

PHASE 1 HIA FOR MINING RIGHT  
APPLICATION ON THE FARM  
KAFFERSKRAAL 400 IP,  
KLERKSDORP, IN CITY OF  
MATLOSANA LOCAL  
MUNICIPALITY, NORTH WEST  
PROVINCE.

AIA/HIA Study



T Mlilo

PREPARED FOR JOAN CONSULTING



## DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Proposed Mining Right Application on the farm Kafferskraal 400 IP, Klerksdorp, in City of Matlosana Local Municipality, North West Province
Purpose of the study	The Phase 1 Archaeological Impact Assessment is to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the area demarcated for the proposed mining right.
1:50 000 Topographic Map	2626 AB
Coordinates	See table 1.
Municipalities	City of Matlosana Local Municipality.
Predominant land use of surrounding area	Agricultural and residential
EAP	Joan Consulting (Pty) Ltd 9A Loure Road Randburg 1724 Gauteng P O Box 4147, Honeydew,2040 Cell:0739120800 Email: Lufuno@Joanprojects.co.za
Ref	<b>NW30/5/1/2/2/10127 MR</b>
Applicant	Zelpy Gold Mine
Heritage Practitioner	Integrated Specialist Services (Pty) Ltd Constantia Park, Building 16-2, 546, 16th Road, Midrand, 1685 Cell: 0716859247 Fax: 086 652 9774 E-mail: trust@issolutions.co.za
Authors	Trust Mlilo
Date of Report	20 May 2020

This report serves to inform and guide the developer and contractors about the possible impacts that the proposed mining development may have on heritage resources (if any) located in the study area. In the same light, the document must also inform South African heritage authorities (SAHRA) about the presence, absence and significance of heritage resources located in the study area. As required by South African heritage legislation and Mining legislation, a mining right application such as this require pre-development archaeology and Heritage assessment by a competent heritage practitioner in order to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed development. In compliance with these laws Joan Consulting (Pty) Ltd retained Integrated Specialist Services (Pty) Ltd (ISS) to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) of the proposed mining development. Desktop studies, drive-throughs and fieldwalking were conducted in order to identify heritage landmarks on and around the farm Kafferskraal 400 IP earmarked for mining development. The study site is not on pristine ground, having seen significant transformations owing to agriculture and infrastructure developments such as roads and farmsteads (see Figure 1). The general project area is known for historical and Late Iron Age occurrences. The sites were extensively researched by several archaeologists such Kusel (2003), Pelsler (2007, 2018), Munyayi (2018, 2019) and several others. In terms of the built environment of the project area, structures older than 60 years of age may occur in the surrounding areas but not within the proposed project site. In addition, sub-surface archaeological material and unmarked graves may still exist and when encountered during construction and mining, work must be stopped forthwith and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must also be submitted to the SAHRA for review.

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 project.
- Most sections of the project area are accessible, and the field survey was effective enough to cover significant sections of the project receiving environs. However, some portions of the proposed mining development site had limited access because of farm owner restrictions.
- The immediate project area is predominantly agricultural and residential.
- Some sections of the proposed development site are severely degraded by agricultural activities marked by pivot irrigation (see Figure 1).

- The study did not record any archaeological site within the proposed mining development site.
- The study recorded 6 burial sites located at different portions of the farm Kafferskraal 400IP.

The report sets out the potential impacts of the proposed mining development 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 recorded burial sites must be preserved *in situ* by barricading during mining activities.
- Buildings and structures that are older than 60 years must not be destroyed or altered without a permit from PHRA.
- Mine workers must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during subsurface construction 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 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 mining development of the cultural environmental values are not likely to be significant on the entire development site if the EMP includes recommended safeguard and mitigation measures identified in this report.

## NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

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

## DECLARATION OF INDEPENDENCE

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

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

### Expertise:

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

### Independence

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

### Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Integrated Specialist Services (Pty) Ltd reserves the right to modify the report in any

way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.

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

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

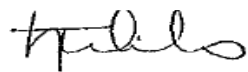
**Geographic Co-ordinate Information:** Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

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

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

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the authorisation of proposed Mining Right Application being proposed by Zelpy Gold Mine (Pty) Ltd.

Signed by



20/ 05/ 2020

## ACKNOWLEDGEMENTS

The authors acknowledge Joan Consulting for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project. Our special thanks go to the landowners who provided vital information about the heritage character of the proposed mining development site as well as assisting in identifying burial sites within their respective farms.

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## ABBREVIATIONS

<b>AIA</b>	Archaeological Impact Assessment
<b>ASAPA</b>	Association of South African Professional Archaeologists
<b>BSKP</b>	Burial Site Kafferskraal Portion-
<b>EIA</b>	Environmental Impact Assessment
<b>EIA</b>	Early Iron Age ( <i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.</i> )
<b>EIAR</b>	Environmental Impact Assessment Report
<b>ESA</b>	Early Stone Age
<b>GPS</b>	Global Positioning System
<b>HIA</b>	Heritage Impact Assessment
<b>ICOMOS</b>	International Council of Monuments and Sites
<b>KSWs-SE2</b>	Kafferskraal Stone Walled Site-Stone Enclosure
<b>LIA</b>	Late Iron Age
<b>LFC</b>	Late Farming Community
<b>LSA</b>	Late Stone Age
<b>MIA</b>	Middle Iron Age
<b>MSA</b>	Middle Stone Age
<b>NEMA</b>	National Environmental Management Act 107 of 1998
<b>NHRA</b>	National Heritage Resources Act 25 of 1999
<b>PHRA-NW</b>	Provincial Heritage Resource Agency of North West

**SAHRA** South African Heritage Resources Agency

**ISS** Integrated Specialist Services

**ToR** Terms of Reference

## KEY CONCEPTS AND TERMS

### Periodization

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

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

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

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

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

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

### Definitions

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

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

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

**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.

### Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed within the mining development site during mining, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6)). Recommendations contained in this document do not exempt the developer/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. ISS assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.



## INTRODUCTION

Integrated Specialist Services (Pty) Ltd was retained by Joan Consulting (Pty) Ltd to carry out a Phase 1 AIA/ HIA of the proposed Mining Right Application on the farm Kafferskraal 400 IP, Klerksdorp, in City of Matlosana Local Municipality, North West Province. The proposed new mining development is gazetted in terms of section 38 (1) of the NHRA (see Figure 1). This HIA study is triggered by mining right application by Zelpy Gold Mine in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) as amended. The overall purpose of this heritage report is to identify, assess any heritage resources that may be located in the study area and evaluate the positive and negative impacts of the proposed mining development on these resources in order to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies) which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Late Iron Age (LIA), historical buildings and graves outside municipal cemeteries. It should be noted that while heritage resources may have been located in the entire study area, subsequent developments such as agriculture and infrastructure development work have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during construction and mining. The proposed mining development may be permitted subject to adopting recommendations and mitigation measures proposed in this report. Other than graves located within the mining development site, there is no archaeological and heritage reason why the development cannot proceed, taking full cognizance of clear procedures to follow in the event of chance findings.

### 1.1. Terms of Reference (ToR)

The author was requested by Joan Consulting (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the mining right application site (Kafferskraal 400 IP) including any known data on affected areas;
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision in respect of authorisation of the proposed mining development
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located within the mining right application 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 mining on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources; and
- Review applicable legislative requirements.

## 1.2. Project Location

The proposed mining development is located on the farm Kafferskraal 400 IP which is located approximately 15km West of Klerksdorp in the City of Matlosana Municipality, North West Province (Figure 1). The GPS coordinates of the main pit and slimes dam are as follows: S26°49'15.54" E26°35'03.17", S26°48'43.89" E26°34'20.28". The farm is approximately 4686.7ha (hectares) in extent.

Table 1: Location of identified sites

Site	Coordinates	Description
Main Pit (open cast)	S26°49'15.54" E26°35'03.17".	Proposed mining pit
Slime Dam	S26°48'43.89" E26°34'20.28".	Slimes dam
BSKP43	S26°50'58.20" E26°35'42.00".	Burial site
BSKP105	S26°48'02.63" E26°35'40.53".	Burial site
BSKP111	S26°49'54.80" E26°33'48.83".	Burial site
BSKP142	S26°51'02.47" E26°37'00.67".	Burial site
BSKP137	S26°49'38.60" E26°34'39.60".	Burial site
BSKP-C2	S26°48'40.10" E026°34'28.10".	Burial site
BSKP-C1	S26°48'29.74" E26°34'11.78".	Burial site
Historical Buildings (Transnet)	S26°50'33.36" E26°33'47.76".	A cluster of historical buildings
Possible Kraal	S26°48'29.74" E26°34'11.78".	Structure
Possible Historical Building	S26°50'55.23" E26°36'05.44".	Dilapidated farmhouse
KSWs-SE1	S26°48'28.16" E026°34'28.87".	LIA stone walled structure
KSWs-SE2	S26°48'23.05" E26°34'26.24"	LIA stone walled structure
KSWs-SE3	S26°48'19.19" E026°34'25.27".	LIA stone walled structure

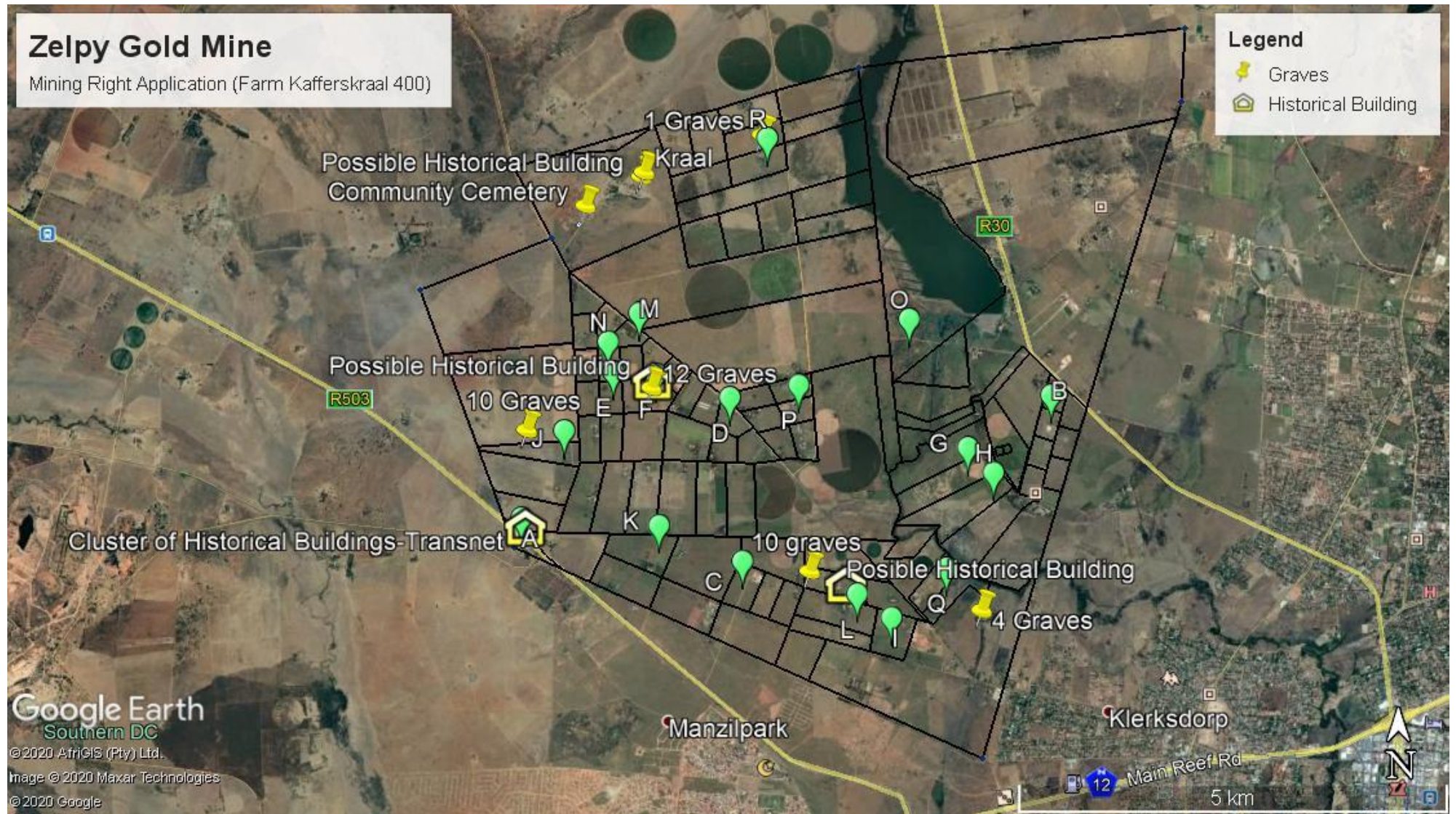


Figure 1: Location of the proposed project site (Joan Consulting 2020)

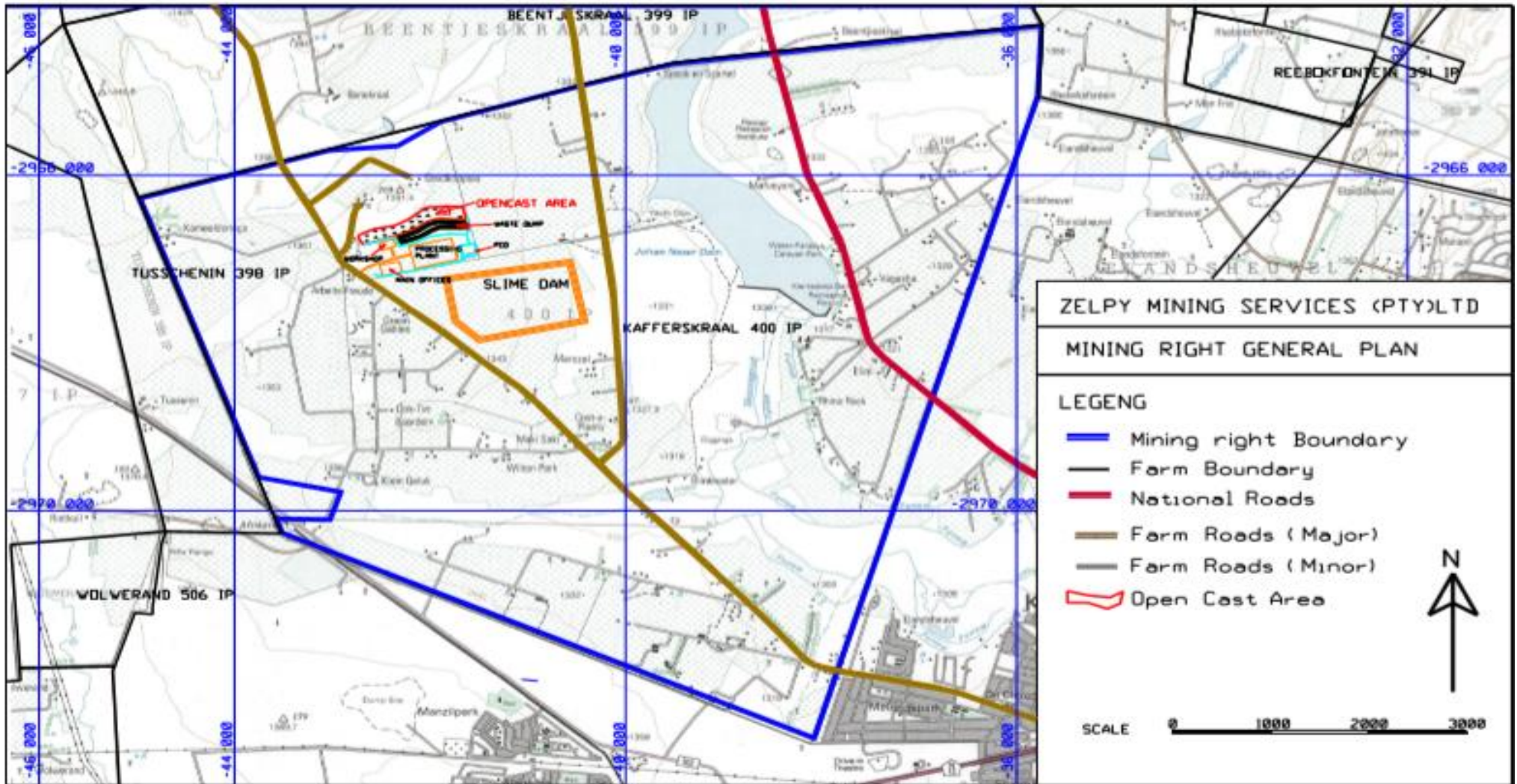


Figure 2: Location of the proposed project site (Joan Consulting 2020)

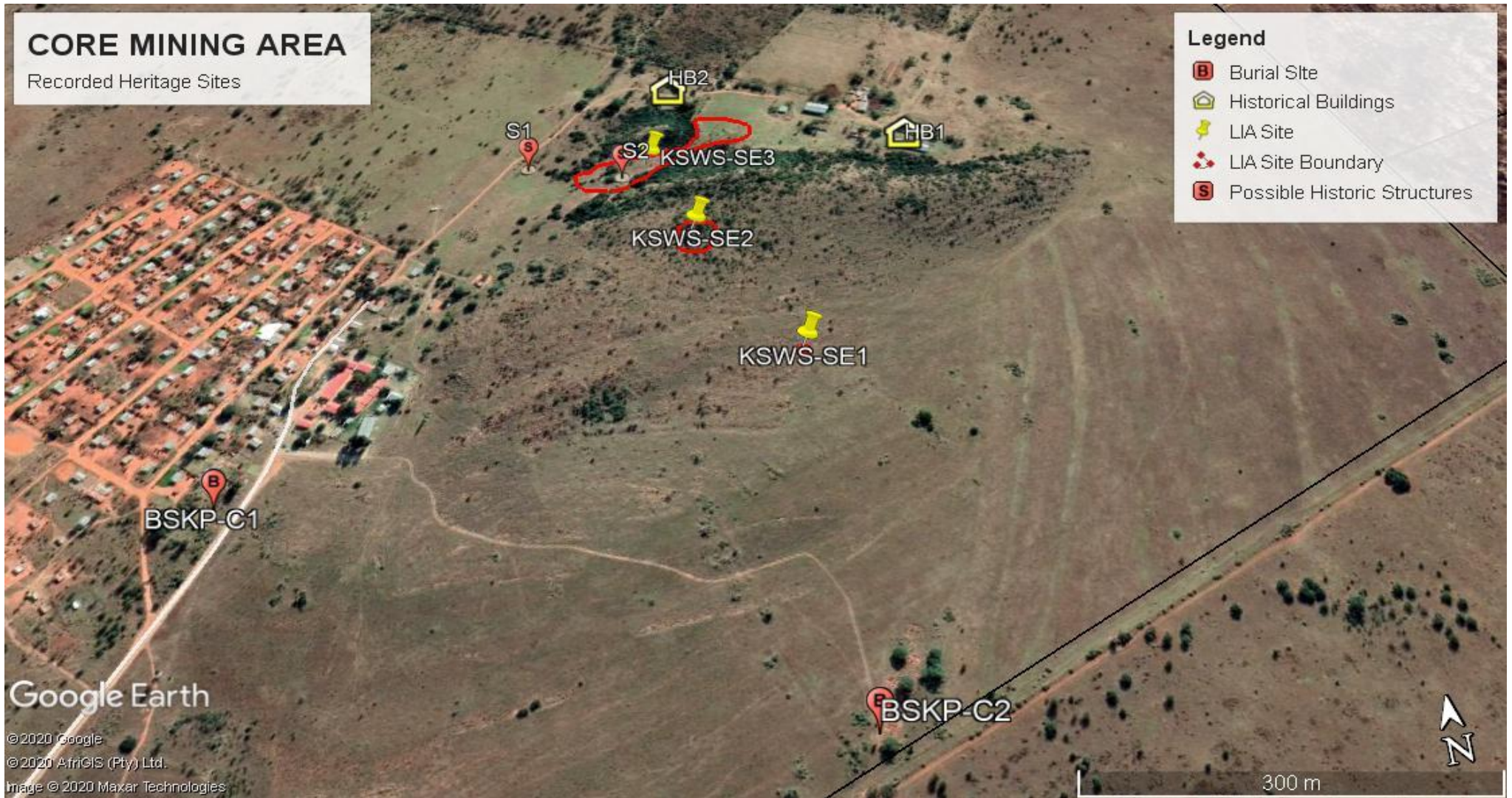


Figure 3: Location of heritage sites recorded within the proposed core area (Mliilo 2020)

### 1.3. Project Background and description

Zelpy Gold Mine (Pty) Ltd has obtained a Prospecting Right for Gold over farm Kafferskraal 400 IP, under the Matlosana Municipality. They are now in the process of applying for a Mining Right for Gold on the above property in the jurisdiction area of Klerksdorp, North West. The mining right application site covers the entire Kafferskraal 400 IP which is 4686.7 ha in extent. The main disturbance will be associated with the proposed mine pit which will cover 37ha, the topsoil storage will cover 1ha and the rock dump 2ha. The perimeter fence will be approximately 3km. The associated infrastructure developments such as administration block, workshops, storage yard, parking space will not cover huge space. The total area to be disturbed is approximately 40ha of the 4 686,7 ha.

The proposed mining programme will be undertaken in four phases with the estimated period of ten years. The mining phase include the followings phases:

- Pre-construction phase
- Construction phase
- Operation phase; and
- Closure and decommissioning phase

## LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study and there are presented here. Under the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA), an AIA or HIA is required as a specialist sub-section of the Basic Assessment (BA) process.

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 present mining development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require an HIA to be conducted by an independent heritage management consultant:

- Construction of a road, wall, power line, 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 same act also requires the submission of a heritage impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 sq m, then an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may **alter damage, destroy and relocate any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority**. This section may not apply to present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, or remove from its original position, or collect, any archaeological material or

object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials but this may not apply to this study because no protected monument will be physically affected by the proposed project.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant (Zelpy Gold Mine) the environmental consultant (ISS), SAHRA/ 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.



Table 2: Evaluation of the proposed mining development as guided by the criteria in NHRA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq m	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	Buildings on the site need to be verified if they are older than 60 years
NHRA Section 35	Impacts on archaeological and palaeontological heritage resources	Subject to identification during Phase 1
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	Subject to identification during Phase 1
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	Yes

## METHODOLOGY

This document falls under the Basic assessment phase of the AIA/HIA and therefore aims at providing an informed heritage-related opinion about the proposed mining right development in North West Province. 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 AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the development footprint. 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 mining 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 development.

### 1.4. The Fieldwork survey

The fieldwork survey was undertaken on the 14<sup>th</sup> and 15<sup>th</sup> of May 2020. The desktop studies were followed by intensive and extensive field walking to verify the situation on the ground and to identify the extent of the stone walled sites and burial sites. Based on the maps, it was noted that most of the stone walled settlements were distributed in an axis trending along the hills. A comprehensive survey of this area was conducted to identify the salient features as well as relationships between the different components of the LIA site, buildings and burial sites. The main focus of the survey involved a pedestrian survey which was conducted within the proposed mining right application site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence for building rubble, existing buildings and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20<sup>th</sup> century modern residential and on-going infrastructure developments; the general area where the proposed development is located would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999: 4). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by agricultural infrastructure and developments.

### 1.5. Visibility and Constraints

Most sections of the proposed mining development site are visible because they were mainly cleared for agriculture, however, access to some portions of the site was restricted due to Covid lockdown and personal security issues. It is conceded that due to the subterranean nature of cultural remains this report should not be construed as a record of all archaeological and historic sites in the area.

### 1.6. Consultations

The Basic Assessment (BA) Public Participation process is conducted by the EAP. The study team consulted landowners about the heritage character of the proposed mining development site. In addition, a list of affected landowners and contact details was drawn for easy consultation purposes. The project archaeologist and heritage practitioner consulted listed landowners about any heritage resources located within their farms. This process helped in identifying mostly forgotten graves within farms (Portion 137,43,105 &111). We also took the opportunity to investigate the presence of buildings and structures older than 60 years within the affected farms. The BA Public Participation Process will also invite and address comments from affected communities and any registered heritage bodies on any matter related to the proposed mining project including heritage concerns that may arise as a result of the mining project. The issues raised by the public with respect to the proposed development will also be included in the Final Basic Assessment Report.

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



Plate 1: Agriculture fields within the proposed mining development site (see Figure 2)



Plate 2: showing agriculture fields under pivot irrigation system (see Figure 1&2). Note there are several pivots within the proposed mining development site



Plate 3: showing one of the main roads cutting across the proposed mining development site.



Plate 4: showing blue gums of marking past colonial settlements often associated with settler graves and historical buildings.



Plate 5: showing site earmarked for slime dams.



Plate 6: showing proposed mining development site previously cleared for agriculture.



Plate 7: showing proposed mining development site previously cleared for agriculture.



Plate 8: showing recently harvested confield within the proposed mining development site.



Plate 9: showing proposed mining development site.



Plate 10: showing masive agriculture infrastrure within the proposed mining development site.





Plate 11: showing recently ploughed field within the proposed mining development site.

## ARCHAEOLOGICAL CONTEXT

### 1.7. Stone Age Archaeology

The project area is located in the North West Province of South Africa that boasts 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 (also Calebrese 1996; Huffman, 2007; Murimbika, 2006; Schoeman, 2006; Meyer, 2000; van Doornum, 2008).

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 kill 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 (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

According to Bergh there are no known Stone Age sites close to Klerksdorp, although several rock engraving sites are known to occur in the larger geographical area (Bergh 1999: 4-5). However, Pelsler (2012, 2013) recorded small scatters of MSA and LSA stone tools in the Klerksdorp area.

### 1.8. Iron Age Archaeology

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoralist 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. The third phase, characterised 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 (Huffman 2007, Coetzee 2010). 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 dated 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 practised 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. Based on the research by Huffman it is possible that sites related to the so-called. Olifantspoort facies of the Urewe Tradition, dating to around AD1500-1700, and the Thabeng facies of the same tradition (AD1700-1840) could possibly be found in the project area ((Huffman 2007: 207).

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 Cradle of Humankind area which is 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).

Early Iron Age and Late Iron Age sites were recorded in the Klerksdorp area for example the Palmietfontein site approximately 30km north of the town excavated in 1975 by D.A White (Bergh 1999:6-7). The Rolong capital of Thabeng is located in the Klerksdorp area (White 1977:89).

### 1.9. Historical (~ AD 1840 to 1950) Archaeology

During the 17<sup>th</sup> century isolated migrations of white travellers, missionaries and adventurers from the Cape who passed through Pretoria took place. Notable amongst them include the Scottish travellers Robert Scoon and William McLuckie, Robert Moffat, James Archbell, Andrew Smith and Captain William Cornwallis Harris (Bergh 1999: 12-13). Some of these missionaries and explorers kept diaries that today form part of invaluable history about indigenous communities which these travellers encountered during missionary and exploration journeys. However, permanent and mass-movement of white settlers occurred in the 1830s with the arrival of Voortrekkers escaping British rule in the Cape Colony (Ross 2002: 39). Because these first white colonists who settled on the Highveld were farmers, they were also interested in water and grazing for cattle, water for crop-farming, trees, thatching grass, clay for making bricks and pots, mild climate, wildlife and the presence of the mountains as shelter and protection. This resulted in fierce clashes with African communities who were also farmers and iron workers. For example, the area claimed by the Voortrekkers after the conquest of Mzilikazi was declared at a public meeting on 16 October 1840 held in Potchefstroom and initially included the Suikerbosrant (Heidelberg), Schoonspruit (Klerksdorp), Mooirivier (Potchefstroom) and Magaliesberg but by 1855 settlements had been established beyond the originally claimed area. It is within this early expansion that Pretoria was founded in 1855 and became the capital of South Africa, then known as the Zuid-Afrikaanse Republiek (ZAR), in 1860 (Theron 1984: 1-3).

In recent colonial history, the area played host to different competing local settler communities. The area was a scene of a series of colonial wars. By the end of the 19<sup>th</sup> century, the region was placed under British rule and the local people were displaced. This part of North West was a 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 of the Republic of South Africa, some areas were reserved for African settlements often referred to as Bantu homelands such as the Bophuthatswana (Tswana Homeland).

Klerksdorp was established in 1837 and was originally named after Jacob De Clereq (Bergh 1999). The town was strategically located between Johannesburg and Kimberley. In recent colonial history, the area played host to different competing local settler communities especially during the gold and diamond rush following the discovery of gold in 1886 (Bergh 199). The earliest traveler was Cornwallis Harris in 1836 followed by a host of missionaries and Voortrakers (Bergh 1999:13-14. Klerksdorp was connected by rail to Krugersdorp in 1887 and to Kimberley in 1906. The area was a scene of series of colonial wars. This part of North West and Gauteng was scene of the most recorded colonial war, the Anglo-Boer War 1899-1902 for example the battle of Ysterspruit, battle of Rooiwal and

Hartbeestfontein. The British established a very large concentration camp in Klerksdorp and most victims were buried in a cemetery situated a few kilometers from Klerksdorp. By the end of the 19th century, the region was placed under British rule and the local people displaced. 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). In August 1886 gold was discovered in the Klerksdorp district by M.G. Jansen van Vuuren as well as on the Witwatersrand, which lies about 160 km to the east. As a consequence, thousands of fortune-seekers descended on the small village, turning it into a town with 70 taverns and even a stock exchange of its own. However, the nature of the gold reef demanded expensive and sophisticated equipment to mine and extract the gold, causing the majority of diggers to move away in the late 1890s and leading to a decline in the gold mining industry. Gold mining has taken place in the area since 1885. It was revived in 1932 and the boom saw the growth of Klerksdorp as a mining and commercial town and historic buildings such as Fountain Villa stand as testimony to the once thriving mining economy.

### 1.11 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 remains because no historically known groups occupied the study area and most of the original settler descendants moved away from the area.

### 1.12 SAHRIS Data Base and Impact Assessment Reports in the project area

Several AIA/HIA studies were conducted in the general vicinity of the study area. The studies include powerline, substation and mining projects completed by Pistorius (2000, 2005, 2006a, 2006b, 2006c, 2007a, 2007b, 2009, 2010, 2011a, 2011b, 2011c, 2012a, 2012b, 2013a, 2013b), Van Sschalkwyk (2007, 2013), Pelsler (2012, 2013), Pistorius & Miller (2011), Tomose (2015), Kusel (2011), Roodt (2005, 2006, 2007, 2009), Roodt, H. (2006), Birkholtz (2007) and Mlilo (2016, 2017, 2019). The studies confirm the occurrence of stone walled Late Iron Age sites in the North West Region including the Klerksdorp area (Pelsler 2013). The reports also mention the existence of structures older than 60 years and burial sites in the Klerksdorp area (Kusel 2007, 2008, 2009).

## RESULTS OF THE FIELD STUDY

### 1.1 Archaeology

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

Similarly, the clearing of access roads, haul roads and powerlines will impact material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to mining. It is important to note that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed mining development site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance and mining. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts on the LIA site will require mapping and documentation before the proceeding with the approval processes. The following section presents results of the archaeological and heritage survey conducted within the proposed development project site.

As a result of advances in technology, it is possible to survey large tracts of land on the desktop. A scoping survey was thus conducted for the entire mining right application site (Farm Kafferskraal 400 IP). The desktop scoping survey in Google Earth and Ortho-rectified satellite imagery identified stone enclosures on the hill and burial sites as well as farm steads and structures which may require protection under the NHRA. The stone walled sites were identified by the concentration of stone walled enclosures. Sites known from written sources were marked pending verification during ground-truthing. During the scoping survey using Google Earth and other electronic databases, it became clear that most of the images were taken when there was little vegetation cover. It was thus easier to map the sites pending verification during ground-truthing. This mapping exercise also gave indications regarding the possible size of the settlements. There were some areas that were not visible enough to allow for mapping because the walls had collapsed to the foundation level and concealed by thick vegetation cover. These were noted and the maps were verified during field walking.

The field study recorded a Late Iron Age site with 3 stone walled clusters. Cluster 1 (stone enclosure 1) is located on the southern base of the hill, Cluster 2 (stone enclosure 2) is located on the top of the hill and Cluster 3 (stone enclosure 3) is located on the north western base of the hill where there is a pass between two kopjes. Cluster 3 is also located near a water reservoir (see Figure 3).

The Late Iron Age (LIA) is widely represented in the Rustenburg-Pilanesberg area by several stone-walled settlement sites situated on kopjes and mountains, where norite and dolerite were used as the raw materials for construction (Boeyens 2000; Anderson 2009). The identified stone walled settlement is typical of stone walled sites found in the North West Province. These date to the period between 1640AD and 1830AD. This occupation phase is linked to the arrival of ancestral Northern Sotho, Tswana and Southern Ndebele (Nguni-speakers) in the Magaliesberg area (Huffman 2007). The terminal LIA is represented by late 18th/early 19th century settlements with multi-chrome Moloko pottery commonly attributed to the Sotho-Tswana. These settlements can in many instances be correlated to Tswana groupings as reported in oral traditions. The sites are usually single settlements on kopjes or are clustered along lower foot slopes and the spurs of large mountains as is the case with the Kafferskral site. The stone walled site is confined to a hill and kopje on the farm Kafferskraal 400 IP.

KSWS-SE1 is a circular stone enclosure approximately 40m in diameter. The site is located at GPS Coordinates S26°48'28.16" E026°34'28.87". The stone enclosure is approximately 1m in height and is made up of rough course stone walling (see Plate 12&13). The structure is facing south, and it might have been for defensive purpose since the main site is located on the other side of the hill. The site is visible on satellite imagery. The structure is remarkably well preserved and intact although there is thick grass cover along the walls. The study team did not identify any archaeological remains usually associated with LIA sites. The reason could be that visibility was compromised by vegetation cover or the site was temporarily inhabited probably during the Mfecane. It is, however, likely that the remains are buried beneath the surface. Further study of the site is required before the proposed mining is approved. The site needs to be mapped and test excavated.



Plate 12: showing stone walled enclosure(KSWS-SE1) on the base of the hill.



Plate 13: showing collapsed section of the stone walled site.



KSWS-SE2 is located at GPS coordinates S26°48'23.05" E26°34'26.24" on the top of the hill where visibility on all sides of the hill is very clear. The site is made up one large enclosure and small enclosures attached to the main enclosure, there are 2 large enclosures and 3 small enclosures all attached to the main enclosure. Mapping of the site was compromised by thick vegetation cover which conceal some of the walls (see Plates 14-22). The site is partially disturbed by vegetation cover and livestock movement; however, some walls are still remarkably preserved. The walls are rough and approximately 1m in height. The largest enclosure is approximately 50m in diameter, while the smaller ones are approximately 8m in diameter. Visibility of the site was highly compromised by thick vegetation cover. The site might have been possibly the residence of a senior individual such as a chief or senior induna, the site's vantage point suggests that it might have been built for defensive purposes to protect the main site on the north western base of the hill. Similarly, the study did not record any archaeological remains associated with LIA stone walled sites. The reason could be that the site was not occupied for a long time, or the remains are concealed beneath the surface. As such the site need to be properly mapped and documented before the mining application is approved.



Plate 14: showing stone walled site (KSWS-SE2). Note the collapsed walls due to vegetation over growth.



Plate 15: showing collapsed walls at site KSWs-SE2



Plate 16: showing collapsed walls at site KSWs-SE2.



Plate 17: showing a member of the community showing us the collapsed walls.



Plate 18: showing overgrown vegetation concealing some stone walls.



Plate 19: showing one of smaller enclosures attached to the larger enclosure.



Plate 20: showing the second enclosure at site KSWs-SE2.



Plate 21: showing standing walls at site KSWs-SE2.



Plate 22: showing to of hill adjacent to the site .

KSWS-SE3 is by far the largest and could have been the main residence of the Late Iron Age communities who stayed there. KSWS-SE3 is located at GPS Coordinates S26°48'19.19" E026°34'25.27". The site has been heavily disturbed by development of farm infrastructures such as reservoirs, powerlines and houses as well as farm structures which were built on the edge of the site. The site is located on a strategic pass between two hills. The centre of site which could have housed several families was disturbed by construction of the main water reservoir (see Figure3 and Plates 23-29). It is assumed that many of the remaining evidence were washed away by erosion or cleared during construction of the farm infrastructures. The walls on the both sides of the site are approximately 1,5m in high and 80m long. Although the site has been heavily disturbed, some sections of the stone structures are still visible and remarkably preserved. Similarly, visibility on this site was highly compromised by overgrown vegetation cover. Vegetation growth, livestock movements and infrastructure development all contributed to the collapse of the stone walls (see Plate 24). It is acknowledged that the sites exhibit collapses, bulges and wall splitting and some of these problems are inherent to the original construction while others are not. The study noted the following as the major agents of site destruction, livestock movements, human activities such as construction of farm infrastructure, stone robbing, uncontrolled vegetation, natural decay and barrowing animals and prospecting. The integrity of many of the archaeological sites is threatened by uncontrolled cattle grazing and the re-use of material by cattle herders as cattle kraals. Although most residents are aware of the existence of archaeological sites, they do not take any action to protect the sites. A few elderly residents who were interviewed during the study said they do not have any direct attachment to the site. The LIA site is not declared provincial and seem to have not attracted any archaeological research. The study team ascribed the site to Grade 3 local significance.



Plate 23: showing surviving stone walls at site KSWS-SE3 .



Plate 24: showing centre of site, note the resevoir was built on the centre of the site.



Plate 25: showing collapsed walls at site KSWs-SE3.



Plate 26: showing overgrown vegetation on the surviving stone walls..



Plate 27: showing collapsing stone wall on northern section of the site.





Plate 28: showing bulging stone wall on the site.



Plate 29: showing some of the teracing bellow the hill..

Based on the field study results and field observations, the receiving environment for the proposed mining development is medium to high potential to yield previously unidentified archaeological sites during subsurface excavations and construction work associated with the proposed mining development. Literature review also revealed that no Stone Age sites are shown on a map contained in a historical atlas of this area. This, however, should rather be seen as a lack of research in the area and not as an indication that such features do not occur.

## 1.2 Burial grounds and Graves

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

The field survey identified 7 burial sites located within Portions of the farm Kafferskraal 400, Klerksdorp within city of Matlosana local Municipality. All the burial sites seem to have been forgotten and neglected. These may have been of local communities who were displaced by the establishment of the town and settler farms. Interestingly all landowners confirmed that they were not aware of the graves when they bought the properties and that nobody ever came to see the graves.

The grave sites were recorded according to farm portions they occur. Burial site Kafferskraal Portion 43 (BSKP43) is located on the western edge of Portion 43. Burial site BSKP43 is located at GPS Coordinates S26°50'58.20" E26°35'42.00". There are approximately ten graves marked by oval shaped stone piles. Due to their age, vegetation cover and negligence some graves are partially disturbed and not very visible. The study team combed the site and identified 10 graves arranged in one row. The graves are mostly of adult individuals. None of them has a tombstone or any inscription that can provide a clue about their owners. The graves are in a poor state of conservation indicating that the graves have long been forgotten. The current owner of the farm confirmed that he has not seen anyone visiting the burial site for the past 35 years he has occupied the farm.

Burial site BSKP105 located at Portion 105 yielded one grave that belong to the father of the current landowner. The site is located at GPS coordinates S26°48'02.63" E26°35'40.53", near an area earmarked for proposed mine

tailing dam. The solitary grave is marked by oval shaped stone piles with a steel cross and a disused planter (see Plate 20). The grave is under a tall tree which was deliberately left for easy identification of the burial site. The grave belongs to the Bekker Family. The study team was assisted by the landowner to locate the solitary grave.

Burial site BSKP111 located on Portion 111 of the Farm Kafferskraal 400 IP was confirmed to contain more than 10 graves. One of the oldest graves was interred in 1912 making the site fall under SAHRA Burial Ground and Graves Unit. The study team could not enter the farm to confirm the graves because the landowner suggested that he will be comfortable to allow visitors to his farm after the Covid lockdown. The study team will visit the site after lockdown to verify and document the site.

Burial site BSKP142 is located on Portion 142 of the Farm Kafferskraal 400 IP earmarked for mining development. The site is located at GPS Coordinates S26°51'02.47" E26°37'00.67". The landowner confirmed that there are 4 graves located in one cluster. As in other cases the graves have long been forgotten and their owners may be difficult to trace. Details of landowners will be appended in the report. The study team could not document the site because there was a funeral in the family. The site will be documented together with other outstanding sites as soon as permission is granted.

Burial site BSKP137 is located on Portion 137 of the Farm Kafferskraal 400 IP earmarked for mining development. The site is located at GPS Coordinates S26°49'38.60" E26°34'39.60". The landowner showed us a burial site with approximately 12 graves which are partially disturbed. All the graves are marked by oval shaped stone piles, however some of the graves are now disfigured due to years of neglect and movement of livestock (see Plate 17 & 19). The graves are arranged in a row along the boundary fence of the farm. The graves appear to be older than 60 years although we could not confirm the age conclusively during the study. The landowner confirmed that there are 4 graves located in one cluster. As in other cases the graves have long been forgotten and their owners may be difficult to trace. Details of landowners will be appended in the report.

Burial site BSKP C1 (community cemetery near school gate) is located near the school gate on the Farm Kafferskraal 400 IP earmarked for mining development. The site is located at GPS Coordinates S26°48'29.74" E26°34'11.78". The site has more than 100 graves marked by oval shaped stone piles and some are marked by tombstones with inscribed headstones. According to local residence, the burial site is full and communities no longer bury their deceased family members at the cemetery. The burial site is known and the planners of the mine can avoid the site and the settlement, however, should it become necessary to relocate the graves proper procedures in accordance with the NHRA and The Human Tissue Act must be followed. The graves are arranged in rows within the village. The graves appear to be younger than 60 years old.

Burial site BSKP C2 (New Nkakiseng community cemetery) is located south of the hill near the area earmarked for a slimes dam. The site is located at GPS Coordinates S26°48'40.10" E026°34'28.10". The site has more than 200 graves marked by oval shaped stone piles and some are marked by tombstones with inscribed headstones. The burial site is still active. Most graves in the cemetery are fairly recent and none of the graves are older than 60 years. Therefore, the site falls under the jurisdiction of the Human Tissue Act. The site is approximately 100m by 40m in width. Although the graves are in one cluster, the graves are further divided into family clusters which are subdivided and fenced. A small percentage of the graves are marked by inscribed head stones. The graves are arranged in rows within the village cemetery. It is not clear at this point in time if the graves are going to be directly affected by the mining development or not, However, should it become necessary to protect or relocate them to a safer place, the Nkakiseng community must be involved in all mitigation processes as prescribed in the heritage legislation.

It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). They have both historical and social significance and are considered sacred. In addition, graves are important in providing evidence for communities seeking land restitution. Wherever they exist or not, they may not be tempered with or interfered with during any development without a permit from SAHRA. It is also borne in mind that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present. Although the possibility of encountering previously unidentified burial sites is low within the proposed mining development site, should such sites be identified during subsurface construction work, they are still protected by applicable legislations and they should be protected.



Plate 30: showing one graves located within Portion 137 of the farm Kafferskraal 400 IP.



Plate 31: showing showing graves within Portion 137 of the farm Kafferskraal 400 IP. Note that some graves are partial disturbed by previous agriculture activities.



Plate 32: showing within Portion 137 of the Farm Kafferskraal 400 IP.



Plate 33: showing a solitary grave within Portion 105 of the Farm Kafferskraal 400 IP. Note that this grave is located within the area earmarked for the tailing dam (see figure 2).



Plate 34: showing a the solitary grave within Portion 105 of the farm Kafferskraal 400 IP.



Plate 35: showing traditional graves within portion 43 of the farm Kafferskraal 400.



Plate 36: showing showing traditional graves concealed by thick grass cover within Portion 43 of the Farm Kafferskraal 400 IP.



Plate 37: showing traditional graves located within Portion 43 of the Farm Kafferskraal 400 IP.



Plate 38: showing one of the graves located within Portion 43 of the Farm Kafferskraal 400 IP.





Plate 39: showing graves located within Portion 43 of the Farm Kafferskraal 400 IP.



Plate 40: showing graves located within community cemetery on the Farm Kafferskraal 400 IP.



Plate 41: showing graves located within a community cemetery on the Farm Kafferskraal 400 IP.

### 1.3 Public Monuments and Memorials

The study did not record any public memorials and monuments within the mining right application site.

### 1.4 Buildings and Structures

There are existing farmsteads and associated infrastructure within all portions of the Farm Kafferskraal 400 IP (see Figure 1&2). Most buildings and structures appear to be much younger than 60 year, however it is likely that some farmhouses may be older than 60 years. The study team noted that most of these buildings have been altered throughout their existence. One such building was recorded on Portion 43 of the Farm Kafferskraal 400 IP(see Plate 29).The study also recorded structure on Portion 137 of the farm which appear to be old, however the landowner could not confirm the age of the structures (see Plate 27). According to Section 34 of the NHRA, buildings and structures older than 60 years may not be destroyed or altered without a destruction permit from PHRA. The study team will consult landowners during public participation to verify if any buildings and structures which are over 60 years occur in the various portions.



Plate 42: showing some of the structures which may be older than 60 years (Portion 137).



Plate 43: showing outstanding structures within the mining development site.



Plate 44: showing a farm house which may be older than 60 years but has been modified significantly.



Plate 45: showing abandoned farm buildings within the proposed mining development site.



Plate 46: showing resevoir built on an LIA site.



Plate 47: showing farm house which probably more than 60 years old.

Table 3: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	There are farm structures and buildings whose ages will be confirmed.
Areas to which oral traditions are attached or which are associated with intangible heritage	None exist
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	LIA sites occur in the broader project area, one was recorded on site.
Graves and burial grounds	There are 7 confirmed burial sites within portions of the Farm Kafferskraal 400 IP.
Movable objects	None
Overall comment	The surveyed area has no confirmable archaeological resources on the surface, but sub-surface chance finds are still possible. The recorded burial sites must preferably be preserved <i>in situ</i> , however, should it be necessary to remove them proper procedures must be followed before they are removed. The ages of buildings and structures in the farm must be verified during public consultations.

### 1.5 Assessment of Mining impacts

An impact can be defined as any change in the physical-chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

### Methodology Adapted in Assessing the Impacts

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

Table 4: Criteria Used for Rating of Impacts

<b>Nature of the impact (N)</b>		
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.
<b>Magnitude(M)</b>		
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*).
<b>Extent (E)</b>		
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.
<b>Duration (D)</b>		
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.
<b>Probability of occurrence (P)</b>		
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:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) \times \text{Probability}$$

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 5: Criteria for Rating of Classified Impacts

<b>Significance of predicted NEGATIVE impacts</b>		
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.
<b>Significance of predicted POSITIVE impacts</b>		
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 6: 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 construction	Destruction of archaeological remains	Cultural heritage	-	4	1	4	5	45	<ul style="list-style-type: none"> <li>LIA site must be mapped and documented</li> <li>A management plan for the site must be drawn</li> <li>Destruction permit required for any disturbance to the site.</li> <li>Use chance find procedure to cater for accidental finds</li> </ul>	6	2	4	3	36
	Disturbance of graves	Cultural heritage	-	6	1	4	5	55	<ul style="list-style-type: none"> <li>Burial sites must be plotted and clearly marked.</li> <li>Burial sites must be protected/barricaded to avoid accidental damage during mining activities</li> <li>Landowners/custodians must be informed about the potential impacts of the mining development,</li> <li>Custodians must be involved in any mitigation work to their family burial sites.</li> </ul>	4	2	4	3	36
	Disturbance of buildings and structures older than 60 years old	Operational	-	6	2	3	4	44	<ul style="list-style-type: none"> <li>Buildings and structures older than 60 years must not be altered/destroyed without a permit from PHRA</li> <li>Buildings and structures older than 60 years must be mapped and protected.</li> </ul>	4	1	2	2	14

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Significanc e before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Significanc e after mitigation
									<ul style="list-style-type: none"> <li>Mine management and workers must be educated about the value of historical buildings and structures.</li> </ul>					
Mining and haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> <li>Mitigation is not required because there are no public monuments within the mining right application site</li> </ul>	2	1	1	4	Low

## 1.6 Cumulative Impacts

The European Union Guidelines define cumulative impacts 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 mining development 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 impacts of the proposed mining development 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 residential, road networks, commercial infrastructure where baselines have already been affected, the proposed mining development will add to the existing impacts in the project area. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during construction phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed mining 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, 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. Furthermore, many heritage resources in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when grass cover is dense. As such, construction workers may not see these resources, which results in increased risk of resource damage and/or loss. Earth moving and extraction of gravel have the potential to interact with archaeology, architectural and cultural heritage.

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

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

Cumulative impacts that need attention are related to the impacts of clearances, digging foundations, access roads and impacts to buried heritage resources. Allowing the impact of the proposed mining development 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 construction vehicles during clearance and excavation within the mining site. Movement of heavy construction vehicles must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if construction vehicles are not monitored to avoid driving through undetected heritage resources.

### 1.7 Mitigation

It is not clear if all the recorded sites are going to be directly impacted by the proposed mining development (see Figure 2 with mine layout plan) but we are certain than the recorded LIA site (KSWA-SE 1,2&3) will be affected by the mining development. In addition, Burial Site BSKP-C2 (New Nkakiseng community cemetery) will be affected by the proposed Slimes dam and auxiliary infrastructure such haul roads and drainage systems. The rest of the sites may be safe for now unless the mine expands further to cover the entire Kafferskraal 400 IP.

The recorded LIA site must be mitigated before any mining activities commence. The site must be mapped and documented by a professional archaeologist. A condition assessment of the site must be done in conjunction with the significance assessment. This assessment will determine whether the site can be destroyed or preserved *in situ*. If the site is not going to be destroyed by mining, then a management plan must be compiled for the site. The site must be registered on SAHRA Heritage register for future reference. However, should it be necessary to destroy the site appropriate steps must be taken in accordance with Section 35 of the NHRA and any other relevant statutes. Since it is a mining development, DMR regulations take precedence especially regarding blasting.

The recorded burial sites must be mapped and secured to avoid any accidental damage by construction and mining vehicles. The burial sites should preferably be preserved *in situ*, however, should it be necessary to relocate the graves, proper procedures as provided by the NHRA and the Human Tissue Act must be followed. As part of mitigation the various landowners must be requested to declare all burial sites and any suspicious stone piles in the farms so that they can be mapped. Burial Site BSKP-C2 (New Nkakiseng community cemetery) must preferably be preserved *in situ*. The site must be fenced to protect it from any mining activities. The project planners must consider shifting the location of the proposed slimes dam to avoid the burial site. However, should it be necessary to relocate the graves, appropriate procedure as prescribed in the Human Tissue Act must be adhered to.

In respect of buildings and structures which are older than 60 years, all the buildings and structures must be mapped and must not be altered or destroyed without a permit from PHRA. It should be noted that all buildings and structures which are older than 60 years old are protected by Section 34 of the NHRA.

## ASSESSING SIGNIFICANCE

The Guidelines to the SAHRA Guidelines and the Burra Charter define the following criterion for the assessment of cultural significance:

### 1.8 Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture, and material of the fabric; sense of place, the smells and sounds associated with the place and its use.

### 1.9 Historic Value

Historic value encompasses the history of aesthetics, science, and society, and therefore to a large extent underlies all the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have historic value as the site of an important event. For any given place, the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

### 1.10 Scientific value

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information. Scientific value is also enshrined in natural resources that have significant social value. For example, pockets of forests and bushvelds have high ethnobotany value.

### 1.11 Social Value

Social value embraces the qualities for which a place has become a focus of spiritual, religious, political, local, national, or other cultural sentiment to a majority or minority group. Social value also extends to natural resources such as bushes, trees and herbs that are collected and harvested from nature for herbal and medicinal purposes.

## DISCUSSION

Various specialists conducted several Phase 1 Archaeological/ Heritage studies for various infrastructure developments in the project area since 2006. The current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the proposed project area. Although these studies recorded sites of significance for example Kruger, (2016), (Kusel (2003, 2008), Van Schalkwyk (2011a, 2011b, 2012) and Pistorius (2011, 2012) the recorded sites are far from the current proposed establishment of a mine. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of two primary interrelated factors:

1. That proposed mining establishment is located within a degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains, be they archaeological, historical, or burial sites, due to previous disturbances resulting from developments and other land uses in the project area.
2. Limited ground surface visibility on sections of the proposed mining establishment that were not cleared at the time of the study may have impeded the detection of other physical cultural heritage site remains or archaeological signatures immediately associated with the construction activities.

It should be borne in mind that the absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist within the proposed project site.

Based on the significance assessment criterion employed for this report, the proposed mining development site was rated **medium to high** from an archaeological perspective, however, the burial sites located within Portion 105 and at the village may be affected by auxiliary mining activities such as access roads, perimeter fence lines and drainage facilities. Therefore, impact rating for LIA is high and require further walkdown survey and mitigation against the final layout plan for the mine. However, it should be noted that significance of the sites of Interest is not limited to presence or absence of physical archaeological sites. Significant archaeological remains may be unearthed during construction. (see appended chance find procedure).



## RECOMMENDATIONS

1. From a heritage perspective supported by the findings of this study, the proposed mining development may be feasible if appropriate measures are taken to deal with Burial Site BSKP C2 (New Nkakiseng community cemetery) and the LIA stone walled site (KSWs-SE1,2&3).
2. According to Section 35 of the NHRA, no archaeological site must be destroyed without a destruction permit from SAHRA and the procedure for obtaining a destruction permit is provided in the legislation and SAHRA Regulations.
3. LIA stone walled site (KSWs-SE1,2&3) must be mapped and documented before mining commences,
4. A management plan for the site must be drawn for effective protection of the site.
5. In accordance with DMR regulations on blasting, no blasting is permitted within 500m of a heritage site because blasting causes excessive vibrations which will cause collapse of dry-stone walls.
6. The identified burial sites must be mapped and preserved *in situ*, however, should it be necessary to relocate them, proper procedures must be followed in accordance with NHRA and the Human Tissue Act.
7. The fate of Burial Site BSKP C2 (New Nkakiseng community cemetery) must be treated separately since it located close to the core of the proposed mining development.
8. Burial site BSKP C2 must be mapped against the slimes dam and other auxiliary developments.
9. Should the site be preserved in situ, the mine must provide access to the site for families who want to perform rituals and cleaning at the burial site.
10. Should it be necessary to relocate the site, then appropriate procedures must be followed in accordance with the Human Tissue Act since all the graves are younger than 60 years.
11. Buildings and structures that are older than 60 years must not be destroyed or altered without a permit from PHRA.
12. Landowners must be requested to declare all burial sites, buildings older than 60 years and suspicious stone piles located within their plots.
13. The footprint impact of the proposed development and associated infrastructure should be kept to a minimal to limit the possibility of encountering chance finds.
14. Mine workers must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during subsurface construction 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.

15. Should chance archaeological materials or human remains be exposed during subsurface construction work on any section of the proposed mining 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.
16. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed mining right application to proceed as planned with special commendations to implement the recommendations here in made.

## CONCLUSIONS

Integrated Specialist Services (Pty) Ltd was tasked by Joan Consulting (Pty) Ltd to carry out HIA for the proposed mining right application on the farm Kafferskraal 400 IP, Klerksdorp, City of Matlosana Local Municipality, North West Province. Desktop research revealed that the project area is rich in LIA sites (Kusel 2003) and Pelsler (2007). The field study confirmed that there are burial sites located in various portions of the farm which need to be protected. In addition, the study recorded a LIA stone walled site which must be protected. In terms of the archaeology and heritage, other than the LIA site located on the hill, there are no obvious 'Fatal Flaws' or 'No-Go' areas on the rest of the farm Kafferskraal 400IP. Although 80% of the farm has either been ploughed or built up, the potential for chance finds, remains and the mine and contractors are advised to be diligent and observant during all mining activities on the site. The procedure for reporting chance finds has clearly been laid out and if this report is adopted by SAHRA, then there are no archaeological reasons why the proposed development cannot proceed.

## REFERENCES

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## APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED MINING RIGHT APPLICATION ON THE FARM KAFFERSKRAAL 400 IP, KLERKSDORP, IN CITY OF MATLOSANA LOCAL MUNICIPALITY, NORTH WEST PROVINCE.

May 2020

### ACRONYMS

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

## CHANCE FIND PROCEDURE

### Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction 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 proposed mining development is located in Klerksdorp, in the North West Province 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 (2020) on the proposed mining development site. The AIA/HIA conducted was very comprehensive covering the entire site. The current study (Mlilo 2020) did not record any significant archaeological or heritage resources along the proposed project site.

## 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 mining 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 Environmental 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 archaeologist 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 Sativa will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or Sativa 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 PROPOSED MINING RIGHT APPLICATION EMP

Objective								
<ul style="list-style-type: none"> <li>Protection of archaeological sites and land considered to be of cultural value.</li> <li>Protection of known physical cultural property sites against vandalism, destruction and theft; and</li> <li>The preservation and appropriate management of new archaeological finds should these be discovered during construction.</li> </ul>								
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
<b>Pre-Construction Phase</b>								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
<b>Construction Phase</b>								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform PHRA-NW.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the PHRA-NW and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
<b>Rehabilitation Phase</b>								
		Same as construction phase.						
<b>Operational Phase</b>								
		Same as construction phase.						

### APPENDIX 3: HERITAGE MITIGATION MEASURES TABLE

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



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

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

General principles for heritage resources management

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

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

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

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

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

(2) To ensure that heritage resources are effectively managed

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

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

(3) Laws, procedures and administrative practices must

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

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

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

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

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

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

(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.

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

### PERSONAL INFORMATION

<b>ID NUMBER</b>	690710 6184 187				
<b>TITLE</b>	<b>Mr.</b>	<b>SURNAME</b>	<b>Mlilo</b>	<b>FIRST NAME</b>	<b>Trust</b>
<b>GENDER</b>	Male			<b>DATE OF BIRTH</b>	10 July 1969
<b>CONTACT</b>	<b>Email:</b> trust.mlilo@gmail.com; <b>Tel:</b> +27 (0) 11 037 1565 (Bus)   +27 71 685 9247 (Mobile)				
<b>ADDRESSES</b>	<b>Bus. Physical:</b> 65 Naalدهout Avenue, Heuweloord, Centurion, 0157 <b>Cell:</b> Fax: 086 652 9774 <b>Web Site:</b> <a href="http://www.sativatec.co.za">www.sativatec.co.za</a>				
<b>QUALIFICATION:</b> MA (ARCHAEOLOGY), BA Hons (Archaeology), [Univ. of Pretoria, Pretoria], PDGE, BA (Archaeology) UZ					

- BRIEF PROFILE**

#### Mr Trust Mlilo

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

Mr Mlilo has undertaken and assisted research teams in several projects in Sustainability, Energy & Environment (SEE); Environmental Health and Safety Solutions; Cultural Heritage Development (CHD) and

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

• **EDUCATION**

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

**LANGUAGE PROFICIENCY** (Good, Fair, Poor)

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

## SKILLS MATRIX

Current Skills levels:

1 Had appropriate training only

2 Limited practical experience

3 Solid practical experience

4 Well versed, extensive experience

5 Expert, extensive experience

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

- **COMPUTER SKILLS:**

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



## ACADEMIC WORKS

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

### Title of Post-Graduate University Theses & Dissertations:

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

### Selected Seminars, Lectures & Conference Papers

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

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

## • WORK & PROFESSIONAL EXPERIENCE

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

- **ESKOM:** HIA study for the household electrification infrastructure of the proposed 22kv powerline for Norlim-Taung (15km) and Norlim Dikhuting (13km) in the Buxton area (Taung World Heritage Site) Greater Taung Municipality, North West Province.
- **GIBB:** HIA for proposed Assen / Tambotie Mining Right Application for the development of the Assen / Tambotie mine in Madibeng Local Municipality of North West Province
- HIA for proposed Eskom 13,5km, 132kv Randfontein Northern Strategy Power line and associated substations in Mogale City and Rand West City Local Municipalities of Gauteng Province
- HIA for proposed Eskom 132kv Westgate.Tarlton Power line in Mogale City and Rand West City Local Municipalities of Gauteng Province: Archaeological and Heritage Impact Assessment Report
- Phase 1 Heritage Impact Assessment for Eskom's proposed 11.065km 22kV Phase 3 Ngqeleni Electrification in Nyandeni Local Municipality of Eastern Cape Province

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

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

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

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

## CORPORATE RESPONSIBILITIES

None

- **SPECIALIST POSITIONS AND PROFESSIONAL CONSULTANCY EXPERIENCE**

### **2007 - 2014 Archeological and Heritage Impact Assessment Studies**

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

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

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

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

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

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

Commissioned by the eThekweni Metro Council as **Assistant Heritage Manager and Research Assistant** for the eThekweni Metropolitan Shembe Baptist Nazareth Church Cultural Landscape Project. The project involved conducting historical research into the evolution of Shembe Church, one of Africa's older and continuous independent churches that were founded by Isaiah Shembe in 1910. The second object was to propose, nominate the Shembe Cultural Landscape as Provincial Heritage Site under the protection of provincial and national heritage laws. The project closed with development of the cultural heritage Conservation Management Plan and nomination of Shembe cultural Landscape as Provincial Heritage Site

(Nomination Approved by the KwaZulu Natal Provincial Heritage Council (Amafa Council) on October. 18 2010).

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

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

- **AUXILIARY PROFESSIONAL EXPERIENCE**

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

- **AUXILLIARY SPECIALIST SKILLS**

#### **Key Management skills**

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

#### **Other skills**

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

- **PROFESSIONAL AFFILIATIONS**

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

- **REFEREES**

#### **Professor Sarah Wurz.**

Institute for Human Evolution

University of Witwatersrand

Private Bag 3

Wits, 2050

South Africa

**Tel:** +27 (0) 11 717 1260; **Cell:** +082 449 3362

**Email:** [sarah.wurz@wits.ac.za](mailto:sarah.wurz@wits.ac.za) sarahwurz@gmail.com

**Professor. Innocent Pikirayi**

Department of Anthropology and Archaeology, Faculty of Humanities  
University of Pretoria  
Cr Lynnwood and University Roads  
Hatfield  
Pretoria  
0038  
SA

**Tel:** +27 (0) 12 4204661; **Cell:** +27 (0) 797841396; **Email:** innocent.pikirayi@up.ac.za

**Mr Chrispen Chauke**

Mapungubwe National Park & World Heritage Site,

Box 383, Musina,

0900

**E-mail:** chrischauke@yahoo.com| **Mobile:** + (27) 760446697 |

**Work:** 015 5347923