



Integrated Specialist Services (Pty) Ltd

**PHASE 1 HIA FOR HIA/ARCHAEOLOGICAL
IMPACT ASSESSMENT FOR THE PROPOSED
PROSPECTING RIGHT APPLICATION FOR
MANGANESE AND IRON ORE ON THE
REMAINDER AND PORTION 1 OF FARM
LOGOLONG 644, REMAINDER AND PORTION
1 OF MOUNT TEMPLE 645, REMAINDER AND
PORTION 1 OF MOUNT LEONARD 640 AND
MAKALA 646 WITHIN KURUMAN
MAGISTERIAL DISTRICT, NORTHERN CAPE
PROVINCE.**

T Mlilo

PHASE 1 HIA FOR HIA/ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED PROSPECTING RIGHT APPLICATION FOR MANGANESE AND IRON ORE ON THE REMAINDER AND PORTION 1 OF FARM LOGOLONG 644, REMAINDER AND PORTION 1 OF MOUNT TEMPLE 645, REMAINDER AND PORTION 1 OF MOUNT LEONARD 640 AND MAKALA 646 WITHIN KURUMAN MAGISTERIAL DISTRICT, NORTHERN CAPE PROVINCE.

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Prospecting for manganese and iron ore on the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, remainder and portion 1 of Mount Leonard 640 and Makala 646 within Kuruman Magisterial District, Northern Cape Province.
Purpose of the study	The Phase 1 Archaeological Impact Assessment for the Prospecting Right Application in Northern Cape Province
Coordinates	See Figure 3
Municipalities	Kuruman Magisterial District
Predominant land use of surrounding area	Mining and agriculture
Applicant	Big Gate Resources (Pty) Ltd
DMR	NC13483PR
EAP	Ndivhudzannyi Mofokeng NDI Geological Consulting Services (Pty) Ltd Address: 38 Ophelia Street, Kimberley, 8301 Cell: 082 760 8420 Tell:053 842 0687 Fax: 086 538 1069 Email: atshidzaho@gmail.com/ndi@ndigeoservices.co.za
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Authors	Trust Miilo
Date of Report	August 2023

PHASE 1 HIA FOR HIA/ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED PROSPECTING RIGHT APPLICATION FOR MANGANESE AND IRON ORE ON THE REMAINDER AND PORTION 1 OF FARM LOGOLONG 644, REMAINDER AND PORTION 1 OF MOUNT TEMPLE 645, REMAINDER AND PORTION 1 OF MOUNT LEONARD 640 AND MAKALA 646 WITHIN KURUMAN MAGISTERIAL DISTRICT, NORTHERN CAPE PROVINCE.

This report serves to inform and guide the applicant and contractors about the possible impacts that the proposed prospecting may have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located within the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, remainder and portion 1 of Mount Leonard 640 and Makala 646 earmarked for prospecting. This report is submitted in terms of Section 38 (8) of the National Heritage Resources Act 25 of 1999 as part of the Prospecting Right Application. The purpose of this study is to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted by the proposed prospecting. In compliance with heritage legislation, NDI Geological Consulting Services (Pty) Ltd on behalf of Big Gate Resources (Pty) Ltd tasked Integrated Specialist Services (Pty) Ltd to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for the proposed Prospecting Right Application. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks within the proposed prospecting site. The study site is not on pristine ground, having seen significant transformations owing to previous and current activities. The study recorded burial sites within the direct path of the proposed prospecting site. The general prospecting area is known for occurrence of archaeological and historical sites. In terms of the built environment, the study noted farm buildings and structures which are most likely younger than 60 years old in the project area. It should be noted that archaeological material and unmarked graves may exist in the area and when encountered during prospecting, work must be stopped forth-with, and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must be submitted to the SAHRA for review in terms of Section 38 (4) of the NHRA.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regard to the proposed prospecting.
- Some sections of the proposed prospecting site are inaccessible; however, the field survey was effective enough to cover significant sections of the project receiving environs.
- The immediate project area is predominantly mining and agriculture.

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- Some sections of the proposed prospecting right site are severely degraded from previous and current land use activities.

The report sets out the potential impacts of the proposed prospecting on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate.

The Report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements.
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed Prospecting Right Application on condition that the identified burial site is treated as a NO GO Area during prospecting and 100m buffer zone must be provided for in terms of SAHRA Regulations of 2020.
3. The identified burial site must be properly mapped and marked during prospecting.
4. From a heritage perspective supported by the findings of this study, the Prospecting Right Application is supported. However, the prospecting should be approved under the observation that prospecting does not extend beyond the area considered in this report/affect the identified heritage sites.
5. Should chance archaeological materials or human remains be exposed during prospecting on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in Prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
6. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed Prospecting Right Application. The Heritage authority may approve the Prospecting Right Application as planned with special commendations to implement the recommendations herein made.

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This report concludes that the impacts of the proposed prospecting on the cultural environmental values are not likely to be significant on the entire site if the EMP includes the recommended safeguard and mitigation measures identified in this report.

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Mlilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for the preparation of this report.

Expertise:

Trust Mlilo, PhD *cand* (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom) and several private companies such as BHP Billiton and Rhino Minerals.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and the survey was carried out under Integrated Specialist Services (Pty) Ltd. The company has no business, personal, financial, or other interest in the proposed prospecting apart from fair remuneration for the work performed.

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Conditions relating to this report.

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Integrated Specialist Services (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant, or previously unavailable, or undisclosed information become known to the author from ongoing research or further work in this field or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Integrated Specialist Services (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA/HIA Report has been prepared by Mr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the approval of the Prospecting Right Application being submitted by Big Gate Resources (Pty) Ltd

Signed by



15/ 08/ 2023

ACKNOWLEDGEMENTS

The author acknowledges NDI Geological Consulting Services (Pty) Ltd for their assistance with the project details and for responding to technical queries related to the project. Special thanks go to Roelf Jacobs (farm worker) for assisting us during the survey and for showing all the burial sites in the farm. We would like to acknowledge the important role which Solly Olifants play especially facilitating our access to private properties.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
PHRA	Provincial Heritage Resource Agency
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

KEY CONCEPTS AND TERMS

Periodization

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below.

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

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Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

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

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

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

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes 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).

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

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 which requires authorisation of permission by law, and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or

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circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or '**project area**' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be exposed during prospecting activities, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the applicant from complying with any National, Provincial, and Municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Integrated Specialist Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

1 INTRODUCTION

Integrated Specialist Services (Pty) Ltd was retained by NDI Geological Consulting Services (Pty) Ltd on behalf of Big Gate Resources (Pty) Ltd to carry out a Phase 1 AIA/ HIA for the proposed prospecting right application on the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, Remainder and Portion 1 of Mount Leonard 640 and Makala 646 within Kuruman Magisterial District, Northern Cape Province. This study was conducted to fulfil the requirements of Section 38 (8) of the NHRA. The purpose of this heritage study is to identify, assess any heritage resources that may be located within the proposed prospecting site in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Late Stone Age (LSA) and historical sites. It should be noted that while heritage resources may have been located in the entire study area, subsequent developments previous and agriculture, settlements, road and boundary fence lines have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during prospecting. The proposed Prospecting Right Application may be approved subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings there is no archaeological and heritage reasons why the Proposed Prospecting Right Application cannot be approved, taking full cognizance of clear procedures to follow in the event of chance findings. The identified burial site can be avoided without compromising the prospecting plan.

1.1 Terms of Reference (ToR)

The Integrated Specialist Services (Pty) Ltd was requested by NDI Geological Consulting Services (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed prospecting site including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the prospecting right application
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located within the proposed prospecting site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;

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- Describe the possible impact of the prospecting on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources; and
- Review applicable legislative requirements.

1.2 Project Location

The site is located on the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, remainder and portion 1 of Mount Leonard 640 and Makala 646 within Kuruman Magisterial District, Northern Cape Province. The project site is located approximately 38 km northwest of Postmasburg.

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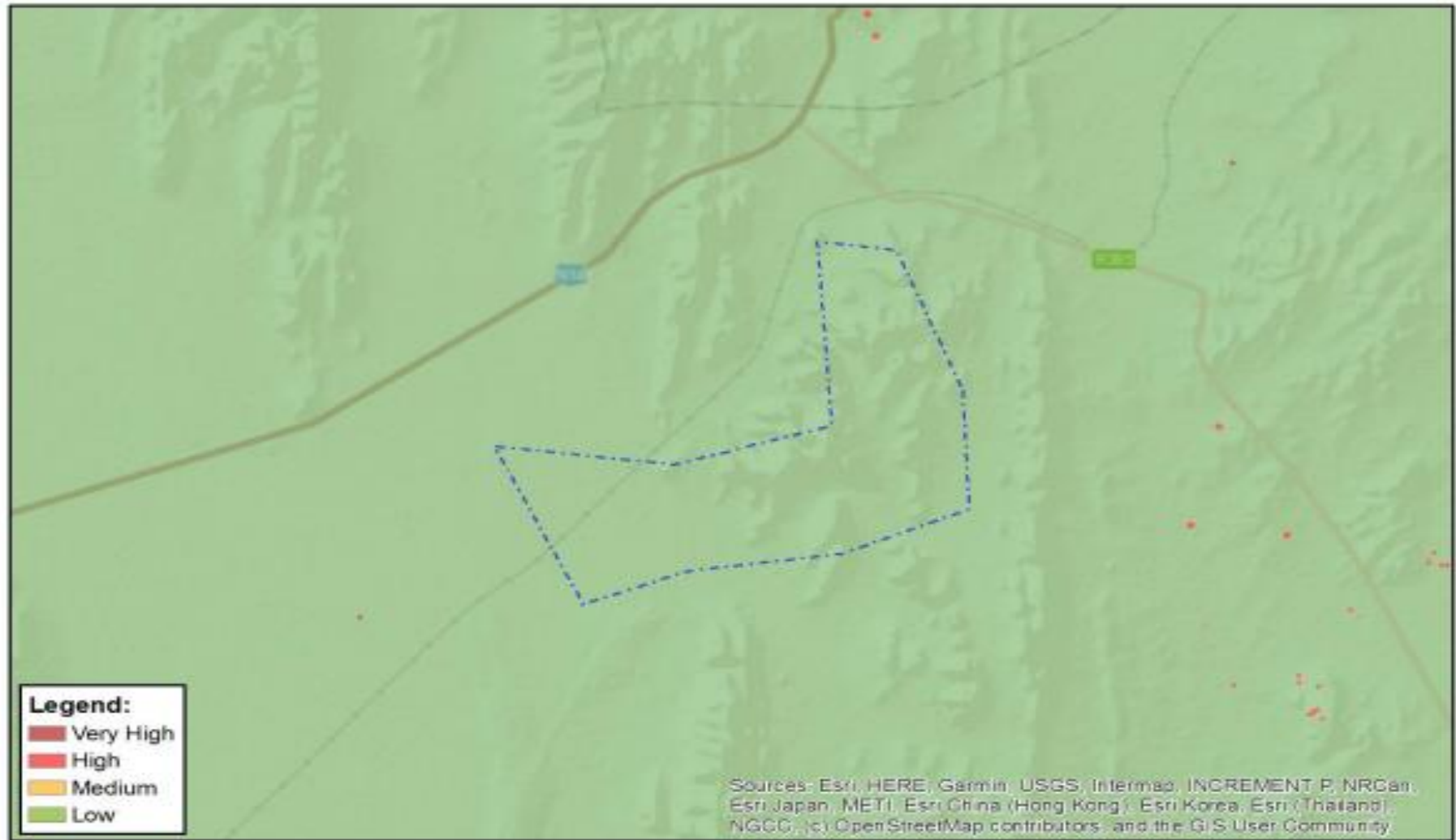


Figure 1: Sensitivity map of the proposed prospecting right application site (NDI Geological Consulting Services (Pty) Ltd, 2023)

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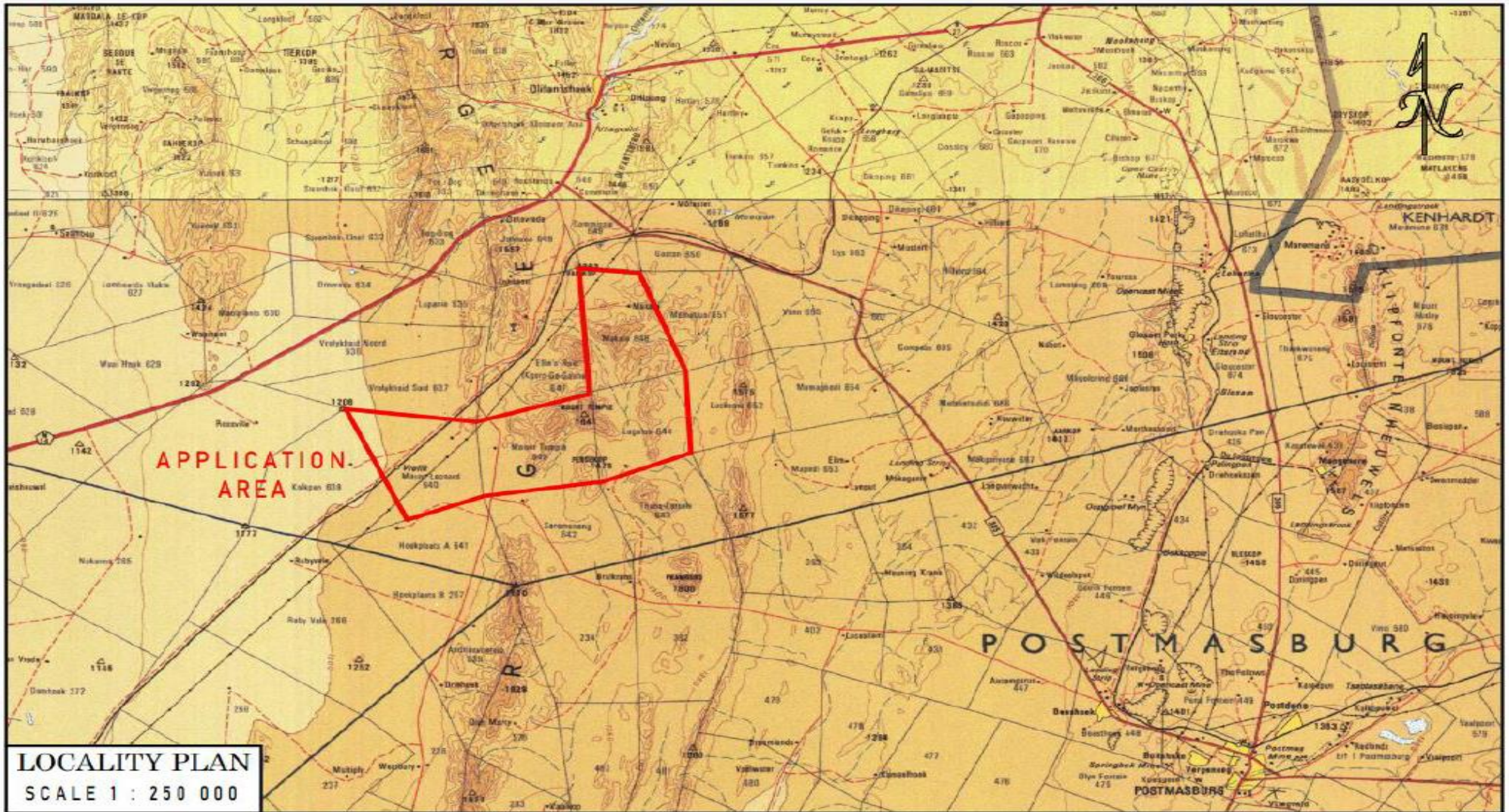


Figure 2: Location of the proposed prospecting right application site (NDI Geological Consulting Services (Pty) Ltd, 2023)

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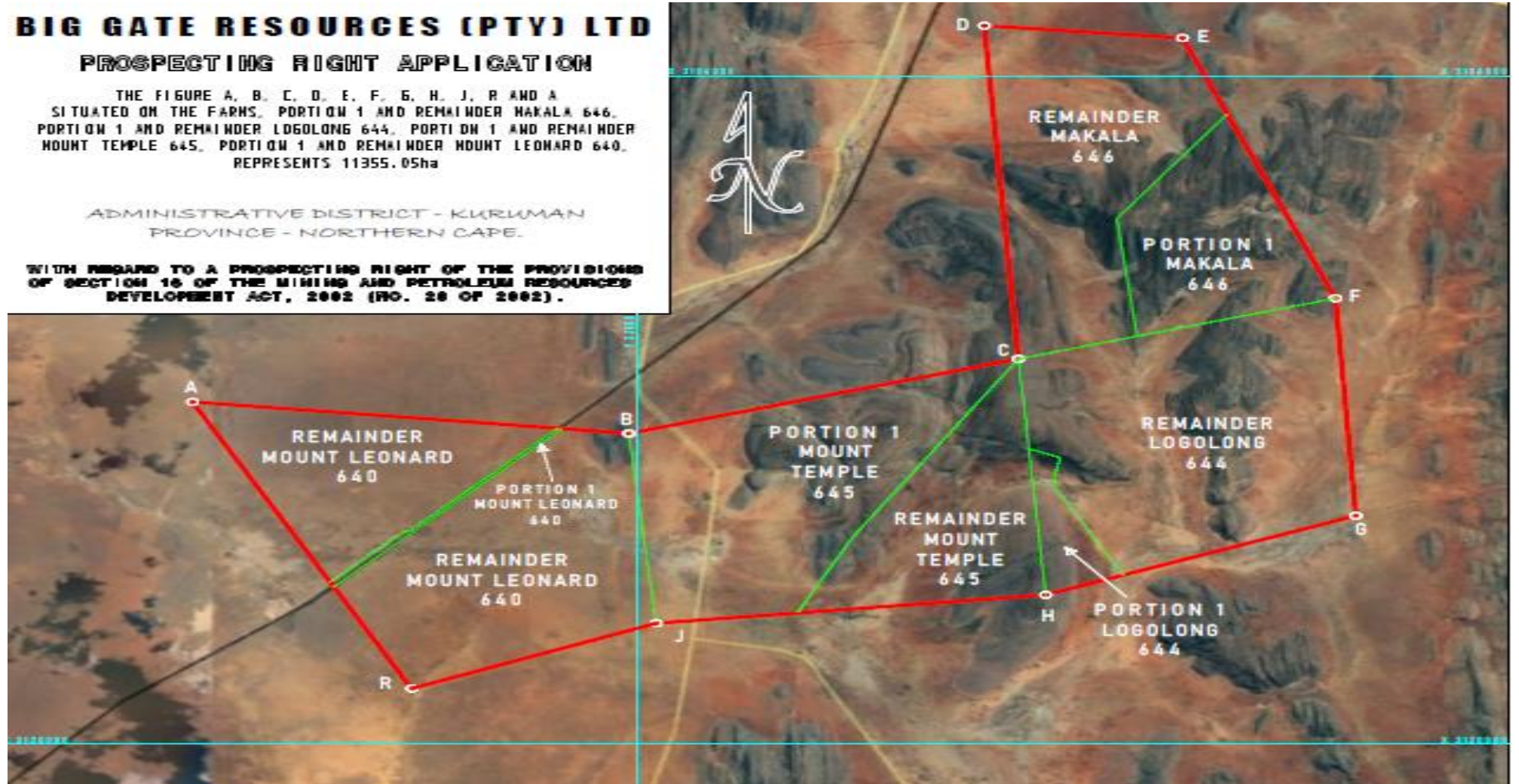


Figure 3: Location of the proposed project site (NDI Geological Consulting Services (Pty) Ltd, 2023)

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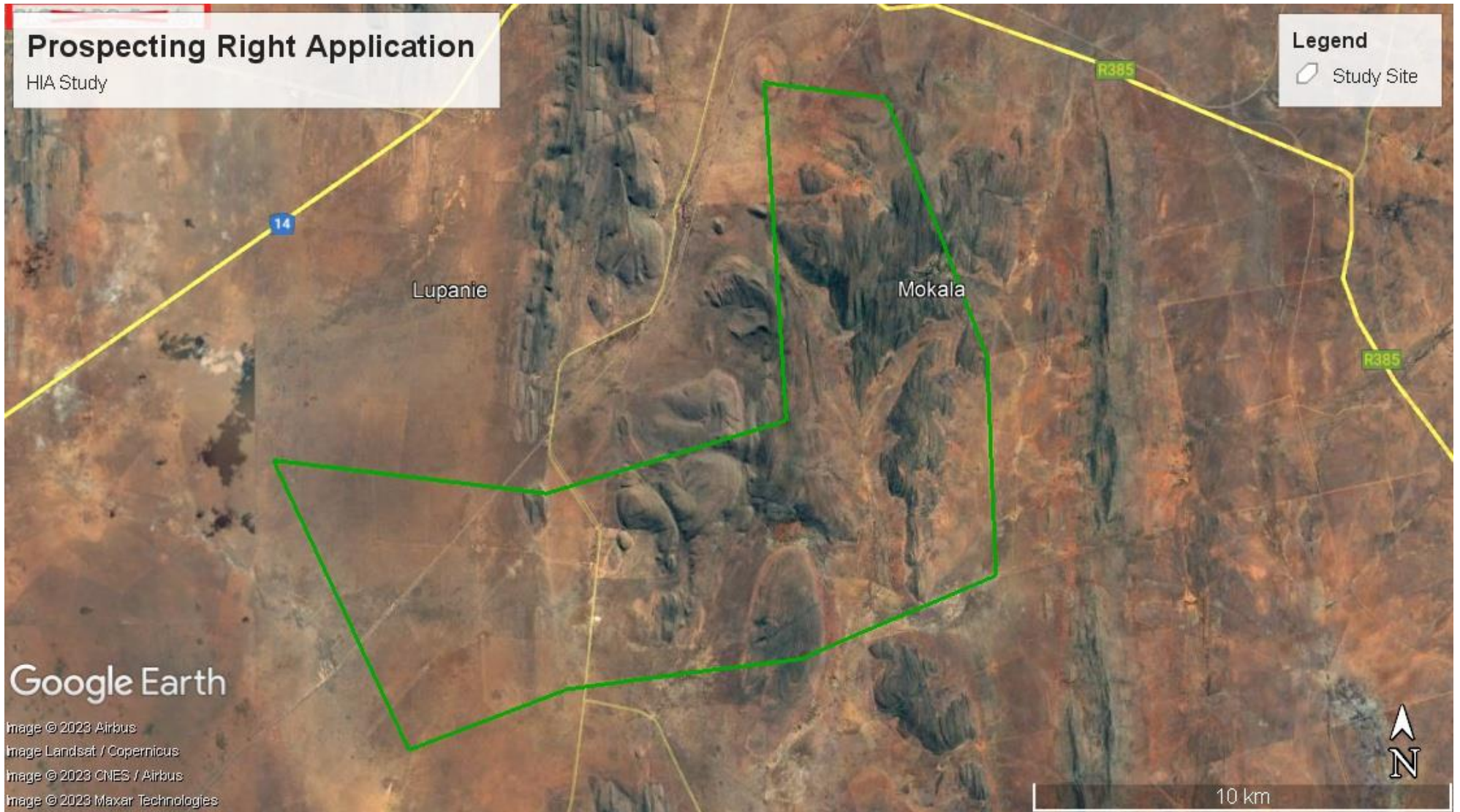


Figure 4: Locality map of the proposed project site (Author, 2023)

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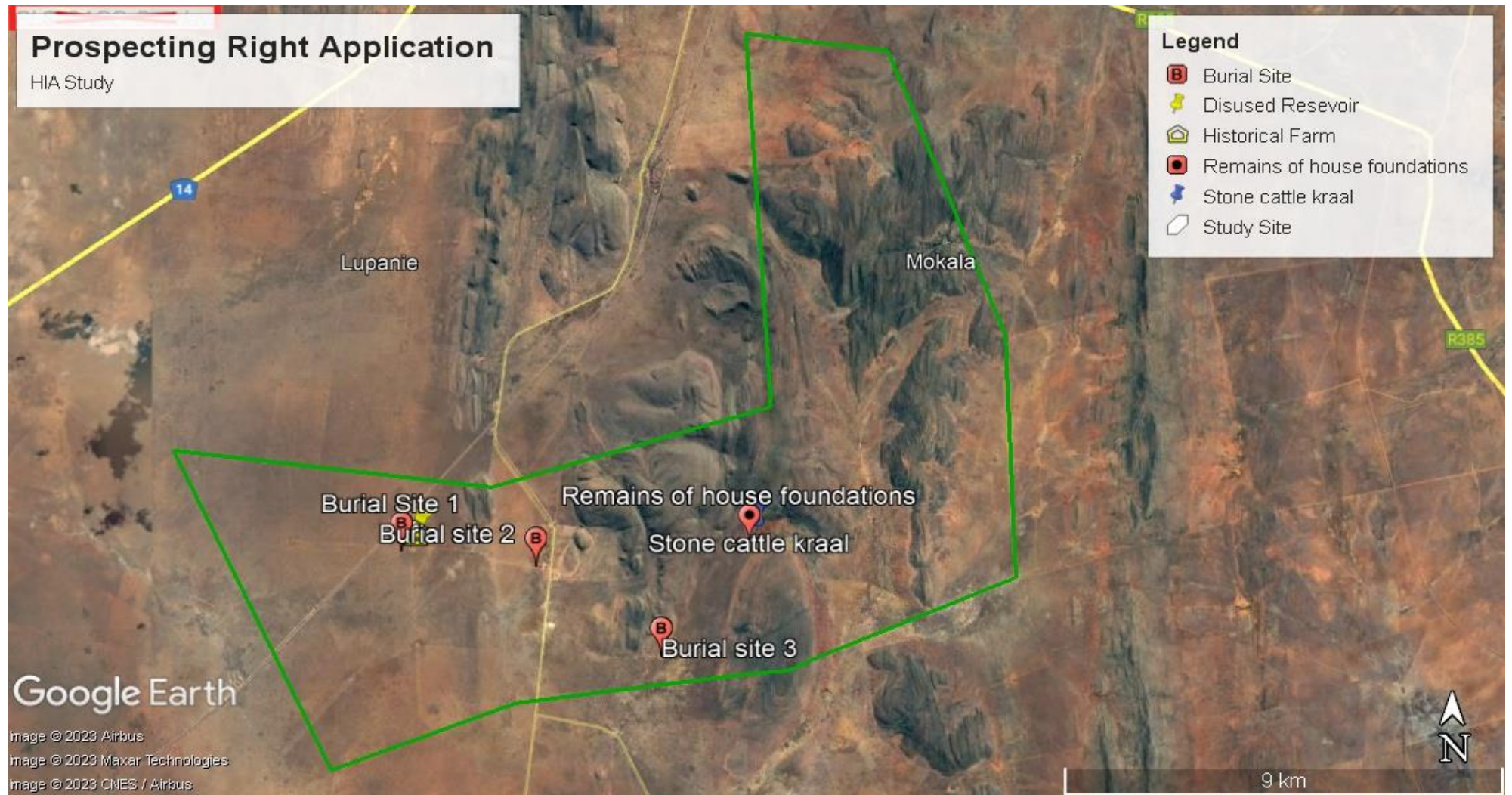


Figure 5: Heritage findings within the proposed project site (Author, 2023)

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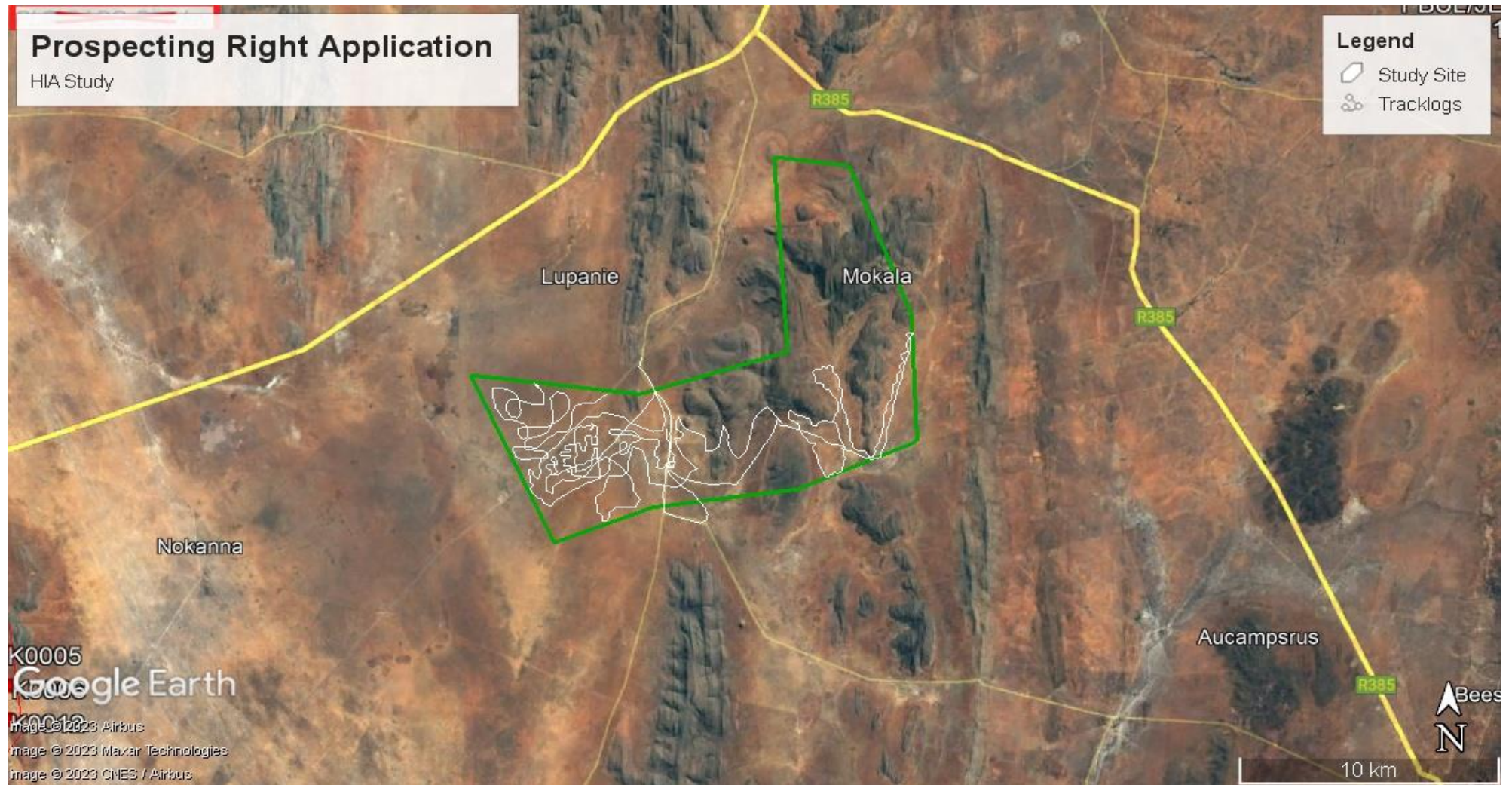


Figure 6: Showing tracklogs within the proposed prospecting right site (Author, 2023)

1.3 Project Background

Prospecting Right Application has been submitted for the exploration of manganese and iron ore on the properties mentioned above. The project area is located under Kuruman Magisterial District in the Northern Cape Province. The project is located approximately 38 km northwest Northwest of Postmasburg. The proposed prospecting right application project will cover an area of 11355.05ha. Prospecting and evaluation activities will be undertaken over a period of two (2) years and are designed in phases, each phase conditional on the success of the previous phase. Both invasive and non-invasive methods will be implemented. Desktop study of the area has commenced, and this incorporates desktop geographical and geological mapping. This will be followed by detailed geochemical and geotechnical surveys. In turn, this is followed by detailed geophysical studies and later, a detailed drilling, sampling, assaying and mineralogical study. Core drilling methods will be utilised to prospect in situ ore deposits. To ensure or minimise impacts on the receiving environment, All the activities will be guided by the project's EMPr.

2 LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study. The proposed Prospecting Right Application is submitted in terms of the National Environmental Management Act, 1998 (NEMA) and the 2017 EIA Regulations for activities that trigger the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (As amended). Therefore, this is in fulfilment of the assessment of the impact to heritage resources as required by section 24(4)(b)(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). An AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process. This study was conducted in terms of Section 38(8) as part of environmental authorisation. The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

Thus, any person undertaking any development in the above categories, 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 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 m², then an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may **alter damage, destroy and relocate any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority**. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove

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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. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed prospecting.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant (Big Gate Resources (Pty) Ltd), SAHRA/ PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed prospecting, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

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Table 1: Evaluation of the proposed development as guided by the criteria in NHRA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38(8)	The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent	yes
NHRA Section 34	Impacts on buildings and structures older than 60 years	Subject to identification during Phase 1
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes

3 METHODOLOGY

This document aims at providing an informed heritage-related opinion about the proposed Prospecting Right Application in the Northern Cape Province. This is usually achieved through a combination of a review of any existing literature and a site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the prospecting footprint. Initially a drive-through was undertaken around the proposed prospecting site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the Prospecting Right Application in order to make recommendations to the competent authority. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed prospecting.

3.1 The Fieldwork survey

The fieldwork survey was undertaken on the 15th of August 2023. The focus of the survey involved a pedestrian survey which was conducted within the proposed prospecting site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence of building rubble, existing buildings and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern agriculture activities; the general area would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by mainly agriculture infrastructure (see Figure 1).

3.2 Visibility and Constraints

Surface visibility on most sections of the proposed prospecting site was compromised due to dense grass cover. It is conceded that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

3.3 Consultations

The Basic Assessment (BA) Public Participation process is conducted by the EAP. The study team consulted farm owners who provided vital information about the heritage character of their area. The BA Public Participation Process will also invite and address comments from the public and any registered heritage bodies on any matter related to the proposed Prospecting Right Application including heritage concerns that may arise relating to the mining activities. The heritage issues and concerns raised by the public will also be included in the Prospecting Right Application to be submitted to DMRE.

The following photographs illuminate the nature and character of the Project Area.



Plate 1: showing farm tracks across an over grazed section of the proposed prospecting site

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Plate 2: showing dug up area within the proposed prospecting site.



Plate 3: showing the proposed prospecting site.

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Plate 4: showing the site earmarked for prospecting.



Plate 5: showing the proposed prospecting right application site.

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Plate 6: showing main road cutting across the proposed prospecting site.



Plate 7: showing the proposed prospecting site.

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Plate 8: showing some dug up areas within the proposed prospecting site.



Plate 9: showing the proposed prospecting site.

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Plate 10: showing the proposed prospecting site.

4 ARCHAEOLOGICAL CONTEXT

Stone Age Archaeology

South Africa is one of the privileged countries in the world to have a very long and varied history of human occupation (Deacon and Deacon 1999). The Northern Cape is one of the regions in South Africa with the richest Stone Age scatters on the landscape, yet it remains poorly researched and understood (Lombard 2012). Stone Age archaeology is prevalent in the larger geographical area, but generally, the project area does not seem to have attracted much of habitation. Perhaps the lack of large rock-shelters, the domination of exposed environments and the lack of preferred stone raw materials for tools, dissuaded early man (ESA ~ 2.6 million to 250 000 years ago) from occupying this part of the area. Further to the northwest of this area, the ESA is very well represented at sites such as Kathu Pan 1, Kathu Townlands, Bestwood 1 (Wilkins and Chazan 2012; Chazan *et al.* 2012; Walker *et al.* 2014) and Wonderwerk Cave (Thackeray *et al.* 1981). All the above sites produced well-made Acheulean hand axes and cleavers, as well as Fauresmith lithic materials that are transitional between the Acheulean (ESA) and the MSA.

The ESA is generally associated with the earlier Oldowan industry (marked by crude choppers and other unifacial core tools), followed by the still large but better fashioned hand axes and cleavers of the Acheulean techno-complex (Deacon and Deacon 1999). The Fauresmith Industry is characterized by a prepared core technology that produced both blades and points, making it transitional between the ESA and the MSA (~ 250 000 to 40-25 000 years ago) (Porat *et al.* 2010; Wilkins and Chazan 2012; Walter *et al.* 2014). Until recently, the Fauresmith Industry was poorly defined, being mostly identified based on the co-occurrence of Levallois points and hand axes (Beaumont and Vogel 2006: 224), and prepared cores, blades, and 'side-scrapers on flakes' (Beaumont 1990:79).

The MSA is better understood as a flake-technological stage characterized by faceted platforms, produced from prepared cores, as distinct from the core tool-based ESA technology (Barham and Mitchell 2008). More technological and behavioural changes than those witnessed in the MSA, occurred during the LSA (40-25 000, to recently, 100 years ago), which is also associated with *Homo Sapiens* (Barham and Mitchell 2008). For the first time there is evidence of people's activities derived from material other than stone tools (ostrich eggshell beads, ground bone arrowheads, small, bored stones and wood fragments) (Deacon and Deacon 1999). The LSA people are also credited with the production of rock art (engravings and paintings), which is an expression of their complex social and spiritual beliefs (Parkington *et al.* 2008). Not much is known about these rock shelters, save for the fact that they have LSA material that include rock paintings (Morris 2010; van der Walt 2013: 18). In the area under study, MSA material mostly occur on the same sites with ESA material, suggesting longer sequences of occupation that have allowed researchers to probe into the behavioural changes that influenced these

technological developments (Porat *et al.* 2010; Walker *et al.* 2014). Thus, characteristic MSA have been reported at sites such as Kathu Pan 1 (Wilkins and Chazan 2012), Wonderwerk Cave (Beaumont and Vogel 2006), but they also have been reported in isolated clusters (van Vollenhoven and Pelsler 2012). At Wonderwerk Cave, the MSA component was associated with pieces of haematite and several incised stone slabs, most with curved parallel lines that add to the behavioural shifts that went beyond stone tools and ushered in the appreciation of art (Beaumont and Vogel 2006).

Later stone age

In terms of characterization, the lithic succession at Wonderwerk Cave serves as a benchmark for the Stone Age sequence of the Northern Cape (Beaumont and Vogel 2006; Kusel *et al.* 2009). The sequence comprises an uppermost LSA sequence that contains Ceramic LSA, Wilton and Oakhurst industries. Some researchers have named the earlier LSA industry of the region as the Oakhurst industry (some have labelled this local variant the Kuruman), characterized by rare, retouched artefacts, most of which are large scrapers that are rectangular with retouch on the side. Several Stone Age sites and scattered finds of Stone Age material were identified by Kusel *et al.* (2009) and Archaetnos close to the town of Hotazel and adjacent to the Gamagara River during 2011. All the same, variants of the LSA industries were located at other sites such as Kathu Pan 1 (Porat *et al.* 2013) have been reported. At this site, ostrich eggshell fragments, beads and lithic artifacts attributed to Wilton and Albany industries were found. It also important to note that, it is still possible to encounter isolated finds during construction and when this happens, the procedure (described in detail below) for reporting chance finds must be followed.

Other than the Wonder Cave, the Northern Cape Province is characterized by a general scarcity of cave sites. There is an abundance of inherently short-term open-air sites (Parson 2003). These assemblages, all of which are associated with ceramics, are described as belonging to either the Swartkop (hunters) or the Doornfontein Industry (Herders) (Beaumont & Morris 1990; Beaumont *et al.* 1995). Most of these open-air sites consist of a collection of stone artefacts and it is difficult to distinguish if the sites belonged to herders or hunter gatherers. Beaumont *et al.* (1995) argues that the Swartkop Industry is characterized by a formal component almost identical to that of the preceding local Wilton Complex, namely the Springbokoog. All Swartkop sites occur close to pans for example the Bundu pan southeast of the project area, streambeds, or other potential water sources, on low kopjes or in deflation hollows (Beaumont *et al.* 1995). In contrast the contemporary Doornfontein Industry consists of mainly amorphous (shapeless) lithic artefacts, often manufactured on quartz and almost no formal tools (Beaumont *et al.* 1995). The implication is that the Wilton Complex gave direct rise to the Swartkop Industry approximately 2000 years ago. Swartkop assemblages are described as having the following elements in

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common: they are characterized by cryptocrystalline silicates, contain high frequencies of blade flakes, and backed blades and associated with undecorated, grass tempered ceramics (Beaumont & Vogel 1989).

The raw material used for stone tool production of the LSA industries constitute four basic types: chert, quartz, quartzite, and banded shale (Humphreys and Thackeray 1983). The chert includes siliceous types such as chert, agate, chalcedony, and jasper, which are essentially fine-grained raw materials. Quartz is equally fine grained but tends to be very brittle. The flake implements of the MSA were replaced by the long, small blades of the Later Stone Age (LSA) from 20 000 years onwards. However, the traditional lifestyle did not change significantly in a very long time (Deacon and Deacon 1999). Assemblages provisionally assigned to the Doornfontein Industry, are associated with groups of people practicing some form of herding during most of the last 2000 years (Beaumont *et al.* 1995: 247–8). Doornfontein assemblages are generally described as including predominantly shapeless lithic flakes, with a formal lithic component.

According to Morris & Beaumont (2004) the larger study area has a wealth of pre-colonial archaeological sites. Famous sites in the region include the world renowned Wonderwerk Cave to the north of the study area. Closer to Kuruman two shelters on the northern and southern faces of GaMohaana (in the Kuruman Hills northwest of the town) contain Later Stone Age remains and rock paintings. Rock art is known to occur at Danielskuil to the northeast and on Carter Block (Morris 2008). Middle Stone Age material is on record around the study area where archaeological surveys have shown rocky outcrops and hills, drainage lines, riverbanks, and confluences to be prime localities for archaeological finds and specifically Stone Age sites, as these areas were utilized for settlement of base camps close to water and hunting ranges.

Morris (2005) noted that in the immediate area to the north of Postmasburg the Earlier Stone Age is represented by 11 known sites (Bruce, Kathu, Uitkoms, Sishen, Demaneng, Lylyveld and Mashwening); the Middle Stone Age by 5 sites (all in the vicinity of Kathu); and the Later Stone Age by 10 sites (one on King, one at Mashwening and eight at Kathu). Rock engravings have been identified from Sishen and Bruce (the Bruce site was salvaged and recorded by Fock & Fock 1984), as well as at Beeshoek (Fock & Fock 1984; Morris 1992; Beaumont 1998). Specularite sources are known on Demaneng and Lylyveld and were mined in Stone Age times at a site on Doornfontein to the south (Beaumont 1973; Beaumont & Boshier 1974) and at Tsantsabane to the east of Postmasburg (Beaumont 1973; Thackeray *et al.* 1983): numerous other specularite workings have also been recorded (Beaumont 1973).

It is important to note that Postmasburg has remarkable evidence of archaeological remains (Webley 2010). The possibility of archaeological findings in the study area has also been indicated by previous research in the greater Daniëlskuil-Postmasburg and Ghaap plateau area. Webley (2010) noted that the possibility of scattered homesteads

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cannot be excluded around this area. A report by Webley (2010) indicates the existence of structures only demarcated by single rows of rocks, indicating the position of the house foundations., which testifies to early human activity. (Snyman 1983) Survey by Webley (2010) recorded dotted Stone Age artefact around dry pans and rivers as well as spot finds in the flat sandy areas. Most of these scatters were found where pebble layers were exposed. It is however important to note that no context and in situ preservation were identified these sites and they were grade as of low heritage significance.

Several prehistoric specularite and haematite mines including underground workings were also recorded around Postmasburg, on the farms Paling M87. Open mining pits at Gloucester 13 and Mount Huxley, as well as open mining pits next to the town reservoir were also recorded. An ancient specularite mine at Doornfontein (Doornfontein 1) north of Postmasburg has a maximum length of over 100 m and consists of four interlinked chambers (Beaumont & Boshier 1974). Excavations yielded mining tools including stone artefacts, various types of pottery, bone arrow heads, and hundreds of ostrich eggshell beads. The most famous mining site is Blinkklipkop (Gatkoppies). The first description of this site was given P.B. Borchards, a member of the 1801 Truter and Somerville expedition to the Bechuana. Lichtenstein, in his Travels in Southern Africa, recounts a visit to the site in 1805, and William Burchell visited Blinkklipkop on June 18, 1812, as noted in his Travels in the Interior of Southern Africa. The Blinkklipkop and Doornfontein sites near provide evidence of LSA mining practices and the introduction in the region of domesticated ovicaprids and possibly cattle as well as pottery by 1200 BP.

Beaumont and Boshier (1974) excavated a prehistoric pigment (specularite) mine four (4) kilometres to the west of Bleskop at Jonas Vlakte on Doornfontein 446. This area appears to be particularly rich in specularite breccia and these deposits were mined in pre-European times. The Doornfontein site represents a number of chambers which have been dug into a hillside. Archaeological excavations resulted in the discovery of large numbers of stone artefacts comprising mainly stone choppers and hammerstones which had been used to mine the specularite. In addition, the archaeologists discovered pottery, decorated ostrich eggshell pieces, beads and bone implements as well as faunal (bone) remains which provide information on the diet of the pre-colonial miners (Beaumont & Boshier 1974: Figure 4). Radiocarbon dates place the mining activities to 1200 years ago or 800 AD. Fragmentary human remains from the Blinkklipkop mine which is approximately 5km to the north-east of Postmasburg suggest that the early miners were of Khoisan physical type rather than representing Iron Age settlement.

Rock art sites in the region, including rock engraving as well as paintings, are known from Wonderwerk Cave (paintings) and the Danielskuil Townlands (engravings). Non-representational rock art sites near Postmasburg include engravings from the farms Beeshoek and Klavin and paintings from Andriesfontein and Toto. Beaumont

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and Boshier (1974) also refer to some engraving sites at Paling which is located on Driehoekspan 435, as well as on Beeshoek to the west of Postmasburg. These roughly pecked engravings occur on shale outcrops.

Further to the north, Early Stone Age hand axes have been recorded at Kathu Pan. Beaumont has excavated numerous sites around the pan and he observed (Beaumont 1990) that a combination of geological conditions resulted in the preservation of a long record of human habitation in the Northern Cape.

Similarly, excavations at Bundu Pan near Marydale in the Northern Cape (Kiberd 2006) have also revealed a sequence including Early, Middle and Later Stone Age assemblages as well as preserved faunal remains. This suggests that the margins of pans need to be investigated for early human habitation. Webley *et al.* (2010) found a mix of Middle and Later Stone Age artefact scatters on fine-grained raw material were found around the margins of pans. Pelsler (2012) study for the proposed Boichoko Township Development on Portions 11 & 12 of Pens Fontein 449 recorded a scatter of stone tools within the proposed development area.

A number of open sites around Keimoes in the Northern Cape have been tested in recent years and they suggest two possible Later Stone Age sequences (Parsons 2008). However, the development of a chronological sequence is hampered by the lack of suitably stratified deposits. Morris & Beaumont (1991:119) have described a ceramic Later Stone Age for the site of Renosterkop, also near Keimoes.

Late Iron Age

The Tswana (Western Sotho) invaded the Northern Cape about 500 years ago. The later Hay District in which Postmasburg was located was only occupied in the early 1800s. Long before settling in this area the Tswana also undertook journeys to Blinkklipkop to mine for the cosmetic substance that they called sibilo. In 1813 the missionary John Campbell came across a group of Bushmen near the mine and commented the following: "Blink Mountain is a kind of Mecca to the nations around, who are constantly making pilgrimages to it, to obtain fresh supplies of the blue shining powder and the red stone." (Snyman 1983). Rock paintings in the area serve as evidence that the hunter gatherer Bushmen had inhabited Griqualand West for centuries. In the 1770s, the Korana (people of Nama ancestry) moved into the Postmasburg area and disrupted the Bushmen's way of life. The Korana regularly visited a primitive mine in the Blinkklipkop, which today forms part of the town of Postmasburg, to exploit shimmering substances, namely hematite and specularite, which were mixed with fat and applied to the skin to give a sought-after shiny red appearance. With the later arrival of the Tswana, Korana, Griqua and Europeans the Bushmen gradually emigrated to the Kalahari, Botswana and Namibia. (Snyman 1983). It was during this period when the Griqua tribes coming from the south settled in the region in order to escape encroachment of Afrikaner Trekboere who was active along the Orange River. They established the town

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of Klaarwater, renamed Griquatown in 1813. In the 1820s Andries Waterboer the Griqua leader was able to expel his enemies, the Bergenaars of the Langeberge, from Blinkklip, as the area was called at the time. This became a permanent outpost of the Griqua tribe. The remaining Tswana and Bushmen moved away, and some were assimilated by Waterboer's people. By the 1830s the Blinkklip population had grown to the extent that missionary of the London Mission Society, John Baillie, was stationed there for a time. Nikolaas Waterboer succeeded his father in 1853, and after this the tribe's authority in the area started to wane. Waterboer and his tribe became British subjects in 1871 after the British annexed Griqualand West.

The area was settled since 1800 and served as a location of the Thlaping and Thlaro with evidence of stone tools, as well as glass beads, have been found in the Blinkklipkop ("Shiny Stone Hill"). The Thlaping and Thlaro branches, who entered the Northern Cape from the north at the beginning of the 17th century, reached as far south as Majeng (Langeberg), Tsantsabane (Postmasburg) and Thhake le Tlou (Danielskuil) by the beginning of the 18th century (Snyman 1986). A large Thlaping settlement was established at Nokaneng, about 40 km southwest of Olifantshoek, while the Thlaro largely occupied the Langeberg region between Ditlou (Olifantshoek) and Dibeng (Deben) (Maingard 1933). The farm Nokanna, situated about 35km north of Witsand, equates with the former BaThlaping capital of Nokaneng, where Chief Mothibi was born in about 1775.

After clashes with the Koranna and Griqua people, who moved into the area after 1770, the Thlaping and Thlaro temporarily abandoned Nokanna and the Langeberg at around 1790 to settle around Dithakong (Kuruman) only to return again to the Langeberg at the beginning of the 19th century (Humphreys 1976). At the time of the 1801-1803 Borchards and Somerville expedition, Dithakong was an important BaThlaping capital. It was calculated that the number of huts there were at least not less than 1 500 and the number of occupants at somewhere between 8 000 and 25 000 (Maingard, 1933; Morris 1990).

Extensive stonewall enclosures are found on the adjacent hills and archaeological investigations during the 1980's has revealed that the ruins were built during the 15th century A.D. and possibly by sedentary Khoi groups. The area consists of primary and secondary enclosures and cover a total area of a square metre comprising hundreds of circles of varying size. With the annexation of the region south of the Molopo and north of Griqualand West by the British in 1885, the area became known as British Bechuanaland. Several reservations were established but following a revolt in 1895 known as the Langeberg Rebellion, the reservations were confiscated by the British colonial j

According to Snyman (1983); Breutz (1963) the discovery of diamonds further paved the way for white settlement in this district. De Jong (2010) noted that in 1867 a serious dispute over the ownership of the diamond fields ensued, involving the Transvaal and Orange Free State Boer republics, Griqua, Korana and Thlaping

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communities and the Cape colonial government. In October 1871 the diamond fields were proclaimed British territory under the name Griqualand West. In 1879 it was annexed to the Cape Colony. The incorporation of Griqualand West into the Cape Colony promoted colonial settlement in the area from the 1880s.

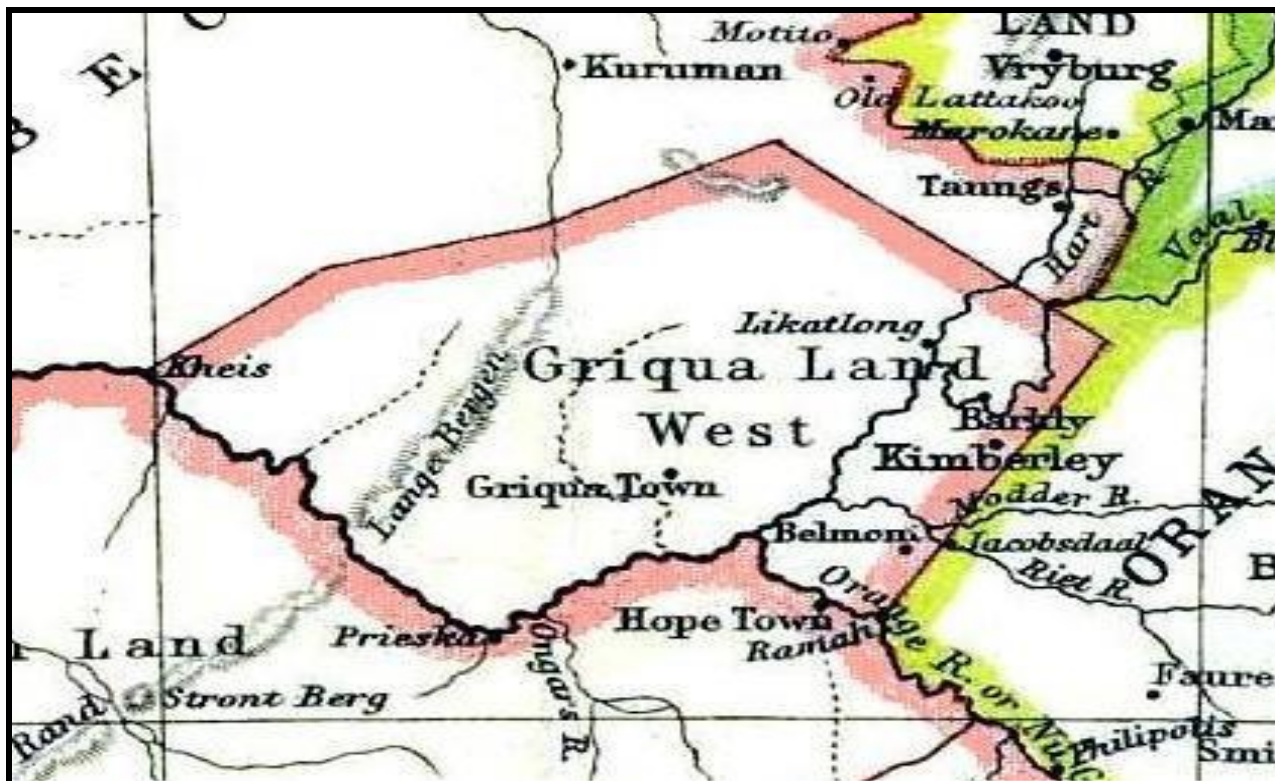


Figure 7: Section of a map titled “Sketch Map of South Africa showing British Possessions”. The map is dated to July 1885. (Kitto 2016). The boundaries and position of Griqualand West is depicted on this figure. The approximate position of the present study area is shown.

Government-owned land was surveyed and divided into farms, which were transferred to farmers. Surveyors were given the task of surveying and naming some of the many farms in this region. These farms were allocated to prospective farmers, but permanent settlement only started in the late 1920s and the first farmsteads were possibly built during this period (De Jong 2010). The reason why the settlement of Europeans in Postmasburg took long was because the country was so bare, waterless and stony that it was almost impossible to make a living there. Tribes that lived in the area occupied large parts of the country because it was so difficult to find water for their stock. It was only the later prosperity that came from mining that sparked agricultural development, leading to the sinking of thousands of boreholes and the construction of roads. (Breutz 1963)

Farms were surveyed by the British in the Griqualand district around 1870, and between 1876 and 1878. It was during this period when the first European owned farms were purchased in this area. There were still a number of

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Griqua landowners in the area as well. The Griqualand West Rebellion disrupted life in the region in 1878, causing some to move away. In 1880 the Griqualand West district was incorporated into the Cape Colony and brought under formal administration. As of the early 1880s a much larger area surrounding Blinkklip was surveyed, and more white settlers moved into the area.

The Magistrate of the Hay District, J. J. Christie, lobbied for the establishment of a town at Blinkklip. This was already the most populous part of the Hay district. The Griqua town of Blinkklip was established in 1882, originally a mission station which was later renamed Postmasburg in 1892 and became the centre of a magisterial district (Snyman 2000). Another town, Olifantshoek, was established in the 1880s. The establishment of Blinkklip led to the establishment of a Reformed Church five kilometres south of Blinkklip that this settlement started to gain prominence. By the late 1884 the Reformed Church and its members were also campaigning for the establishment of the town, and on 30 November 1889 it was finally decided that the church would move to Blinkklip. The church was consecrated in Blinkklip on 28 February 1891, and a new Reformed Church building was completed in 1908. (Snyman 1983). It was only in 1891 that 82 town plots were surveyed around the existing police station at Blinkklip. In the same year members of the church petitioned the Commissioner of Crown Lands to rename this town Postmasburg, in memory of Professor Dirk Postma, a minister and founder of the Dutch Reformed Church in South Africa. On 14 April 1892 the Assistant-Commissioner of Crown Lands reported as follows: "...in view of the unanimous request of the inhabitants, instructions have been issued for the necessary arrangements to be made for the change of the name of the township from 'Blink Klip' to 'Postmasburg' (Snyman, 1983)

By June 1892 there were only three buildings in the town of Postmasburg: a police station, a church building and a small house belonging to a policeman. This soon changed, and by March 1893 the little settlement that was established around a church had a post office, two shops, a partially completed school building and twenty dwelling houses. The town's first town management council was elected in May of that year. (Snyman 1983) The manganese fields in the Postmasburg area were opened for prospecting in 1922, and this greatly boosted the development of the town and caused an influx of new residents. The economic depression of the 1930 adversely affected mining in the area, but the town economy could still rely on the agricultural sector. Postmasburg became a municipality in 1936. (Snyman 1983: 12).

Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people

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that uphold it. In the present study area, very little intangible heritage is anticipated on the development footprint because most historical knowledge does not suggest a relationship with the study area, even though several other places in the general area such as Old Moffat Mission in Kuruman do have intangible heritage.

SAHRIS Database and Impact assessment reports in the proposed project area

Several archaeological and heritage impact studies were conducted for mining and infrastructure developments in the vicinity of the proposed prospecting site. These studies include studies conducted by Beaumont (2000) and Dreyer (2010) in the general project. Dreyer (2010) noted that evidence of previous mining activities occurs in the project area. Dreyer (2010) also observed trenches, pits, tracks, mine dumps and infrastructure associated with previous manganese and Iron ore mining in the area. In addition, Dreyer (2010) recorded ruined mine workers houses in the project area. The buildings were made up of concrete brick wall and wooden frames, the current study confirmed that most of the buildings are partially destroyed, some walls have collapsed due to years of neglect and exposure to vibration. None of the buildings have roofs.

Archaeological research and CRM studies in the general project confirmed that Stone Age tools occur in red sands deposits around the Kathu area (Beaumont 1990, 2000, 2007, Dreyer 2006, 2008, 2010). Although the studies confirmed abundance of ESA remains in Kathu area the Archaeological impact studies conducted by Beaumont (2000) and Dreyer (2010) in the project area did not record any archaeological sites. Desktop studies revealed that a small Iron Age specularite working on a hill flanking the Gamagara River, on Demaneng 546 was destroyed by previous mining activities. Beaumont (1990, 2007) for Kathu Cemetery, Dreyer (2006) for a development at Bestwood 459 RD yielded hand axes and pointed flakes.

Small McGregor Museum collections from the Farm Lylyveld 545 comprise an Earlier Stone Age sample from along the Gamagara River and Earlier Stone Age plus Iron Age material from around specularite pits on the hills. The sites were destroyed by subsequent Iscor prospecting. Another small Later Stone Age collection was documented in 1987 on southern Lylyveld 545, from the slopes around a shallow overhang, now mined away, directly south of the N14. Still intact is a low rise with many specularite pits on Mashwening 557, some 6 km to the south-east, where a test trench in 1989 yielded Ceramic Later Stone Age overlying sparse Acheulean, which included a cleaver. These studies also mention pecked engravings on off – white Gamagara Shale located on the Farms Sishen 543 and Bruce 544. In addition, another Acheul quarry of similar extent to the Kathu Towlands Site occurs on the crest of Kathu Hill close to the town of Kathu. However, to extensive mining activities in the area, none of the mentioned sites still survive within the current development site.

Kusel *et al* (2009) Orton (2016 & 2017), Kruger (2015) and Hutten & Hutten (2013) have all identified a mix of ESA and MSA archaeological material along the Ga-Magara River in the Hotazel area west of the current project

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site. The formal ESA tools include Acheulian hand axes or large cutting tools. The MSA flakes and blades are characterised by the faceted striking platforms that indicate the use of prepared cores. Kruger (2015) posits that the Ga-Magara River would have been an important source of water in this arid environment. However, the section that cuts across the current mining site has been disturbed and mine residue has been washed into the river. The other studies include powerline and substation projects completed by Kaplan, J. (2009), Van der Walt (2013); Fourie, (2013b), Hutten, L. & Hutten, W. (2013) Magoma (2013), Bandama (2015), Mlilo (2016), Kruger (2015a, 2015b), Pelsler, A. & van Vollenhoven, A.C. 2011, Pelsler (2012), Van Schalkwyk (2010, 2015a, 2015b, 2016), Van Vollenhoven, A.C. (2012) and Webley, L & Halkett (2008). Van Schalkwyk (2010, 2016) examined sites west of Hotazel town and found no cultural resources to be present in either location. Other studies further afield (e.g. Fourie 2013) have found a similar rareness of archaeological material in open, sandy areas. However, along the margins of the Kuruman River and Ga-Mogara River, stone artefacts have been reported (Hutten & Hutten 2013) and (Kusel *et al* 2009). These artefacts are low density and appear to be largely from the Middle Stone Age (MSA), although some may be Later Stone Age (LSA). Surveys have revealed that there are large tracts of land where virtually no archaeological material occurs (Orton 2016, 2017; Van Schalkwyk 2010, 2016). Early Stone Age (ESA) material seems to be largely absent, despite how common it is at Kathu, 40km to the north, where extensive research has been carried out (e.g. Chazan *et al.* 2012; Porat *et al.* 2010).

5 RESULTS OF THE FIELD STUDY

5.1 Archaeology

The site was surveyed for archaeological remains, however, given the previous and current land use activities, no archaeological remains were identified during the survey (see Figure 1 & Plates 1-10). Based on the field study results and field observations, the receiving environment for the prospecting site is low to medium potential to yield previously unidentified archaeological sites during prospecting. Literature review also revealed that no Stone Age sites are shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

5.2 Burial grounds and Graves

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and concealed by dense vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities mining and construction. In some instances, packed stones or bricks may indicate the presence of informal burials. If any human bones are found during the course of prospecting work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or Department of Health for graves younger than 60 years.

The field survey identified three burial sites within the proposed prospecting site. The burial sites were recorded as Burial site **BGBS1**, **BGBS2** and **BGBS3**.

Burial site **BGBS1** is located at GPS Coordinates 28° 8'20.92"S 22°39'16.32"E near a dug-up area in the farm. The burial site belongs to previous farm workers. The site is partially concealed by sand, and we were able to identify the site through the help of an elderly farm worker who is familiar to the site (see Plate 11). There are approximately 10 graves at the site which are marked by headstones. Some gravestones have been moved by livestock and the positions of some graves are now doubtful.

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Burial site **BGBS2** is located at GPS Coordinates 28° 8'31.59"S 22°40'57.49"E near a cattle kraal approximately 200m from the farmstead. The site is fenced and has about 14 marked graves marked by oval shaped stone piles. The burial site also belongs to former farm workers. The graves are arranged in rows. We were assisted by the landowner and farm workers to get to the site.

Burial site **BGBS3** is located approximately 3km from the farmstead across the road. The site is located at GPS Coordinates 28° 9'34.35"S 22°42'31.51"E within the grazing area. There are 5 graves marked by oval shaped stone piles. Although the site is located near a farm track, the graves are partially visible because of vegetation cover. This site is problematic from a development perspective because it is located far from the farmstead and farm workers compounds. The site must be clearly marked and barricaded to avoid any accidental damage during prospecting.

It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. Wherever they exist or not, they may not be tampered with or interfered with without a permit from SAHRA. It should also be borne in mind that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. The possibility of encountering previously unidentified burial sites is low within the proposed prospecting site, however, should such sites be identified during prospecting, they are still protected in terms of Section 36 of NHRA.



Plate 11: showing burial site **BGBS1**.

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Plate 12: showing burial site **BGBS1**.



Plate 13: showing burial site **BGBS2** within the proposed prospecting right application site.

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Plate 14: showing burial site **BGBS2**.

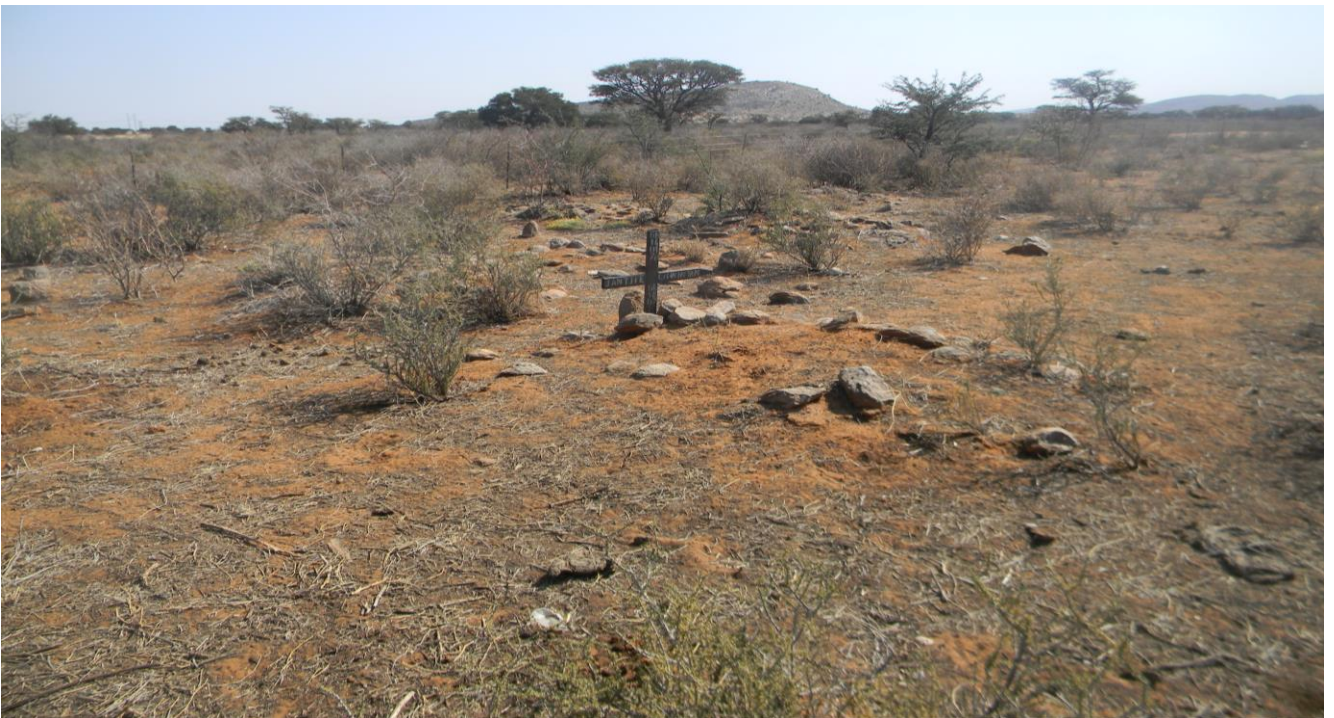


Plate 15: showing **BGBS2** burial site.

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Plate 16: showing proposed prospecting right application site.



Plate 17: showing **BGBS3** burial site.

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Plate 18: showing burial site **BGBS3**.



Plate 19: showing **BGBS3** burial site.

5.3 Public Monuments and Memorials

The study did not record any public memorials and monuments within the proposed prospecting right application site. As such the proposed Prospecting Right Application may be approved without any further investigation and mitigation in terms of Section 27 of the NHRA.

5.4 Buildings and Structures

The study identified buildings and farm structures which were confirmed to be older than 60 years. These include abandoned farmhouses, reservoirs, and remains of house foundations. The structures are in a poor state of conservation although they still retain their form, roofs and some fittings. Buildings and structures that are older than 60 years are protected in terms of Section 34 of the NHRA. They are not supposed to be altered or destroyed without a permit from PHRA. It is the considered opinion of the author that the proposed prospecting will not affect buildings and structures especially those that are occupied or within 500m from the farmstead.



Plate 20: showing wind pump and water reservoir

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Plate 21: showing remains house foundations within the proposed prospecting right application site.



Plate 22: showing disused wind pump and instalations.

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Plate 23: showing a cattle kraal.



Plate 24: showing historical farmhouse.

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Plate 25: showing delapidated farmhouse.



Plate 26: showing a historical farm house.

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Plate 27: showing a historical farmhouse in its delapidated state of conservation.



Plate 28: showing derelict facades of a historic farmhouse.

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Table 2: Summary of Findings

Heritage resource	Coordinates	Description
Burial site 1 (BGBS1)	28° 8'20.92"S 22°39'16.32"E	approximately 10 graves at the site which are marked by headstones
Burial site 2 (BGBS2)	28° 8'31.59"S 22°40'57.49"E	14 marked graves marked by oval shaped stone piles
Burial site 3 (BGBS3)	28° 9'34.35"S 22°42'31.51"E	5 graves marked by oval shaped stone piles
Historic farmhouse	28° 8'18.58"S 22°39'27.33"E	Historic farmhouse
Historic farmhouse	28° 8'18.34"S 22°39'26.21"E	Historical farmhouse
Disused water reservoir	28° 8'18.08"S 22°39'23.74"E	Disused water reservoir
Remains of house foundation	28° 8'15.16"S 22°43'37.45"E	Remains of house foundation
Stone cattle kraal	28° 8'10.02"S 22°43'36.15"E	Stone cattle kraal

5.5 Impacts Assessment

An impact can be defined as any change in the physical-chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. A quantitative impact assessment will be conducted for the project. The method to be used makes use of the basic risk assessment approach of deriving an expression for risk from the product of likelihood (probability) and consequences.

The main objective of the impact assessment is to identify the negative impacts that can be avoided and/or mitigated and the benefits of the positive impacts during the planning, operation and decommissioning and rehabilitation phases of the mining project on the environment. The impact assessment is aimed predicting potential impacts of the proposed project. Impact assessment strives to avoid damage, loss of ecosystems services, and where they cannot be avoided, to reduce and mitigate these impacts (DEA, 2013). Offsets to compensate for loss of habitat are regarded as a last resort, after all efforts have been made to avoid, reduce and mitigate. The mitigation hierarchy is represented in **Table 6**.

The significance of the impacts will be assessed considering the following descriptors:

5.5.1 Impact Identification

The study will identify impacts (positive and negative) associated with the project. The study will be required to specify the type of impact (direct/indirect) and will include an assessment of cumulative impacts that may occur because of the proposed project.

5.5.2 Impact Assessment Methodology

All the identified potential impacts were assessed according to the following Impact Assessment Methodology as described below. This methodology has been utilised for the assessment of heritage impacts where the consequence (severity of impact, spatial scope of impact and duration of impact) and likelihood (frequency of activity and frequency of impact) have been considered in parallel to provide an impact rating and hence an interpretation in terms of the level of environmental management required for each impact.

The first stage of any impact assessment is the identification of potential heritage activities, aspects and impacts which may occur during the commencement and implementation of a project. This is supported by the identification of receptors and resources, which allows for an understanding of the impact pathway and an assessment of the sensitivity to change. Heritage impacts (social and biophysical) are then identified based on the potential interaction between the aspects and the receptors/resources.

The significance of the impact is then assessed by rating each variable numerically according to defined criteria as outlined in **Table 3**. The purpose of the rating is to develop a clear understanding of influences and processes associated with each impact. The severity, spatial scope and duration of the impact together comprise the consequence of the impact and when summed can obtain a maximum value of 15. The frequency of the activity and the frequency of the impact together comprise the likelihood of the impact occurring and can obtain a maximum value of 10. The values for likelihood and consequence of the impact are then read off a significance rating matrix table. This matrix thus provides a rating on a scale of 1 to 150 (low, medium low, medium high or high) based on the consequence and likelihood of a heritage impact occurring.

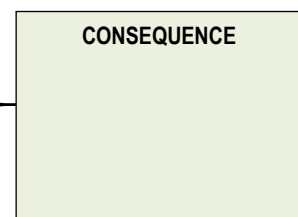
Natural and existing mitigation measures, including built-in engineering designs, are included in the pre-mitigation assessment of significance. Measures such as demolishing of infrastructure, and reburial of graves, are considered post-mitigation.

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SEVERITY OF IMPACT	RATING
Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4

SPATIAL SCOPE OF IMPACT	RATING
Activity specific	1
Project area specific (within the prospecting area boundary)	2
Local area (within 5 km of the mine boundary)	3
Regional (Municipal area)	4
National	5

DURATION OF IMPACT	RATING
One day to one month	1
One month to one year	2
One year to ten years	3
Life of operation	4



FREQUENCY OF ACTIVITY / DURATION OF ASPECT	RATING
Annually or less / low	1
6 monthly / temporary	2
Monthly / infrequent	3
Weekly / life of operation / regularly / likely	4

FREQUENCY OF IMPACT	RATING
Almost never / almost impossible	1
Very seldom / highly unlikely	2
Infrequent / unlikely / seldom	3
Often / regularly / likely / possible	4

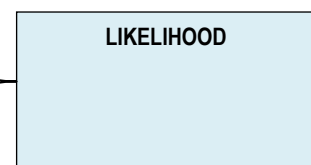


Table 3: Impact Assessment Parameter Ratings

		CONSEQUENCE														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LIKELIHOOD	2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

	High	76 to 150	Improve current management
	Medium High	40 to 75	Maintain current management
	Medium Low	26 to 39	
	Low	1 to 25	No management required

SIGNIFICANCE = CONSEQUENCE x LIKELIHOOD

Loss of heritage /Impact Statement

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and drilling, indirect impacts may occur during movement of heavy prospecting vehicles. Any additional excavation for foundations temporary camp sites will result in the relocation or destruction of all existing surface heritage material (if any are present).

Similarly, the clearing of access roads will impact on material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to prospecting. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed prospecting site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of prospecting by means of mitigation measures (see appended Chance Find Procedure). There is still a possibility of finding archaeological remains buried beneath the ground. It is the considered opinion of the author that the chances of recovering significant archaeological materials is present within the prospecting site.

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5.5.3 Pre & Prospecting/operational phase

Table 4: Loss of heritage during prospecting phase

Loss of Heritage					
Phase	Prospecting				
Criteria	Details / Discussion				
Description of impact	<ul style="list-style-type: none"> • Destruction of archaeological remains during clearance of access roads. • Disturbance of buried archaeological remains during drilling. • Stumping of archaeological remains by movement of vehicles 				
Mitigation required	<ul style="list-style-type: none"> • Provide for 100m buffer zone from each recorded heritage site. • Minimise the impacted area and clear only what is required. • Place boreholes on areas already disturbed. • Use existing farm tracks and roads to access the site. • Use chance find procedure to manage accidental finds 				
Parameters	<i>Intensity</i>	<i>Spatial scale</i>	<i>Duration</i>	<i>Probability</i>	<i>Significance</i>
Pre-Mitigation	Serious (3)	Limited (2)	Short-term (3-5 years) (3)	Likely (8)	Major (negative) (64)
Post Mitigation	Limited (2)	Minor (2)	Short-term (3-5 years) (3)	Likely (4)	Minor (negative) (36)

5.5.4 Decommissioning/post prospecting/closure phase

No direct loss of heritage resources is expected during this phase of the project. However, indirect impacts may occur during movement of vehicles.

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Table 5: Loss of heritage during decommissioning/closure phase.

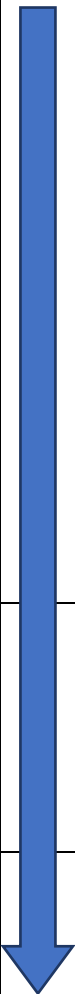
Loss of heritage					
Phase	Decommissioning (Removal infrastructure and equipment)				
Criteria	Details / Discussion				
Description of impact	<ul style="list-style-type: none"> • Stumping of archaeological remains by moving vehicles. • Accidental damage of graves by moving vehicles 				
Mitigation required	<ul style="list-style-type: none"> • Using existing tracks and roads to remove infrastructure and equipment. • Remove markings/barricades for heritage sites after completion of the rehabilitation process. • Use chance find procedure to manage any accidental exposure /damage of heritage resources. 				
Parameters	<i>Intensity</i>	<i>Spatial scale</i>	<i>Duration</i>	<i>Probability</i>	<i>Significance</i>
Pre-Mitigation	Serious (4)	Limited (2)	Short-term (3-5 years) (3)	Likely (6)	Major (negative) (64)
Post Mitigation	Limited (3)	Minor (2)	Short-term (3-5 years) (3)	Likely (4)	Minor (negative) (36)

Table 6: Impact Assessment Ratings

Heritage Aspect	Nature of potential impact/risk	Heritage Impact Significance Before Mitigation							Impact Management Actions (Proposed Mitigation Measures)	Heritage Impact Significance After Mitigation					
		Consequence			Probability					Consequence			Probability		
		Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance	Significance Rating		Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance
Loss of Heritage	Archaeological remains	2	2	3	4	4	64	Medium-High	*Chance finds procedure	2	2	2	3	3	36
	Burial grounds and Graves	3	2	3	4	4	64	Medium-High	* Appended Chance find procedure	2	2	2	3	3	36
	Building and structure	3	2	3	4	4	64	Medium-High	* Construction team must be educated on importance of heritage	2	2	2	3	3	36
	Public monuments and plaques	2	2	2	3	3	36	Medium-Low	* Mitigation is not required	2	2	2	3	3	36

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Table 7: Mitigation hierarchy of impacts

	Avoid or Prevent	Refers to considering options in project location, sitting, scale, layout, technology and phasing to avoid impacts on heritage. This is the best option but is not always possible. Where environmental and social factors give rise to unacceptable negative impacts, prospecting should not take place. In such cases, it is unlikely to be possible or appropriate to rely on the other steps in the mitigation.
	Minimise	Refers to considering alternatives in the project location, sitting, scale, layout, technology and phasing that would minimise impacts on heritage. In cases where there are heritage constraints, every effort should be made to minimise impacts.
	Rehabilitate	Refers to rehabilitation of areas where impacts are unavoidable, and measures are provided to return impacted areas to near natural state or an agreed land use after mine closure. Rehabilitation can, however, fall short of replicating the diversity and complexity of natural systems.
	Offset	Refers to measures over and above rehabilitation to compensate for the residual negative impacts on heritage after every effort has been made to minimise and then rehabilitate the impacts. Heritage offsets can provide a mechanism to compensate for significant residual impacts on biodiversity.

A small portion of the property with the remaining cultural landscape is anticipated to be lost due to the proposed prospecting and associated activities. The impact of the proposed activity will involve loss of heritage.

5.6 Cumulative Impacts

Cumulative impacts are defined as impacts that result from incremental changes caused by other past, present, or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed prospecting is considered the total impact associated with the proposed project when combined with other past, present, and reasonably foreseeable future developments projects. The impacts of the proposed prospecting were assessed by comparing the post-project situation to a pre-existing baseline. This section considers the cumulative impacts that would result from the combination of the proposed prospecting.

This proposed prospecting combined with other proposed project activities will effectively transform the landscape and will spoil the visual quality of the area along the road. The cumulative impact will negatively affect the landscape quality of the area which are ordinarily considered to be source. The frequency of development proposals in the area has a potential of collectively changing the character of the landscape (see Kathu area as an example). The once isolated landscape will see volumes of people establishing low settlement or enlarging the existing ones. In the long run the accumulative impact will be of high significance in terms of its potential to change the characteristics and quality of the landscape in the long run. The field survey focused on potential of lithic tools and rock engravings that are known to occur in the study area.

5.7 Mitigation

Mitigation for the proposed prospecting site is required to protect the recorded burial sites and historic building. A copy of the chance finds procedure must be kept at the site office to ensure appropriate management of any accidental finds during prospecting.

6 DISCUSSION

Several Phase 1 Heritage studies for various infrastructure developments and mining developments were conducted since 2006 in the general project area. Although these studies recorded sites of significance for example Morris (2010) Orton and Webley, (2013), Pelsler (2011); Kaplan (2012) and Orton (2013), the recorded sites of varying significance. The archaeology of the Northern Cape is rich and varied, covering long spans of human history (Morris 2006). In the Northern Cape ESA assemblages, including the Fauresmith, tend to occur on the margins of seasonal rivers, semi-permanent water holes or pans (Pelsler 2010) see Kusel *et al* (2009). The significance of sites so far recorded in the study compared to other sites indicate that they are of lesser importance because they are small scatters and confined pans and foothills of mountains (Morris 2010, Orton & Webley 2013). The proposed prospecting area is predominantly agriculture and recently been exposed to exploration. Agriculture and infrastructure developments may have obliterated surficial archaeological heritage resulting in lack of confirmable archaeological findings in the area.

The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of two primary interrelated factors:

1. That proposed prospecting site is located within a degraded farming area which has reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical or burial sites, due to stamping and overgrazing by livestock.
2. Limited ground surface visibility on sections of the proposed prospecting site may have impeded the detection of other physical cultural heritage site remains or archaeological signatures within the development site. This factor is exacerbated by the fact that the study was limited to general survey without necessarily conducting any detailed inspection of specific locations that will be affected by the proposed prospecting right application site.

The absence of confirmable and significant archaeological cultural heritage site is not evidence that such sites do not exist in the proposed prospecting site. Significance of the sites of Interest (prospecting site) is not limited to presence or absence of physical archaeological sites. Based on the results of the field study

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the proposed prospecting right application may be approved to proceed without any further investigation from a heritage perspective.

7 CONCLUSION

Integrated Specialist Services (Pty) Ltd was tasked by NDI Geological Consulting Services (Pty) Ltd to carry out a HIA for the proposed prospecting for manganese and iron ore on the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, remainder and portion 1 of Mount Leonard 640 and Makala 646 within Kuruman Magisterial District, Northern Cape Province. Desktop research revealed that the project area is rich in archaeological sites ranging from ESA, MSA to LIA. In terms of the archaeology, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, remains and the applicant and contractors are urged to be diligent and observant during prospecting. The recorded burial site must be treated as No Go area during prospecting and measures to protect it must be put in place. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the proposed Prospecting Right Application cannot be approved.

8 RECOMENDATIONS

Report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements.
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed Prospecting Right Application on condition that the identified burial site is treated as NO GO Area during prospecting and 100m buffer zone must be provided for in terms of SAHRA Regulations of 2020.
3. The identified burial sites must be properly mapped and marked during prospecting.
4. From a heritage perspective supported by the findings of this study, the Prospecting Right Application is supported. However, the prospecting should be approved under observation that prospecting does not extend beyond the area considered in this report/affect the identified heritage sites.
5. Should chance archaeological materials or human remains be exposed during prospecting on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in Prospecting scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
6. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed Prospecting Right Application. The Heritage authority may approve the Prospecting Right Application as planned with special commendations to implement the recommendations here in made.

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10 APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED PROSPECTING RIGHT APPLICATION ON THE REMAINDER AND PORTION 1 OF FARM LOGOLONG 644, REMAINDER AND PORTION 1 OF MOUNT TEMPLE 645, REMAINDER AND PORTION 1 OF MOUNT LEONARD 640 AND MAKALA 646 WITHIN KURUMAN MAGISTERIAL DISTRICT, NORTHERN CAPE PROVINCE.

AUGUST 2023

ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organisation

10.1 CHANCE FIND PROCEDURE

10.1.1 Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during prospecting. The main purpose of a CFP is to raise awareness of all prospecting workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of prospecting monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed prospecting site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during prospecting.

10.1.2 Definitions

In short, the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

10.1.3 Background

The proposed Prospecting Right Application is located on the Remainder and Portion 1 of Farm Logolong 644, Remainder and Portion 1 of Mount Temple 645, Remainder and Portion 1 of Mount Leonard 640 and Makala 646 situated within Kuruman Magisterial District, Northern Cape Province. The proposed prospecting is subject to heritage survey and assessment at planning stage and Prospecting Right Application in accordance with Section 38(8) of NHRA. These surveys are based on surface indications

alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are often accidentally exposed in the course of construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by T. Mlilo (2023) on the prospecting site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2023) recorded one burial site within the proposed prospecting site.

10.1.4 Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the prospecting site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during prospecting and movement of prospecting equipment. The proposed prospecting activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by dense grass cover. Integrated Specialist Services (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during prospecting. This ensures that appropriate treatment of chance finds while also minimizing disruption of the mining schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of prospecting scheduling. It is recommended that due to the moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during prospecting.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

10.2 GENERAL CHANCE FIND PROCEDURE

10.2.1 General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 30m buffer zone from all sides of the find any other project and 100m buffer zone for mining projects.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ*.
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- **Finds rescue strategy:** All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.

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- In the case of human remains, in addition, to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeological will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the prospecting right application process.
- Once authorisation has been given by SAHRA, the Applicant will be informed when prospecting activities can resume.

10.2.2 Management of chance finds

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Integrated Specialist Services (Pty) Ltd will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which ISS will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or ISS Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

- a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:
- b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.
- c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.

- d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.
- e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42.
- f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to SAHRA Burial Ground and Graves Unit.
- g. As soon as the project archaeologist receives the rescue permit from SAHRA he will, in collaboration with the company/contractor, arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.
- h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.
- i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the client.

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Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

11 APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED PROSPECTING RIGHT APPLICATION

Objective								
<ul style="list-style-type: none"> 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-Mining 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
Mining 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 development site, a registered heritage specialist or PHRA 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 development 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 Northern Cape PHRA		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the Northern Cape PHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as prospecting phase.						
Operational Phase								
		Same as prospecting phase.						

12 APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans.

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must

(a) be clear and generally available to those affected thereby;

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

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- (7) The identification, assessment and management of the heritage resources of South Africa must—
- (a) take account of all relevant cultural values and indigenous knowledge systems;
 - (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;
 - (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
 - (d) contribute to social and economic development;
 - (e) safeguard the options of present and future generations; and
 - (f) be fully researched, documented and recorded.

12.1 Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) (a) No person may, without a permit issued by SAHRA or a provincial 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, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest

in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

12.2 General policy

47. (1) SAHRA and a provincial heritage resources authority—

(a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and

(b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and

(c) must review any such statement within 10 years after its adoption.

(2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is

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owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.

(3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.

(4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.

(5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.

(6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.

13 APPENDIX 4: CV OF THE ARCHAEOLOGIST (Trust Mlilo)

PERSONAL INFORMATION

ID NUMBER	690710 6184 187				
TITLE	Mr.	SURNAME	Mlilo	FIRST NAME	Trust
GENDER	Male			DATE OF BIRTH	10 July 1969
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QUALIFICATION: MA (ARCHAEOLOGY), BA Hons (Archaeology), [Univ. of Pretoria, Pretoria], PDGE, BA (Archaeology) UZ					

BRIEF PROFILE

Mr Trust Mlilo

Mr Trust Mlilo is the Archaeology/Heritage specialist at Sativa Travel and Environmental Consultants (Pty) Ltd. He is professional member of ASAPA and listed as an archaeologist and heritage specialist by Amafa aKwaZulu Natal and Eastern Cape Provincial Heritage Resources Agency (ECPHRA). Prior to joining SATIVATEC (Pty) Ltd, Trust Mlilo served as the Archaeologist and Heritage Manager at Nzumbululo Heritage Solutions (RSA Ltd.) [www.nzumbululo.com]. He has also collaborated in a number of archaeological and Heritage work with Siyathembana 293Trading (Pty) Ltd, Finishing Touch (Pty) Ltd, Vhubvo Archaeo Heritage (Pty) Ltd. And Integrated Specialist Services (Pty) Ltd. He is a professional heritage manager and research consultant with more than 15 years of practice and experience in archaeology, heritage management and education management. He has vast experience in Heritage Impact Assessments, Heritage induction, public consultations, monitoring and pre-construction heritage mitigation. He has worked as a researcher in Heritage development and nomination of heritage sites such as Nelson Mandela Legacy sites, Shembe sites and Delmas Treason Trial just to mention a few. He has attended and participated in several academic and professional symposiums and conferences.

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Mr Mlilo has undertaken and assisted research teams in several projects in Sustainability, Energy & Environment (SEE); Environmental Health and Safety Solutions; Cultural Heritage Development (CHD) and Applied Socio-Economic Research and Enterprise Development [RED]. His willingness to learn has seen him participate as a researcher and coordinator in research teams responsible, for example, in developing a Heritage Management Plans for O.R Tambo and Chris Hani memorial sites (2016) as well as the Nelson Mandela sites (2014 -2015), Integrated Development Planning (IDP) Environmental Toolkit (Mpumalanga Province [2011]), the Tourism Development Toolkit (Department of Environment and Tourism [2009]), etc. He is also effective in public engagements and consultations and has facilitated in massive grave relocation projects for several mining and infrastructure developments companies such as BHP Billiton 2013-2015 and Rhino Minerals 2009-2014 as well as Eskom and Road Agency Limpopo. He has conducted hundreds of Heritage Impact Assessment projects for Eskom minor reticulation projects in North West Province, KwaZulu Natal, Eastern Cape, Limpopo Province, Mpumalanga, Gauteng and the Free State Province as well as HIAs for various public and private developers (See SAHRIS website for HIA reports registered under Nzumbululo Heritage Solutions [Murimbika and Mlilo as the authors], Sativa and Integrated Specialist Services. The major highlight of his work was the Heritage Impact Assessment for the 700km, 765KV Gamma Kappa and Kappa Omega powerline in the Western Cape. Under Sativa Travel and Environmental Consultants, Mlilo served high profile companies such as GIBB, Afrimat, Eskom and Trans Africa Projects. Trust Mlilo has sound knowledge of heritage permit application processes and heritage mitigation processes. He is also effective in resource mobilization, team building and coordination. In addition, he has vast experience in project presentation and consultation.

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EDUCATION

Institution [Date from - Date to]	Degree(s) or Diploma(s) obtained:
University of Pretoria 2013 - 2015	MA in Archaeology
University of Pretoria 2009 – 2010	BA Honours in Archaeology
University of Zimbabwe, 2000	Post Graduate Diploma in Education (History)
University of Zimbabwe (1991-1993)	BA Gen. (Archaeology, African Languages & Linguistics)

LANGUAGE PROFICIENCY (Good, Fair, Poor)

Language	Reading	Speaking	Writing
English	Good	Good	Good
Shona	Good	Good	Good
Ndebele	Good	Good	Fair
Zulu	Fair	Good	Fair
Tsonga	Good	Good	Good
Tshivenda	Poor	Fair	Poor
Sesotho	Poor	Fair	Poor
Setswana	Poor	Fair	Poor
Xhosa	Poor	Fair	Poor
Afrikaans	Beginner's stage		

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SKILLS MATRIX

Current Skills levels:

1 Had appropriate training only 2 Limited practical experience 3 Solid practical experience 4 Well versed, extensive experience 5 Expert, extensive experience

Type of Experience	Experience In months	Date Last used	Skill level
Communication and Marketing	+120	Current	4
Inter-personal and inter-governmental liaison	+120	Current	3
Organizational skills	+120	Current	4
Coordination	+120	Current	5
Facilitation	+120	Current	5
Planning	+120	Current	4
People Management	+120	Current	4
Time Management	+120	Current	5
Computer literacy (MS Office, Project management software, MAC OS)	+120	Current	3
Project management	+120	Current	4

COMPUTER SKILLS:

- MS Operating System
 - Professional Level Competencies in MS Word, MS Excel, MS Power-point, PMS Publisher, and Internet.
- Mac Operating System
- Photoshop

ACADEMIC WORKS

- The challenges of cultural heritage management in South Africa: A focus on the Klasies River main site (Pending).

Title of Post-Graduate University Theses & Dissertations:

- **Master in Archaeology** (2013-2015), University of Pretoria) Management of the Klasies River main site along the Tsitsikamma Coast in the Eastern Cape Province.
- **BA Hons in Archaeology**. (2010, University of Pretoria): Comparison of conservation of archaeological sites under the jurisdiction of museums and sites in rural locations, the case BaKoni Malapa and Mahumane Late Iron Age sites in Limpopo Province.
- **Post Graduate Diploma in Education**. (2000, University of Zimbabwe): An assessment of attitudes towards use of media in the teaching of History in Secondary schools in Gweru, Zimbabwe

Selected Seminars, Lectures & Conference Papers

July 2014: Pan Africanist Archaeologist Conference. Johannesburg, South Africa Paper to be presented:

- *The challenges of heritage management in South Africa: A focus on the Klasies River main site.*

WORK & PROFESSIONAL EXPERIENCE

PERIOD: 2015 to Present: Archaeologist/Heritage Manager at Integrated Specialist Services (Pty) Ltd [Web Site: www.sativatec.co.za] and emerging consultancy with highly experienced Heritage, Palaeontology and Ecology/Biodiversity Specialists. Sativa (Pty) Ltd 's main focus is to provide quality specialist services in Environmental and Heritage Management. Sativa (Pty) Ltd team has successfully completed a significant number of projects and is looking forward to building its profile in both Environmental and Heritage Management. The major clients are Bigtime Strategic Group Science and Research, Afrimat, Trans Africa Projects, Kimopax, Mawenje Consulting and Road Agency Limpopo. The following is a list of selected projects completed at Sativa (Pty). Ltd

- **ESKOM:** HIA study for the household electrification infrastructure of the proposed 22kv powerline for Norlim-Taung (15km) and Norlim Dikhuting (13km) in the Buxton area (Taung World Heritage Site) Greater Taung Municipality, North West Province.
- **GIBB:** HIA for proposed Assen / Tambotie Mining Right Application for the development of the Assen / Tambotie mine in Madibeng Local Municipality of North West Province
- HIA for proposed Eskom 13,5km, 132kv Randfontein Northern Strategy Power line and associated substations in Mogale City and Rand West City Local Municipalities of Gauteng Province
- HIA for proposed Eskom 132kv Westgate.Tarlton Power line in Mogale City and Rand West City Local Municipalities of Gauteng Province: Archaeological and Heritage Impact Assessment Report

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- Phase 1 Heritage Impact Assessment for Eskom's proposed 11.065km 22kV Phase 3 Ngqeleni Electrification in Nyandeni Local Municipality of Eastern Cape Province
- HIA for proposed Eskom Wolvekrans Substation and 132kv Powerline in Mogale City and of Gauteng Province:
- HIA for Proposed Zandrivers Drift Mining Right Application in Madibeng Local Municipality of North West Province
- Phase 1 Heritage Impact Assessment for Eskom's proposed KwaZamoxolo normalization power line development at Noupoot in Umsobomvu Local Municipality, Northern Cape Province.
- Phase 1 Heritage Impact Assessment for Eskom's proposed 0.659km 22kv Murraysburg powerline move in the Pixley Ka Seme District Municipality, Northern Cape Province
- A Phase 1 Heritage Impact Assessment for the proposed, Tubatse Special Economic Zone in Burgersfort, Limpopo, under the jurisdiction of the Greater Tubatse Local Municipality of Limpopo Province.
- A Phase 1 Heritage Impact Assessment for the proposed construction of a new 20ML/D Pump station and bulk water pipeline in Middleburg, Steve Tshwete Local Municipality in Province.
- A Phase 1 Heritage Impact Assessment for the proposed 5.5km 88kV power line and substation in Johannesburg Metropolitan Municipality, Gauteng Province.

PERIOD: 2008 to 2014: Archaeologist and Heritage Manager – Nzumbululo Holdings Limited [www.nzumbululo.com] (dynamic and market-leading consultancy providing innovative solutions in Applied Social-Economic Research and Enterprise Development services, Cultural Heritage Development, Sustainability, and Energy & Environment, Environmental Health and Safety).

Specialist Responsibilities: Assist in Project Management, fieldwork, community consultation and report compilation.

- Researcher for heritage and cultural landscape management projects that involve cultural resources management, heritage conservation management planning, heritage and environmental impact assessment, basic assessment, project management, public participation coordination, predevelopment planning specialists input coordination and liaison with compliant agencies such as government departments.

CORPORATE RESPONSIBILITIES

None

SPECIALIST POSITIONS AND PROFESSIONAL CONSULTANCY EXPERIENCE

2007 - 2014 Archeological and Heritage Impact Assessment Studies

Have participated in phase 1 (scoping studies) to Phase 2 and 3 heritage and archeological impact assessment studies (mitigation excavations, rescue or salvage excavation and monitoring studies) for infrastructural developments including, powerlines, roads and other developments. The HIA and AIA portfolio during this period amounts to more than 300 projects across all nine provinces of South Africa and neighboring countries with an estimated value in excess of Million Rands in professional specialist's fees and billions in associated project budgets.

January 2008 – 2014: Environmental and Heritage Impact Assessment Study for Eskom SOC Limited 765kV Powerline Development Northern to Western Cape Provinces.

Field Archaeologist and Assistant Heritage Manager: Environmental Authorisation (EIA) and Heritage Impact Assessment (HIA) studies for Eskom SOC Transmission Gamma-Kappa & Kappa-Omega 765kV Powerlines Development in Northern & Western Cape Provinces in South Africa 2012-14. The Field archaeologist and heritage manager responsibilities involve coordinating a team of 4 (Archaeology, Palaeontology, Visual and Cultural Landscapes and Built Environment). This power transmission project is one of the largest and strategic transmission projects Eskom has ever embarked on in the past two decades.

July 2011 – March 2012: Research, Design and Development of the Delmas Treason Trials Commemorative Monument Project at Delmas Magistrate's Court, Mpumalanga Province.

Project Heritage Manager and Research Assistant for archival, oral and historical research on the 1985-1989 Delmas 22 and 1989 Delmas 4 Treason Trials (the last of the infamous apartheid treason trials). The project entails detailed legal history on treason trials, conceptualise, design and develop and commission a public commemorative monument in honour of the treason Trialists. Hundreds of hours of digital recordings of interviews with legal struggle icons such as George Bizos, the late Justice Arthur Chaskalson, Advocate Gcina Malindi, Justice Yacob, former Premier Popo Molefe and all surviving Delmas trialists and their families were collected, project report was generated and South Africa's first monument dedicated to commemoration of treason trials was developed and unveiled in March 2012 at Delmas Court in Delmas Town, Mpumalanga.

2009 – October 2010: eThekweni Metropolitan Shembe Baptist Nazareth Church Cultural Landscape Project

Commissioned by the eThekweni Metro Council as **Assistant Heritage Manager and Research Assistant** for the eThekweni Metropolitan Shembe Baptist Nazareth Church Cultural Landscape Project. The project involved conducting historical research into the evolution of Shembe Church, one of Africa's older and

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continuous independent churches that were founded by Isaiah Shembe in 1910. The second object was to propose, nominate the Shembe Cultural Landscape as Provincial Heritage Site under the protection of provincial and national heritage laws. The project closed with development of the cultural heritage Conservation Management Plan and nomination of Shembe cultural Landscape as Provincial Heritage Site (Nomination Approved by the KwaZulu Natal Provincial Heritage Council (Amafa Council) on October. 18 2010).

2008- 2009: Mpumalanga Province Greening, Heritage and Greening Mpumalanga Flagship Program Management Unit [PMU]

Research Assistant (Heritage) for the Mpumalanga Provincial Government commissioned Mpumalanga Province Greeting, Heritage and Greening Mpumalanga Flagship Program Management Unit [PMU]. Mr Mlilo assisted in archaeological and heritage components of the project.

AUXILIARY PROFESSIONAL EXPERIENCE

1996-2006: ‘O’ and “A” Level History Examiner (Ministry of Education in collaboration with Cambridge University, UK).

AUXILLIARY SPECIALIST SKILLS

Key Management skills

- Applied Environment & Heritage Management Research
- Sustainable development programmes assessment.
- Project Management
- Adult Education

Other skills

- Performance management
- Public Finance Management
- School administration and teaching
- Professional Archaeologist.

PROFESSIONAL AFFILIATIONS

- **Member of Association of Southern African Professional Archaeologists (ASAPA) No.396.** Accredited by Amafa akwaZulu Natali and Eastern Cape Provincial Heritage Agency

REFEREES

Professor Sarah Wurz.

Institute for Human Evolution

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