

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT FOR PROSPECTING RIGHT  
APPLICATION TO PROSPECT MANGANESE AND IRON ORE ON A PORTION OF  
REMAINING EXTENT OF FARM 267 NCWANING SITUATED WITHIN THE JOE MOROLONG  
LOCAL MUNICIPALITY UNDER THE JURISDICTION OF THE JOHN TAOLO GAETSEWE  
DISTRICT MUNICIPALITY IN THE NORTHERN CAPE PROVINCE.**

**FEBRUARY 2019**

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## Document Information

| Item                                     | Description  |
|--|--|
| Proposed development and location        | Prospecting for Manganese and Iron ore on a portion of Remaining Extent of Farm 267 Ncwaning situated within the Joe Morolong Local Municipality under the jurisdiction of the John Taulo Gaetsewe District Municipality in the Northern Cape Province   |
| Title                                    | Prospecting Right Application to prospect for Manganese and Iron ore on a portion of Remaining Extent of Farm 267 Ncwaning situated within the Joe Morolong Local Municipality under the jurisdiction of the John Taulo Gaetsewe District Municipality in the Northern Cape Province. Archaeological and Heritage Impact Assessment Report |
| Purpose of the study                     | The purpose of this document is an Archaeological and Heritage Impact Assessment report that describes the cultural values and heritage factors that may be impacted on by the proposed prospecting for manganese and iron ore on the Remaining Extent of Farm 267 Ncwaning in the North Cape Province.                                    |
| 1:50 000 Topographic Map                 | 2722 BB Hotazel  |
| Coordinates                              | See Table 2  |
| Municipalities                           | Joe Morolong Local Municipality and John Taulo Gaetsewe District Municipality  |
| Predominant land use of surrounding area | Grazing and mining   |
| Applicant                                | Duho Mining cc   |
| Date of Report                           | 14 February 2019   |
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| Ref.                                     | NC 30/5/1/1/2/12019 PR   |

## **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 preparation of this report.

### **Expertise:**

Trust Mlilo, MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional member) with 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, 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 Duho Mining cc. Integrated Specialist Services (Pty) Ltd has no any business, personal, financial or other interest in the proposed prospecting project apart from fair remuneration for the work performed.

### **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 on-going 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 Duho Mining cc. 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 authorisation of prospecting right application being proposed by Duho Mining cc.

Signed by:



13/ 02/ 2019

## **Acknowledgement**

The authors acknowledge Duho Mining cc for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project. Special thanks go to Fredy Olyn of Nchwaning Farm who accompanied our study team throughout the survey. We would like to thank Veries Pitrus and Johannes Mietswe for assisting us with information relating to location of graves and the history of mining in the project area.

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## EXECUTIVE SUMMARY

This Archaeological and Heritage Impact Assessment (AIA/HIA) Report has been prepared to address requirements of the National Heritage Resources Act, Act 25 of 1999, Section 38 (3). Integrated Specialist Services (Pty) Ltd (ISS) was commissioned by Duho Mining cc to conduct this Archaeological and Heritage Impact Assessment (AIA/HIA) Study for the proposed prospecting right application to prospect for manganese and iron ore on a portion of Remaining Extent of Farm 267 Ncwaning situated within the Joe Morolong Local Municipality in the Northern Cape Province. This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the prospecting right application site. This study was conducted as part of the specialist input for environmental authorisation process. The study area covers the site for the proposed application sites. The project information has been passed to ISS research team by the project applicant. Analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area predicted that archaeological sites, cultural heritage sites, burial grounds or isolated artefacts were likely to be present on the affected landscape. The field survey was conducted to test this proposition and verify this prediction within the proposed prospecting right application site. The general project area is predominantly grazing and surrounded by existing mining operations.

The proposed prospecting right application site was surveyed by Trust Mlilo, Jerry Mafogo (intern), Laura Mlilo and a local guide on the 9<sup>th</sup> of February 2019. The site was accessed from the R380 and transects were walked across the proposed prospecting site to the Ga-Mogara River boundary (see Figure 1). There were no significant limitations to the study other than the rain which disrupted the last lap of the survey. In addition, the site was previously surveyed by Kusel *et al* (2009). It is assumed that the current survey and Kusel *et al* (2009) 's survey is adequate to conclude that archaeological resources are very scarce within the prospecting site and the surrounding landscape and of very low cultural significance.

The field survey did not identify any archaeological remains within the proposed prospecting site. However, the field survey identified one informal burial site near Ncwaning 267 farm compound. The site is slightly outside side the proposed prospecting site, but it is important to flag it out to avoid any danger from prospecting vehicles which may drive through it.

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. Field survey and desktop results Indicate that in terms of archaeological heritage, impacts to the prospecting site are expected to be negligible. The project area is considered to be of very low heritage significance (Kusel *et al* 2009, Pelsler 2010). It is recommended that the project be authorised with the following conditions included in the EMPr:

- ❖ The prospecting teams should be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during prospecting on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds.

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

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



## **ABBREVIATIONS**

|              |   |
|--------------|---|
| <b>AIA</b>   | Archaeological Impact Assessment              |
| <b>ECO</b>   | Environmental Control Officer                 |
| <b>EAP</b>   | Environmental Assessment Practitioner         |
| <b>EIA</b>   | Environmental Impact Assessment               |
| <b>EM</b>    | Environmental Manager                         |
| <b>EMP</b>   | Environmental Management Plan                 |
| <b>HIA</b>   | Heritage Impact Assessment                    |
| <b>LIA</b>   | Late Iron Age                                 |
| <b>NHRA</b>  | Nation Heritage Resources Act, Act 25 of 1999 |
| <b>PM</b>    | Project Manager                               |
| <b>PHRA</b>  | Provincial Heritage Agency                    |
| <b>SM</b>    | Site Manager                                  |
| <b>ISS</b>   | Integrated Specialist Services (Pty) Ltd      |
| <b>SAHRA</b> | South African Heritage Resources Agency       |

## KEY CONCEPTS AND TERMS

**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** 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.

**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 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).0800333636

**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.

# 1 INTRODUCTION

## Background

This Archaeological and Heritage Impact Assessment (A/HIA) Report has been prepared by Integrated Specialist Services (Heritage Division) for Duho Mining cc. Duho Mining cc has submitted a prospecting right application to prospect for manganese and Iron ore on a portion of Remaining Extent of Farm 267 Ncwaning situated near Santoy in the Northern Cape Province. This report details the field study, results of the study as well as discussion on the anticipated impacts of the proposed prospecting as is required by the National Heritage Resources Act, Act 25 of 1999 Section 38. It focuses on identifying and assessing potential impacts on archaeological resources as well as on other physical cultural properties including historical heritage resources in relation to the proposed prospecting. ISS heritage specialists undertook the assessment, research and consultations required for the preparation of the report comprising archaeological and heritage impacts for the purpose of ensuring that the cultural environmental values are taken into consideration and reported into the project authorisation process.

The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the proposed prospecting. The assessment includes recommendations to manage the expected impact of the proposed prospecting for manganese and iron ore. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to the environmental approval process for the prospecting right application. The report concludes with detailed recommendations on heritage management associated with the proposed prospecting for manganese and iron ore. ISS, an independent consulting firm, conducted the assessment; research and consultations required for the preparation of the archaeological and heritage impact report in accordance with its obligations set in the NHRA as well as the environmental management legislations.

In line with SAHRA guidelines, this report, not necessarily in that order, provides:

- 1) Management summary
- 2) Methodology
- 3) Information with reference to the desktop study
- 4) Map and relevant geodetic images and data
- 5) GPS co-ordinates
- 6) Directions to the site
- 7) Site description and interpretation of the cultural area where the project will take place
- 8) Management details, description of affected cultural environment, photographic records of the project area
- 9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site
- 10) Conclusions.

## Location of the proposed prospecting site

The proposed prospecting site is located approximately 56 km North West of Kuruman under the jurisdiction of the John Taolo Gaetsewe District Municipality in the Northern Cape Province. The site is accessed through R380 west from Kuruman. According to geological studies of the project area, the proposed prospecting site is underlain by Pleistocene to recent aeolian sands of the Gordonia Formation (Kalahari Group). These soft sands are underlain by hardpan calcretes. The topography of the prospecting site is level with no geographical features except the Ga Mogara River which marks the eastern boundary of the site (see Figure 1). The vegetation on the property is typical of the Kathu Bushveld associated with aeolian red sands and calcrete deposits. There are some dense and impenetrable patches of *Acacia mellifera* near the Ga-Mogara River boundary. These dense, thorny patches prevented evenly spaced survey transects, but this is not a significant constraint in terms of coverage of the study site. The project site is currently utilised for grazing livestock and set between two Manganese mining operations (see Figure 1).

Table 1: Geographical co-ordinates for the proposed prospecting site

| Site                | Coordinates                   | Brief Description  | Comment relating to proposed development and Mitigation Measures             |
|---------------------|-------------------------------|--|--|
| A                   | E027.127976<br>S22.893696     | Open shrub land  | No heritage significance   |
| B                   | E027.133552<br>S22.927084     | Vacant grazing land  | No heritage significance   |
| C                   | E27.140808<br>S22.921591      | Vacant grazing land  | No heritage significance   |
| D                   | E27.151654<br>S22.9216771     | Vacant grazing land  | No heritage significance   |
| E                   | E27.147835<br>S22.890692      | Vacant grazing land  | No heritage significance   |
| Burial site(NPSBS1) | E022°52'57.5"<br>S27°08'04.7" | 5 visible graves marked by stone piles the rest not marked. Fence is broken. | Highly significant and sacred, however it falls outside the prospecting site |

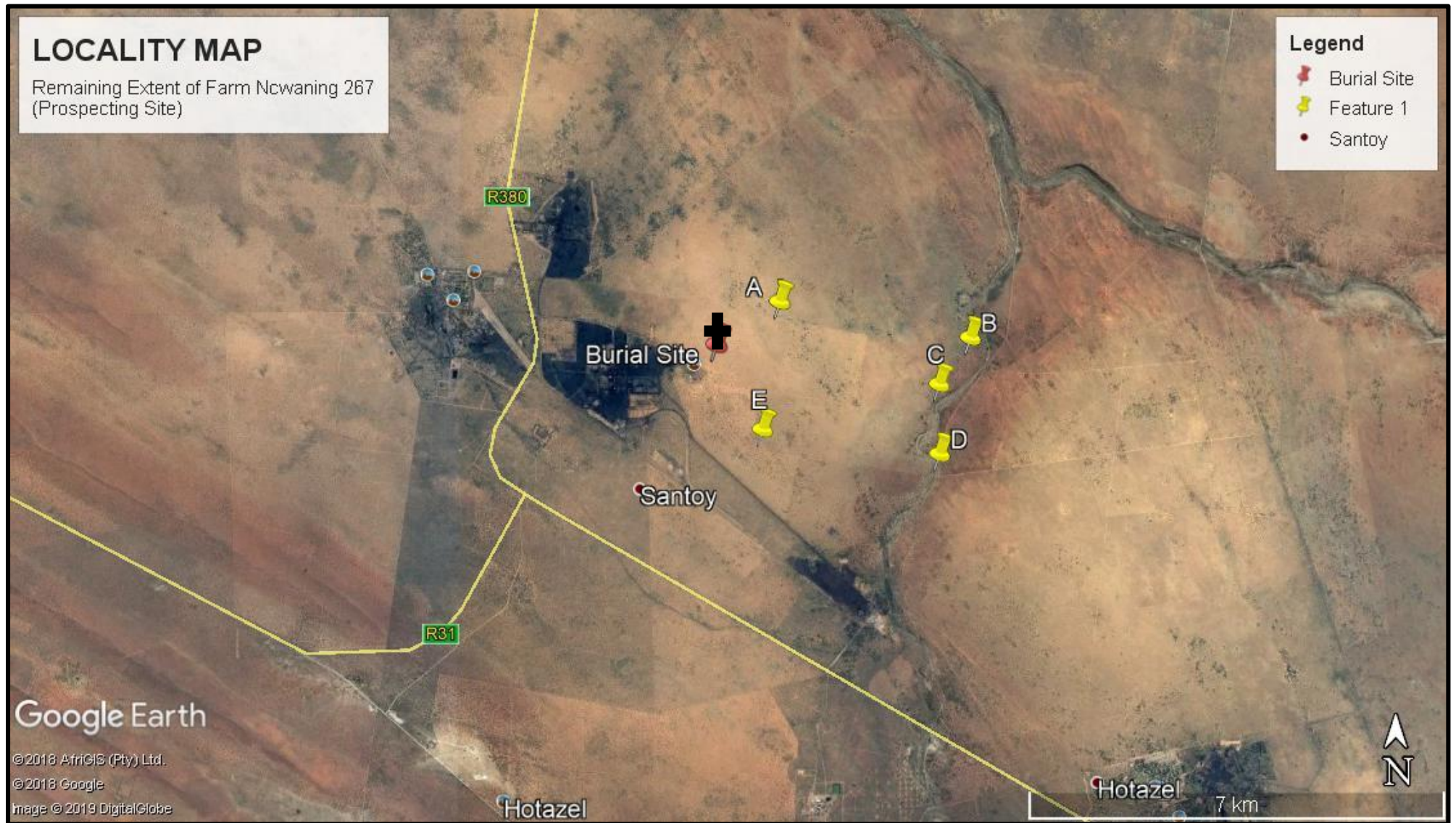


Figure 1: Prospecting site marked yellow pins and burial site marked by black cross.

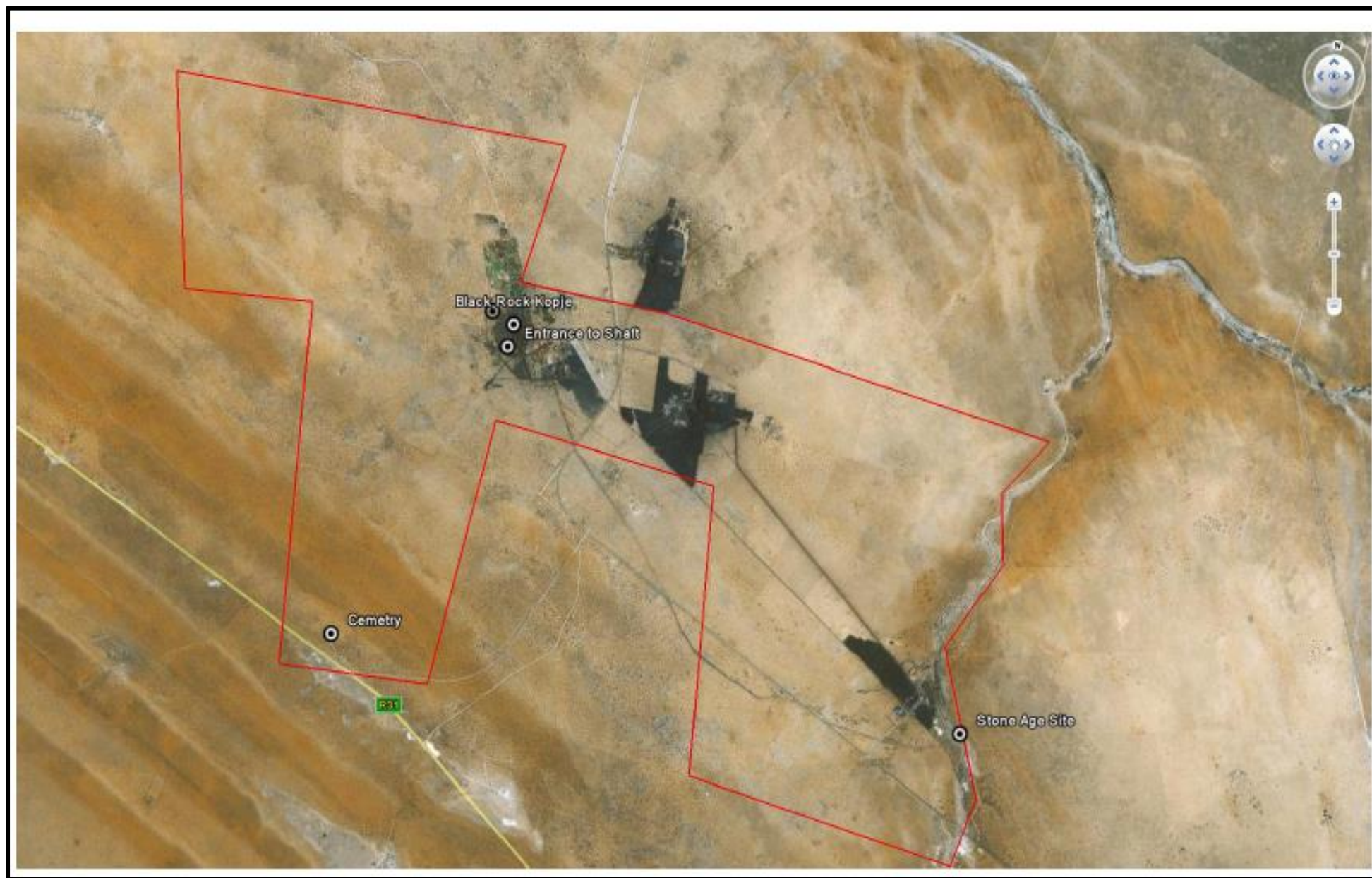


Figure 2: Area surveyed by Kusel *et al* (2009) for a different project.

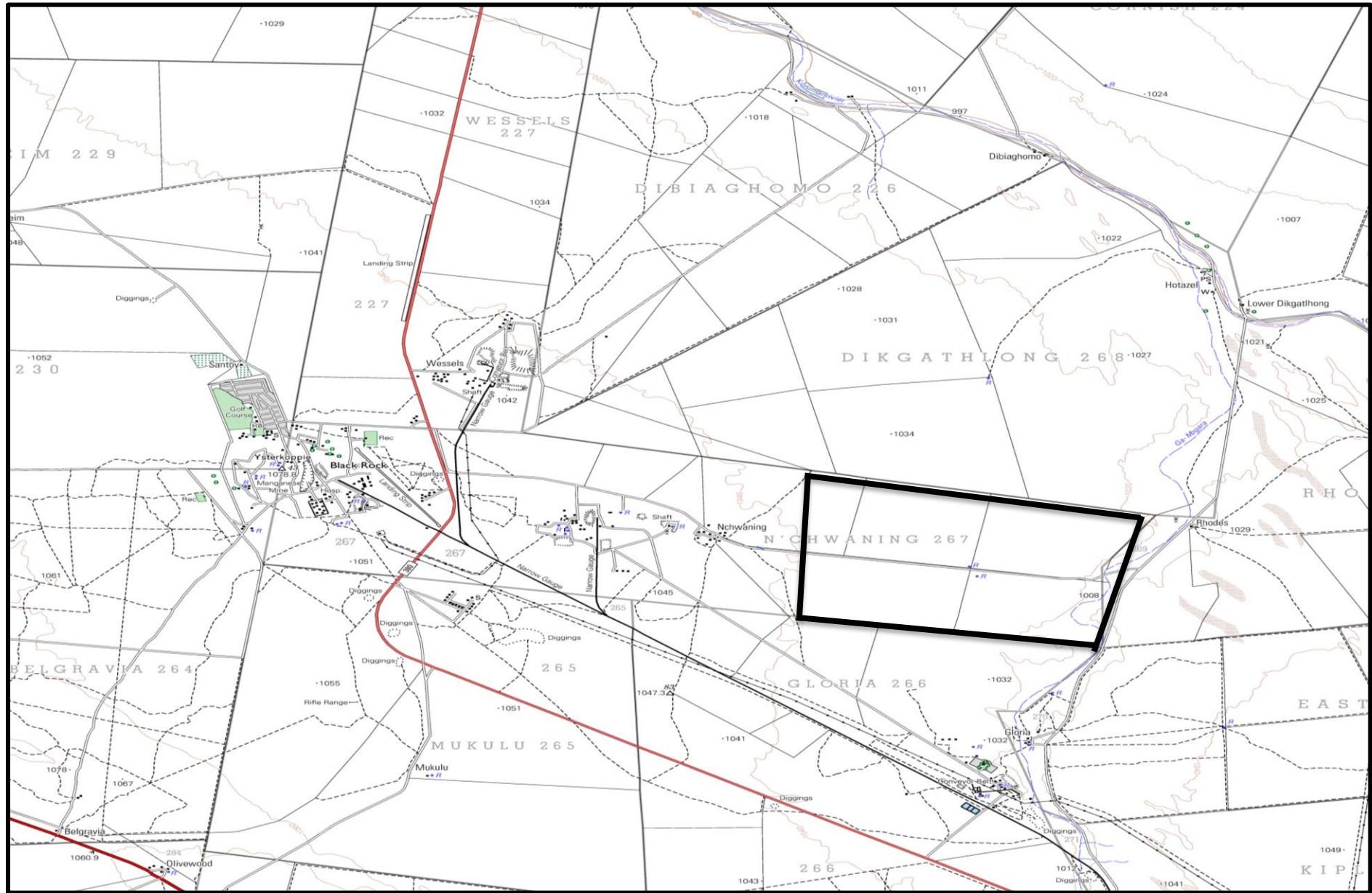


Figure 3: 1:50000 topographic map reference 2722BB showing project site



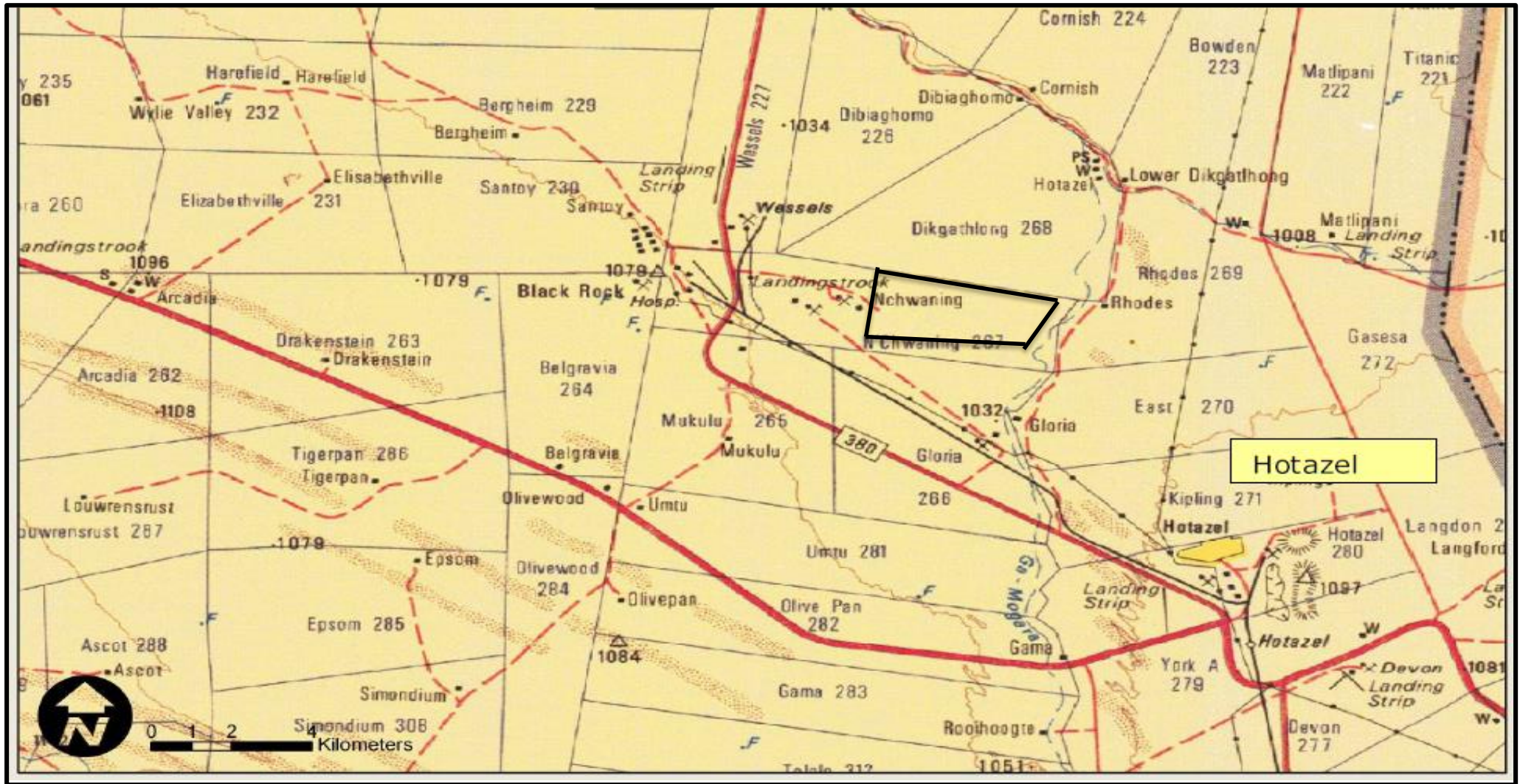


Figure 4: Historical map showing the proposed prospecting site. 2722BB

## 2 LEGAL REQUIREMENTS

Relevant pieces of legislations are to the present study are presented here. Under the National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA), Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), and the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and 2014 Regulations, an AIA or HIA is required as a specialist sub-section of the EIA.

Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its PHRAs. There are different sections of the NHRA that are relevant to this study. The proposed development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require a HIA to be conducted by an independent heritage management consultant:

- Construction of a road, wall, powerline, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
  - Exceeding 5000 sq. m
  - Involving three or more existing erven or subdivisions
  - Involving three or more erven or divisions that have been consolidated within past five years
  - Rezoning of site exceeding 10 000 sq. m
  - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

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 NHRA also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs).

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may alter, damage, destroy, relocate etc. any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. 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 SAHRA or PHRA (the relevant PHRA), who will assist in investigating the extent and significance of the finds and inform 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 SAHRA, destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. 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 likely discovery of burials or graves by the developer or his contractors. Section 37 of the NHRA deals with public monuments and memorials which exist in the proposed project area.

In addition, the new EIA Regulations (4 December 2014) promulgated in terms of NEMA (Act 107 of 1998) determine that any environmental 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 (Duho Mining cc) the environmental consultant, SAHRA or 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.

### **Assessing the Significance of Heritage Resources**

The appropriate management of cultural heritage resources is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Cultural significance is defined in the Burra Charter as meaning aesthetic, historic, scientific, or social value for past, present, or future generations (Article 1.2). Social, religious, cultural, and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of the site of interest, associated place or area are resolved.

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time (Pearson and Sullivan 1995:7). This assessment of the Indigenous cultural heritage significance of the Site of Interest as its environments of the study area will be based on the views expressed by the traditional authority and community representatives, consulted documentary review and physical integrity.

African indigenous cultural heritage significance is not limited to items, places or landscapes associated with pre-European contact. Indigenous cultural heritage significance is understood to encompass more than ancient archaeological sites and deposits, broad landscapes, and environments. It also refers to sacred places and story sites, as well as historic sites, including mission sites, memorials, and contact sites. This can also refer to modern

sites with particular resonance to the indigenous community. The site of interest considered in this project falls within this realm of broad significance.

Archaeological sites, as defined by the National Heritage Resources Act (Act 25 of 1999) are places in the landscape where people once lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and non-renewable. Many such sites are unfortunately lost on a daily basis through infrastructure developments such as mining, powerlines, roads and other destructive economic activities such as agriculture. This is true for the proposed prospecting site whose main economic activities are mining and agriculture. It should be noted that once archaeological sites are destroyed, they cannot be replaced as site integrity and authenticity is permanently lost. Archaeological heritage contributes to our understanding of the history of the region and of our country and continent at large. By preserving links with our past, we may be able to appreciate the role past generations have played in the history of our country and the continent at large.

### **Categories of Significance**

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites. In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

#### **Aesthetic Value:**

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

**Historical Value:**

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

**Scientific Value:**

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality and on the degree to which the place may contribute further substantial information.

**Social Value:**

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group. It is important for heritage specialist input in the EIA process to take into account the heritage management structure set up by the NHR Act. It makes provision for a 3-tier system of management including the South Africa Heritage Resources Agency (SAHRA) at a national level, Provincial Heritage Resources Authorities (PHRAs) at a provincial and the local authority. The Act makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

**Formally Protected Sites**

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the PHRA.
- Grade 3 or local heritage sites.

**General Protection**

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 70 years.
- Structures older than 60 years.

The certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low. The significance of archaeological sites is generally ranked into the following categories:

**Significance Rating Action**

No significance: sites that do not require mitigation.

**Low significance: sites, which may require mitigation.**

**2a.** Recording and documentation (Phase 1) of site; no further action required

**2b.** Controlled sampling (shovel test pits, auguring), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction

**Medium significance: sites, which require mitigation.**

**3.** Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]

**High significance: sites, where disturbance should be avoided.**

**4a.** Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism

**High significance: Graves and burial places**

**4b.** Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinternment [including 2a, 2b & 3]

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

An important aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data /information, which would otherwise be lost.

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

| ACT                                 | Stipulation for developments  | Requirement details                                       |
|-------------------------------------|---|---|
| NHRA Section 38                     | Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length | No  |
|                                     | Construction of bridge or similar structure exceeding 50m in length   | No  |
|                                     | Development exceeding 5000 sq. m  | No  |
|                                     | Development involving three or more existing erven or subdivisions  | No  |
|                                     | Development involving three or more erven or divisions that have been consolidated within past five years                       | No  |
|                                     | Rezoning of site exceeding 10 000 sq. m   | No  |
|                                     | Any other development category, public open space, squares, parks, recreation grounds   | No  |
| NHRA Section 34                     | Impacts on buildings and structures older than 60 years   | No  |
| NHRA Section 35                     | Impacts on archaeological and paleontological heritage resources  | Subject to identification during Phase 1 walk down survey |
| NHRA Section 36                     | Impacts on graves   | None on the direct foot print                             |
| NHRA Section 37                     | Impacts on public monuments   | No  |
| 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   |

## **Other relevant legislations**

### **The Human Tissue Act**

Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925 Graves 60 years or older are heritage resources and fall under the jurisdiction of both the National Heritage Resources Act and the Human Tissues Act of 1983. However, graves younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial Member of the Executive Committee (MEC) as well as the relevant Local Authorities.

### **Terms of reference**

The author was instructed to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed prospecting for manganese and iron ore site including any known data on affected areas;
- Provide details on methods of study; potential and recommendations to guide the PHRA/ SAHRA to make an informed decision in respect of authorisation of the proposed prospecting for manganese and iron ore.
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in and around the proposed prospecting site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed 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;
- Review applicable legislative requirements;

In addition, the AIA should comply with the requirements of NEMA, including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of competency.



## PHOTOGRAPHIC PRESENTATION OF THE PROPOSED PROSPECTING SITE



Plate 1: Photo 1: View of proposed development site (Photograph © by Author 2019).



Plate 2: Photo 2: View of proposed development site (Photograph © by Author 2019).



Plate 3: Photo 3: View of proposed development site (Photograph © by Author 2019).



Plate 4: Photo 9: South western view of the project area (Photograph © by Author 2019)



Plate 5: Photo 4: View of one of the several tracks that cut across the proposed development sites (Photograph © by Author 2019).



Plate 6: Photo 5: Full view of proposed development and new residential area in the background (Photograph © by Author 2019).



Plate 7: Photo 6: View of proposed development site (Photograph © by Author 2019).



Plate 8: Photo 7: View of proposed development site (Photograph © by Author 2019)



Plate 9: Photo 8: South western view of the proposed development site (Photograph © by Author 2019)



Plate 10: Photo 10: View of illegal sand mining within Alternative 1 development site (Photograph © by Author 2019)



Plate 11: Photo 11: View of illegal dumping and diggings near Option 2 development site (Photograph © by Author 2019)



Plate 12: Photo 12: View of section of the proposed development which were previously cleared for agriculture (Photograph © by Author 2019)



Plate 13: Photo 13: View of Formal village cemetery near proposed Option 1 site (Photograph © by Author 2019)



Plate 14: Photo 14: View of burial site and dwellings near option 1 site (Photograph © by Author 2019)



Plate 15: Photo 15: View of residential developments near the proposed project site (Photograph © by Author 2019)



Plate 16: Photo 16: View of cleared sections of the proposed development site (Photograph © by Author 2019)



### 3 METHODOLOGY

The proposed prospecting requires clearance and authorisation from government compliance agencies including the heritage authority of SAHRA. Key A/HIA objectives for this project are to:

- Fulfil the statutory requirements of the National Heritage Resources Act, Act 25 of 1999.
- Identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed prospecting. This study searched for sites and features of traditional historical, social, scientific, cultural and aesthetic significance within the affected study area; the identification of gravesites.
- Assess the significance of the resources where they are identified.
- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed development.
- Provide guidelines for protection and management of identified heritage sites and places (including associated intangible heritage resources management that may apply).
- Consult with the affected and other interested parties, where applicable, in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Take responsibility for communicating with the SAHRA and other authorities in order to obtain the relevant permits and authorization with reference to heritage aspects.

In order to meet the objectives of the A/HIA Phase 1 study, the following tasks were conducted: 1) site file search, 2) limited literature review, 3) consultations with the affected communities, 4) completion of a field survey and assessment and 5) analysis of the acquired data and report production. The following tasks were undertaken:

- Preparation of a predictive model for archaeological heritage resources in the study area.
- A review and gap analysis of archaeological, historical and cultural background information, including possible previous heritage consultant reports specific to the affected project area, the context of the study area and previous land use history as well as a site search;
- Field survey of the proposed prospecting site within the study area, in order to test the predictive model regarding that heritage sites in the area;
- Physical cultural property recording of any identified sites or cultural heritage places;
- Identification of heritage significance; and
- Preparation of A/HIA report with recommendation, planning constraints and opportunities associated with the proposed prospecting.

Walking surveys were conducted in order to identify and document archaeological and cultural sites within the proposed prospecting site. The entire project area was accessible. Although limited sections of ground surface were

covered with grass and thick bushes, this did not hinder identification of possible archaeological sites in surveyed site. Geographic coordinates were obtained with a handheld Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.

### **3.1 Assumptions and Limitations**

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 noted that archaeological deposits (including graves and traces of archaeological heritage) usually occur below the ground level. Should artefacts or skeletal material be accidentally exposed at the site during prospecting, such activities should be halted immediately, and a competent heritage practitioner, SAHRA or PHRA 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. The author assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the sections exposed by erosion. Although the last lap of the field survey was slightly disturbed by rain, the survey was adequate to identify any potential resources within the prospecting site. Some assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should however, be noted that these do not invalidate the findings of this study in any significant way:

- The proposed prospecting will be limited to specific right of site as detailed in the development layout (Figure 1).
- The prospecting team to provide link and access to the proposed site will use the existing access roads and there will be no prospecting beyond the demarcated site.
- No excavations or sampling were undertaken, since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on superficially observed indicators. However, these surface observations concentrated on exposed sections such as road cuts and clear farmland.
- This study did not include any ethnographic and oral historical studies nor did it investigate the settlement history of the area.
- Layout plans for prospecting were not available at the time of this study.

### **3.2 Consultation**

ISS study team consulted local residents Pitrus Vries, Johannes Mietswe and Fredy Olyn who confirmed that the site was never inhabited and therefore no traces of human settlement could be identified. Residents confirmed that the proposed prospecting site has been used as grazing land and they are not aware of any cultural site or activity associated with the site. The study team also consulted the Robert Moffat Museum in Kuruman for any reference

to missionary heritage material within the project site. The consulted residents assisted in the identification of an isolated burial site slightly outside the proposed site.

## **4 CULTURE HISTORY BACKGROUND OF THE PROJECT AREA**

### **Stone Age Archaeology**

In the Northern Cape ESA assemblages, including the Fauresmith, tend to occur as lag deposits on the margins of seasonal rivers, semi-permanent water holes or pans. Such assemblages commonly represent the accumulated remains of numerous reoccupations over possibly many thousands of years. The particular locality from where the hand axes in the collection originate reflects the correlation of Acheulean sites with sources of water and an environment that could provide animal and plant foods (Deacon 1988:643-647; Mason 1988:626-30; McNabb *et al* 2004:656). In this region stone tools often occur within calcrete zones underlying the modern surface of unstratified red aeolian sands (Deacon 1988:643-647; Mason 1988:626-30). Previous research in the Hotazel area confirmed localised occurrences of low-density Stone Age scatters along the exposed calcrete areas in dry riverbeds (PGS Heritage Unit:2009).

Stone Age archaeology is prevalent in the larger geographical area, especially to the south and east of the study area but generally, the Hotazel and Santoy area does not seem to have attracted much of habitation, save for the two Late Stone Age rock shelters that occur north and south of GaMohaana hills and sites along the Gamogara ancient river bed. 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 southwest and southeast 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 of 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.

It must be stressed that ESA sites are not only limited to areas that are south of the study area but also occur to the northwest, especially close to Black Rock and Gloria Mines near the town of Hotazel (Kusel *et al.* 2009; Pelsner and Van Vollenhoven 2011).

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). 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).

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). In the area under study, the two LSA rock shelters to the south and the north of GaMohaana Hill are the only known archaeological remains that are closer to the study area (van der Walt 2013). 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 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 oblong with retouch on the side. However, it is not necessary to belabour the descriptions of these industries, especially because no LSA remains were recovered on the proposed development footprint. 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.

### **Iron Age Archaeology**

Agriculturalist communities entered southern Africa from West and East Africa around AD 200 and brought with them settled agriculture, metal working, animal husbandry, pottery making and social stratification (Huffman 2007). The view that all of these activities were introduced to southern Africa by these agriculturalists communities is still

contested. The movement and spread of these EIA (~ AD200-1000) people within southern Africa seem to have been restricted to the summer rainfall (because of sorghum and millet farming) and they did not occupy much of the central interior Highveld area in South Africa. This perhaps explains the paucity of EIA sites in the study area. Ecologically, EIA preferred to settle on the alluvial soils near rivers for agricultural purposes and access to water. It was not until the mid-second millennium AD that serious Iron Age occupation began in the larger geographical area (excluding the study area) of this part of the Northern Cape.

The study area falls known within the fringes of the distribution of LIA (~ AD1100-1840) people who made Olifantspoort facies (ancestral Sotho-Tswana speakers) dated between AD1500 and AD1700 (Huffman 2007: 191). Olifantspoort facies represents the second phase of the Moloko sequence and settlements with people that made this type of ceramics are distributed in the area to the northeast of the study area, between the Vaal River and Pretoria. The people, just like the markers of Thabeng facies (third phase of the Moloko sequence AD1700-1840), settled in aggregated clusters where space was also demarcated by extensive stone walling. The extensive walled settlements around Kuruman are historically associated with the Tswana people such as the Rolong, Tlharo and Thlaping (De Jong 2010; Pelsler 2012; Fourie 2013). Typologically, this type of walling is called Type Z, which is prevalent in the Free State and mark the most southerly expansion of Sotho-Tswana speakers, up to the edge of a viable farming environment (Nkhasi 2008). Type Z settlement units have large compact central primary enclosures, "usually from three to eight in number and often so close as to be touching' but they also have smaller primary enclosures which may be linked by secondary walling (Maggs, 1976: 40).

The nature of the interaction between the emigrant Tswana groups and Khoesan people who were already in this area is complex but there are indications of acculturation (Breutz 1981) and intensive trading (Goodwin 1956). Some of the activities that formed the locus for trade and interaction between the Tswanas and the Khoesan groups in this area are specularite mining and ivory hunting. For instance, at sites such Blinkklipkop (about 80km to the south of the study area), a Khoesan specularite mine sites dating to as early as AD800, there is evidence of either trade with or occupation of the mine by the Thlaping peoples around 1801 (Thackeray *et al.* 1983). Specularite was used for non-metallurgical purposes such as pottery decoration and bodily adornment (Hall 1985), and was a prized trade commodity, together with ivory and other items during the second millennium trade boom in this part of southern Africa. Thus by the mid-19th century (and probably earlier), the Thlaping people were purchasing glass beads, iron, copper, tin and bronze wares from other northern Sotho-Tswana groups such as the Kwena and Hurutse, and exchanging these items with the Khoesan groups to the southwest (Goodwin, 1956: 256).

Of the Tswana groups around the present study area, the Thlaping might be of interest because of their connections with the site of Dithakong near Kuruman (De Jong 2010: 35-36; Pelsler 2012). This site, which at one point was a Thlaping capital, appears to be the only area in which there is direct archaeological evidence for settlement in the form of stone walling (Maggs 1972; Magoma 2013: 28). Socio-political tensions and permutations necessitated the shifting of most Tswana capital of which Dithakong was no exception. For instance, during the Batlhaping capital

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

Nonetheless, in the 1920s, the capital of the Batlhaping was permanently moved to Kuruman. All the same, none of these LIA sites were identified in the study area.

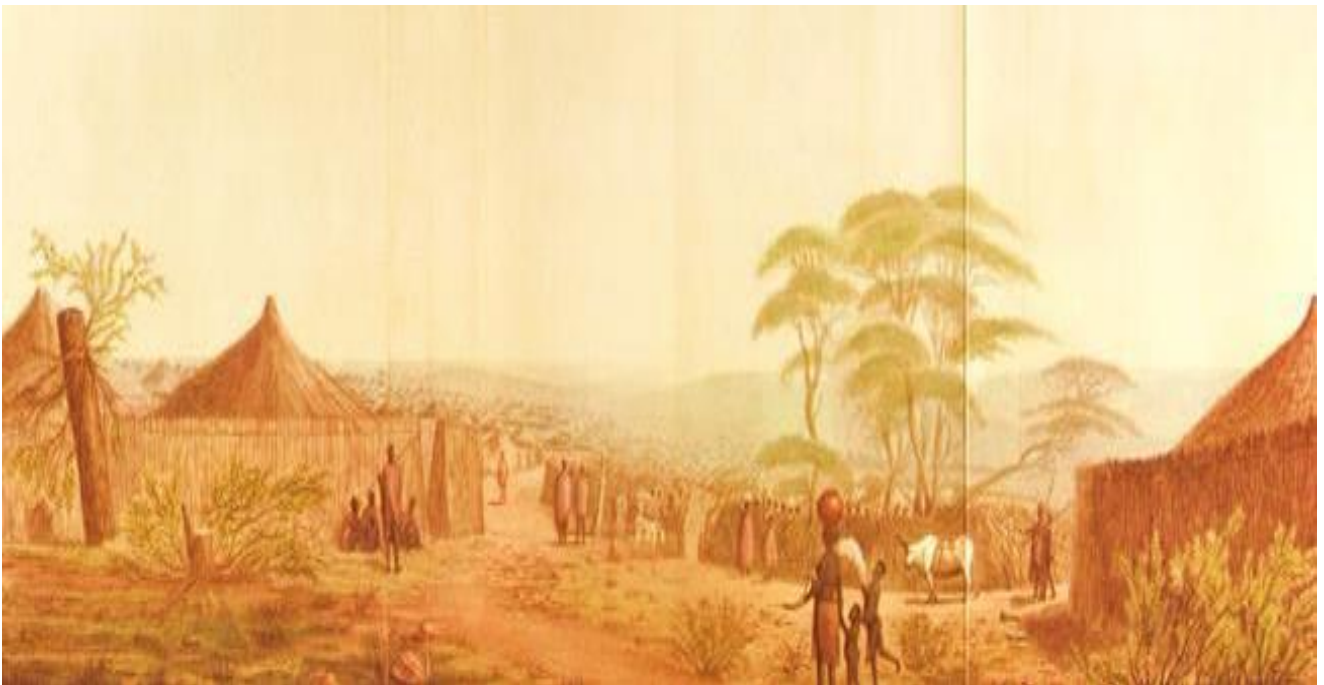


Plate 17: Photo 17: 'A view in the Town of Litakun' (Dithakong), a southern Tswana town near present-day Kuruman.

An engraved and coloured reproduction of an original drawing made by William Burchell in July 1812 (From Burchell, W.J., 1824, *Travels in the Interior of Southern Africa*. V II, London: Longman, Hurst, Orme, Brown and Green) <http://www.apc.uct.ac.za/news/tuning-obo#sthash.PkrFm3EY.dpuf> (accessed on 30 August 2015).

### **Contemporary heritage**

Southern Africa was networked with the literate world for several centuries, but the period of written history in the study area corresponds to the arrival of white travellers, hunters, missionaries and adventurers from the Cape in the 1800s. Notable amongst them include PJ Truter's, William Somerville, Robert Moffat, Andrew Smith and John Campbell. The first arrivals in to the study area may be PJ Truter's and William Somerville who in 1801 reached Dithakong at Kuruman (Pelser 2012). Some of later travellers into this area kept diaries that today form part of invaluable history about indigenous communities whom they travellers interacted with (see Figure 5 and 6).

European explorers such as Dr. Hinrich Lichtenstein (in 1805) and Dr. Andrew Smith (in 1835) reached Kuruman and met Tswana-speaking people (Bergh 1999). It should be noted that most of the early African-colonial interaction in this area centred around the nearly two-century old London Mission Society station at Kuruman, established by James Read in 1817 but popularized by Robert Moffat and his wife, three years later. Since the arrival of the Moffats in 1820, the mission has been known as The Moffat Mission Station (Figure 5, plate 12).



Plate 18: Photo 18: Photo A&B shows a drawing of the Old Mission House at Lattakoo which is now known as Kuruman (David J. Deane 2005. Robert Moffat: The Missionary Hero of Kuruman. March 16, 2005 [EBook #15379][http://www.gutenberg.org/files/15379/15379-h/15379-h.htm#CHAPTER\\_IV](http://www.gutenberg.org/files/15379/15379-h/15379-h.htm#CHAPTER_IV) accessed 30 August 2015.

Besides the isolated incursions by traders, hunters, and missionaries permanent and mass-movement of white settlers only took root in the late 1800s with the arrival of Dutch speaking farmers (Voortrekkers) who were protesting and escaping British rule in the Cape Colony (Ross 2002: 39). Yet even this incursion was not permanent as yet because by 1897 most of them white settlers around the Kuruman River had moved away (Fourie 2013). It took the great drought of 1907 and 1908 for many farmers of the then Cape Colony to move into these areas along the edge of the Kalahari Desert in search of better grazing for their cattle (Smit 1966). Nonetheless, significant urban development in this area has been focused around the 'Eye' and the water course springing from it leading to the evolution of the town of Kuruman, from the late nineteenth century (Morris 2010). When in 1885 Britain declared a Protectorate over Bechuanaland and the Kalahari (on 23 March) and then divided the Protectorate was divided into two parts (on 30 September 1885), the area south of the Molopo (including the study area) became the Crown Colony of British Bechuanaland with its capital at Vryburg (Fourie 2013) (Tlou and Campbell 1997). Ten years later this area was included in the Cape Colony accordance to Act 31 of 1895 (Smit 1966) and the Lower Kuruman Native Reserves well as a number of other so-called native reserves were established by virtue of

Bechuanaland Proclamation No. 220 of 1895. The study area lies on the fringes of this Lower Kuruman Native Reserve.

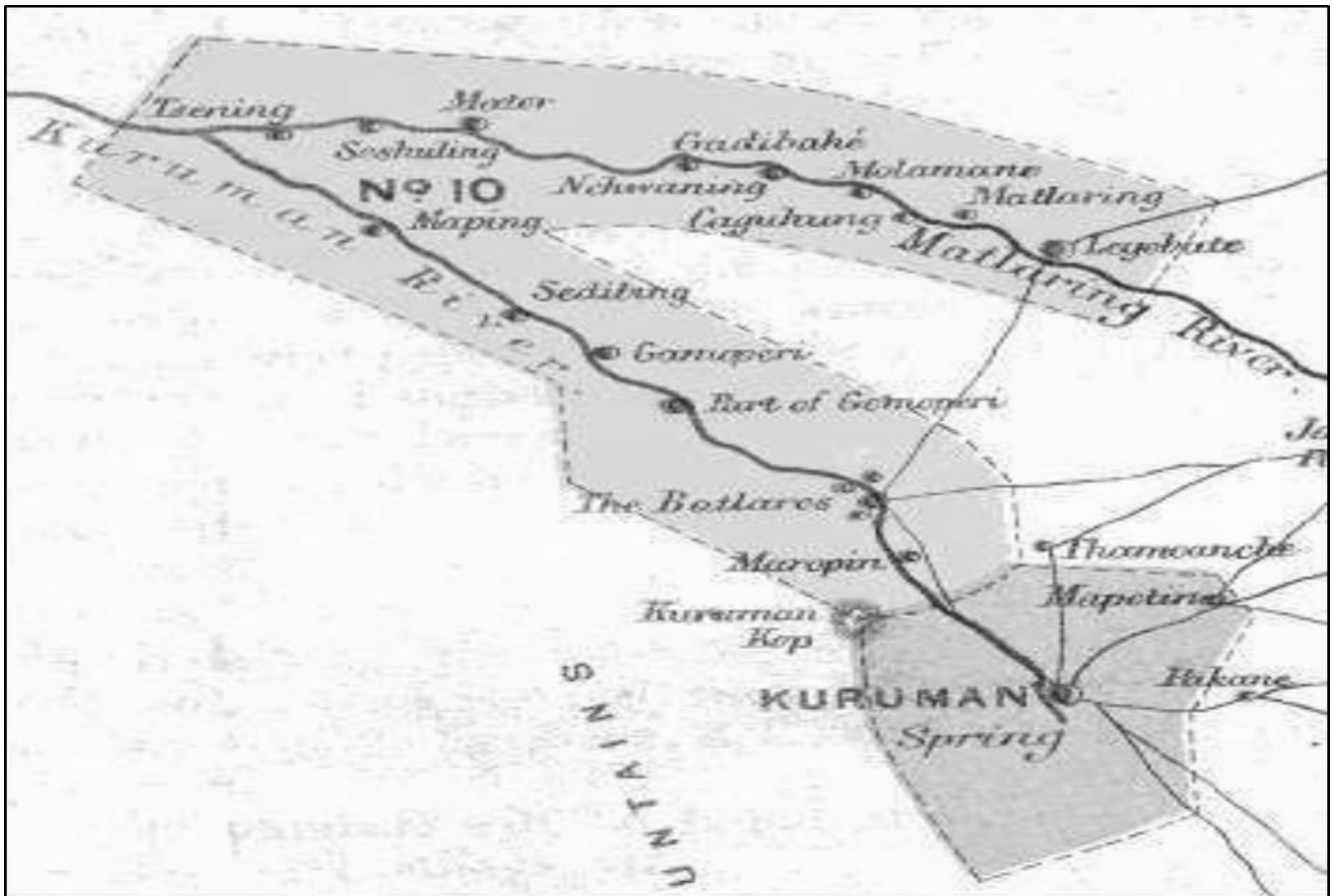


Figure 5: Map showing the original demarcation of the Lower Kuruman Native Reserve (Fourie 2013: 35)

Another impetus for the occupation of the Kuruman area was related to events that were ignited outside the African continent. Thus, when the First World War (1914-1918) broke out, and the South African Union Government joined the coalition forces and attacked German South West Africa (now Namibia). To sustain the Union troops along the way, a number of boreholes were sunk along the banks of the Kuruman River at places such as Eensaam, Kameelrus, Murray, Springputs and Van Zylsrus (Van der Merwe 1949; Smit 1966;). After the war, even more boreholes were sunk by the Department of Lands as opportunistic white farmers established themselves at these localities as borehole watchmen so that they could be allowed free grazing rights on the surrounding land (Smit 1966). All of this history produced heritage landmarks along the Kuruman River but it is significant to note that none of these resources are located closer to the area of the proposed development. Parallel to the urban development is the history of manganese mining that the surrounding region is well known for today. Manganese is used in the manufacture of carbon steel, and has been mined at such places as Hotazel and Black Rock (Fourie 2013). These mines are however, located out of the prospecting footprint and no mining heritage has been located within the proposed prospecting site.



## **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 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 per se, 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 a study conducted by Kusel *et al* in (2009) within the current prospecting site (Nchwaning 267) (see Figure 1 & 2). Therefore, this report must be read together with Kusel *et al* (2009) report. Kusel *et al* (2009)'s survey concluded that stone artefacts were very rare within the proposed prospecting area. Kusel *et al* (2009) did not identify any archaeological and heritage remains within the current proposed prospecting site, however he identified a site within the Ga Mogara River bed out of the current study site (see Figure 3). Kusel *et al* (2009) indicates that the Ga Mogara River bed may bear unknown Stone Age sites. As such no prospecting should take place within 100m distance from the river bed. Orton (2016 & 2017), Kruger (2015) and Hutten & Hutten (2013) have all identified a similar mix of ESA and MSA archaeological material along the Ga-Magara River in the general study area. The artefacts are made on the local cryptocrystalline silica rock types. The formal ESA tools include Acheulian hand axes or large cutting tools (LCT's). 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. 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), Milo (2016), Kruger (2015a, 2015b), Pelser, A. & van Vollenhoven, A.C. 2011, Pelser (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). Nilssen (2018) concludes that several of the heritage studies around Hotazel have commented on the almost total absence of heritage resources. 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, 50 km to the south, where extensive research has been carried out (e.g. Chazan *et al.* 2012; Porat *et al.* 2010).

## **5 RESULTS OF THE ARCHAEOLOGICAL/HERITAGE ASSESSMENT STUDY**

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 severe impacts are likely to occur during prospecting period although indirect impacts may occur during movements in and out of the site by prospecting vehicles. The drilling will result in the relocation or destruction of all existing surface heritage material. Similarly, the clearing of access roads will impact material that lies buried in the surface sand. 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 prospecting. 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 the proposed prospecting by means of mitigation measures (see appended Chance Find Procedure). While it was not possible to walk down the entire prospecting site, inferences may be drawn from Kusel *et al* (2009)'s survey and other archaeological and heritage impact studies in the vicinity of the prospecting site. It is concluded that the impacts will be negligible since drilling will be done on a few sampled positions within the site. The following section presents results of the field survey

## Summary of results of the field survey

| Heritage resource  | Status/Findings   |
|--|---|
| Buildings, structures, places and equipment of cultural significance                         | None exists within the development footprint  |
| Areas to which oral traditions are attached or which are associated with intangible heritage | None exists on the prospecting site   |
| Historical settlements and townscapes  | None located within the site  |
| Landscapes and natural features of cultural significance                                     | None  |
| Archaeological and palaeontological sites  | No outcrops within the site   |
| Graves and burial grounds  | One informal burial site was recorded within Nchwaneng but outside the prospecting site   |
| Movable objects  | None  |
| Overall comment  | The proposed prospecting site did not yield any confirmable archaeological sites. The Stone Age site recorded by Kusel (2009) is located out of the study site. Kusel (2009) surveyed a greater part of the study site and did not record any archaeological sites earmarked for the current project. However the Ga-Mogara river bed remains sensitive and therefore no prospecting must be done within 100m from the river bed. |

### 5.1 Archaeological Site

The proposed prospecting right application site did not yield any confirmable archaeological sites or material. Previous study by Kusel *et al* (2009) on the same site of interest did not record any archaeological remains. However, the study recorded stone tools at a site along the Ga Mogara River outside the current study site. Based on Kusel *et al* (2009)'s findings, it is the considered opinion of the author that the Ga Mogara River be may bear unknown ESA, MSA and MSA remains. As such the river bed must be avoided during prospecting.

### 5.2 Buildings and Structures

The field survey, historical maps, the 1:50 000 topographic maps (2722BB) and Google imagery confirm that there are no farm buildings or structures on the Remaining extent of the farm Nchwaning 276 earmarked for prospecting. It is not anticipated that there will be any impacts to the Built Environment. There are no buildings and structures

older than 60 years within the prospecting right application site. Therefore, the proposed prospecting right application does not trigger Section 34 of the NHRA.

### **5.3 Burial grounds and graves**

Human remains and burials are commonly found close to archaeological sites; they may be found in abandoned and neglected burial sites, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Archaeological and historical burials are usually identified when they are exposed through erosion, mining and infrastructure developments. In some instances, packed stones or stones may indicate the presence of informal pre-colonial burials.

The field survey identified an isolated burial site near Nchwane farm compound slightly outside the prospecting site. The burial site is not under threat of the proposed prospecting because it is known and can be protected. The prospecting teams must be made aware of the existence of the burial site prior to prospecting. The site is located at GPs coordinates E022°52'57.5" and S27°08'04.7" south of the proposed boundary. The site has approximately 20 graves estimated from the size of the fenced cemetery. Some of the graves are marked by stone piles but some are only marked by one headstone. It seems some graves were covered sand over time. Since some graves are not clearly visible, it is difficult to determine the number of graves within the site. The farm workers know the custodians of the graves and their whereabouts.

#### **Significance valuation for Burial Ground, Historic Cemeteries and Individual Graves**

Although the possibility of encountering previously unidentified burial sites is low along the proposed prospecting site, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected (also see Appendixes for more details). The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high socio-cultural significance protected by practices, a series of legislations, and municipal ordinances.

#### **Mitigation**

The prospecting planners must ensure that no drilling will take place near the burial site and also avoid creating access road through the burial site. Prospecting activities at the prospecting site must not disrupt any burial activities at the cemetery should they be any burial or rituals at the cemetery on a working day.

### **5.4 Public Monuments and Plaques**

There are no heritage sites within the proposed prospecting right application site that are on the National Heritage List. However, it should be noted that there are several Historical Monuments listed on SAHRIS Data base in the Kuruman, Khatu and Hotazel area. The proposed prospecting will not impact on any listed heritage sites in the project area.

## **5.5 Palaeontological**

The SAHRIS Palaeosensitivity map indicates that the prospecting site is of moderate sensitivity from the point of view of fossil heritage and that at least a desktop study should be conducted. Almond (2016) indicated that the Kalahari Sands and underlying calcretes are not sensitive from a palaeontological point of view because the types of fossils expected to be found are common and widespread within the region. These include invertebrate burrows and root and reed castes. These sorts of fossils are the only ones recorded by Almond in the project area (see Almond 2016). Almond (2016) observed that the site is underlain by sediments of the Kalahari Group. These include the Pleistocene-aged red sands of the Gordonia Formation as well as the underlying calcretes of the Mokolanen Formation. Fossils occur in both but are expected to be sporadic and widespread. Although mammalian bones, teeth and horn cores may occur in these sediments, their distribution is likely to be very sparse. Since the proposed prospecting site was surveyed previously, they may not be any need to conduct another survey.

## **5.6 Cumulative Impacts**

This section considers the cumulative impacts that would result from the combination of the proposed prospecting. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this proposed prospecting project was undertaken during the preparation of this report. The impacts of the proposed prospecting were assessed by comparing the post-project situation to a pre-existing baseline. The total impact arising from the proposed prospecting (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated. In this case there are a number of manganese mining operations and a number of solar facilities which have been approved. The project's impact is therefore one part of the total cumulative impact on the environment. There are existing mining developments and agriculture activities within the project area. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during prospecting they will be increase in human activity and movement of heavy prospecting equipment and vehicles that could change, alter or destroy heritage resources within and outside the proposed prospecting site given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed prospecting and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed prospecting has the potential to impact on possible paleontological resources in the area. Sites of archaeological, paleontological, or architectural significance were not specifically identified and cumulative effects

are not applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of access roads and impacts to buried heritage resources. Allowing the impact of the proposed prospecting to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially prospecting vehicles during clearance and excavation within the prospecting site. Movement of heavy construction vehicles must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process.

## **6 DISCUSSION**

Several Phase 1 Heritage studies for various infrastructure developments and mining developments were conducted since 2006. Although these studies recorded sites of significance for example Kusel *et al* (2009) van Schalkwyk, (2015), Van der Walt (2013); Magoma (2013), Bandama (2015), Mlilo (2016), the recorded sites are out of the current prospecting site. It is important to note that the current prospecting site was previously surveyed by Kusel *et al* 2009 and the current study also confirmed the scarcity of archaeological remains within the prospecting site (see Figure 1, 2& 3). The current study should be read in conjunction with Kusel *et al* (2009) conducted in the proposed project area. 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 (Pelser 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 to the GaMogara and Kuruman River beds. The region's remoteness of the Northern Cape may be a reason for the lack of archaeological research in the area. Probably because of its dryness, the area has probably been relatively marginal to human settlement for most of its history (Fourie 2010, Kusel *et al* 2009, Morris 2006, Pelsler 2010). Some areas are richer than others, and not all sites are equally significant and this is true for the current prospecting site. Thus Webley (2018) concludes that Studies further to the west, along the Go-Magara River have confirmed the presence of large scatters of ESA and MSA material. However, all archaeological studies to the south of Hotazel in the general vicinity of the study area have confirmed the almost total absence of any archaeological material. 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 heavily degraded grazing area, and have 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 that were not cleared at the time of the study may have impeded the detection of other physical cultural heritage site remains or

archaeological signatures within the prospecting 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.

The absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist in the proposed prospecting right application site. Significance of the sites of Interest (prospecting site) is not limited to presence or absence of physical archaeological sites.

## **7 CULTURAL HERITAGE SITE ASSESSMENT OF SIGNIFICANCE**

The appropriate management of cultural heritage resources is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Cultural significance is defined in the Burra Charter as meaning aesthetic, historic, scientific or social value for past, present or future generations (Article 1.2). Social, religious, cultural and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of the site of interest, associated place or area are resolved.

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time (Pearson and Sullivan 1995:7). This assessment of the Indigenous cultural heritage significance of the Site of Interest as its environments of the study area is based on the views expressed by the traditional authority and community representatives, consulted documentary review and physical integrity.

African indigenous cultural heritage significance is not limited to items, places or landscapes associated with pre-European contact. Indigenous cultural heritage significance is understood to encompass more than ancient archaeological sites and deposits, broad landscapes and environments. It also refers to sacred places and story sites, as well as historic sites, including mission sites, memorials, and contact sites. This can also refer to modern sites with particular resonance to the indigenous community. The site of interest considered in this project falls within this realm of broad significance.

## 8 RECOMMENDATIONS

Indications from the desktop and field survey are that in terms of archaeological heritage, impacts to the prospecting site are expected to be negligible. The prospecting site is considered to be of very low heritage significance. The study did not find any permanent barriers to the proposed prospecting right application. It is the considered opinion of the author that the proposed prospecting may proceed from an archaeological and heritage perspective, provided that mitigation measures are implemented if and when required. The following recommendations are based on the results of the AIA/HIA research, cultural heritage background review, site inspection and assessment of significance.

From a heritage point of view:

- The proposed prospecting is viable because no confirmable archaeological sites were identified during desktop and field survey.
- The project area falls within high to very high palaeontological sensitivity, therefore a Paleontological Impact Assessment is required for this prospecting application.
- The proposed prospecting may be approved to proceed as planned under observation that prospecting work does not extend beyond the surveyed site.
- Although located outside, the recorded burial site must be demarcated by a danger warning sign and must be clearly marked to avoid any accidental damage by especially heavy prospecting equipment.
- No stone robbing, or removal of any material is allowed. Any disturbance or alteration on this burial site would be illegal and punishable by law, under section 36 (3) of the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999).
- It is the responsibility of the applicant to protect the site from publicity (i.e. media) until a mutual agreement is reached.
- Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA.
- The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stone-walling, graves) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during prospecting (see Chance Find Procedure).
- The foot print impact of the proposed prospecting activities should be kept to minimal to limit the possibility of encountering chance finds within the proposed prospecting right application site.
- Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMP



for the mining phase, include chance archaeological finds mitigation procedure in the project EMP (See Appendix 1).

- The chance finds process will be implemented when necessary especially when archaeological materials and burials are encountered during subsurface construction activities.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

## **9 CONCLUDING REMARKS**

The literature review and field research confirmed that the project area is situated within a contemporary cultural landscape dotted with settlements with long local history. In terms of the archaeology and heritage in respect of the proposed prospecting site, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, still remains and the applicant and contractors are advised to be diligent and observant during prospecting, should prospecting activities commence on the site. The procedure for reporting chance finds has clearly been laid out (see Appendix 3). This report concludes that the prospecting right application may be approved by SAHRA to proceed as planned subject to recommendations herein made and heritage monitoring plan being incorporated into the EMP (also see Appendices). The mitigation measures are informed by the results of the AIA/HIA study and principles of heritage management enshrined in the NHRA, Act 25 of 1999.

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**APPENDIX 1: CHANCE FIND PROCEDURE**

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**CHANGE FIND PROCEDURE FOR PROPOSED PROSPECTING FO MANGANESE AND IRON  
ORE NEAR SANTOY IN THE NORTHERN CAPE PROVINCE**

**February 2019**

## **ACRONYMS**

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



## **CHANCE FIND PROCEDURE**

### **INTRODUCTION**

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction of proposed prospecting. The main purpose of a CFP is to raise awareness of all construction 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 construction 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 development 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 construction.

### **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.

### **BACKGROUND**

Proposed prospecting site is subject to heritage survey and assessment at planning stage in accordance with the 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 prospecting or the actual mining 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 Mlilo (2019) over a large area earmarked for the proposed prospecting. The AIA/HIA conducted was very comprehensive covering the entire site. The study did not record any significant archaeological or heritage resources.

### **PURPOSE**

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the proposed 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 earth moving and ground altering activities associated with proposed prospecting. 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 vegetation cover. ISS 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 construction 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 construction scheduling. It is recommended that due to the low to 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.

## CHANCE FIND PROCEDURE

### General

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

- All construction activity in the vicinity of the accidental find/feature/site must cease immediately avoid further damage to the site.
- Briefly note the type of archaeological materials you think you've 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 25m buffer zone from all sides of the find.
- 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. 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.
- 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 permit application process.
- Once authorisation has been given by SAHRA, the Applicant (IDT) will be informed when construction activities can resume.

### **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), ISS 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 company.

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



## Heritage Management Plan Input into the prospecting project EMP

| Objective                    | <ul style="list-style-type: none"> <li>Protection of archaeological sites and land considered to be of cultural value;</li> <li>Protection of known physical cultural property sites against vandalism, destruction and theft; and</li> <li>The preservation and appropriate management of new archaeological finds should these be discovered during construction.</li> </ul> |  |                    |                   |                        |             |           |                |
|------------------------------|--|--|--------------------|-------------------|------------------------|-------------|-----------|----------------|
| No.                          | Activity   | Mitigation Measures  | Duration           | Frequency         | Responsibility         | Accountable | Contacted | Informed       |
| <b>Pre-Prospecting Phase</b> |  |  |                    |                   |                        |             |           |                |
| 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]<br>CECO | SM          | ECO       | EA<br>EM<br>PM |
| <b>Prospecting Phase</b>     |  |  |                    |                   |                        |             |           |                |
| 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<br>CECO              | SM          | ECO       | EA<br>EM<br>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<br>CECO              | SM          | ECO       | EA<br>EM<br>PM |
|                              |  | Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;   |                    | Throughout        | C<br>CECO              | SM          | ECO       | EA<br>EM<br>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 PHRA.                                    |                    | When necessary    | C<br>CECO              | SM          | ECO       | EA<br>EM<br>PM |
|                              |  | Should any remains be found on site that is potentially human remains, the PHRA and South African Police Service should be contacted.  |                    | When necessary    | C<br>CECO              | SM          | ECO       | EA<br>EM<br>PM |
| <b>Rehabilitation Phase</b>  |  |  |                    |                   |                        |             |           |                |
|                              |  | Same as prospecting phase.   |                    |                   |                        |             |           |                |
| <b>Operational Phase</b>     |  |  |                    |                   |                        |             |           |                |
|                              |  | Same as prospecting phase.   |                    |                   |                        |             |           |                |

## Appendix 3: Heritage mitigation measures table

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## Heritage mitigation measures table

| SITE REF                               | HERITAGE ASPECT   | POTENTIAL IMPACT   | MITIGATION MEASURES   | RESPONSIBLE PARTY  | PENALTY  | METHOD STATEMENT REQUIRED  |
|--|---|--|---|--|--|--|
| Chance Archaeological and Burial Sites | General area where the proposed project is situated is a historic landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work which may disturb previously unidentified chance finds. | <p>Possible damage to previously unidentified archaeological and burial sites during construction phase.</p> <ul style="list-style-type: none"> <li>• Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites.</li> <li>• Loss of historic cultural landscape;</li> <li>• Destruction of burial sites and associated graves</li> <li>• Loss of aesthetic value due to construction work</li> <li>• Loss of sense of place</li> </ul> <p>Loss of intangible heritage value due to change in land use</p> | <p>In situations where unpredicted impacts occur construction activities must be stopped and the heritage authority should be notified immediately.</p> <p>Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate.</p> <ul style="list-style-type: none"> <li>• Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access thereto by the construction team must be denied.</li> <li>• Accidentally discovered burials in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. The heritage officer responsible should secure relevant heritage and health authorities permits for possible relocation of affected graves accidentally encountered during construction work.</li> </ul> | <ul style="list-style-type: none"> <li>• Contractor /</li> <li>• Project Manager</li> <li>• Archaeologist</li> <li>• Project EO</li> </ul> | Fine and or imprisonment under the PHRA Act & NHRA | <p>Monitoring measures should be issued as instruction within the project EMP.</p> <p>PM/EO/Archaeologists Monitor construction work on sites where such development projects commences within the farm.</p> |



**Appendix 4: Legal background in South Africa**

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## Legal background 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.

(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.

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.

#### 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 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.