

PHASE 1 HIA FOR THE PROPOSED
ENVIRONMENTAL MANAGEMENT
PLAN UPGRADE ON THE FARM
MARITZBURG QUARRY LOCATED
IN PIETERMARITZBURG, MSUNDUZI
LOCAL MUNICIPALITY IN KWA-ZULU
NATAL PROVINCE

AIA/HIA Study

T Mliilo
PREPARED FOR

 **AFRIMAT**

DOCUMENT SYNOPSIS (EXECUTIVE SUMMARY)

Item	Description
Proposed development and location	Proposed Environmental Management Plan Upgrade on the Farm Maritzburg Quarry located in Pietermaritzburg, Msunduzi Local Municipality, KwaZulu-Natal 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 mining development on these resources.
Coordinates	See Table 1
Municipalities	Msunduzi Local Municipality
Predominant land use of surrounding area	Agriculture, housing, railway, and mining
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Authors	Trust Mlilo
Date of Report	12 November 2021

This report serves to inform and guide the applicant 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 Amafa aKwaZulu Natal and Research Institute about the presence, absence and significance of heritage resources located in the study area. According to Section 38 of the South African Heritage Resources Act (Act 25 of 1999) (NHRA) and Amafa aKwaZulu Natal and Research institute Act of 2018, an Environmental Management Plan Upgrade such as this require an 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 mining development. In compliance with Amafa aKwaZulu Natali and Research institute Act 05 of 2018, Maritzburg Quarry (Pty) Ltd retained Integrated Specialist Services (Pty) Ltd (ISS) to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) of the quarry site. Desktop studies, drive-throughs and fieldwalking were conducted to identity heritage landmarks on and around the study site. The study site is not on pristine ground, having seen significant transformations owing to previous mining activities and agriculture (see Figure 1& 2). The general project area is known for occurrence of LIA and historical sites. In terms of the built environment of the project site, structures and buildings were recorded on the site, the age of the structures however could not be confirmed conclusively. In addition, sub-surface archaeological material and unmarked graves may still exist and when encountered during mining activities, work must be stopped forth-with, and the finds must be reported to the Amafa aKwaZulu and Natali Research Institute or the heritage practitioner. This report must also be submitted to the Amafa aKwaZulu Natali and Research institute 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 Environmental Management Plan Upgrade.
- Although some of the sections were not easily accessible, the field survey was effective enough to cover significant portions of the project site. This was done with aid of local informants who have a thorough knowledge of the heritage character of the landscape.
- The immediate project area is predominantly mining, agricultural and human settlement.

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:

- In terms of Sections 37 (Buildings and structures), 38&39 (Burial grounds and Graves) and 40 (Battlefields) of the Amafa AkwaZulu Natali and Research Institute Act of 2018 and Sections 38, 36 and 34 of the NHRA, the Environmental Management Plan may be approved subject recommendations and mitigation measures provided in this report.
- Mine workers must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during subsurface mining work on the site in order to ensure appropriate mitigation measures and that appropriate course of action is afforded to any chance finds.
- If archaeological materials are uncovered, work must cease immediately and the Amafa AkwaZulu Natali and Research Institute be notified, and activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the Amafa AkwaZulu Natali and Research Institute, 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 mining development on the cultural environmental values are not likely to be low to medium 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, Rhino Minerals, GIBB Engineering and Golder Associates.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo. The company (Integrated Specialists Services) has no 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 Specialists Services (Pty) Ltd reserves the permit 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. 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).

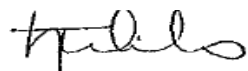
Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

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 the proposed Environmental Management Plan upgrading.

Signed by



10/11/2021

ACKNOWLEDGEMENTS

The author acknowledges Maritzburg Quarry (Pty) Ltd for their assistance with project information, and the associated project BID as well as responding to technical queries related to the project.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted. This means that it must be read and interpreted within the context in which it is used.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act 25 of 1999
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

KEY CONCEPTS AND TERMS

Periodization

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

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

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

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

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

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

Definitions

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

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

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

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 study site during mining, such activities should be halted immediately, and a competent heritage practitioner and Amafa aKwaZulu Natali and Research institute must be notified in order for an investigation and evaluation of the find(s) to take place. Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the Amafa AkwaZulu Natali and Research Institute Act of 2018. Integrated Specialist Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by Amafa AkwaZulu Natali and Research Institute Act in terms of this report.

INTRODUCTION

Integrated Specialist Services (Pty) Ltd was tasked by Maritzburg Quarry (Pty) Ltd to carry out a Phase 1 AIA/ HIA of the proposed Environmental Management Plan Upgrade on the Farm Maritzburg Quarry located in Pietermaritzburg, Msunduzi Local Municipality, KwaZulu-Natal Province. The proposed EMP is gazetted in terms of Section 41 of the Amafa AkwaZulu Natali and Research Institute Act 05 of 2018. 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 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) and historical sites. The proposed Environmental Management Plan Upgrade may be permitted subject to adopting recommendations and mitigation measures proposed in this report.

The purpose of this AIA/HIA Study is to assess presence/absence of heritage resources on the mining development footprint. The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the mining development. The assessment includes recommendations to manage the expected impact of the mining development. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to the environmental approval process for the proposed EMP upgrade. The report concludes with detailed recommendations on heritage management associated with the proposed mining development.

ISS an independent consulting firm, conducted an assessment, research and consultations required for the preparation of the AIA/HIA report in accordance with its obligations set in the NHRA, as well as the environmental management legislations.

In line with SAHRA guidelines and Amafa aKwaZulu Natali and Research Institute, this report, not necessarily in that order, provides:

- 1) Management summary
- 2) Methodology
- 3) Information with reference to the desktop study
- 4) Map and relevant geodetic images and data
- 5) Global Positioning System (GPS) co-ordinates
- 6) Directions to the site
- 7) Site description and interpretation of the cultural area where the project will take place

- 8) Management details, description of affected cultural environment, photographic records of the project area
- 9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site.

Terms of Reference (ToR)

Integrated Specialist Services (Pty) Ltd was tasked by Maritzburg Quarry (Pty) Ltd to conduct an AIA/HIA study addressing the following issues:

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

Project Location

The study site is located at Maritzburg Quarry located, Pietermaritzburg in Msunduzi Local Municipality of Kwa-Zulu Natal Province (see Figure 1&2).

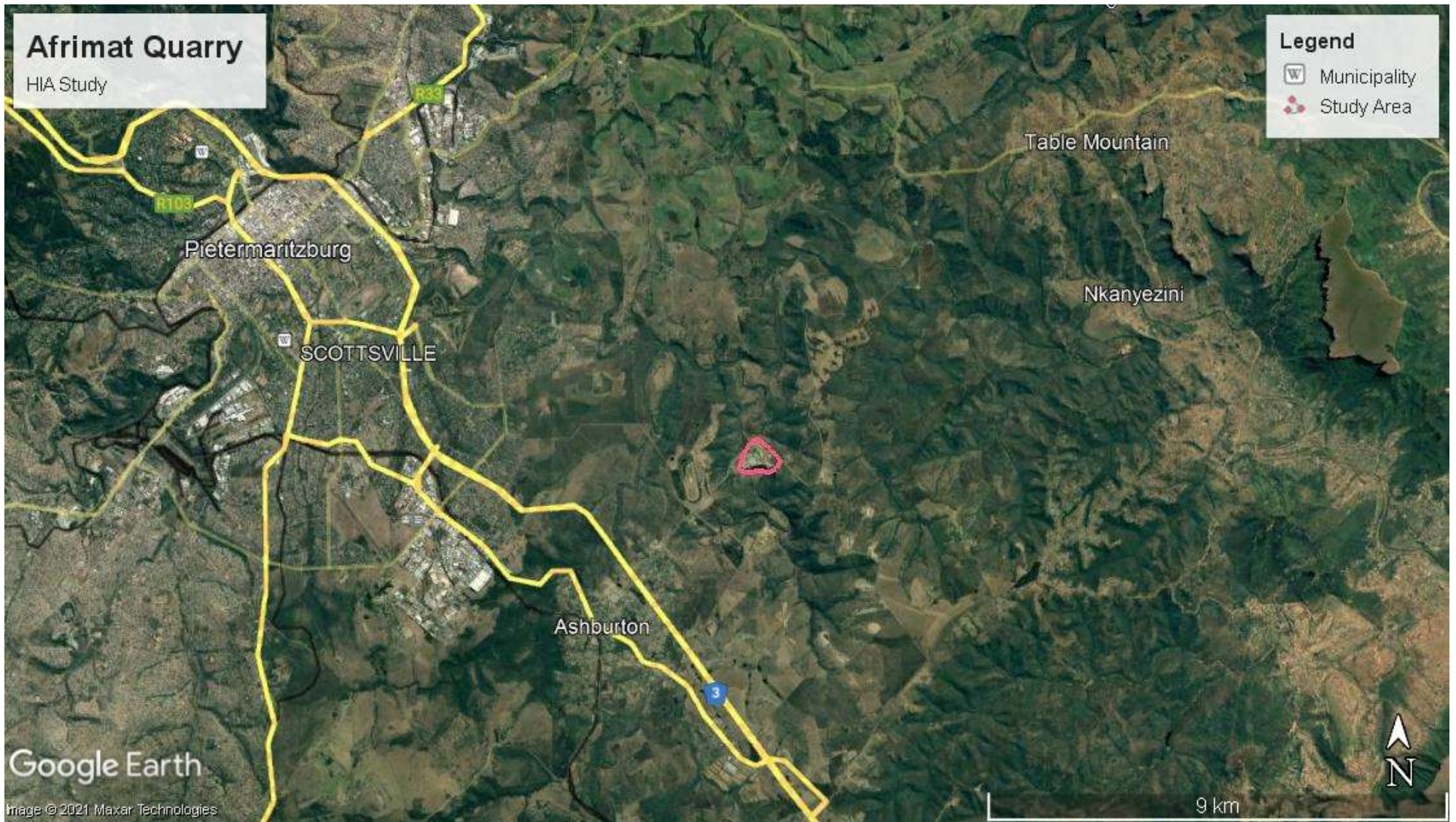


Figure 1: Locality map for the EMP upgrade Site (Author, 2021)

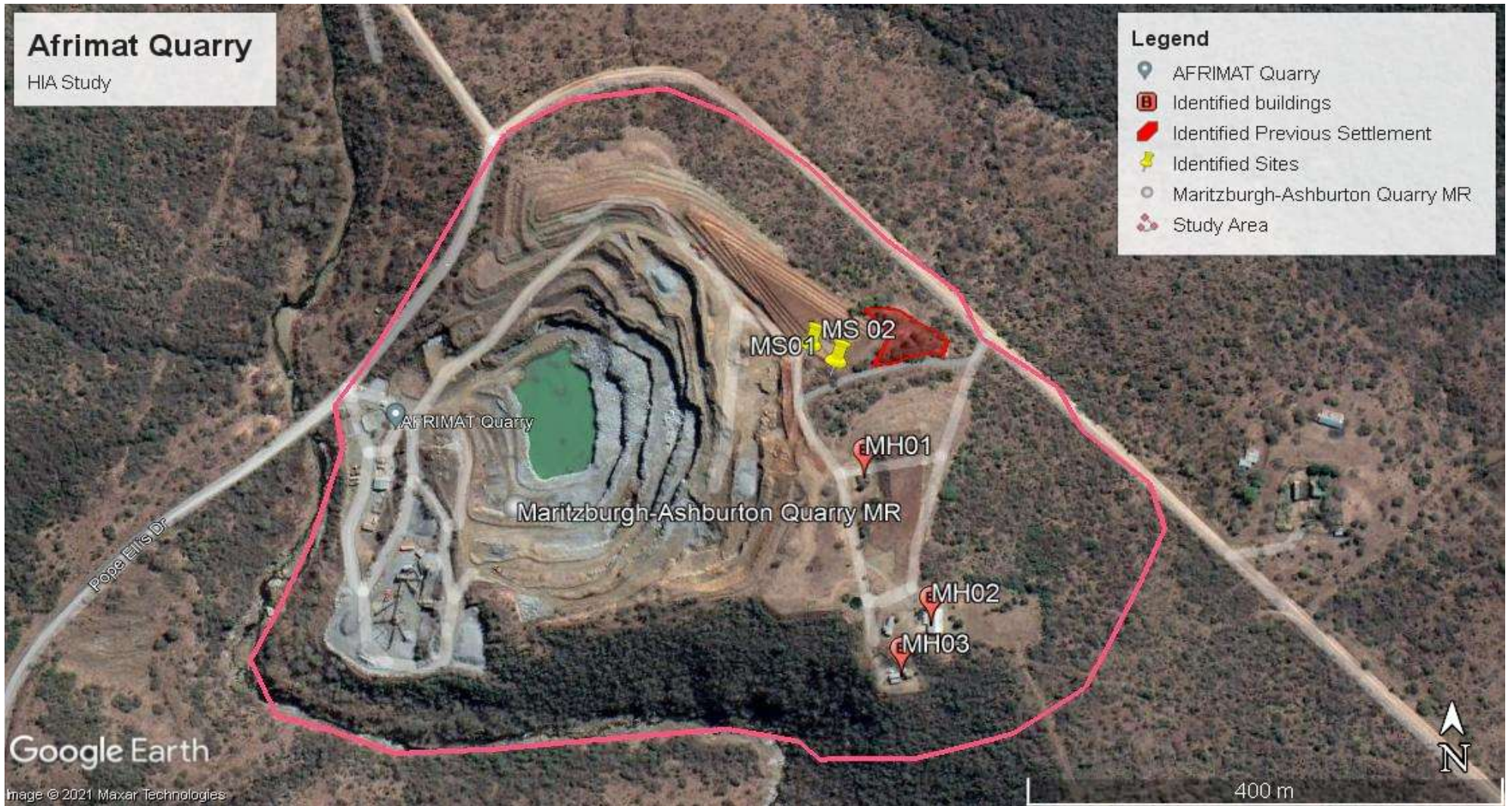


Figure 2: Proposed EMP upgrade site (Integrated Specialist Services (Pty) Ltd, 2021)

Project Background and Description

Maritzburg Quarry is proposing to update the Environmental Management Plan for the Farm Maritzburg Quarry located in Pietermaritzburg in Kwa-Zulu Natal Province. The site mines Granite on 84,0415 hectares.

The quarrying process currently involves:

- Drill and blast the hard rock after the topsoil of the area has been stripped and stockpiled
- Load and haul the material out of the excavation to the crushing and screening plants,
- Crush and screen the recovered material at the crusher plant in order to reduce it to various size aggregate,
- Stockpile the aggregate at a stockpile area until it is collected by clients.

LEGISLATIVE CONTEXT

Three main pieces of legislations are relevant to the present study and there are presented here. Under KwaZulu Natal Amafa and Research Institute Act No. 05 of 2018), 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. This report is also required in terms of Section 23(a), (b) and (c) of the Minerals and Petroleum Resources Development read together with regulations 11(1) (g) of the Mineral and Petroleum Resources Development Act 28 of 2002).

General protection for Structures,

37.(1)(a) No structure which is, or which may reasonably be expected to be, older than 60 years, may be demolished, altered or added to without the prior written approval of the Institute having been obtained on written application to the Institute.

(b) Where the Institute does not grant approval, the Institute must consider special protection in terms of sections 44, 45, 46, 47 and 49 of Chapter 9.

(2) The Institute may, by notice in the Gazette, exempt –

(a) a defined geographical area; or

(b) defined categories of sites within a defined geographical area,

from the provisions of subsection (1) where the Institute is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 44, 45, 46, 47 and 49 of Chapter 9.

(3) A notice referred to in subsection (2) may, by notice in the Gazette, be amended or withdrawn by the Institute.

General protection: Graves of victims of conflict

38. No person may damage, alter, exhume, or remove from its original position –

- (a) the grave of a victim of conflict.
- (b) a cemetery made up of such graves; or
- (c) any part of a cemetery containing such graves, without the prior written approval of the Institute having been obtained on written application to the Institute and in terms of the Regulations to this Act

General protection: Graves of victims of conflict

39. (1) No grave or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority –

- (a) not otherwise protected by this Act; and
- (b) not located in a formal cemetery managed or administered by a local authority,

may be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute.

(2) The Institute may only issue written approval once it is satisfied that –

- (a) the applicant has provided evidence of efforts to consult with communities or descendants who may have an interest in the grave, using the guidelines and criteria for consultation set out in regulations; and
- (b) the applicant and the relevant communities or descendants have reached agreement regarding the grave

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites

40.(1) No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Institute having been obtained on written application to the Institute.

(2) Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Institute without delay.

(3) The Institute may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Institute to be inappropriate within 50 metres of a rock art site.

(4) No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Institute having been obtained on written application to the Institute

(5) No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Institute having been obtained on written application to the Institute.

(6)(a) The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government.

(b) The Institute may establish and maintain a provincial repository or repositories for the safekeeping or display of

- (i) archaeological objects;
- (ii) palaeontological material;
- (iii) ecofacts;
- (iv) objects related to battlefield sites;
- (v) material cultural artefacts; or
- (vi) meteorites.

(7) The Institute may, subject to such conditions as the Institute may determine, loan any object or material referred to in subsection (6) to a national or provincial museum or institution.

(8) No person may, without the prior written approval of the Institute having been obtained on written application to the Institute, trade in, export or attempt to export from the province –

- (a) any category of archaeological object;
- (b) any palaeontological material;
- (c) any ecofact;
- (d) any object which may reasonably be regarded as having been recovered from a battlefield site;
- (e) any material cultural artefact; or
- (f) any meteorite.

(9)(a) A person or institution in possession of an object or material, referred to in paragraphs (a) - (f) of subsection (8), must submit full particulars of such object or material, including such information as may be prescribed, to the Institute.

(b) An object or material referred to in paragraph (a) must, subject to paragraph (c) and the directives of the Institute, remain under the control of the person or institution submitting the particulars thereof.

(c) The ownership of any object or material referred to in paragraph (a) vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government.

Heritage resources management

41.(1) Any person who intends to undertake a development categorised as –

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site –
 - (i) exceeding 5 000 m² in extent;
 - (ii) involving three or more existing erven or subdivisions thereof;

- (iii) involving three or more erven or divisions thereof, which have been consolidated within the past five years;
or
- (iv) the costs of which will exceed a sum set in terms of regulations;
- (d) the rezoning of a site exceeding 10 000 m² in extent; or
- (e) any other category of development provided for in regulations,

must, at the very earliest stages of initiating such a development, notify the Institute and furnish it with details regarding the location, nature and extent of the proposed development.

(2) The Institute must, within 14 days of receipt of a notification in terms of subsection (1) –

- (a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report: Provided that such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the Institute with relevant qualifications and experience and professional standing in heritage resources management; or
- (b) notify the person concerned that this section does not apply.

(3) The Institute must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included –

- (a) the identification and mapping of all heritage resources in the area affect;
- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations;
- (c) an assessment of the impact of the development on such heritage resources;
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the mining development on heritage resources;
- (f) the consideration of alternatives, if heritage resources will be adversely affected by the proposed development; and

- (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.
- (4) The report must be considered timeously by the Institute which must, after consultation with the person proposing the development, decide –
- (a) whether or not the development may proceed;
 - (b) any limitations or conditions to be applied to the development;
 - (c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
 - (d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
 - (e) whether the appointment of specialists is required as a condition of approval of the proposal.
- (5) The Institute must not make any decision under subsection (4), with respect to any development which impacts on a heritage resource protected at national level, unless it has consulted the heritage resources authority.
- (6) The applicant may appeal against the decision of the Institute to the responsible Member of the Executive Council, who –
- (a) must consider the views of both parties; and
 - (b) may, at his or her discretion –
 - (i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the Institute; and
 - (ii) consult the National Heritage Resources Agency; and
 - (c) must uphold, amend or overturn such decision.
- (7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by the National Heritage Resources Agency unless the Institute decides otherwise.
- (8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of

Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that –

- (a) the evaluation fulfils the requirements of the Institute in terms of subsection (3); and
- (b) any comments and recommendations of the Institute with regard to such development have been taken into account prior to the granting of the consent.

(9) The Institute, with the approval of the responsible Member of the Executive Council, may, by notice in the Provincial Gazette, exempt from the requirements of this section any place specified in the notice.

(10) Any person who has complied with the decision of the Institute in subsection (4) or of the responsible Member of the Executive Council in terms of subsection (6) or other requirements referred to in subsection (8), is exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 continue to apply

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 EMP upgrade on the farm Maritzburg Quarry located within Msunduzi Local Municipality, KwaZulu-Natal. 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 quarry 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 mining development.

The Fieldwork survey.

The fieldwork survey was undertaken on the 8th of November 2021. The focus of the survey involved a pedestrian survey which was conducted within the proposed mining area. 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 20th century agriculture and mining development; the general project area would have been a rewarding region to locate heritage resources related to Iron Age and historical sites (Bergh 1999, Huffman 2007). However, the situation today is completely different. The study area now lies on a clearly modified landscape that is dominated by previous mining and agriculture activities and mining settlement across the entire study area.

Visibility and Constraints

The sites were accessible through access roads. 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.

Consultations

In terms of Chapter 6, Regulations 40 – 44 of the EIA Regulations, 2014 (as amended), Integrated Specialists Services (Pty) Ltd is required to consult with interested and Affected Parties (I&APs). Comments received from the I&APs will be recorded and included in the Public Participation Report which will be submitted to the Amafa AkwaZulu Natal and Research Institute. The public participation process aims to enable landowners, lawful occupiers, directly affected individuals and or Interested and Affected Parties (I&APs) to raise any issues, comments and or concerns regarding the proposed

The project will be announced in the locally distributed newspaper and notices will be placed in the project area to inform the public about the proposed EMP upgrade. Notifications will request I&APs to contribute to the identification of potential environmental impacts. Stakeholders will be notified in writing of the project via email, fax or hand delivered letters. Public meetings will be undertaken as part of the consultation process to discuss any issues and concerns. A draft BAR/ EMPr will be prepared which lists the potential environmental impacts and how they will be managed. I&APs will be provided the opportunity to review and comment on the draft BAR/EMPr.

The Basic Assessment (BA) Public Participation process is conducted by the EAP. The study team consulted residents about the heritage character of the site. 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 development including heritage concerns that may arise as a result of the project. Heritage issues raised by the public with respect to the proposed Environmental Management Plan Upgrade will also be included in the Final Basic Assessment Report.

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



Plate 1: showing entrance to Maritzburg Quarry site



Plate 2: showing access roads and open cast mining within the mining area



Plate 3: showing the quarry plant within the study area



Plate 4: showing the finished product within the mining development site.



Plate 5: showing the leftover infrastructure from previous mining activities.



Plate 6: showing the mining development site



Plate 7: showing open cast mining on Level 572 within the development site.



Plate 8: showing the mining area.



Plate 9: showing view of of ongoing mining activities



Plate 10: showing rehabilitated section within the mining development site.



Plate 11: showing the dense vegetative cover around the active mining area.



Plate 12: showing the dense vegetative cover around the rehabilitated section of the mining area.



Plate 13: showing an active reservoir within the mining development site



Plate 14: showing rehabilitated section within the mining development site



Plate 15: Mine Infrastructure on rehabilitated section within the mining development site

ARCHAEOLOGICAL AND HERITAGE CONTEXT OF THE STUDY AREA

Archaeology

The archaeological and history of KwaZulu-Natal and the Msunduzi area (Pietermaritzburg) in particular dates to over 2 million years, which marks the beginning of the Stone Age (Maggs 1988). The Stone Age in KwaZulu-Natal was extensively researched by Oliver Davies formerly of the Natal Museum (see for example Davies, 1976, 1952). Abundant evidence of Stone Age archaeology of the KZN region are recorded amongst others at Sibudu Cave on the coast of KwaZulu-Natal and Drakensberg Mountains. Archaeological evidence at Sibudu Cave shows early forms of cognitive human behavioural patterns in the MSA of South Africa some 40 000 years BP (e.g., Wadley, 2005; Wadley et al, 2004; Wadley, 2001). Border Cave also has abundant evidence of the Stone Age material culture (Fourie, 2003).

KwaZulu Natal is also known to have been occupied by the San people who mainly resided in caves, plains, valleys and foothills. Evidence for San occupation includes numerous of rock art sites, predominantly in the form of rock paintings and material culture recorded in areas such as the Giants Castle and Kamberg in the Drakensberg Mountains located south and east of the province of KwaZulu-Natal (Vinnicombe 1976).

The greater Pietermaritzburg area was extensively researched by KwaZulu-Natal Museum archaeologists. The KwaZulu-Natal Museum heritage site inventories, indicates that the greater Pietermaritzburg area has abundant evidence of the ESA, MSA and LSA material. Most of these sites are situated close to water, such as the Msunduzi River, Slangspruit, Foxhill Spruit, and Mkhondeni, as well as in open air context or adjacent to exposed dongas or road cuttings. The archaeological remains probably date between 300 000 and 1.7 million years ago. The MSA blades and flakes recorded in the project area are associated with the first anatomically modern people i.e. Homo Sapiens Sapiens.

The LSA flakes identified in the Msunduzi area are associated with the San (Bushmen) and their direct ancestors. These LSA tools most probably dates back to between 200 and 20 000 years ago. Most of the ESA and MSA sites were also recorded by the Olivier Davies in the 1950's and 1960's, Farden in the 1960s and 1970's and Aron Mazel in the 1980's.

The Iron Age of the KwaZulu Natal region dates back to the 5th Century AD when the Early Iron Age (EIA) proto-Bantu-speaking farming communities began arriving in this region, which was then occupied by hunter-gatherers. These EIA communities are archaeologically referred to as the Kwale branch of the Urewe EIA Tradition (Huffman, 2007: 127-9). The Iron Age communities occupied the foot-hills and valley lands introducing settled life, domesticated livestock, crop production and the use of iron (also see Maggs 1984a; 1984b; Huffman 2007).

Alongside the Urewe Tradition was the Kalundu Tradition whose EIA archaeological sites have been recorded along the KwaZulu Natal region.

The second period of occupation in KwaZulu-Natal was during the Early and Middle Iron Age; an occupation of the KwaZulu-Natal region by the Bantu speakers who migrated from as far as the Great Lakes regions of Congo and Cameroon. The site of Mzonjani, near Durban is the oldest known Iron Age site in KwaZulu-Natal, dating to the 3rd Millennium AD (Huffman, 2010). The Mzonjani facies is the type of pottery most likely to be found within the study area. This pottery is characterized by punctures on the rim and spaced motifs on the shoulder (see Huffman 2007). The Early Iron Age sites typically occur on the alluvial and colluvial soils in the large river valleys below 700m above sea level. Some have been located along the Msunduzi River as well as in the Ashburton area. Later Iron Age sites occur in similar contexts as well as on ridges or plato's in the existing grassland. Some impressive Later Iron Age sites occur in the Umngeni River Valley close to Howick as well as in the Ottos Bluff area near Albert Falls Dam.

From about 15 00 AD the region was occupied by new coming groups of Late Iron Age farmers of the Kalundu Tradition (ibid). The region was the centre of immigration and migration of different African groups some of which are ancestors of the contemporary Zulu predominant in the region. The archaeological evidence of the Iron Age people in the region is represented through distinct ceramic traditions, stone walls and other structural features such as grain bins and hut floor remains, kraal remains, vitrified cattle dung slugs, iron implements, bellows and furnaces. The earliest known type of stonewalling that characterises the Central Cattle Pattern in KwaZulu Natal region (KZN) is known as Moor Park, which dates from 14th to 16th Centuries AD (Huffman, Whitelaw, Davis 1974). This type of stonewalling can be found in defensive position on hilltops in the Midlands of KZN (Huffman, 2010 & 2007). Archaeologists have concluded that the function of these structures was to serve mainly defensive purposes - the site of Moor Park is "located on the spurs and ends of hills, stone walls cut the settlement off from remaining terrain perimeter walls enclose about two thirds of the settlement, leaving the back free" (Huffman, 2007). However, it has to be noted that the Central Cattle Pattern and other forms of Iron Age stonewalling features are not unique to the eastern Bantu Speaking language groups (Nguni) (Huffman's 2007).

Other than stone walled structures, the other form of Iron Age structures are the 'beehive huts'- documented in many of historical records dating as far back as the colonial times. Beehive structures presents a challenge to the archaeological study of Iron Age in the province because they are often not adequately preserved in the archaeological record. Huffman (2007) argues that the archaeology of the KwaZulu-Natal is not as prominent as is in other parts of the country because most of the structures were built of thatch material that do not preserve well. The same is true for their ceramic traditions. The type site of Moor Park therefore presents a unique view of the Iron Age in this region and is worth a mention in this report.

Historians argue that communities existed in numerous small-scale political units of different sizes, population numbers and political structures (Wright & Hamilton, 1989). During the second half of the eighteenth century, stronger chiefdoms and paramountcies emerged (Wright & Hamilton 1989). A more centralized political system emerged in the 1780's. This shift was mainly characterized by population growth and geographical expansion of states. The most important and largest and strongest states at the time were the Mabhudu, Ndwandwe and Mthethwa. However, other smaller states, also established themselves in the greater Tugela Region. These included in the south the Qwabe, Bhaca, Mbo, Hlubi, Bhele, Ngwane and many others (Wright & Hamilton, 1989). As such the Late Iron Age in KwaZulu-Natal and other parts of southern Africa this period was characterised by a variety of expansionists' battles fought by different chiefdoms, culminating in the pre-colonial southern African war called Imfecane (Ommer-Cooper, 1993).

Throughout the middle of the 1800s the region witnessed the Mfecane migrations and displacements linked to Tshaka's expansionist policy. One of the prominent chiefdoms that was conquered was the Ndwandwe chiefdom of Zwibe kaLanga which were situated north of King Shaka's territory around the modern day kwaNongoma (Knight, 1998). Shaka managed to achieve his ideal kingdom by strategically expanding the traditional amabutho system. King Shaka's reign as the Zulu King did not last long as he was assassinated by his younger brothers in September 1828. One of them, Dingane KaSenzangakhona later became the king of Zulu. King Shaka moved the royal homestead to KwaDukuza in Stanger, south of upper Thukela River before his assassination by Dingane (and Mpande) who later re-relocated and rebuilt it at eMgungundlovu. Umgungundlovu is 'The Place Surrounding the Elephant' in the emaKhosini valley where King Shaka and King Dingane's forefathers are buried. It has been suggested that one important reason for the relocation of the royal homestead back to uMgungundlovu- north of the upper Thukela River was the growing influence of the white community at Port Natal (settlers) and the encroaching Trek Boers who crossed uKhahlamba Mountains into Natal in the 1837 (Knight, 1998). Dingane, then King of the Zulus died in February 1840 under the defeat of his brother Mpande with the assistance of the Voortrekkers in the battle on the Maqongqo Hills. Mpande had initially assisted Dingane to assassinate Shaka.

In Msunduzi area two tribal groups established themselves in an area that subsequently became known as the Swartkop Location in the 1830's (Wright 1988). These were the Mpumuza and a section of the Nxamalala (or Zuma). Fear of the Zulu under Dingane had led them to separate from their respective parent chiefdoms and to migrate southwards together. Slightly later arrivals were the Zondi (or Nadi) who moved from near the Mooi-Thukela confluence. All these groups still have a presence in the study area today (Wright 1988).

European settlement of the area started soon after 1838 when the first Voortrekker settlers marked out large farms in the area. The Voortrekkers arrived in Natal regions in the shadow of the weakened African kingdoms and chiefdoms in the aftermath of the Mfecane. This effectively ushered in new era of colonial occupation by succeeding

Afrikaans and British colonial administration authorities through the last half of the 1800s and into the last 1900s. By 1850s the region witnessed the influx of more settler communities which triggered settler wars between the African chiefdoms and the incoming Afrikaner settlers. Some of these colonial wars and battles lasted into Anglo-Boer wars of 1899-1902. A great number, led by Piet Retief, crossed the Drakensburg into Natal. They encountered the Zulu people who lured them into a trap and brutally massacred the entire group. This is said to be one of the many failures of the white settler expeditions in the frontiers and when the shocking news reached the Cape, more groups were sent to the interior for revenge. A series of battles were fought but the most notable was the Battle of Blood River in 1838 where the Boers defeated the Zulus. This ended the Zulu threat to the white settlers and a permanent and formal settlement in the former Natal Colony was established. However, the Republic of Natalia was annexed by the British in 1845 (Wright & Hamilton, 1989). There after the region was subsequently annexed by the British and effectively placed the majority of African communities under the Union of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994.

Historic Period

The Pietermaritzburg is famous also its colonial heritage especially architecture. The original Voortrekker route, later to become the transport route into the interior, passes through Worlds View which is currently a suburb in western Pietermaritzburg. The route was originally established by the Voortrekker leader Piet Retief and his party in 1838. The site at Worldsvie is a provincial landmark that is protected by heritage legislation (Oberholser 1972). The colonial heritage of Pietermaritzburg also includes various buildings associated with the first Dutch settlers (Voortrekkers) after 1837 as well as the latter Victorian and Edwardian heritage of the area associated more closely with the British occupancy of Natal after 1845 (Laband & Hasswell 1988; Derwent 2006).

Pietermaritzburg is arguably the greatest Victorian city in the southern hemisphere and finest remaining urban environments in South Africa. The city's colonial heritage consists of built structures, mostly buildings, which are of great architectural (and also historical) significance (Laband & Haswell 1988; Oberholser 1972; Derwent 2006). A number of the buildings located within the Pietermaritzburg Central Business District (CBD) are constructed out of red-clay bricks, such as the Pietermaritzburg City Hall, giving the city a recognisably unique architectural style. Most of the architectural resources are concentrated within the Pietermaritzburg CBD and adjacent areas such as Georgetown in Edendale. These resources largely consist of buildings constructed in Voortrekker, British-Colonial, Indian and traditional African styles dating back to the late 1800s and early 1900s. There are fine examples of architecture from as early as the 1840s that still exist within Pietermaritzburg CBD and its vicinity for example Hollingwood and further afield at Fort Nottingham. Fine post World War 2 architecture is also abundant in the city.

The Georgetown area in Edendale contains a number of unique buildings consisting of a mixture of traditional African styles of architecture with British- Colonial and Indian influences. Some of the earliest buildings in

Georgetown date back to the 1850s and consist of rectangular houses of unfired mud brick, and brick and shale houses covered by lime plaster. Georgetown also provides rare examples of wood and iron buildings, while this building style was common in the 1900s, few examples still exist today. Some interesting building styles also occur further afield at Merrivale Station. The upper reaches of Sweetwaters, in the immediate vicinity of the study area, were originally a farm demarcated by the Voortrekker leader Andries Pretorius. During the British colonial administration of Natal after 1845 this area was declared an African Reserve. It became known as the Swartkop Location after the prominent hill in the area.

The city is also renowned for its multiple religious establishments and a variety of places of worship depicting the demographic pluralism in the study area. There are several Christian churches, chapels and mission stations throughout the Msunduzi Municipality area. Several of these structures are Provincial and Heritage Landmarks (e.g. the Christian Science Church and Old St Mary's Anglican Church in Pietermaritzburg) and are architecturally historically significant. There are also a number of Mosques and Hindu Temples located within the greater Pietermaritzburg, these buildings hold value in terms of both their architectural style and cultural significance. These include the Soorti Sunni Mosque in Church Street and the Stri Siva Soobramoniar and Marriamen Temples in Longmarket (Langalibalele) Street in Pietermaritzburg, amongst others.

There are a number of cemeteries that are of cultural and historical significance. These include the Jewish and Muslim cemetery off Roberts Road in the Clarendon area, the Old Commercial Road Cemetery and the Fort Napier Military Cemetery in the Signal Hill area. Graves from the Anglo-Boer War, including those of concentration camp victims, are located within the Commercial Road Cemetery. Graves from both the First and Second World Wars are located in the Commercial Road Cemetery and the Fort Napier Military Cemetery. The Commercial Road Cemetery also contains the graves of individuals spanning the early history of Pietermaritzburg including original Voortrekkers, Germans interned during the First World War, members of the Natal Mounted Police, prominent colonial figures and early Indian Christian converts.

The Percy Taylor Rockeries in Scottsville are important natural feature as well as a significant historical resource; and the Pietermaritzburg Railway Station located off Church Street is architecturally, historically and culturally significant. The site is associated with the 1893 incident that sparked Mahatma Gandhi's strategy of passive resistance, occurred (KwaZulu-Natal Museum).

The city hosts several struggle heritage sites which include the Old Prison in Pietermaritzburg, the Gandhi statue opposite the Colonial Building, various houses and places of significance within the Sobantu township as well as the Edendale/Mbali sub-route. Of special interest in this region is the Mandela Capture site, near Howick, and the Alan Paton Centre and struggle archives at the University of KwaZulu-Natal in Pietermaritzburg. The Centre houses the famed author of 'Cry, the Beloved Country', and founder of the Liberal Party, Alan Paton's literary works, and

documents relating to other institutions. The historical heritage is protected by the NHRA and KwaZulu Natal Heritage Act no. 4 of 2008. The proposed development will not impact on any of the mentioned heritage monuments, buildings and structures.

SAHRIS Database and Impact assessment reports in the proposed project area

According to SAHRIS Database, several archaeological and heritage studies were conducted in the project area. The studies include HIA for solar plants, powerline, roads and other infrastructure development projects were completed by SRK (2006), Whitelaw, (2007a &b), Whelan (2007); Prins (2013a, 2013b, 2013c), Van Schalkwyk (2013), Anderson (2015), Brikholtz (2016). These studies recorded LSA, MSA and LSA sites, burial sites and historical buildings and structures of varying significance. Most importantly the initial HIA study for the proposed project (Seleane 2014) is key to the findings of this report. These finding provided insights regarding the heritage potential of the study sites.

RESULTS OF THE FIELD STUDY

Study site Archaeology

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains 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 earth moving activities as well as mining, indirect impacts may occur during movement of heavy mining vehicles. The installation of fence lines will result in the relocation or destruction of existing surface heritage material (if any are present).

Similarly, the clearing of access roads 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 low to moderate within the mining right site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed mining development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be low to moderate since the project area has been previously altered by previous mining activities and agriculture. The following section presents results of the archaeological and heritage survey conducted within the proposed project sites.

Archaeology

The quarry site did not yield any confirmable archaeological sites or material. Previous studies such as Prins (2012, 2017, 2019) in the project area recorded confirmable archaeological remains. Most prehistoric settlements and farmsteads are clustered along foothills. Apparently prehistoric communities also preferred location near sources of water. However, in this case, no evidence of prehistoric settlements were recorded during the survey. In addition, if any remains occurred in the area, they could have been destroyed by previous mining activities and agriculture. It is the considered opinion of the author that the site is not likely to yield any archaeological findings. Based on the field study results and field observations, it is the considered opinion of the author that the receiving environment for mining is low to medium potential to yield previously unidentified archaeological sites during mining activities.

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 mining. In some instances, packed stones or bricks may indicate the presence of informal burials. If any human bones are found during the course of mining 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 study did not identify any graves or burial sites within the proposed EMP upgrade site, however, the possibility of encountering previously unidentified burial sites is low within the quarry site, should such sites be identified during mining, they are still protected by applicable legislations, and they should be protected (also see Appendixes for more details). Burial sites older than 60 years are protected by the NHRA and those younger than 60 years are protected by the Human Tissue Act. Exhumation of graves must confirm to the standards set out in the ordinance on excavation (Ordinance no.12 of 1980 which replaced the old Transvaal Ordinance no.7 of 1925).

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

It should be noted that burial grounds and gravesites are accorded the highest social significance threshold (see Appendix 3). The significance of burial grounds and gravesites is closely tied to their age and historical, cultural, and social context. Nonetheless, every burial should be considered as of high socio-cultural significance protected by practices, a series of legislations, and municipal ordinances. 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 Amafa AkwaZulu Natali and Research Institute.

Public Monuments and Memorials

The study did not record any public memorials and monuments within the quarry site.

Buildings and Structures

The general study area is dotted with structures and buildings left by the previous landowners which occur in already mined sections of the mining area. In addition, the ages of the buildings were deemed to be younger than 60 years. As such the EMP upgrade application does not trigger Section 34 of the NHRA or Section 37 of the Amafa AkwaZulu

Natali and Research Institute Act 05 of 2018. The identified structures and buildings are illustrated below and summarised in Table 1 below.



Plate 16: Showing structures and buildings (MH01) within the study area



Plate 17: Showing structures and buildings (**MH03**) identified within the study area



Plate 18: Showing a reservoir identified within the study area (**MS02**)



Plate 19: Showing area that was previously a settlement (**MS01**).



Plate 20: Showing identified structures within the mining area. (**MH02**).

Table 1: Summary of Identified Sites.

REFERENCE	DESCRIPTION OF SITE
MH01	An existing cement and mortar structure covering an area of approximately 200m ² was identified (MH01) on the coordinates 29°38'15.98"S, 30°28'54.52"E. The structure is however in mint condition and could not be over 60 years
MH02	A compound 200m x 150m with two structures was identified on the coordinates 29°38'20.24"S, 30°28'56.82"E. The compound is fenced off and the exact age of the structures could not be confirmed.
MH03	A structure with blended thatched and zinc roofing was recorded on the coordinates 29°38'21.93"S, 30°28'55.66"E. The structure's age could not be confirmed to be over 60 years.
MS01	A previous settlement was recorded on the coordinates 29°38'11.57"S, 30°28'55.68"E. The site covers an area of approximately 400m ² . The area was occupied by previous landowners; however, no structures exist at the site

MS02	A disused reservoir was recorded MS02 on the coordinates 29°38'12.93"S, 30°28'53,45"E, the reservoir is associated with the settlement identified on site MS01
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Table 2: Summary of Findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	Structures and buildings left by the previous miners and land occupants
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists
Historical settlements and townscapes	None survives in the proposed area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	None exist
Graves and burial grounds	None
Movable objects	None
Overall comment	The proposed mining development site is significantly altered as a result of previous mining activities; however, it is important to note that the study did not record any significant archaeological evidence within the proposed mining site. It should be borne in mind that sub-surface chance finds are still possible hence should be taken into consideration in all mining activities.

Methodology Adapted in Assessing the 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. The significance of the impacts will be assessed considering the following descriptors:

Table 3: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.

Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.
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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 4: Criteria for Rating of Classified Impacts

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

Table 5: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	Impact /	Aspect	Nature	Magnitude	Extent	Duration	Probability	Impact before mitigation	Mitigation measures	Magnitude	Extent	Duration	Probability	Impact after mitigation
Clearing and mining	Destruction of archaeological remains	Cultural heritage	-	6	2	2	2	20	<ul style="list-style-type: none"> Use chance find procedure to cater for accidental finds 	2	1	1	1	4
	Disturbance of graves	Cultural heritage	-	6	1	1	2	14	<ul style="list-style-type: none"> Chance finds procedure and heritage induction for workers, 	2	1	1	1	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no historical buildings within the proposed development site 	4	1	1	1	4
Haulage	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	<ul style="list-style-type: none"> Mitigation is not required because there are no public monuments within the proposed development site 	2	1	1	4	4

Cumulative Impacts

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

This section considers the cumulative impacts that would result from the combination of the proposed mining. The study did not record any significant archaeological remains within the proposed site. As such increased development in the project area will have several cumulative impacts on heritage resource whether known or covered in the ground. For example, during mining phase they will be increase in human activity and movement of heavy mining equipment and vehicles that could change, alter, or destroy heritage resources within and outside the proposed site given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed development and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves and archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be

easily affected or lost. As such, mining workers may not see these resources, which results in increased risk of resource damage and/or loss. Vibrations and earth moving activities associated with drilling have the potential to crack tombstone which are known to occur in the greater study area.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. Sites of archaeological significance were identified, and cumulative effects are applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of access roads and impacts to sub surface archaeological remains. Allowing the impact of the proposed mining project 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 mining vehicles during mining. Movement of heavy mining equipment must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if haulage vehicles/equipment are not monitored to avoid driving through undetected heritage resources.

Mitigation

Given that no significant heritage resources were recorded within the mining site, mitigation is not required, however, chance find procedure applies.

ASSESSING SIGNIFICANCE

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

Aesthetic Value

The aesthetic values of the AIA Study Area and the overall project area are contained in the valley bushveld environment and landscape typical of this part of the KwaZulu Natal Province. The visual and physical relationship between AIA study area and the surrounding historical Cultural Landscape demonstrates the

connection of place to the local and oral historical stories of the African communities who populated this region going back into prehistory.

The proposed mining site will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of KwaZulu Natal. The local communities consider the project area a cultural landscape linked to their ancestors and history. However, the proposed mining will not alter this aesthetic value in any radical way since the mining holes will be limited in number and small.

Historic Value

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

Scientific value

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

Social Value

The project sites fall within a larger and an extensive cultural landscape that is integrated with the wider inland. The overall area has social value for the local community, as is the case with any populated landscape. Literature review suggests that social value of the overall project area is also demonstrated through local history which associates the area with the coming of European missionaries, explorers and colonialists and the African struggle against settler colonialism in the second half of the 1800s and at the end of the 1800s, the colonial wars of resistance, the century long struggle for democracy that followed colonial subjugation. Several generations of communities originate from the project area and continue to call it home. As such, they have ancestral ties to the area. The land also provides the canvas upon which daily socio-cultural activities are painted. All these factors put together confirms the social significance of the project area. However, this social significance is unlikely to be negatively impacted by the proposed mining especially

given the fact that the development will add value to the human settlements and activities already taking place. Some sections of development site are covered by thick bushes and vegetation retains social value as sources of important herbs and traditional medicines. As such, they must be considered as significant social value sites.

DISCUSSION

Various archaeological and heritage specialist studies were conducted in the general project area since 2002. The current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the general project area. These studies recorded sites of varying significance for example Prins (2012, 2014, 2017, 2019) and Beater (2017, 2019) which testify that the project area is a cultural landscape with medium to high potential to yield significant Iron Age sites. The study noted that the mining site is located within a degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains on some already disturbed sections. The study did not yield any confirmable archaeological, historical burial sites that require protection before the mining activities commence. The study noted that the absence of confirmable and significant archaeological cultural heritage sites is not evidence in itself that such sites did not exist within the mining site. There is potential of recovering significant archaeological remains beneath the surface. In addition, some sections were not easily accessible due to the steep nature of the project site as well as dense vegetation cover. Significance of the sites of Interest is not limited to presence or absence of physical archaeological sites.

The findings by archaeological and heritage specialist attest to the fact that the project area may have been located within a rich LIA landscape. As such there is potential for encountering subsurface LIA remains ranges from medium to high on the proposed mining development site (See the appended Chance find procedure for handling of chance finds). Visibility was affected during the current survey is thought to be a result of previous clearance, and mining that may have destroyed surface remains. In addition, surface visibility was compromised by thick vegetation cover. It should be noted that significance of the site is not limited to presence or absence of physical archaeological sites.

Based on the significance assessment criterion employed for this report, the mining site was rated **low to medium** from an archaeological perspective, 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 mining (see appended chance find procedure). The absence of significant archaeological remains may be due to the following factors:

1. That the quarry site is located within a heavily degraded area and have reduced sensitivity for the presence of high significance physical cultural site remains due previous mining and agricultural activities.
2. Limited ground surface visibility on sections of the proposed mining site may have impeded the detection of other physical cultural heritage site remains or archaeological signatures within the mining site. This factor is exacerbated by the fact that the study was limited to general survey without necessarily conducting any detailed inspection of specific locations that will be affected by the proposed mining.

RECOMMENDATIONS

1. From a heritage perspective supported by the findings of this study, the proposed EMPr upgrade is feasible. However, the proposed Environmental Management Plan Upgrade should be approved to proceed as planned under observation that the mining development dimensions do not extend beyond the surveyed sites.
2. Contractors and workers must be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the Amafa AkwaZulu Natali and Research Institute Act 05 of 2018 and National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).
3. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by Amafa AkwaZulu Natal. The footprint impact of the proposed mining development and associated infrastructure should be kept to minimal to limit the possibility of encountering chance finds.
4. Should any unmarked burials be exposed during mining, affected families must be tracked and consulted, relevant rescue/ relocation permits must be obtained from Amafa AkwaZulu Natal before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process in accordance with the Amafa AkwaZulu Natali and Research Institute Act 05 of 2018.
5. Should chance archaeological materials or human burials remains be exposed during mining work on any section of the mining site, work should cease on the affected area and the discovery must be

reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the Amafa AkwaZulu Natali and Research Institute and SAHRA regulations (see appended Chance Find procedure for further details).

6. The Project Public Participation Process should ensure that any cultural heritage related matters for this project are given due attention whenever they arise and are communicated to PHRA throughout the proposed project development. This form of extended community involvement would pre-empt any potential disruptions that may arise from previously unknown cultural heritage matter that may have escaped the attention of this study.
7. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP there are no other significant cultural heritage resources barriers to the proposed development by Maritzburg Quarry (Pty) Ltd. The Heritage authority may approve the proposed development to proceed as planned with special commendations to implement the recommendations here in made.

CONCLUSIONS

Integrated Specialist Services (Pty) Ltd was tasked by Maritzburg Quarry (Pty) Ltd to carry out a Phase 1 AIA/ HIA of the proposed Environmental Management Plan Upgrade on the Maritzburg Quarry located in Pietermaritzburg, Msunduzi Local Municipality, KwaZulu-Natal Province. The study revealed that the quarry site has been significantly altered by forestry plantations. It was anticipated that if any archaeological remains existed within the disturbed sites may have been exposed by the previous agriculture and mining activities. It should be borne in mind that the potential of encountering chance finds during mining is for ever present. The applicant and contractors must be diligent and observant during clearance of the site. The procedure for reporting chance finds has clearly been laid out. The proposed Environmental Management Plan Upgrade may be approved subject to recommendations and mitigation measures provided in this report.

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APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED ENVIRONMENTAL MANAGEMENT PLAN UPGRADE ON THE FARM MARITZBURG QUARRY LOCATED IN PIETERMARITZBURG, MSUNDUZI LOCAL MUNICIPALITY, KWAZULU-NATAL PROVINCE

November 2021

ACRONYMS

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

CHANCE FIND PROCEDURE

Introduction

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

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 proposed Environmental Management Plan upgrade on the farm Maritzburg Quarry located in Pietermaritzburg, Msunduzi Local Municipality, KwaZulu-Natal Province The mining development site is subject to heritage survey and assessment at planning stage in accordance with the NHRA and Amafa aKwaZulu Natali and Research Institute Act 05 of 2018. 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 mining or any associated mining work and hence the need for a Chance Find Procedure to deal with accidental finds.

In this case an extensive Archaeological Impact Assessment was completed by T. Mlilo (2021) on the proposed development site. The AIA/HIA conducted was very comprehensive covering the entire 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 land clearing and mining. 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 (Pty) Ltd developed this Chance Find Procedure to define the process which govern the management of Chance Finds during mining. This ensures that appropriate treatment of chance finds while also minimizing disruption of the mining schedule. It also enables compliance with the heritage legislations and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of mining 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 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 mining/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 Amafa aKwaZulu Natali and Research Institute.
- 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 Amafa aKwaZulu Natali and Research Institute.
- 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 Amafa aKwaZulu Natali and Research Institute 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 Amafa aKwaZulu Natali and Research Institute, 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 Amafa aKwaZulu Natali and Research Institute and NHRA (1999) Regulations (Regulation 38, 39, 40), Integrated Specialist Services (Pty) Ltd will notify Amafa aKwaZulu Natali and Research Institute on behalf of the applicant. Amafa aKwaZulu Natali and Research Institute may require that a search and rescue exercise be conducted in terms of Amafa aKwaZulu Natali and Research Institute Act 05 of 2018, this may include rescue excavations, for which Integrated Specialist Services (Pty) Ltd will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, Amafa aKwaZulu Natali and Research Institute or Integrated Specialist Services (Pty) Ltd 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 Amafa aKwaZulu Natali and Research Institute 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 Amafa aKwaZulu Natali and Research Institute.

- f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to Amafa aKwaZulu Natali and Research Institute.
- g. As soon as the project archaeologist receives the rescue permit from Amafa aKwaZulu Natali and Research Institute. 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 Amafa aKwaZulu Natali and Research Institute and to the company.

Note that the relocation process will be informed by SAHRA Regulations, Amafa aKwaZulu Natali and Research Institute and the wishes of the descendants of the affected burial.

APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED ENVIRONMENTAL MANAGEMENT PLAN UPGRADE APPLICATION.

Objectiv	<ul style="list-style-type: none"> • Protection of archaeological sites and land considered to be of cultural value. • Protection of known physical cultural property sites against vandalism, destruction and theft; and • The preservation and appropriate management of new archaeological finds should these be discovered during mining. 							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Mining Phase								
1	Plannin g	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Mining Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of mining, mining 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 Amafa aKwaZulu Natali and Research Institute. official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed form site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Mining Manager who in turn will inform Amafa aKwaZulu Natali and Research Institute.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the Amafa aKwaZulu Natali and Research Institute. and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as mining phase.						

PHASE 1 HIA for the Proposed Environmental Management Plan upgrade on the Farm Maritzburg Quarry located in Pietermaritzburg, Msunduzi Local Municipality in Kwa-Zulu Natal Province

Operational Phase		
		Same as mining phase.

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.