRAVE.....	- 40 -

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



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

At the request of PGM Resources Holdings (Pty) Ltd, VhubvoArchaeo-Heritage Consultant Cc conducted the archaeological study for the proposed prospecting of zinkin the Prieska area of the Northern Cape Province. The survey was conducted in accordance with the SAHRA Minimum Standards for the Archaeology and Palaeontology. The Minimum Standards clearly specify the required content of a Phase 1 AIA report. The proposed area measures approximately 12 000Ha.

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, provided that prospected minerals are economic viability. 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 details the field survey, results of the survey and discussion on the expected impacts of the proposed mining development as is required by Section 38 of the National Heritage Resources Act, Act 25 of 1999.

PGM Resources Holding (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 relevant. Affected properties were marked in the map provided by PGM Resources Holding (Pty) Ltd.

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. 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:

- Identification and recording of heritage resources that will be affected by the proposed development,
- 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, development (and in this case prospecting for mineral resources) proposals may be modified to avoid or minimize harm,
- 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 relevant authorities in order to obtain the relevant authorisation 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, leading to the production of a report.

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 17th and 18th of August 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 three Vhubvo archaeologists assisted by an Archaeology student. The survey was conducted on foot, and also by a slow moving vehicle, where situation permitted. The study targeted river valleys and foothills where Stone Age and Iron Age communities are known to have preferred. It was anticipated that mountainous areas may yield caves or shelters, which in turn may contain archaeological material. 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. A permit from the relevant heritage authority is required to disturb a heritage resource. In addition, no materials were collected.



Documentation

The general project area was documented. This documentation included taking photographs using 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.

Oral Interview

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

Restrictions

Some sections of the area under survey could not be adequately accessed because of a variety of factors. Among others, there were areas with thick vegetation cover resulting in poor ground visibility, lack of access to the farm, and sloppy mountainous areas. This limited our survey to some extent.

4. Sites location and description

The proposed prospecting is located in the Prieska area of the Northern Cape. The proposed prospecting is located within Portion 5, of the Farm Karabee 50, Portions 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 13, 14, 16, 17 and remaining extent of the farm PrieskaPoorts 51 (see figures below). The total extent of the prospecting area is estimated to be about 12 000ha. The site can be accessed through N12, R357 West, R403 east and R386 south located south of Prieska town. The site is predominantly a grazing area zoned for livestock rearing. The site is located within the Siyathemba Local Municipality in the Northern Cape Province, which falls under the Karoo District in the Northern Cape. The major urban centres in the Siyathemba Local Municipality are Prieska, Niekerkshoop and Marydale. Prieska is the largest of the three towns and is located about 240km from the provincial capital of Kimberley. 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 prospecting area.



Summary of Project Location Details

Province:	Northern Cape
Local Municipalities:	Siyathemba
District Municipality:	Karoo
Farm name/affected properties:	Karabee and Prieskaspoort
Extent	12 000Ha
Description of proposed development:	Prospecting for zink
Map:	Topographic 1:50 000 map and Google earth Map.



Figure 1: Google map of the proposed prospecting area and coordinates (Courtesy Google earth).



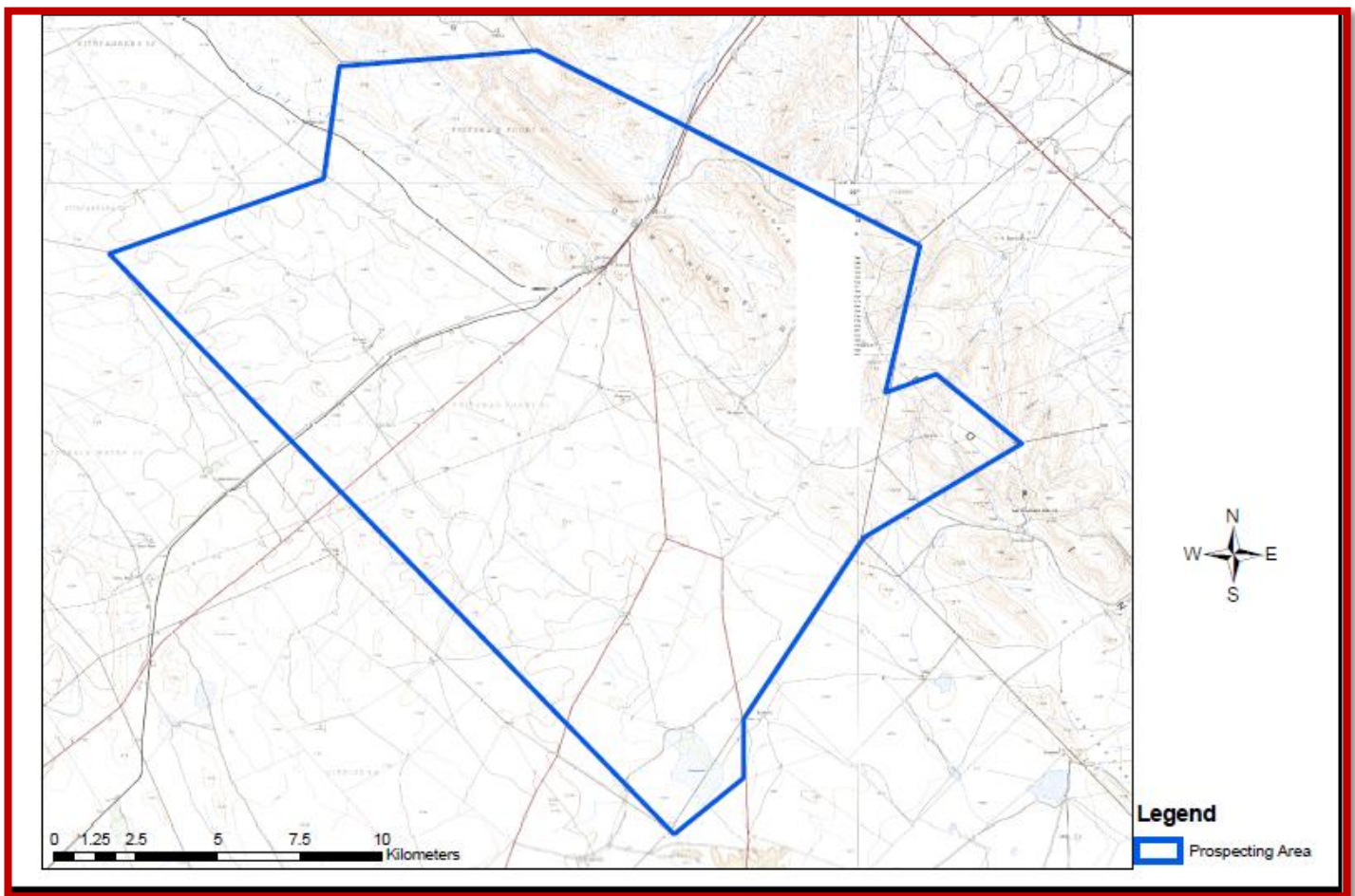


Figure 2: Locality map of the proposed prospecting area and coordinates (Courtesy Vhubvo).





Figure 3: View of the western most side of the area proposed for prospecting.



Figure 4: View of the selected area proposed for prospecting.





Figure 3: View of another sectional area on the south-west.

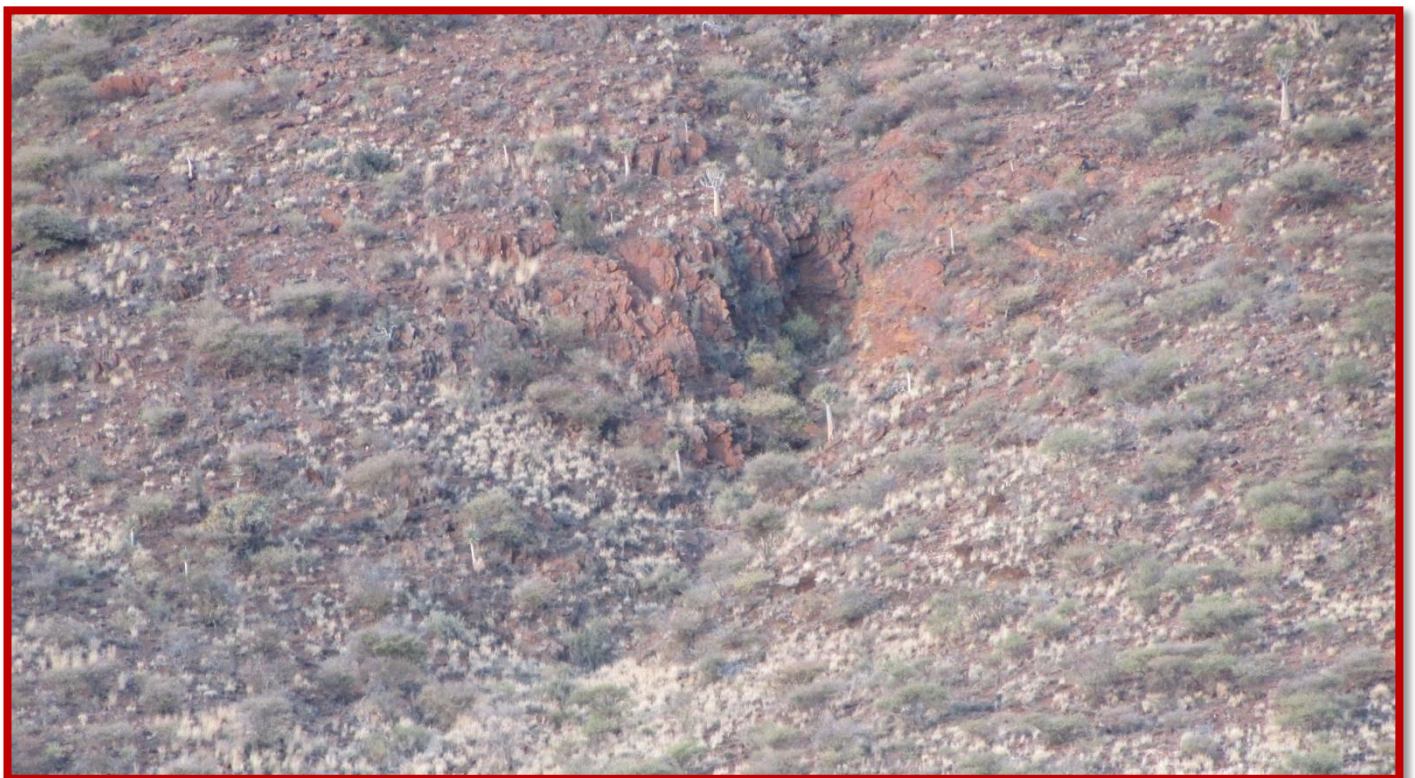


Figure 5: Close-view of selected section from figure 3. This is to highlight that there are no shelters where rock art paintings could have been made.





Figure 6: One of the contemporary structures which were noted.

5. Nature of the proposed project

The main objective of the exploration programme is aimed at the search for base metals Zinc. The success of any exploration programme is based on the quality of the exploration procedures.

6. Applicable heritage legislation

Several legislation provide the legal basis for the protection and preservation of both cultural and natural resources. These includes 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 the National Heritage Resources Act requires that where relevante, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

- (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 Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have 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 a direct relevance to the AIA 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. Degree 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 SouthHeritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999. Destruction of any heritage site may only take place when a permit has been issued by the appropriate heritage authority. 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 Value	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 Northern Cape and areas around the prospecting 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 and 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 several kilometres 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 0.3 km. 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 zink. The most well-known of all is Wonderwerk Cave in the Kuruman Hills, this site which is about 50 km east of the proposed area, and constitutes a very large cave, extends for almost 140 m 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 35 km 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 Blinkklipkopspeculate 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; Pelsler 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.



Cultural History of the Prieska area

Archaeological and heritage studies in the Northern Cape indicate that Prieska and the surrounding areas generally have a high presence of stone artefacts. A study conducted by Schalkwyk (2001) for the establishment of a mainstream renewable solar power in Prieska region revealed that most sites in the region belong to Stone Age that are the Early Stone Age, Middle Stone Age and Later Stone Age. This is confirmed by another study by Nielsen (2012). He alluded to the fact that such stone artefacts covers the Early, Middle and Later Stone Age periods together with the presence of rock engravings that are relatively (see also see Beaumont 2006; Morris 2005; Rossouw 2007). Another study by Murimbika *et al* 2012 also recorded scatters of Stone Age artefacts in the vicinity of the project area. Similar observations were made by Moris (2000, 2006) who excavated Budu Pan 25-30km northwest of Copperton where high profile ESA, MSA and LSA deposits were recorded. Several LSA sites in the northwest and south of the Prieska region were also investigated by Beaumont *et al*, (1995), Smith (1995a), and Parsons (2003, 2004, 2007). Kuil and Driekopseiland are some of the rock engraving sites in the region (Beaumont *et al*, 1995, Beaumont and Vogel 1989, Rudner and Rudner 1968, Rush and Parkington 2010, Wilman 1933). Orton (2012) found scrapped engravings between Copperton and Vanwyksvleil. Stone circles belonging to the LSA were also recorded further along the Orange River by Orton (2012) in addition to what Sampson (1968) had earlier recorded. This area is also well-known for the Iron Age and a much more recent historical period (see Hart, 2005, Kaplan, 2010, Kiberd, 2006, Morris, 1990, Orton, 2011). Representing a much more recent period, a British fort at Prieska is one of the heritage sites that are ruminant of the late 19th Century Anglo-Boer War. In addition there are also war graves in the region (also see Southerncape 2010, Orton 2012). A study conducted by Orton (2010) further revealed also historical sites in Klipgat Pan.

9. Survey findings and discussion

As indicated earlier, the intention is to prospect for zink in the Siyathemba Local Municipality of the Northern Cape Province. The proposed prospecting will not significantly and permanently alter the entire landscape because it will be conducted on sampled sites. In general, this project aims to check for commercially viable minerals and precious stones, through surveys and drilling, which will be conducted at reasonable intervals. It is anticipated that this exploration activity will not contribute negatively to any archaeological and historical resources. Furthermore, the prospecting area is surrounded by mining activities, farming and is also marked by access roads, power lines, boundary-fence lines, historical residential infrastructure and associated infrastructure. Nonetheless, since there 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 PGM Resources Holding(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 3: Overview of the findings and their significance

Name of the resource	Co-ordinates	Description/Condition	Significance
Remains of farm dwellings	S27° 21' 09.36'' E23° 15' 19.76''	Abandoned and in poor condition	Low
Borrowpit	S29° 52' 53.8'' E22° 35' 27.8''	Abandoned and in poor condition	Low
PrieskaPoort farmstead located 400m from the road	S29°47' 47.0'' E22°27' 18.5''	Abandoned and in poor condition	Low
Boerdery farmstead	S29°49' 18.3'' E22°37' 24.8''	Contemporary	low
Farm gate	S29°50' 57.7'' E22°35' 27.8''	Contemporary	low
Farmstead	S29°46' 19.3'' E22°40' 55.8''	Contemporary	low
Burial Site	S29°46' 20.3'' E22°40' 56.5''	Historical and still intact	low
Farm structure adjacent to R357 Road	S29°45' 33.9'' E22°41' 32.0''	Contemporary	low
R403 and R386 Junction within the project area	S29°44' 25.2'' E22°42' 02.0''	contemporary	low
Farm dwelling and field under irrigation	S29°45' 31.7'' E22°41' 33.8''	contemporary	low
Farm structure west of the Railway line and road	S29°45' 33.9'' E22°41' 32.0''	Contemporary	low



Stone Age

The background study revealed that the area was inhabited by descendants of the KhoiSan and early colonial settlers. Although the project area is associated with Stone Age communities no confirmable sites were identified during the site survey. 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, noting the lack of access to other parts of the surveyed area.

Iron Age

The proposed prospecting site did not yield any Iron Age sites. The proposed prospecting site covers an approximate 20 000ha. Most of the proposed prospecting site surface is characterised by surface stones which are typical of the landscape. There exist powerlines, boundary fence lines, existing and decommissioned railway lines, main and access roads, quarry sites, residential, grazing land and other associated infrastructures across the entire project area. As such, the proposed prospecting will be additional to *in situ* developments already on project area (Figure 2; also see Plates 1 to 10). However, the chances of recovering significant archaeological materials *in situ* are possible.

Based on the field study results and field observations, it is the considered opinion of the author that the project area is not likely to yield previously unidentified archaeological sites during subsurface excavations and construction work associated with the proposed prospecting development.

Burial grounds and cemetery

Two burial sites were recorded on the farm Steenkop located on GPS Coordinates S29 46 19.3 E022 40 55.8. Six graves were identified on one site and a solitary grave was recorded within the same farmstead. Although the study team was allowed to one grave (figure 7) the farm owner refused to let the team access and photograph the six graves. The burial sites are not likely to be affected by the proposed prospecting for minerals. Although the identified burial sites may be avoidable, it should be noted that there is always a possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low on the prospecting area, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected.





Figure 7: View of the only grave that we were able to photograph.

National/provincial heritage sites and landmarks

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

Historical period sites and Built Environment

Generically speaking, historic sites are associated with colonial era white settlers, colonial wars period sites and, industrialisation; recent and contemporary African population settlements, contemporary ritual sites dating to the last 100 years. However, recent historic period sites and features associated with the African communities, settler and commercial farming communities are on record in the general project area environs. Although the affected general landscape is associated with historical events such as settler migration, colonial wars and the recent African peopling of the region, no listed specific historical sites are on the proposed development sites. The more common functions of places of cultural historical significance may include:



<ul style="list-style-type: none"> • Domestic • Recreation and culture • Commerce and trade • Agriculture and subsistence, social and health care 	<ul style="list-style-type: none"> • Religion • Designed landscape • Funeral (cemeteries, graves and burial grounds) • Civil and structural engineering • Defence/military
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Several contemporary and historical farm settlements and infrastructures were recorded in the project area. The historical kraals and farm houses are still in use and are very intact. At one farmstead visited, the farm owner claims that the farm house was built in the 1940s (figure 8).



Figure 8: View of the house which was built in the 1940s.



Natural and contemporary cultural sites

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

In the absence of confirmable archaeological or physical cultural resources along the larger project receiving environment, and also confirmed by similar studies in the wider area, it is recommended that the project be exempted from any further archaeological assessment studies.

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. 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.

It should be noted 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. Discussion

The proposed project is unlikely to affect any discernible archaeological sites. The following observations are worthy emphasizing in the discussion prior to making final recommendations:



- The prospecting area is situated within a developed and partially degraded area and have reduced sensitivity for the presence of highly significant physical cultural sites remains, be they archaeological, historical or burial sites due previous agricultural activities, settlement developments and associated infrastructure, earth moving disturbances resulting from developments such as roads and railway lines and other land uses in the project area.
- That the survey focused on sampled sections that had high potential to yield possible archaeological sites. Due to the large area of prospecting area, it was impractical to physically survey every inch of more 20 000ha core and buffer zone. As such, there is a possibility that previously unknown low to medium sites may exist in the project area where as the sampled section fell outside sections with such potential distinct archaeological sites.
- Limited ground surface visibility on selected sections of the project area were not cleared at the time of the study and this may have impeded the detection of other physical cultural heritage remains or archaeological signatures immediately associated with the site of interest. This factor is exacerbated by the fact that the study was limited to the general survey without necessarily conducting any detailed inspection of specific locations where the final prospecting and drilling will be conducted or such localities that will be affected by the proposed prospecting.
- The absence of confirmable archaeological sites is not evidence in itself that such sites do not exist in the project area. It may be that due to infrastructure developments and commercial agriculture in the project area, if such sites existed before, changing earth moving activities may have destroyed their surficial evidence. Furthermore, some sections were not accessible due to thick vegetation cover and denial of access by land owners.

11. Concluding remarks

A thorough background study and survey of the proposed prospecting was conducted and findings were recorded in line with SAHRA guidelines. The study revealed that the study area is located within a contemporary cultural landscape dotted with settlements and infrastructure development with a long local history. Thus, it is recommended that 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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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 meantime 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.

