DRAFT PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR LEGARE MINING SERVICES (PTY)LTD WITHIN ALL PORTIONS OF FARM RONDAVELSKRAAL 290 JP, SITUATED UNDER THE MAGISTERIAL DISTRICT OF MARICO, NORTH-WEST PROVINCE.

DATE: 13 JUNE 2021

Document Information

Item	Description
Proposed development and location	Proposed Prospecting Right Application and Environmental Authorization Application within all Portions of the Farm Rondavelskraal 290 JP Marico Magisterial District, North West Province.
Purpose of the study	To carry out an Archaeological and Heritage Impact Assessment to determine the presence/absence of cultural heritage sites and the impact of proposed prospecting on these resources.
1:50 000 Topographic Map	See Figure 1
Coordinates	See Figure 1 and 2
Municipalities	Magisterial District of Marico, Ngaka Modiri Molema District Municipality
Predominant land use of surrounding area	Commercial agriculture, vacant land and residential .
Applicant	Legare Mining Services (Pty) Ltd, Smokey Mountain Office Park, Unit No 201, Second Floor Route N4 Business Park, Witbank 1035 Republic of South Africa Office +27 13 656 0180 /+27 87 150 7131 Fax +27 86 690 7791 Email: admin@legare.co.za
Reference No.	NW 30/5/1/1/2/13015 PR
EAP	Singo Consulting (Pty) Ltd Office No: 16, First Floor (South Block) Corridor Hill Crossing, 09 Langa Crescent, Corridor Hill, eMalahleni Tel: +27 71 895 2436/ +27 13 692 0041 Fax: +27 86 5144 103 Email: betty@singoconsulting.co.za / admin@singoconsulting.co.za
Heritage Consultant	Integrated Specialist Services (Pty) Ltd Constantia Park, Building 16-2, 546, 16th Road, Midrand, 1685 Tel: 010 492 4330, Fax: 086 652 9774, Cell: 076 328 1558 / 071 685 9247 Email: trust@issolutions.co.za
Author	Trust Mlilo (Archaeology and Heritage Specialist)
Date of Report	13/06/ 2021

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 Singo Consulting (Pty) Ltd. Integrated Specialist Services (Pty) Ltd has no business, personal, financial or other interest in the proposed development 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.

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).

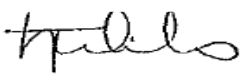
Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

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 the Proposed Prospecting Right Application and Environmental Authorization Application within all Portions of Farm Rondavelskraal 290 JP Marico Magisterial District, North West Province being proposed by Legare Mining Services (Pty) Ltd

Signed by



13/ 06/ 2021

Acknowledgement

The author acknowledges Singo Consulting (Pty) Ltd and Legare Mining Services (Pty) Ltd for their assistance with project information and responding to technical queries related to the project. Special thanks go to the farm owners who provided the study team access to their farms and shared vital heritage related information with the study team. We would like thank Mr Swart, R, Mr Mutimukhule and Boiboi for showing us heritage sites in their farms. Above all the farming community was hospitable to us.

TABLE OF CONTENTS

DOCUMENT INFORMATION I

ACKNOWLEDGEMENT III

TABLE OF PLATES [PHOTOGRAPHS] ..... **V**

EXECUTIVE SUMMARY ..... **VIII**

ABBREVIATIONS ..... **XII**

KEY CONCEPTS AND TERMS ..... **XIII**

1 INTRODUCTION ..... **- 16 -**

BACKGROUND ..... - 16 -

DESCRIPTION OF THE PROPOSED PROJECT ..... - 17 -

LOCATION OF THE PROPOSED DEVELOPMENT ..... - 19 -

2 LEGAL REQUIREMENTS ..... **- 25 -**

ASSESSING THE SIGNIFICANCE OF HERITAGE RESOURCES ..... - 26 -

CATEGORIES OF SIGNIFICANCE ..... - 27 -

AESTHETIC VALUE: ..... - 28 -

HISTORICAL VALUE: ..... - 28 -

SCIENTIFIC VALUE: ..... - 28 -

SOCIAL VALUE: ..... - 28 -

FORMALLY PROTECTED SITES ..... - 28 -

GENERAL PROTECTION ..... - 28 -

SIGNIFICANCE RATING ACTION ..... - 29 -

OTHER RELEVANT LEGISLATIONS ..... - 31 -

TERMS OF REFERENCE ..... - 31 -

3 METHODOLOGY ..... **- 41 -**

ASSUMPTIONS AND LIMITATIONS ..... - 42 -

CONSULTATIONS ..... - 43 -

4 CULTURE HISTORY BACKGROUND OF THE PROJECT AREA ..... **- 44 -**

INTANGIBLE HERITAGE ..... - 47 -

SAHRIS DATABASE AND IMPACT ASSESSMENT REPORTS IN THE PROPOSED PROJECT AREA ..... - 47 -

5 RESULTS OF THE ARCHAEOLOGICAL/HERITAGE ASSESSMENT STUDY ..... **- 48 -**

ARCHAEOLOGICAL AND HERITAGE SITES ..... - 50 -

BUILDINGS AND STRUCTURES OLDER THAN 60 YEARS ..... - 59 -

BURIAL GROUNDS AND GRAVES ..... - 63 -

PUBLIC MONUMENTS AND MEMORIALS ..... - 72 -

BATTLE FIELDS ..... - 72 -
PALAEONTOLOGY ..... - 72 -
ARCHAEO-METALLURGY, PREHISTORIC MINING AND MINING HERITAGE ..... - 72 -
MITIGATION ..... - 72 -

6 CUMMULATIVE IMPACTS ..... - 73 -

7 ASSESSMENT OF SIGNIFICANCE ..... - 74 -
THE SIGNIFICANCE OF THE IMPACTS WILL BE ASSESSED CONSIDERING THE FOLLOWING DESCRIPTORS: ..... - 74 -

8 STATEMENT OF SIGNIFICANCE ..... - 78 -

9 DISCUSSION ..... - 79 -

10 RECOMMENDATIONS ..... - 80 -

11 CONCLUDING REMARKS ..... - 82 -

12 BIBLIOGRAPHY ..... - 83 -

APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR LEGARE MINING SERVICES (PTY)LTD WITHIN ALL PORTIONS OF FARM RONDAVELSKRAAL 290 JP, SITUATED IN THE MAGISTERIAL DISTRICT OF MARICO, NORTH-WEST PROVINCE ..... - 90 -

CHANCE FIND PROCEDURE ..... - 91 -

INTRODUCTION ..... - 91 -

DEFINITIONS ..... - 91 -

BACKGROUND ..... - 91 -

PURPOSE ..... - 92 -

CHANCE FIND PROCEDURE ..... - 92 -

MANAGEMENT OF CHANCE FINDS ..... - 93 -

APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROSPECTING RIGHT APPLICATION EMP ..... - 96 -

APPENDIX 3: LEGAL BACKGROUND IN SOUTH AFRICA ..... - 97 -

TABLE OF PLATES [PHOTOGRAPHS]

Plate 1: Photo 1: View of mountain range within the prospecting right site (Photograph © by Author 2021). - 32 -
Plate 2: Photo 2: View of proposed prospecting right site (Photograph © by Author 2021). - 32 -
Plate 3: Photo 3: View of prospecting right site (Photograph © by Author 2021). - 33 -
Plate 4: Photo 4: View of the prospecting right site (Photograph © by Author 2021) - 33 -
Plate 5: Photo 5: View of extensive soil erosion within the prospecting right site Photograph © by Author 2021). - 34 -
Plate 6: Photo 6: View of the proposed prospecting right site (Photograph © by Author 2021) - 34 -

Plate 7: Photo 7: View of the proposed prospecting site (Photograph © by Author 2021). - 35 -
Plate 8: Photo 8: View of the proposed prospecting site (Photograph © by Author 2021). - 35 -
Plate 9 Photo 9: View of proposed prospecting site (Photograph © by Author 2021). Note the high vegetative cover affects the visibility of archaeological materials. - 36 -
Plate 10: Photo 10: View of proposed prospecting right site (Photograph © by Author 2021). - 36 -
Plate 11: Photo 11: View of agricultural infrastructure within theproposed prospecting right site(Photograph © by Author 2021). - 37 -
Plate 12: Photo 12: View of proposed prospecting right site (Photograph © by Author 2021). - 37 -
Plate 13: Photo 13: View of the proposed prospecting site (Photograph © by Author 2021). - 38 -
Plate 14: Photo 14: Showing access road within the proposed prospecting right application site (Photograph © by Author 2021). - 38 -
Plate 15: Photo 15: Showing railway line within the proposed prospecting right site (Photograph © by Author 2021). - 39 -
Plate 16: Photo 16: Proposed prospecting site is bound by regional highway road (Photograph © by Author 2021). - 39 -
Plate 17: Photo 17: View of active farmland within the proposed prospecting right application site (Photograph © by Author 2021). - 40 -
Plate 18: Photo 18: Access road within the active farm (Photograph © by Author 2021). - 40 -
Plate 19: Photo 19: View of some sections of the stone walled site (Photograph © by Author 2021). - 51 -
Plate 20: Photo 20: View of a stone walled enclosure (Photograph © by Author 2021). - 52 -
Plate 21: Photo 21: View of LIA site (Photograph © by Author 2021). - 52 -
Plate 22: Photo 22: View of LIA site (Photograph © by Author 2021). - 53 -
Plate 23: Photo 23: View of collapsing stone walled settlements (Photograph © by Author 2021). - 53 -
Plate 24: Photo 24: View of sections of site concealed by vegetation © by Author 2021). - 54 -
Plate 25: Photo 25: View of a collapsed stone enclosure (Photograph © by Author 2021). - 54 -
Plate 26: Photo 26: View of access road cutting across the site (Photograph © by Author 2021). - 55 -
Plate 27: Photo 27: View of a well-preserved structure (Photograph © by Author 2021). - 55 -
Plate 28: Photo 28: View of a well-preserved enclosure (Photograph © by Author 2021). - 56 -
Plate 29: Photo 29: View of a partially destroyed enclosure (Photograph © by Author 2021). - 56 -
Plate 30: Photo 30: View of a partially destroyed structure (Photograph © by Author 2021). - 57 -
Plate 31: Photo 31: View of a well-preserved section of a stone walled structure (Photograph © by Author 2021). - 57 -
Plate 32: Photo 32: View of collapsed stone wall (Photograph © by Author 2021). - 58 -
Plate 33: Photo 33: View of a farm owner showing the collapsing structures (Photograph © by Author 2021). - 58 -
Plate 34: Photo 34: View of historical school building (Photograph © by Author 2021). - 59 -
Plate 35: Photo 35: View of a historical farm house (Photograph © by Author 2021). - 59 -
Plate 36: Photo 36: View of a historical farm building(Photograph © by Author 2021). - 60 -
Plate 37: Photo 37: Showing a historical farm building (Photograph © by Author 2021). - 60 -

Plate 38: Photo 38: Showing a historical farm building(Photograph © by Author 2021). - 61 -
Plate 39: Photo 39: Showing a historical farm building (Photograph © by Author 2021). - 61 -
Plate 40: Photo 40: Showing a historical farm building (Photograph © by Author 2021). - 62 -
Plate 41: Photo 41: Showing a dilapidated farm building (Photograph © by Author 2021). - 62 -
Plate 42: Photo 42: Showing a historical farm building (Photograph © by Author 2021). - 63 -
Plate 43: Photo 43: Showing a dilapidated farm building (Photograph © by Author 2021). - 63 -
Plate 44: Photo 44: Showing Burial site RBS1 (Photograph © by Author 2021). - 65 -
Plate 45: Photo 45: Showing Burial site RBSI (Photograph © by Author 2021). - 66 -
Plate 46: Photo 46: Showing a collapsed tombstone at RBSI (Photograph © by Author 2021). - 66 -
Plate 47: Photo 47: Showing the farm workers cemetery RBS2 (Photograph © by Author 2021). - 67 -
Plate 48: Photo 48: Showing one of the few graves marked by tombstones and inscribed headstones at RBS2 (Photograph © by Author 2021). - 67 -
Plate 49: Photo 49: Showing Burial site RBS3 Pioneer cemetery (Photograph © by Author 2021). - 68 -
Plate 50: Photo 50: Showing British grave marked by a still cross (Photograph © by Author 2021). - 68 -
Plate 51: Photo 51: Showing some graves within Burial site RBS3 (Photograph © by Author 2021). - 69 -
Plate 52: Photo 52: Showing one of the Swart family members and neighbouring landowners explaining the nature of their family cemetery (Photograph © by Author 2021). - 69 -
Plate 53: Photo 53: Showing graves at Burial site RBS3 (Photograph © by Author 2021). - 70 -
Plate 54: Photo 54: Showing Burial site RBS4 (Photograph © by Author 2021). - 70 -
Plate 55: Photo 55: Showing tree growing on top of graves at Burial site RBS4 (Photograph © by Author 2021). - 71 -
Plate 56: Photo 56: Showing the impact of vegetation overgrowth on graves at Burial site RBS4 (Photograph © by Author 2021). - 71 -

LIST OF FIGURES

Figure 1: Proposed Prospecting Right Site (Singo,2021) ..... - 20 -
Figure 2: Prospecting Right Application site (ISS 2021) ..... - 21 -
Figure 3: Recorded heritage sites within the proposed prospecting right site (ISS 2021) ..... - 22 -
Figure 4: Recorded heritage sites within the proposed prospecting right site (ISS 2021) ..... - 23 -
Figure 5: Showing recorded LIA site within the proposed prospecting right application site (ISS 2021) ..... - 24 -

LIST OF TABLES

Table 1: Summary of Findings ..... - 48 -
Table 2: Coordinates of Identified Heritage Sites ..... - 49 -
Table 3: Criteria Used for Rating of Impacts ..... - 74 -
Table 4: Criteria for Rating of Classified Impacts ..... - 76 -
Table 5: Operational Phase ..... - 77 -

EXECUTIVE SUMMARY

Legare Mining Services (Pty) Ltd is applying for a Prospecting Right and Environmental Authorization Application within all Portions of Farm Rondavelskraal 290 JP, Magisterial District of Marico, North-West Province. The prospecting right application site is located in an area that is predominantly agriculture (crop and livestock farming) and emerging game farming and tourism (See Figure 3). The study noted that the Marico area is rich in Late Iron Age stone walled settlements, historic farmsteads and historic colonial graves. Any listed development in this area must take full cognizance of potential occurrence heritage resources at any given site. Various national and provincial legislative arms mandate pre-development assessment to ensure protection of heritage resources. The rich geological and agricultural resources of the project area have also led to extensive farming activities that had robbed parts of the area's pristine environments. The implications of this observation are that whatever heritage resources that still exist in the area must be protected from any developments.

Archaeological resources in the general project area stretches into deep time starting with australopithecines. These australopithecines were gradually displaced by early hominid (Homo Habilis) that was later replaced by the early crude stone tool using hominid (Homo erectus around 1.8 million years ago). This marked the beginning of the Stone Age (ESA), which is not very widespread in the study area. Nonetheless the area has isolated occurrences of the Middle Stone Age (MSA) industries associated with anatomically modern humans, Homo sapiens that replaced the ESA around 250000 years ago. The subsequent replacement of the MSA by Later Stone Age (LSA) occurred from about 20000 years ago and the new technology is also represented in isolated occurrences. The LSA is triggered a series of technological innovations and social transformations within these early hunter-gatherer societies that included the advent of rock art (painting and engravings), associated with the Khoisan communities. From this period onwards, there has not been significant reports of Early Iron Age (AD200 to 1000) sites in the study area until the post 15th century Ntsuanatsatsi-Uitkomsts (Nguni-speakers) and Olifantsfontein and Buispoort (Sotho-Tswana speakers) period of Late Iron Age that is characterized by stone walling. Key historical events relate to the 19th century encroachment of Boer Trekkers and Mfecane fleeing Mzilikazi's Ndebele people, as well as the aftermaths of Boer-Anglo and European-African military encounters that resulted in the establishment of several towns. These armed encounters left trails of historical battle grounds, cemeteries and unmarked graves that are protected by the South African heritage legislation and must not be disturbed without consultation and approval from national and provincial heritage agencies. Graves in general, and historical (over 60 years) graves in particular, are of high social significance and must be preferably preserved *in situ*. Other historical mining activities relates to the discovery of coal in the project area. All the same, archaeological resources are known to occur in buried

contexts that may only be identifiable during prospecting, such that failure to detect them during field surveys is not absolute evidence of their absence and a clear procedure for reporting chance finds must be followed during construction.

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. Integrated Specialist Services (Pty) Ltd (ISS) was retained by Singo Consulting (Pty) Ltd to conduct this Archaeological and Heritage Impact Assessment (AIA/HIA) Study for the Prospecting Right Application and Environmental Authorization Application within all Portions of Farm Rondavelskraal 290 JP, Marico Magisterial District in North West Province. This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed prospecting. This study was conducted as part of the specialist input for the Environmental authorisation process. The project information has been passed to ISS research team by the project EAP. 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 hypothesis and verify this prediction within the proposed prospecting site. The general project area is predominantly agriculture.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed prospecting.
- The prospecting right site was accessed through farm tracks, and the field survey was effective enough to cover most sections of the project receiving environs. However, the boundary of the development site had limited access because of dense vegetation cover and farm boundaries
- The immediate project area is predominantly agricultural (commercial farming).

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

- ❖ The prospecting teams must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during clearance and prospecting at the site prior to commencement of work 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 must cease immediately and the SAHRA/ North West PHRA 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 values are likely to be significant on where LIA site was recorded on the foothills a mountain and where graves and historical buildings occur. All the identified heritage sites must be avoided by providing for a buffer zone of up to 100m on all sides of each heritage site.

The assessment reached the following conclusions:

1. Sections of the southern part of the proposed prospecting site are currently being utilised for agriculture (crop farming) while the northern section of the site is used for livestock grazing.
2. The unavailability of recorded surface findings doesn't necessarily mean material remains do not exist, there is possibility and potential to recover significant archaeological resources buried beneath the surface although the site has been previously disturbed.

Recommendations

1. The LIA site recorded on the foothill of the mountain must be avoided, the site needs to be properly mapped and its boundaries clearly marked before any activities can be allowed.
2. Given the existence of a mega LIA stone walled settlement in the proposed prospecting site, any prospecting activities on the northern portion of the proposed prospecting site across Road N4 must be monitored by a professional archaeologist.
3. All burial sites and historical buildings must be avoided by providing for a 100m buffer zone on all sides of the burial site or structure in accordance with the 2020 SAHRA Regulations.
4. All recorded heritage sites must be clearly mapped and marked should the proposed prospecting be allowed to proceed as planned.
5. It is also advised that the Archaeology, Palaeontology and SAHRA Meteorites Unit is alerted when site work begins.
6. Strict and clear reporting procedures for chance findings must be followed by Legare Mining Services (Pty) Ltd and its contractors throughout the whole period of prospecting.
7. From a heritage perspective the proposed prospecting right application may be allowed on areas previously cleared such agriculture fields and open areas where the study did not

record any significant archaeological remains subject to monitoring by a professional archaeologist during prospecting.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
ECO	Environmental Control Officer
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EM	Environmental Manager
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
PM	Project Manager
PHRA	Provincial Heritage Agency
SM	Site Manager
SAHRA	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).

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

Most heritage sites occur within communities, whose development should not be neglected in the name of heritage preservation but should be encouraged and embraced within legal and adaptive management frameworks (Carter and Grimwade 1997; Salafsky *et al* 2001). This case is true for the entire project area, which hosts palaeontological, archaeological, historical, natural and contemporary heritage resources (Maggs 1976, Mason, 1986, Boeyens 2003, Huffman 2007, Hall, *et al* 2008. Moton 2008. Anderson 2009). Legare Mining Services (Pty) Ltd is applying for a Prospecting Right and Environmental Authorization Application within all Portions of Farm Rondavelskraal 290 JP within Ngaka Modiri Molema District Municipality in the North West Province. Previous heritage studies (Pistorius 2014, Pelseer, 2012, 2015, Mlilo 2018, 2019, Marais 2021) recorded scatters of potsherds in places around the proposed prospecting site. The studies mention a range of heritage resources in the general project area. As such this current report must be read in conjunction with the previous HIA report by Pistorius (2009) and Pelser 2012, 2015). This study focuses on the site ear marked for prospecting (see Figure 1).

The purpose of this Archaeology and Heritage Study is to assess presence/absence of heritage resources on the prospecting right site. 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. 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. Integrated Specialist Services (Pty) Ltd (ISS), an independent consulting firm, conducted an 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) Conclusion

Description of the proposed project

Legare Mining Services (Pty) Ltd is undertaking a prospecting right application which will be valid for a period of approximately 5 years. The application is for both non-invasive and invasive methods of prospecting and it entail the following activities but not limited to the activities below:

Non-Invasive methods are methods that do not cause disturbances to the land. Examples of non-invasive methods include aerial photography, desktop studies, and aeromagnetic surveys. Invasive methods are activities that result in land disturbances and comprise of diamond core drilling, sampling and sampling storage. The proposed activities will be implemented in phases as detailed below.

Non-invasive Activities (Phase 1)

Literature Review

Initial Phase 1 work will include the collection and interpretation of all available data and the compilation of Geographic Information Systems (GIS) database. The information to be collected will include aerial photos, orthophotos, aeromagnetic data, topo-cadastral maps, geological maps, results of historic exploration programmes and any other published literature and maps. The desktop study will aid in compiling a preliminary geological model of the area to be utilized in the planning geological mapping and sighting of drill holes.

Geophysical survey

Ground geophysical surveys will involve the systematic measurement of magnetic, gravitational and electromagnetic fields over target areas of interest within the property, using appropriate instruments. The individual survey areas will vary between 500 x 500m to 2 x 2km depending on the inferred size of any target. Magnetic survey lines will be spaced at a maximum of 50m apart and readings will be taken at a minimum of 5m intervals along the lines. Electromagnetic and gravity survey lines will be spaced at a maximum of 100m apart with readings taken at a maximum of 50m along the lines. After data collection has been completed, data processing and visualization will be carried out to allow the interpretation of the survey.

Resource estimation

The borehole, geophysical survey and analytical data/results are captured into an electronic database. A geological model is then developed that forms the basis for the resource estimate. The purpose of the resource estimate is to obtain an indication of the tonnage and quality of a potential base metal deposit.

Invasive Activities (Phase 2 & 3)

Drilling

Drilling will be the most important method of prospecting. Diamond core drilling method will be used. The rig will be mounted on a 4 x 4 truck or trailer. The hole diameter will be typically 47.5mm to 65mm. The mineralisation may be present from surface up to a depth of 1000m and thus drill holes depths will range between 200 and 1000m. An independent and experienced drilling contractor will be used to complete the drilling in accordance with industry best practice and in compliance with the Mine Health and Safety Act. Borehole sites are GPS located and pegged. The site will be inspected and photographed prior to any disturbance. The removal of vegetation will be within the drill pad area and will be demarcated prior to construction, to ensure that the footprint of the disturbance is limited. Topsoil stripping will be restricted to the footprint of the site under operation as far as possible to minimise soil erosion. Where practicable topsoil will be stripped to a depth of 10cm and stockpiled separately. After each drill hole is complete, logged and sampled, the borehole collar is surveyed by an independent surveyor using a high-accuracy differential GPS. Thereafter the drill sumps will be filled in, the drill area rehabilitated and photographed according to the procedures as stipulated in the Environmental Management Plan. The rehabilitation process will be closely monitored to ensure that standards are not compromised. A drill site will only be considered rehabilitated when done in accordance with applicable legislation and acceptable environmental standards.

Sampling and Analyses/Test Work

The boreholes will be logged and sampled where mineralisation has been identified. Samples will be submitted for analyses to determine the average metal content. Each sample is logged, halved, bagged and numbered in the field by the geologist and field assistants. The core will be split into two halves, with one half of the core taken for assay purposes and the other half being retained. Each sample will be measured and weighed and the sample lengths will be recorded before despatch for assays at a South African National Accreditation System (SANAS) accredited laboratory.

The Construction phase

As this activity mainly entails Prospecting, a small drill pad will be set up on site, Enviro-loo ablution facilities placed in close proximity to it, drill site, access road, fuel storage and equipment storage will be located at an environmentally secure position/s agreed upon by the applicant, the landowner/s and the Environmental Control Officer (ECO) and cannot be determined at this stage of the process. No permanent structures will be erected.

Prospecting (Operational) phase

In terms of this application, non-invasive prospecting activities would be carried out by the applicant within the prospecting study area once the right has been approved. The identified target areas shall be visited by means of 4x4 vehicles along existing farm access as far as practically possible. Dense/intact land parcels would be accessed by foot. During this phase, it is anticipated that there will be limited site clearance. The equipment which will be used is 4x4 vehicles in the initial phase. During the invasive drilling stage, a drilling rig will be used. The invasive

prospecting phase of the project will involve the actual drilling, survey and sampling. Drilling and sampling will increase noise and can create dust. Employees operating the drilling and sampling equipment will use personal protective equipment (PPE) such as ear plugs to minimise exposure to the noise from machinery, dust masks, hard hats, safety boots, etc. Working hours (drilling and sampling) will be limited to between 07h00 and 17h30. A total of approximately 30 holes will be drilled as part of Phase 2 and 3 respectively (thus per phase) to a depth of approximately 200m and 1000m respectively. All activities will be done in accordance with industry best practice and in compliance with the Mine Health and Safety Act

The Decommission/Rehabilitation phase

Decommissioning phase involve rehabilitation of the area to the state in which it was prior to prospecting and disturbance. All equipment will be removed from the site. All the stockpiled soil will be backfilled into the sumps and boreholes. Any rock cores and any ablution facilities that were erected will be removed.

During each of the above-mentioned phases all directly and indirectly impacted and affected parties will be consulted with before any activities take place.

Location of the proposed development

The proposed location for Legare Mining Services (Pty) Ltd Chrome, Nickel, Gold, Cobalt and Iron ore prospecting is on various portions of the farm Rondavelskraal 290 JP approximately 7.64 km South-East km of Groot Marico and about 40.33 km South-East of Zeerust situated within Magisterial District of Marico, North-West Province.

.

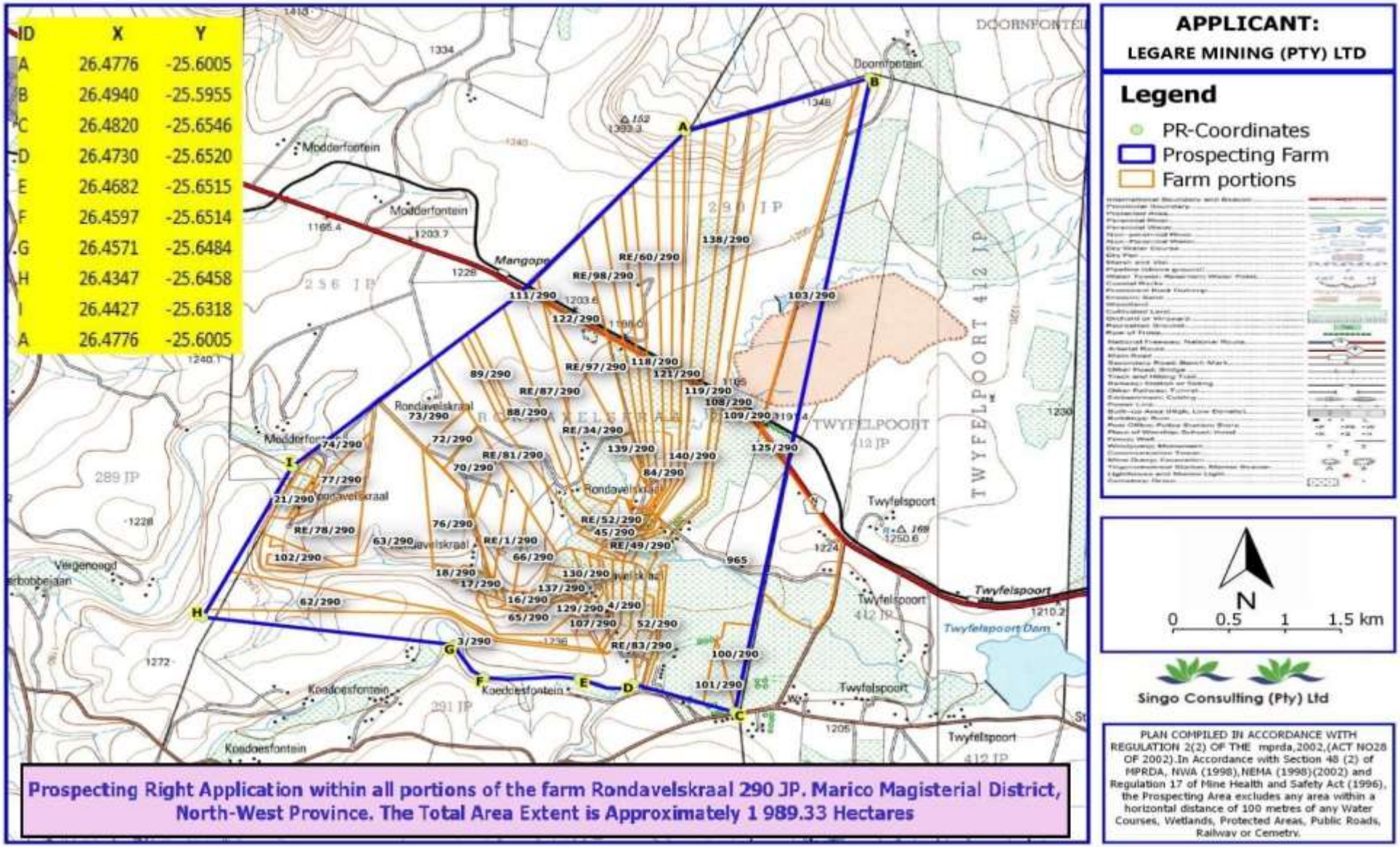


Figure 1: Proposed Prospecting Right Site (Singo,2021)

Figure 2: Prospecting Right Application site (ISS 2021)

Figure 3: Recorded heritage sites within the proposed prospecting right site (ISS 2021)

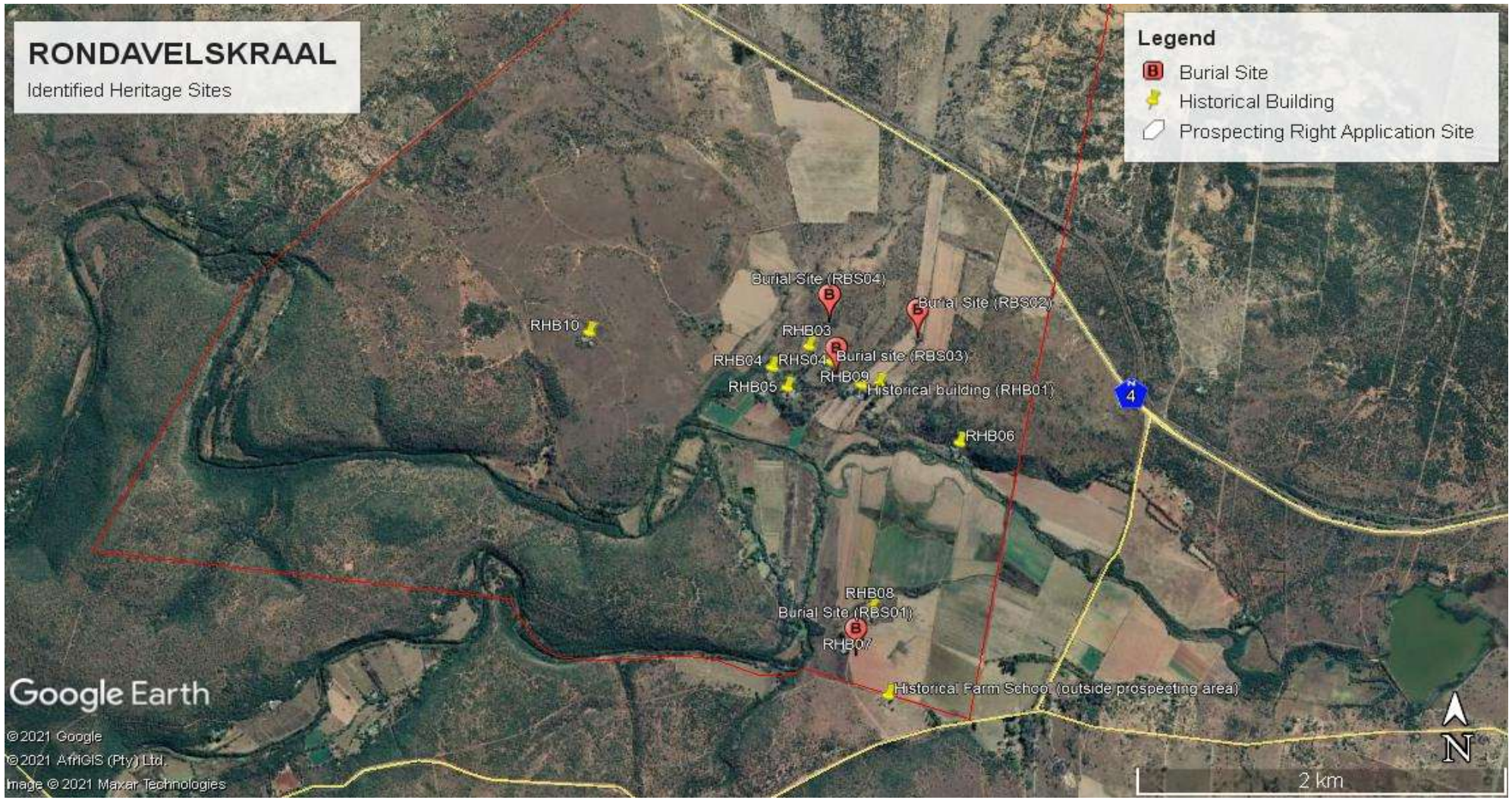


Figure 4: Recorded heritage sites within the proposed prospecting right site (ISS 2021)

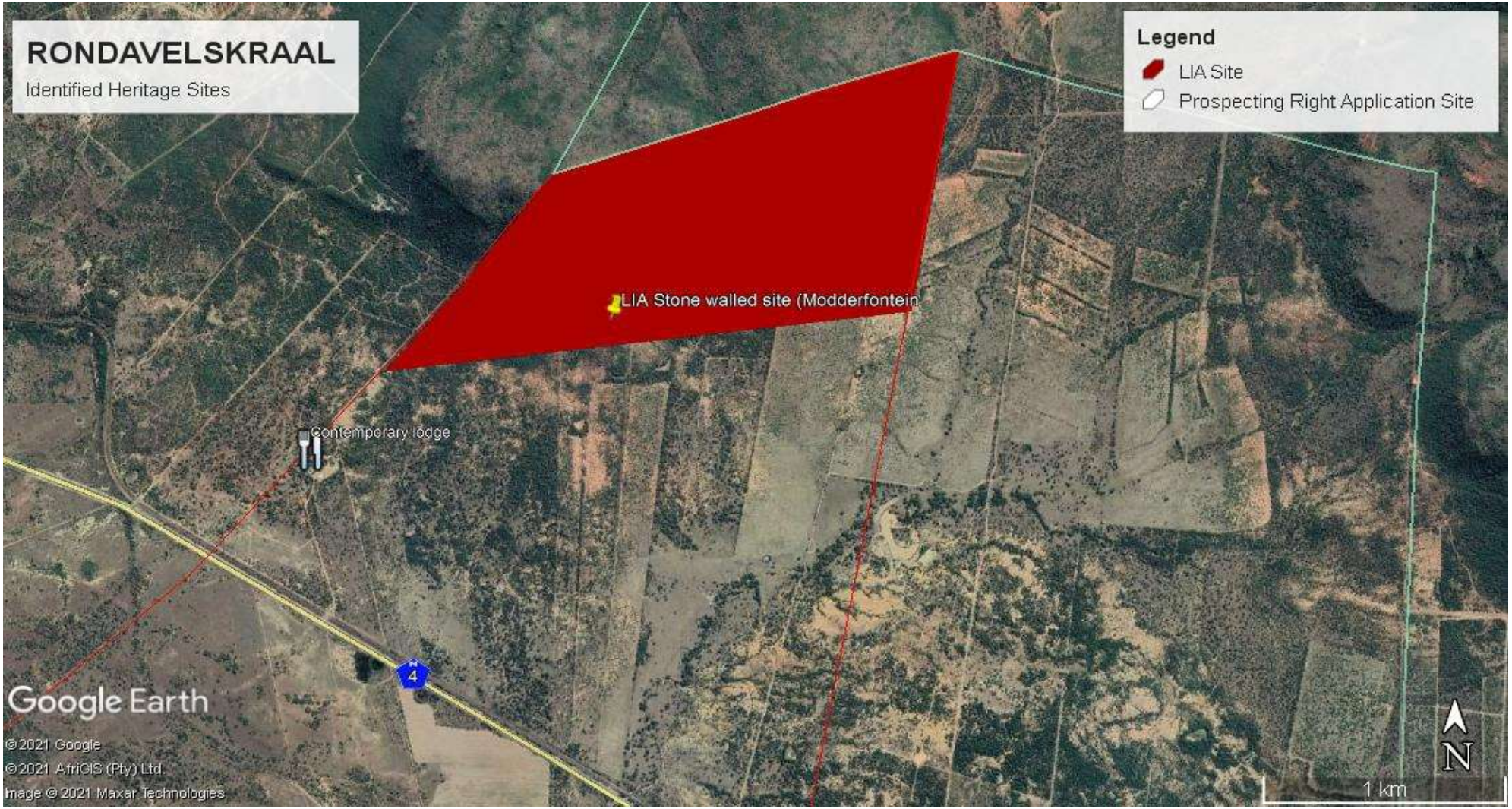


Figure 5: Showing recorded LIA site within the proposed prospecting right application site (ISS 2021)

2 LEGAL REQUIREMENTS

Relevant pieces of legislations 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, the environmental consultant, SAHRA or PHRA and interested and affected parties about existing heritage resources that may be affected by the proposed development, 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 powerlines, roads and other destructive economic activities such as mining and agriculture. This true for the Groot Marico (proposed project area) whose main economic activities are 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 development as guided by the criteria in NHRA, MPRDA 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	Yes
	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	Subject to identification during Phase 1
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 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 prospecting right application.
- 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;

PHOTOGRAPHIC PRESENTATION OF THE PROJECT SITE

Plate 1: Photo 1: View of mountain range within the prospecting right site (Photograph © by Author 2021).

Plate 2: Photo 2: View of proposed prospecting right site (Photograph © by Author 2021).

Plate 3: Photo 3: View of proposed prospecting right site (Photograph © by Author 2021).

Plate 4: Photo 4: View of the proposed prospecting right site (Photograph © by Author 2021)

Plate 5: Photo 5: View of extensive soil erosion within the proposed prospecting right site Photograph © by Author 2021).

Plate 6: Photo 6: View of the proposed prospecting right site (Photograph © by Author 2021)

Plate 7: Photo 7: View of the proposed prospecting site (Photograph © by Author 2021).

Plate 8: Photo 8: View of the proposed prospecting site (Photograph © by Author 2021).

Plate 9 Photo 9: View of proposed prospecting site (Photograph © by Author 2021).

Plate 10: Photo 10: View of proposed prospecting right site (Photograph © by Author 2021).

Plate 11: Photo 11: View of agricultural infrastructure within the proposed prospecting right site (Photograph © by Author 2021).

Plate 12: Photo 12: View of proposed prospecting right site (Photograph © by Author 2021).

Plate 13: Photo 13: View of the proposed prospecting site (Photograph © by Author 2021).

Plate 14: Photo 14: Showing access road within the proposed prospecting right application site (Photograph © by Author 2021).

Plate 15: Photo 15: Showing railway line within the proposed prospecting right site (Photograph © by Author 2021).

Plate 16: Photo 16: Proposed prospecting site is bound by regional highway road (Photograph © by Author 2021).

Plate 17: Photo 17: View of active farmland within the proposed prospecting right application site (Photograph © by Author 2021).

Plate 18: Photo 18: Showing access road within the active farmland, the farming area is within the proposed prospecting site (Photograph © by Author 2021).

3 METHODOLOGY

Relevant published and unpublished sources were consulted in generating desktop information for this report. This included online databases such as the UNESCO website, Google Earth, Google Scholar and SAHRIS. Previous HIA in the project area were also consulted (Pelser 2012, 2015, Pistorius 2009, 2012, 2013, Marais 2020, van Schalkwyk 2014, Mlilo 2018, 2019). A number of published works on the archaeology, history and palaeontology were also consulted. This included dedicated archaeological, paleontological and geological works by (Breutz 1956; 1968; 1987; Button 1971; Clarck 1971; Eriksson *et al*. 1975; Bertrand and Eriksson 1977; Humphreys 1978; Humphreys and Thackeray 1983; Beaumont and Vogel 1984; Beaumont and Morris 1990; Beaumont 1999; Holmgren *et al*. 1999; Johnson *et al.* 1997; Peabody 1954; Shillington 1985; Wills 1992; Young 1934; 1940, Huffman 2007, Mason 1962). Thus, the prospecting right application by Legare Mining Services (Pty) Ltd was considered in relation to the broader landscape, which is a key requirement of the ICOMOS Guidelines.

This document falls under the basic assessment phase of the HIA and therefore aims at providing an informed heritage-related opinion about the proposed prospecting right application and environmental authorization application. This is usually achieved through a combination of a review of any existing literature and a basic site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted HIA practices and aimed at locating all possible heritage objects, sites and features of cultural significance on the proposed development site. Initially a drive-through was undertaken around the proposed development site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed mining development. The field survey was undertaken in June of 2021 by an archaeologist, ecologist and the EAPs. The proposed prospecting site was surveyed through tracks, footpaths which cut across the proposed prospecting site. The main focus of the survey involved a pedestrian survey which was conducted across the proposed site. The pedestrian survey focussed on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller that the surrounding grass veld; the presence of exotic trees; evidence for building rubble, and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern agriculture and associated infrastructure; the general project area would have been a rewarding region to locate heritage resources related to Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that has previously been cleared of vegetation but is now dominated by agricultural activities. Several agricultural infrastructure developments such access roads, high voltage and minor voltage powerlines, pipelines and other infrastructure dominate the project area.

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 revealed at the site during prospecting, such activities should be halted immediately, and a competent heritage practitioner, SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. 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. 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 activities 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 prospecting site by using the existing access roads and there will be no construction 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 surficially 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.

Consultations

Public consultations are being conducted by the project EAP and issues raised by Interested and Affected parties will be presented during project specialist integration meetings. Issues relating to heritage will be forwarded to the heritage specialist. Integrated Specialist Services (Pty) Ltd team consulted local residents in respect of heritage resources such as graves, historical buildings and structures located in the area.

4 CULTURE HISTORY BACKGROUND OF THE PROJECT AREA

The project area is located near Groot Marico in the Magisterial District of Marico of North West Province. The project area is located in the North West Province of South Africa that boosts a rich traditional homeland of the contemporary Western Sotho-Tswana including Hurutshe, Kwena, and Kgatla (Huffman 2007, Coetzee 2010). Archaeological and heritages studies in the region indicate that the area is of high pre-historic and heritage significance. It is in fact a cultural landscape where palaeontological, Stone Age, Iron Age and Historical period sites contribute the bulk of the cultural heritage of the region (Legassick, 1969, Maggs, 1976, Mason, 1986, Reid *et al* 1997, Hall, 1998, Berg 1999, Calebrese 1996; Boeyens, 2000, Lane 2000, 2003, Pistorius, 1992, 1997, 2009, Anderson, 2009, Pistorius *et al* 2001, Fredriksen, 2007, Huffman, 2007,Hall, *et al* 2008, Moton, 2008, Sadr 2012 and Jordaan 2016).

Stone Age sites are general identifiable by stone artefacts found scattered on the ground surface, as deposits in caves and rock shelters as well as in eroded gully or river sections. Archaeological sites recorded in the project region confirms the existence of Stone Age sites that conform to the generic SA periodization split into the Early Stone Age (ESA) (2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (22 000 years ago to 300 years ago). Stone Age sites in the region are also associated with rock painting sites. Cave sites also exist on the landscape south west of the project area.

Concentrations of Early Stone Age (ESA) sites are usually present on the floodplains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large, concentrated deposits ranging from pebble tool choppers to core tools such as hand axes and cleavers. The earliest hominids who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore fill sites.

Middle Stone Age (MSA) sites also occur on flood plains but are also associated with caves and rock shelters (overhangs). Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom preserve. Limited drive-hunting activities are also associated with this period.

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San ethnographic data, a better understanding of this period is possible. South African rock art is also associated with the LSA.

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoral settlements during the Early Iron Age (EIA). Diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. The first phase of the Early Iron Age, known as Happy Rest (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of Diamant is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg (Huffman 2007, Coetzee 2010). The third phase, characterized by herringbone-decorated pottery of the Eiland tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Limpopo Province, Gauteng and Mpumalanga. The Eiland tradition occurs over large areas in North West Province. The Eiland tradition has been regarded as the last expression of Early Iron Age that has been date to AD 900 – 1200. This phase has been dated to about AD 900 - AD 1200. These sites are usually located on low-lying spurs close to water.

The North West Province region hosts some of southern Africa's most important Late Iron Age archaeological remains. The Iron Age in southern Africa is associated with the recent peopling of South Africa since the arrival of Bantu-speaking mixed farmers who practiced food and metal production and sedentarism that stretch as far back at the 5th Century AD (Berg 1999). Stonewalled enclosures situated on hilltops are characteristic of the Late Iron Age (LIA) settlements that are dated between AD 1640-1830 widely found across the affected landscape. These include sites dating to AD 1500 - AD 1700 represented by the Olifantspoort and Madikwe facies of the Urewe tradition (Huffman, 2007). Other LIA sites in the area date to AD 1650 - AD 1840 and include the Uitkomst, Rooiberg, and Buispoort facies of the Urewe tradition (Huffman, 2007). Between AD 1700 and AD 1750 the Kgafela settled in Pilanesberg area named after Chief Pilane ruler of the Kgafela people who reigned between AD 1825 and AD 1859. From AD 1600 to AD 1800 various Sotho-Tswana speaking communities settled in and around the Brits area (Berg, 1999; Pistorius, 2009). These communities included the Kwena, Kgatla, Fokeng and Po and had small farm style settlements throughout the area (Berg, 1999). The Fokeng were very active in this area during the early 19th century and also built their capital at Phokeng. Various Sotho-Tswana sites in the district of Brits have been excavated and yielded faunal remains. These sites include Boitsemagano, Molokwane and Mabjanamatshwana (Plug and Baderhorst, 2006). Some of the sites that are linked to this are found in the neighbouring Waterberg regions.

The province is also endowed with ancient copper mines that date back to pre-colonial times in the Dwarsberg. Grant and Huffman (2007) found 20 homesteads with pottery assemblages belonging to Moloko cluster. According to Grant et al, (2007) Moloko is the archaeological name for the styles of pottery produced by Sotho-Tswana speakers. The facies called Madikwe belongs to the middle phase of the sequence dating between AD 1500 and 1700. Prehistoric copper production was also practiced in the province as is evidenced by copper ore, slag and

tuyeres. The North West Province also is host to the Vredofort Dom, which is a meteorite impact site. It is South Africa's one of the eight World Heritage Sites. Also important is the Cradle of Humankind area which also a World Heritage Site.

From the late 1700s, trade in supply of meat to passing ships on the east coast had increased substantially to an extent that by 1800 meat trade is estimated to have surpassed ivory trade. At the same time population was booming following the increased food production that came with the introduction of maize that became the staple food. These changes promoted further westwards movement by the Nguni farming communities. Naturally, there were signs that population groups had to compete for resources and at time move out of region, which may have been under stress. KwaZulu Natal, east of the North West Province has a special place in the history of the region and country at large. This relates to the most referenced Mfecane (wandering hordes) period of tremendous insecurity and military stress. Around the 1805, the region was witnessing the massive movements, which later came to be associated with the Mfecane. The causes and consequences of the Mfecane are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988).

The project falls within a well-documented cultural landscape. Many Iron Age Sites around Brits to Zeerust have been recorded previously (Berg 1999:7-8). The general project area was previously inhabited by Tswana speaking communities from around AD1600. The ceramic sequence for the Sotho Tswana is referred to as Moloko and consists of different facies with origins in either the Icon facies or a different branch associated with Nguni speakers. Several sites belonging to the Madikwe and Olifantspoort facies (from Icon) have been recorded in the Brits area. These sites date to between AD 1500 and 1700 and predate stone walling ascribed to Sotho-Tswana speakers. Thousands of stone walled sites built along the bases of hills and mountain ranges in the Madibeng area (Pistorius 2012). Several LIA stone walled sites were recorded along the Swartkoppies mountain range which is located to the south of the proposed pipeline route. A detailed survey of the mountain range on the farm Hoekfontein recorded more than 470 individual archaeological sites (Kusel 2003) covering an area of about 1000 hectares (Pelser 2007). Unfortunately, due to extensive mining on the mountain range more than 110 of these sites were destroyed for example Mmakau LIA site which is located more than 2km from the pipeline route was rescued after threats by mining (SAHRIS Case ID 3464 & 5686) (Kusel 2005, 2006). Thirty-seven previously recorded sites are on record in the 2527 DB Topographic Map at Wits database (Van der Walt 2012). These include MSA, LSA, Rock Art and LIA Moloko Stone walled sites. One of the sites worth mentioning is the LIA stone walled complex at Medunsa on the southern border of the prospecting area. Mike Taylor (1979) classified the Mmakau sites and the Medunsa sites fell within the group 2, particularly group 2a dating between AD 1650 and AD 1840. Sotho Tswana stonewalled sites with Uitkomst pottery have been recorded in the Brits and dates to the seventeenth to nineteenth centuries.

In recent colonial history, the area played host to different competing local settler communities. The area was a scene of series of colonial wars. By the end of the 19th century, the region was placed under British rule and the local people displaced. This part of North West and Gauteng was scene of the most recorded colonial war, the Anglo-Boer War 1899-1902. At the end of these wars, the colonial era of the Union of South Africa and the subsequent apartheid regimes on the Republic of South Africa, some areas were reserved for African settlements often referred to as Bantu homelands such as the Bophuthatswana (Tswana Home land.

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 do have intangible heritage.

SAHRIS Database and Impact assessment reports in the proposed project area

Several AIA/HIA studies were conducted in the Marico area. The studies include powerline, substation and mining projects completed by Pistorius (2000, 2005, 2006a, 2006b, 2006c, 2009, 2010, 2011a, 2011b, 2011c, 2012a, 2012b, 2013a, 2013b), van Sschalkwyk (2007, 2008, 2013, 2014), Pistorius, J.C.C. & Miller, S. 2011, Kusel 2005, 2006, 2008, 2011, 2012, Birkholtz 2007, Pelser 2012, 2013, Mlilo 2018, 2019, Marais 2021). The studies confirm the occurrence of several stone walled Late Iron Age sites in the Madibeng area. The recorded scatters of potsherds are a confirmation that the project area is a LIA cultural precinct. A search on the SAHRIS data base confirmed that several sites have been rescued or destroyed by mining, infrastructure developments and agriculture (Kusel 2012). The reports also mention the existence of structures older than 60 years and traditional burial sites in the project area, but none will be affected by the proposed mining development project

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 clearance, and drilling, indirect impacts may occur during movement of prospecting equipment. The excavation for foundations and fence line posts will result in the relocation or destruction of all existing surface heritage material such as potsherds. 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 construction. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during prospecting. The purpose of this study 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). The study concludes that the impacts will be negligible on previously been cleared and ploughed sections of the study area and high on identified LIA site, burial sites and historical buildings and structures. The following section presents results of the field survey. The following section presents results of the archaeological and heritage survey conducted within the proposed development project site.

Table 1: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	Several historical farm houses were recorded within the proposed prospecting site.
Areas to which oral traditions are attached or which are associated with intangible heritage	The area is rich in LIA and recent historical sites which are attached to oral traditions.
Historical settlements and townscapes	There are historical farmsteads dotted within the proposed prospecting site
Landscapes and natural features of cultural significance	None

Archaeological sites	A large section of the LIA stone walled settlement known as Modderfontein stretches on the foothills of a mountain covering approximately 3km. The site is a cluster of stone walled settlement covering the Farm Modderfontein 256 and Rondavelskraal 290.
Graves and burial grounds	An active farm worker cemetery and three pioneer settler's burial sites were identified on the southern portion of the on the proposed prospecting site
Movable objects	None
Overall comment	From a heritage perspective some sections of the proposed prospecting sites are very sensitive and No Go Areas. The southern portion of the site has historical farmsteads and burial sites, while the northern portion north most part bears a large section of the LIA stone walled settlement which according to literature has not yet been properly mapped. As such prospecting activities must be confined to previously cleared sections of the site eg agriculture fields and other over grazed sections of the northern portion across the railway line.

Table 2: Coordinates of Identified Heritage Sites

SITE DESCRIPTION	COORDINATES
Rondavelskraal historical buildings (RHB01)	25°38'15.41"S; 26°28'33.67"E
Rondavelskraal historical buildings (RHB02)	25°38'11.01"S; 26°28'27.68"E
Rondavelskraal historical buildings (RHB03)	25°38'8.13"S; 26°28'23.42"E
Rondavelskraal historical buildings (RHB04)	25°38'12.12"S; 26°28'16.26"E
Rondavelskraal historical buildings (RHB05)	25°38'15.92"S; 26°28'19.17"E

Rondavelskraal historical buildings (RHB06)	25°38'26.34"S; 26°28'52.83"E
Rondavelskraal historical buildings (RHB07)	25°39'1.85"S; 26°28'31.34"E
Rondavelskraal historical buildings (RHB08)	25°38'57.82"S; 26°28'35.68"E
Rondavelskraal historical buildings (RHB09)	25°38'15.16"S; 26°28'37.17"E
Rondavelskraal historical buildings (RHB10)	25°38'5.52"S; 26°27'40.57"E
Rondavelskraal burial sites (RBS01)	25°39'4.89"S; 26°28'33.12"E
Rondavelskraal burial sites (RBS02)	25°38'4.56"S; 26°28'45.24"E
Rondavelskraal burial sites (RBS03)	25°38'11.84"S; 26°28'29.31"E
Rondavelskraal burial sites (RBS04)	25°38'1.73"S; 26°28'27.95"E"

Archaeological and Heritage Sites

The study observed that the entire foothills of the mountain that marks the boundary of the Farm Rondavelskraal 290 is covered by a section of the LIA stone walled site referred to in the literature as Modderfontein 256. The site is a cluster of continuous stone walled settlements covering up to 3km in length. The site is only mentioned in passing in most literature of the Groot Marico area. However, it seems research on the site focused on metallurgy recording and analysing furnaces identified at the site (see Friede *et al* 1982). Although several archaeologists conducted studies in the Groot Marico for example (Legassick, 1969, Maggs, 1976, Mason, 1986, Reid et al 1997, Hall, 1998, Berg 1999, Calebrese 1996; Boeyens, 2000, Lane 2000, 2003, Pistorius, 1992, 1997, 2009, Anderson, 2009, Pistorius et al 2001, Fredriksen, 2007, Huffman, 2007,Hall, et al 2008, Moton, 2008, Sadr 2012 and Jordaan 2016) there is very little mention of the site. This may suggest that the site has not received systematic research save for the study by (Friede *et al* 1882),

The site is one of the several mega stone walled settlements dotted in the Rustenburg, Marico, Zeerust and Pilannesburg region. Most of these sites are located in the foothills and on hill tops. It seems smaller sites also occur in the open veld for example Lebenya near Swartruggens. Although research has mainly focused on aggregated sites (Jordaan 2016), it is puzzling why the site regardless of its size did not receive attention from researchers. The stone walled sites in the region are linked to the Tswana groups and the Mzilikazi's Ndebele

(Boeyens 2000, 2003, Maggs 1993, Mason 1986, Pistorius 1992). Reid et al 1997, Hall 1998, Lane 2000, Fredrickson 2007, Sadr and Rodier 2012 focused on the classification of the sites. However, Kaditshwene, Marothodi, Molokwane, Boitsemagano and Olifanspoort were extensively researched. The LIA sites such as Molokwane and Boitsemagano are located on premium agriculture land with access to arable land water (Hall 2012). This is true for Modderfontein located adjacent to well-watered agricultural land.

The site is partial preserved although the structures are collapsing due to natural causes such vegetation overgrowth and movement of livestock. Some structures are still well preserved although the site is neglected from a heritage perspective (see Plates 20 to 51). A site condition assessment needs to be done to provide more details about the conservation status of the site. The site must be further investigated to establish its origins and authorship.

Based on the field study results and field observations, it is the considered opinion of the author that the receiving environment for the proposed prospecting is medium to high potential to yield previously unidentified archaeological sites during prospecting work.

Plate 19: Photo 19: View of some sections of the stone walled site (Photograph © by Author 2021).

Plate 20: Photo 20: View of a stone walled enclosure (Photograph © by Author 2021).

Plate 21: Photo 21: View of LIA site (Photograph © by Author 2021).

Plate 22: Photo 22: View of LIA site (Photograph © by Author 2021).

Plate 23: Photo 23: View of collapsing stone walled settlements (Photograph © by Author 2021).

Plate 24: Photo 24: View of sections of site concealed by vegetation © by Author 2021).

Plate 25: Photo 25: View of a collapsed stone enclosure (Photograph © by Author 2021).

Plate 26: Photo 26: View of access road cutting across the site (Photograph © by Author 2021).

Plate 27: Photo 27: View of a well-preserved structure (Photograph © by Author 2021).

Plate 28: Photo 28: View of a well-preserved enclosure (Photograph © by Author 2021).

Plate 29: Photo 29: View of a partially destroyed enclosure (Photograph © by Author 2021).

Plate 30: Photo 30: View of a partially destroyed structure (Photograph © by Author 2021).

Plate 31: Photo 31: View of a well-preserved section of a stone walled structure (Photograph © by Author 2021).

Plate 32: Photo 32: View of collapsed stone wall (Photograph © by Author 2021).

Plate 33: Photo 33: View of a farm owner showing the collapsing structures (Photograph © by Author 2021).

Buildings and Structures older than 60 years

The field study recorded ten farm buildings and structures that are older than 60 years. Buildings and structures are protected by Section 34 of the NHRA as such the proposed prospecting triggers Section 34 of the NHRA. The buildings were not assessed in detail because some are still under use. Note that buildings and structures older than 60 years regardless of their condition are protected by Section 34 of the NHRA. No prospecting must be done within 100m from each recorded building.

Plate 34: Photo 34: View of historical school building (Photograph © by Author 2021).

Plate 35: Photo 35: View of a historical farm house (Photograph © by Author 2021).

Plate 36: Photo 36: View of a historical farm building(Photograph © by Author 2021).

Plate 37: Photo 37: Showing a historical farm building (Photograph © by Author 2021).

Plate 38: Photo 38: Showing a historical farm building(Photograph © by Author 2021).

Plate 39: Photo 39: Showing a historical farm building (Photograph © by Author 2021).

Plate 40: Photo 40: Showing a historical farm building (Photograph © by Author 2021).

Plate 41: Photo 41: Showing a dilapidated farm building (Photograph © by Author 2021).

Plate 42: Photo 42: Showing a historical farm building (Photograph © by Author 2021).

Plate 43: Photo 43: Showing a dilapidated farm building (Photograph © by Author 2021).

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 and earth moving activities for infrastructure developments such as powerlines and roads. In some instances, packed stones or stones may indicate the presence of informal pre-colonial burials.

The field survey recorded four burial sites with the southern portion of the proposed prospecting site. Burial site Rondavelskraal Burial site 1 (RBS1) is located within an agriculture field. The site is located at GPS Coordinates 25°65' 084"S 26°47'632"E. The field was designed to avoid the burial site although the site is neglected. The burial site has two graves, but it is not clear if they could be more graves at the site. One grave has a collapsed tombstone and on the other a big tree is growing over the graves (see Plate 44, 45 &46). Little is known about the graves, but landowner confirmed that the site belongs to his distant relatives.

Burial site RBS2 is located withing agriculture fields and the site was offered by the landowner for the burial of farm workers. The site is located at GPS Coordinates 25°63'42.1"S 26°47'35.953"E. The site is active although most of the original farm workers are no longer at the farm. Effectively the site is utilised by 3 families. The site has more than 80 graves. Some of the graves are no longer visible due to vegetation overgrowth. A few graves have tombstones while the rest are marked by oval shaped stone piles. Some graves are taken care of while some are completely neglected.

Burial site RBS3 is located between two historical farmhouses still in use. The site is located at GPS Coordinates 25°09'38.04"S 28°28'42"E. The site a pioneer settlers burial site with graves of the first settler farmers and Anglo Boer war graves. Most of the graves are marked by tombstones with inscribed headstones. There are 14 English graves and one Boer commando grave other than the rest are Swart family graves. The Boer commando grave is marked by Headstone and brick lining while the English graves are marked still crosses and they are facing east which is the opposite of the normal east west orientation.

Burial site RBS4 is located within the proposed prospecting site. The site is located at GPS Coordinates 25°38'08"S 26°28'27.60"E. The site also belongs to historical farm owners. The site has approximately 30 graves marked by tombstones and inscribed headstones. Although the site is fenced, it seems this site has been neglected for a long time. Trees are growing over graves there is no sign of visitation by family members or custodians.

The possibility of encountering previously unidentified burial sites is low within the proposed prospecting site, should such sites be identified during prospecting, they are still protected by applicable legislations, and they should be protected (also see Appendixes for more details). Burial sites older than 60 years are protected by the NHRA and

those younger than 60 years are protected by the Human Tissue Act. Exhumation of graves must confirm to the standards set out in the ordinance on excavation (Ordinance no.12 of 1980 which replaced the old Transvaal Ordinance no.7 of 1925)

Plate 44: Photo 44: Showing Burial site RBS1 (Photograph © by Author 2021).

Plate 45: Photo 45: Showing Burial site RBSI (Photograph © by Author 2021).

Plate 46: Photo 46: Showing a collapsed tombstone at RBSI (Photograph © by Author 2021).

Plate 47: Photo 47: Showing the farm workers cemetery RBS2 (Photograph © by Author 2021).

Plate 48: Photo 48: Showing one of the few graves marked by tombstones and inscribed headstones at RBS2 (Photograph © by Author 2021).

Plate 49: Photo 49: Showing Burial site RBS3 Pioneer cemetery (Photograph © by Author 2021).

Plate 50: Photo 50: Showing British grave marked by a still cross (Photograph © by Author 2021).

Plate 51: Photo 51: Showing some graves within Burial site RBS3 (Photograph © by Author 2021).

Plate 52: Photo 52: Showing one of the Swart family members and neighbouring landowners explaining the nature of their family cemetery (Photograph © by Author 2021).

Plate 53: Photo 53: Showing graves at Burial site RBS3 (Photograph © by Author 2021).

Plate 54: Photo 54: Showing Burial site RBS4 (Photograph © by Author 2021).

Plate 55: Photo 55: Showing tree growing on top of graves at Burial site RBS4 (Photograph © by Author 2021).

Plate 56: Photo 56: Showing the impact of vegetation overgrowth on graves at Burial site RBS4 (Photograph © by Author 2021).

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

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.

Public Monuments and Memorials

The survey did not identify any historical monument and public memorials within the prospecting right application site. There are no monuments or plaques within the proposed prospecting site that are on the National Heritage or provincial List. However, it should be noted that there are Historical Monuments listed on SAHRIS Data base in the Madibeng Local Municipality of the North West Province. The proposed development will not impact on any listed monuments and memorials in the project area.

Battle fields

No known battles or skirmishes associated with the Anglo-Boer war and the struggle against apartheid were fought on the proposed prospecting site.

Palaeontology

The Palaeontological sensitivity map shows that the proposed project area is located within a generally sensitive area. The impacts of the proposed development on palaeontology is low (Baker 2017). However, if any fossil deposits are discovered during any phase of the development, the contractor responsible for construction should alert SAHRA (South African Heritage Research Agency) immediately so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.

Archaeo-Metallurgy, Prehistoric Mining and Mining Heritage

There are historical and current mining activities in the entire North West Province, however none are located on the proposed prospecting site.

Mitigation

The recorded graves must be clearly marked during prospecting to avoid any accidental damage to the graves. Should prospecting be allowed to proceed as planned the prospecting team must be oriented by the landowners who know the heritage sites in their farms. The prospecting must provide for a 100m buffer zone from the boundary of the Modderfontein LIA site. Effectively any prospecting activities near the LIA site must be monitored by a professional archaeologist. This will ensure that any accidental finds will be dealt with properly in accordance with

NHRA. Prospecting teams must be inducted on how to identify heritage resources during prospecting and the reporting procedure in accordance with the appended Chance find procedure.

6 CUMMULATIVE IMPACTS

Cumulative impacts are defined as impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed development is considered the total impact associated with the proposed development when combined with other past, present, and reasonably foreseeable future developments projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this proposed development project was undertaken during the preparation of this report. The total impact arising from the proposed project (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. The project's impact is therefore one part of the total cumulative impact on the environment. The analysis of a project's incremental impacts combined with the effects of other projects can often give a more accurate understanding of the likely results of the project's presence than just considering its impacts in isolation. The impacts of the proposed prospecting were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments including agricultural activities where baselines have already been affected, the proposed prospecting will continue to add to the impacts in the region, it was deemed appropriate to consider the cumulative effects of proposed development.

This section considers the cumulative impacts that would result from the combination of the proposed development. There are existing infrastructure developments and agriculture activities within the proposed development sites. 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 mining phase they will be increase in human activity and movement of heavy mining equipment and vehicles that could change, alter or destroy heritage resources within and outside the proposed development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed development 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.

Heritage resources such as burial grounds and graves and archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. As such, prospecting workers may not see these resources, which results in increased risk of resource damage and/or loss. Vibrations and earth moving activities associated with drilling and excavation tower have the potential to crack/damage rock art covered surfaces, which are known to occur in the greater study area.

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. Sites of archaeological significance were identified, and cumulative effects are 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 surface archaeological remains. 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 prospecting. Movement of heavy prospecting equipment 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. Cumulative impacts can be significant, if construction vehicles/equipment are not monitored to avoid driving through undetected heritage resources.

7 ASSESSMENT OF SIGNIFICANCE

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

Table 3: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
`Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).

Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

Significance Points (SP) = (Magnitude + Duration + Extent) x Probability

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.

Table 4: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

Table 5: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	**Impact /**	**Aspect**	**Nature**	**Magnitude**	**Extent**	**Duration**	**Probability**	**Significance before mitigation**	**Mitigation measures**	**Magnitude**	**Extent**	**Duration**	**Probability**	**Significance after mitigation**
Clearing and prospecting	Destruction of archaeological remains	Cultural heritage	-	8	2	4	5	70	• LIA site must be mapped and documented • A management plan for the site must be drawn • An archaeologist must be appointed to monitor during prospecting • Use chance find procedure to cater for accidental finds	6	2	4	3	36
	Disturbance of graves	Cultural heritage	-	6	2	4	5	60	• Mitigation for graves required • Provide100m buffer zone for burial sites • Request landowners to orient prospecting team • Burial sites must be clearly mapped and marked	2	1	1	1	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	6	2	4	5	60	• Protect identified historical buildings • Provide 100m buffer zone	4	1	2	2	14
Movement of equipment	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	• Mitigation is not required because there are no public monuments within the mining right application site	2	1	1	4	4

Based on the results of the Impact Assessment Matrix the proposed prospecting requires careful planning to avoid all identified heritage sites.

8 STATEMENT OF SIGNIFICANCE

Aesthetic Value

The aesthetic values of the AIA Study Area and the overall project area are contained in the valley bushveld environment and landscape typical of this part of the North West Province. The visual and physical relationship between AIA study area and the surrounding historical Cultural Landscape demonstrates the connection of place to the local and oral historical stories of the African communities who populated this region going back into prehistory.

The proposed development site will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of North West Province. The local communities consider the project area a cultural landscape linked to their ancestors and history. However, the proposed development will not alter this aesthetic value in any radical way since it will add to the constantly changing and developing settlements.

Historic Value

The Indigenous historic values of the Site of Interest and overall study area are contained in the claim of possible historic homesteads being located on the affected area. The history of generations of the Sotho-Tswana clans is tied to this geographical region. Such history goes back to the pre-colonial period, through the colonial era, the colonial wars and subsequent colonial rule up to modern-day North-West Province.

Scientific value

Past settlements and associated roads and other auxiliary infrastructure developments and disturbance within the HIA Study Area associated with the Mining Right Application has resulted in limited intact landscape with the potential to retain intact large scale or highly significant open archaeological site deposits.

Social Value

The project sites fall within a larger and an extensive cultural landscape that is integrated with the wider inland. The overall area has social value for the local community, as is the case with any populated landscape. Literature review suggests that social value of the overall project area is also demonstrated through local history which associates the area with the coming of European missionaries, explorers and colonialists and the African struggle against settler colonialism in the second half of the 1800s and at the end of the 1800s, the colonial wars of resistance, the century long struggle for democracy that followed colonial subjugation. Several generations of communities originate from the project area and continue to call it home. As such, they have ancestral ties to the area. The land

also provides the canvas upon which daily socio-cultural activities are painted. All these factors put together confirms the social significance of the project area. However, this social significance is unlikely to be negatively impacted by the proposed development especially given the fact that the development will add value to the human settlements and activities already taking place. Some sections of development site are covered by thick bushes and vegetation retains social value as sources of important herbs and traditional medicines. As such, they must be considered as significant social value sites

9 DISCUSSION

The area stretching from Brits to Zeerust have many known LIA sites (Bergh 1999:7-8, Boeyens 2003, Pistorius et al 2001, Jordaan 2016). There are also known rock art sites (rock engraving) in the Zeerust and Groot Marico area. Several archaeologists and researchers conducted various Phase 1 Archaeological studies in the Groot Marico area since 2000. The studies were conducted for various infrastructure developments such as powerlines and substations, pipelines and residential developments. These studies recorded stone walled sites which are characteristic of the LIA in the North West Region for example van Schalkwyk (2007 & 2009), Huffman (2007), Pistorius (2000, 2005, 2006, 2009, 2010, 2011, 2012, 2013, 2014), Pelser 2012, 2015 and Mlilo 2018, 2019, Marais 2021). Therefore, the current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the general project area.

The study recorded one mega LIA stone walled settlement on the northern boundary of the proposed prospecting site and 4 burial sites as well as10 historical farm buildings on the southern portion of the proposed prospecting site. Apparently the Modderfontein LIA site has not received much attention from researchers in the area. It seems the site was overshadowed by the search for Kaditshwene and other aggregated sites in the area. Other than the elaborate stone walled structure the study did not record any other archaeological remains on the site. It is possibly because of the dense vegetation cover which inhibited visibility of surface archaeological remains. As such the Chance Find procedure applies. In the event of any archaeological remains being exposed during prospecting, a professional archaeologist must be retained to monitor and document the accidental finds. The lack of confirmable archaeological surface archaeological remains such as pottery, beads and iron implements recorded during the current survey is thought to be a result of two primary interrelated factors:

- The ploughed section of the proposed prospecting site is located within a heavily degraded area and has reduced sensitivity for the presence of highly significant physical cultural site remains, be they archaeological, historical or burial sites, due to previous earth moving disturbances resulting from ploughing and other destructive land use activities in the area.

• Limited ground surface visibility on sections of all the proposed prospecting site was a result of dense vegetation cover that may have impended the detection of other physical cultural heritage site remains, or archaeological signatures immediately associated with 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.

Furthermore, some sections were not accessible due to thick vegetation cover. Significance of the sites of Interest is not limited to presence or absence of physical archaeological sites. The recorded LIA site testifies to the significance of the project area as a cultural landscape of note, which has discernible links to local oral history and folk stories, environmental and ethnobotanical aesthetics, popular memories etc. associated with significance emanating from intangible heritage of the region.

10 RECOMMENDATIONS

The study noted that the proposed prospecting site is a sensitive cultural landscape which requires careful planning to protect all the recorded heritage sites. The applicant must provide the proposed prospecting plan which should be overlaid on the identified sites to determine which sites are likely to be affected by the proposed prospecting. It is the considered opinion of the author that the proposed prospecting may proceed from a heritage perspective, provided that mitigation measures are implemented to protect the recorded heritage sites. The following recommendations are based on the results of the AIA/HIA research, cultural heritage background review, site inspection and assessment of significance.

- The recorded burial sites and historical builds must be avoided by providing a 100m buffer zone from all sides of the burial site and each building.
- The recorded burial sites and historical buildings must be clearly mapped and marked before any prospecting activities commence.
- The recorded LIA stone walled settlement is a NO GO Area, a buffer zone of up to 100m must be provided on the southern boundary of the site.
- Should it become necessary to prospect on the mapped site (see Figure 1) then an archaeologist must be appointed to monitor during prospecting.
- Prospecting must be inducted about the occurrence of heritage sites and how to manage accidental finds.
- A walk down survey is required as soon as the prospecting team avails their prospecting plan.
- The proposed prospecting may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site.

- Should any unmarked burials be exposed during construction and mining, potential custodians must be trekked, consulted and relevant rescue/ relocation permits must be obtained from SAHRA and or Department of Health before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process in accordance with the National Heritage Resources Act 25 of 1999.
- Should chance archaeological materials or human burial remains be exposed during subsurface construction work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
- Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no other significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed prospecting right application to proceed as planned with special commendations to implement the recommendations here in made.
- In the event that archaeological materials are unearthed, all prospecting activities within a radius of at least 20m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist should be contacted immediately
- 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 footprint impact of the proposed prospecting activities should be kept to minimal to limit the possibility of encountering chance finds within the proposed development site.
- Overall, impacts to heritage resources are considered to be significant for the project receiving environment. It is thus concluded that the proposed prospecting must be carefully planned to avoid all known heritage sites (See Appendix 1).
- Given the sensitive of the proposed prospecting site a professional archaeologist must be retained to monitor during prospecting especially in sections where heritage sites were recorded.

- 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.

11 CONCLUDING REMARKS

The literature review and field research confirmed that the project area is situated within Groot Marico, a cultural landscape dotted with LIA stone walled settlements and colonial and settler farmers. Field survey established that some sections of the prospecting right application site are ploughed and may be viable for prospecting from a heritage perspective. In terms of the archaeology and heritage in respect of the proposed prospecting site, the area where the LIA site and burial sites as well as historical buildings were recorded and mapped (approximately 40% of the site) must be avoided. The recorded heritage sites are no obvious 'Fatal Flaws' or 'No-Go' areas. They must be avoided during prospecting. The recorded sites are an indication of the potential to encounter previously unidentified heritage resources during prospecting, however, prospecting may be allowed to proceed while monitored by an ECO or a professional archaeologist. The potential for chance finds is high 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. This report concludes that the proposed prospecting may be approved by SAHRA to proceed as planned subject to recommendations herein made and heritage monitoring plan being incorporated into the prospecting 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 and SAHRA''s 202 Regulations on heritage management.

12 BIBLIOGRAPHY

Australia ICOMOS (1999) The Burra Charter: The Australia ICOMOS charter for places of cultural significance. Burwood.

Bergh, J.S., (ed.) Geskiedenisatlas van Suid-Afrika.Die vier noordelike provinsies. Pretoria: J. L. van Schaik Uitgewers. 1999.

Bickford, A. and Sullivan, S. 1977. "Assessing the research significance of historic sites" in S Sullivan and S Bowdler (eds) Site Surveys and Significance assessment in Australian Archaeology. Canberra: ANU.

Boeyens, J.C.A. 2000. In search of Kaditshwene. South African Archaeological Bulletin 55: 3-17.

Breutz, P-L. 1953. The tribes of Marico district. Ethnological Publications 30. Pretoria: Govt Printer.

Birkholtz, P. 2007. Phase 1 Heritage Impact Assessment for the Proposed development of the Madibeng Manor Township on certain portions of the farm Hartebeespoort C 419 JQ in the vicinity of Brits, North West Province

Burke, H. and Smith, C. 2004. The archaeologist's field handbook. Australia. Allen and Unwin.

Cooper, M. A; Firth, A, Carman, J. & Wheatley, D. (eds.)1995: Managing Archaeology. London: Routledge.

Deacon, J. 1996. Archaeology for Planners, Developers and Local Authorities. National Monuments Council. Publication no. P02IE.

Deacon, J. 1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. In: Newsletter No. 49, SepU998.South African Association of Archaeology.

Deacon, H. J. and Deacon J. 1999. Human beginnings in South Africa. Cape Town: David Philips Publishers.

Evers, T.M. 1983. Oori or Moloko? The origins of the Sotho!Iswana on the evidence of the Iron Age of the Transvaal. S. Afr. 1. Sci. 79(7): 261-264.

Fourie, W. 2008. A Phase I Heritage Impact Assessment for Bushveld View Estate x14 on Portion 67 and 66 of the Farm Hartebeesfontein 445 JQ, District of Madibeng, North West Province

Glazewski, J., 2000: Environmental Law in South Africa. Durban: Butterworths.

Hall, S.L. 1981. Iron Age sequence and settlement in the Rooiberg, Thabazimbi area. Unpublished MA thesis, University of the Witwatersrand.

Hammond-Tooke, D.1993. The roots of Black South African. Johannesburg: WUP.

Huffman, T.N. 2008 Lenasia South Impact Assessment, Gauteng National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)

Huffman, T.N. 2007. Handbook for the Iron Age. Pietermaritzburg: UKZN Press.

Hamilton, C. (ed.). 1995. The Mfecane Aftermath: Reconstructive debates in Southern African History. Johannesburg: WUP.

Kusel, U.S. 2008. Cultural Heritage Resources Impact Assessment of Hartbeessfontein 445 JQ, R14, R51 and 48 (Ingwenys) Flower Farm (Pty) Ltd, Brits North West Province

Kusel, U.S. 2009. Cultural Heritage Resources Impact Assessment of Portion 41, 239, (Portions 29, 69, 78, 86, 89, 92, 93, 235, 77, 112 and 238 known as Ingwenys Flower Farm (Pty) Ltd, Madibeng, North West

Kusel, U.S. 2011. Cultural Heritage Resources Impact Assessment of portions of portion 3 of the farm Buffelskloof 511 IQ, North West Province

Kusel, U.S. 2012. Cultural Heritage Resources Impact Assessment of proposed new powerline 132kv at the Bakfontein Substation, Madibeng, North West Province

Maggs, T. 1984a. Ndondondwane: a preliminary report on an Early Iron Age site on the lower Tugela River. Annals of the Natal Museum 26: 71-93.

Major Jackson, H. M. 1904. Potchefstroom. Drawn in the Surveyor-Generals Office and photo- lithographed at the Government Printing Works, Pretoria. Pretoria: Government Printing Works.

Mason, R.J. 1986. Origins of Black People of Johannesburg and the Southern Western Central Transvaal AD 350-1880. Johannesburg: University of the Witwatersrand.

Morton, R.F. 2003. Perpetual motion: resettlement patterns in the western Transvaal and southeastern Botswana since 1750. Historia 48: 265-282.

Pelser, A.J and Van Vollenhoven. 2008. A report on a heritage impact Assessment for proposed Sky Chrome mining in the Mooinoi, Brits District, North West Province.

Pelser, A.J and Van Vollenhoven. 2008. A report on a heritage impact Assessment for proposed development on the remaining extent of Portion 1 of the farm Doornhoek 329 JQ and Plumani Ranch 595 JQ, Hekpoort, Gauteng.

Pistorius, J.C.C. 1992. Molokwane: An Iron Age Bakwena Village. Early Tswana settlement in the Western Transvaal. Johannesburg: Perskor.

Pistorius, J.C.C. 1994. Molokwane, a seventeenth century Tswana village. South African Journal of Ethnology. 17: 38-53.

Pistorius, J.C.C. 1 995a. Rathateng and Mabyanamatshwaana: Cradles of the Kwena and Kgatla. South African Journal of Ethnology 18: 49-64.

Pistorius, J.C.C. 1997a. The Matabele village which eluded History, Part I. South African Journal of Ethnology. 20(1), 26-38.

Pistorius, J.C.C. 1998. eMhlalandlela, a Matabele settlement in the Bankeveld. South African Journal of Enthnology. 21(2), 55-65.

Pistorius, J.C.C. 1999. Archaeological survey and assessment of Norite mines on the farms Tweedepoort (283JQ) and Boschpoort (284JQ) in the Rustenburg district. Incorporating the Taylor mining area, the Bekker mining area, the Transvaal mining area and the Springbok mining area. Addendum to the Environmental Management Programme Reports done for Marlin and Kelgran Norite. Report prepared for Marlin and Kelgran Norite Mines.

Pistorius, J.C.C. 2000. New Late Iron Age spatial identities in the Bankeveld. South African Journal of Ethnology. 23: 150-163.

Pistorius, J.C.C. 2000. A Phase I archaeological survey of portions of the farm Middelkraal 466JQ in the Central Bankeveld for Western Platinum Mine's proposed tailings dam. Unpublished report prepared for C. van der Westhuizen (Private geohydrologist) and for Western Platinum Mine.

Pistorius, J.C.C. 2004. A Heritage Impact Assessment (HIA) study for the Vodacom Makolokwe Base Station Selfbuild B 13057 in the North-West Province of South Africa. Unpublished report for Eskom.

Pistorius, J.C.C. 2005. A preliminary investigation of a settlement unit (kgoro) in the Tlhôgôkgôlô (Wolhuterskop) motse of the Bakwena Bamogale (Bapô) with the aim of developing this Late Iron Age stone walled complex into an archaeo-tourism destination. Unpublished report for Madibeng Town Council.

Pistorius, J.C.C. 2006a. A Phase I Heritage Impact Assessment (HIA) study for Boynton Platinum's new proposed mining areas near the Pilanesberg in the North-West Province of South Africa. Unpublished report prepared for Metago Environmental Engineers.

Pistorius, J.C.C. 2006b. An extended Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mines (PPM) new proposed mining areas near the Pilanesberg in the North-West Province of South Africa. Unpublished report prepared for Metago Environmental Engineers.

Pistorius, J.C.C. 2006c. A Phase I Heritage Impact Assessment (HIA) study for Boynton Platinum's new proposed mining areas near the Pilanesberg in the North-West Province of South Africa. Unpublished report prepared for Metago Environmental Engineers (combination of first two studies).

Pistorius, J.C.C. 2007a. Report on monitoring a seismic survey for heritage resources on parts of various farms in the Madibeng (Brits) district in the North-West Province of South Africa. Unpublished report prepared for Lonmin and SAHRA.

Pistorius, J.C.C. 2007b. A Phase I Heritage Impact Assessment (HIA) study for the proposed new Sedibelo Platinum Mine near the Pilanesberg in the 13 North-West Province of South Africa. Unpublished report prepared for Barrick Platinum.

Pistorius, J.C.C. 2009. A Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mine's (PPM) proposed rock waste dump extension near the Pilanesberg in the North-West Province of South Africa. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2009. A Phase I Heritage Impact Assessment (HIA) Study for Eskom's proposed new 6x765kv power lines running from the Delta Substation in Lephalale to the Epsilon Substation in the Gauteng Province of South Africa Unpublished report prepared for PBA International Eskom Megawati Park

study for Pilanesberg Platinum Mine's (PPM) proposed rock waste dump extension near the Pilanesberg in the North-West Province of South Africa.

Pistorius, J.C.C. 2010. Brief report on heritage matters at Pilanesberg Platinum Mine. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2010. A Phase I Heritage Impact Assessment for the farm Magazynskraal 2JQ near the Pilanesberg in the North-West Province. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mine's (PPM) proposed amendment of the closure objectives of the Tuschenkomst Open Pit and community water supply scheme near the Pilanesberg in the North-West Province. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2011. Follow-up report on Lonmin's exploration activities on Vlakfontein 207JP and Diamand 206JP near the Pilanesberg in the North-West Province: completion of exploration activities during 2011. Unpublished report prepared for Lonmin Platinum.

Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) study for Pilanesberg Platinum Mine's (PPM) proposed amendment of the closure objectives of the Tuschenkomst Open Pit and community water supply scheme near the Pilanesberg in the North-West Province. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) study for a combined platinum mining operation near Pilanesberg in the North-West Province: the extension of the Tuschenkomst open cast pit for Pilanesberg Platinum Mine. Unpublished report prepared for LSR Consulting (Africa) (Pty) Ltd.

Pistorius, J.C.C. & Miller, S. 2011. A Phase 2 Archaeological study of a Late Iron Age stone walled site on Middelkraal 466JQ near Marikana in the North-West Province. Unpublished report for Lonmin and the South African Heritage Resources Agency.

Pistorius, J.C.C. 2012. A Phase I Heritage Impact Assessment (HIA) study for a combined Platinum Mining operation near the Pilanesberg in the North-West Province: the extension of the Tuschenkomst open cast pit for Pilanesberg Platinum MIne. Unpublished report prepared for Pilanesberg Platinum Mine.

Pistorius, J.C.C. 2012 (a). A Phase I heritage impact assessment for the extension of Lonmin Platinum's Tailings Dam (site D6) on the farm Midelkraal 466JQ in the Central Bankeveld in the North-West Province. Unpublished report prepared for Lonmin Platinum.

Pistorius, J.C.C. 2012 (b). A Phase I heritage impact assessment for the extension of Lonmin Platinum's Tailings Dam (site D6) to incorporate Tailings Dam 8 (T8) and Tailings Dam 9 (T (9) on the farm Middelkraal 466JQ in the Central Bankeveld in the North-West Province. Unpublished report prepared for Lonmin Platinum.

Pistorius, J.C.C. 2013. An updated 1 Phase I heritage impact assessment for the Pilanesburg Platinum mine near Pilanesberg in the North West Province.

Pistorius, J.C.C. 2013. A Phase I heritage impact assessment study for the extension of Lonmin for the Platinum mine tailing dam on the farm Middelkraal 466 JQ near Madibeng in the Central Bankveld in the North West Province.

Plug, I, and Baderhorst, S. 2006. Notes on the Fauna from Three Late Iron Age Mega-Sites, Boitsemagano, Molokwane and Mabjanamatshwana, North West Province,

Rasmussen, R.K. 1978. Migrant Kingdom: Mzilikazi's Ndebele in South Africa. David Philip: Cape Town.

Roodt, F. 2005. Phase I Heritage Resources Impact Assessment. Lonmin Platinum Surface rights (WPL & EPL) and Tribal Land Marikana: North-West Province. Unpublished report prepared by R and R Cultural Resource Consultants.

Roodt, F & Roodt, H. 2006 (updated 2011). Report: rescue recovery of skeletal remains. Lonmin Smelter, Marikana North-West Province. Unpublished report prepared for Lonmin and the South African Heritage Resources Authority.

Senne, M. 2016. Phase 1 Heritage Impact Assessment for proposed Township Development on remains of the Farm Tyne 250 JQ within the jurisdiction of the Madibeng Local Municipality, North West Province

South Africa. The South African Archaeological Bulletin 61 (183): 57-67.

Rasmussen, R.K. 1978 Migrant kingdom: Mzilikaqzi"s Ndebele in South Africa. London: Rex Collings

Ross, R. 1999. A concise history of South Africa. Cambridge University Press. Cambridge.

South Africa,1983. Human Tissue Act. Government Gazette.

South Africa 1999. National Heritage Resources Act (No 25 of 1999), Government Gazette. Cape Town.

SAHRA APMHOB. 2004. Policy for the management of Archaeology, Palaeontology, Meteorites and Heritage Object. SAHRA: Cape Town.

SAHRA APM. 2006. Guidelines: Minimum standards for the archaeological and palaeontological Component of Impact Assessment Reports. SAHRA: Cape Town.

SAHRA APMHOB 2002. General Introduction to surveys, impact assessments and management plans. SAHRA: CT.

SAHRA. 2002. General guidelines to Archaeological Permitting Policy. SAHRA: Cape Town.

SAHRA. 2002. General Introduction to surveys, impact assessments and management plans.

SAHRA. What to do when Graves are uncovered accidentally.

SAHRA Report Mapping Project Version 1.0, 2009

SAHRIS (Cited 16 February 2016)

Taylor, M.O.V. 1979. Late Iron Age settlements on the northern edge of the Vredefort Dome. Unpublished MA thesis, Uni- versity of the Witwatersrand

Tomose, G. N. 2015. A Heritage Impact Assessment of Ngwedi Turnings Eskom deviations as part of Ngwedi Turn ins Transmission powerlines, North West Province, South Africa

Van Schalkwyk, J.A. 2003. Document and sampling of LIA Tswana sites impacted upon by Seismic exploration for mining development at Farm Beestkraal 290 JQ near Thekwane near Rustenburg District, North West Province

Van Schalkwyk, J.A. 2011. Heritage Assessment report for the proposed Mountain View Estate development on Portions of the Farms Simon'sview, Kalkheveuwel, Rhenostterspruit and Riverside, North West Province

Van Schalkwyk. 2013. Basic Heritage Assessment report for the proposed Winterveld 132kv powerline, Garankuwa Region, North West and Gauteng Province

Van Schalkwyk, J. A. 2014. Cultural Heritage Assessment for the proposed Rhombus 88kv Distribution powerline and substation west of Brits, North West Province

Van Vollenhoven. 2011. A report on a Phase 1 Heritage Impact Assessment for proposed Rietfontein Manor x20 Retirement Centre on the farm Rietfontein 485 JQ, North West Province.

Van Vollenhoven, A.C. 2013. A report on a Cultural Heritage Phase 1 Heritage Impact Assessment for proposed Eskom Lethabong Project Close to Brits North West Province

Van der Walt. 2012. A report on a Phase 1 Heritage Impact Assessment for proposed Kgabalatsane PVC Solar facility near Brits, North West Province

Van der Walt. 2013. Archaeological Scoping Report for the proposed Kgabalatsane Solar facility, North West Province

Wilson, M. 1969. Changes in social structure in southern Africa: the relevance of kinship studies to the historian. In: L. Thompson, (ed)., African societies in southern Africa. London: Heinemann, pp. 71–85.

APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR LEGARE MINING SERVICES (PTY)LTD WITHIN ALL PORTIONS OF FARM RONDAVELSKRAAL 290 JP, SITUATED IN THE MAGISTERIAL DISTRICT OF MARICO, NORTH-WEST PROVINCE.

June 2021

ACRONYMS

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

CHANCE FIND PROCEDURE

Introduction

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

The prospecting right application site is located on various portions of Farm Rondavelskraal 290 JP, in the North West Province, the development 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 construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by T. Mlilo (2021) on the prospecting right application site. The AIA/HIA conducted was

very comprehensive covering the entire site. The current study (Mlilo 2021) recorded scatters of LIA sites, burial sites and historical buildings which further documentation should the project proceed to mining stage.

Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources along the proposed project 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 digging of foundations and movement of construction equipment. The proposed prospecting activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Integrated Specialist Services and Heritage Consultants developed this Chance Find Procedure to define the process which govern the management of Chance Finds during construction. 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 construction and mining.

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/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.

- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 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 by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- 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 will be informed when mining 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 accidently 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.

Appendix 2: Heritage Management Plan Input into the Prospecting Right Application EMP

Objective	• Protection of archaeological sites and land considered to be of cultural value. • Protection of known physical cultural property sites against vandalism, destruction and theft; and • The preservation and appropriate management of new archaeological finds should these be discovered during construction.							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Prospecting Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed form site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA.		When necessary	C CECO	SM	ECO	EA EM 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 CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as prospecting phase.						
Operational Phase								
		Same as prospecting phase.						

Appendix 3: 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.