HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38(8) OF THE NHRA (No. 25 OF 1999)

FOR THE PROPOSED KAREERAND BATTERY ENERGY STORAGE (BESS) FACILITY, NORTHWEST PROVINCE

Type of development:

Battery Energy Storage (BESS) Facility

Applicant:

Kareerand BESS (Pty) Ltd

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February 2024

APPROVAL PAGE

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Report Title	Heritage Impact Assessment for the proposed Kareerand Battery Energy Storage (BESS) Facility, North West Province
Authority Reference Number	TBC
Report Status	Draft Report
Applicant Name	Kareerand BESS (Pty) Ltd

Responsibility	Name	Qualifications and Certifications	Date
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REPORT OUTLINE

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the Environmental Authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

Table 1. Specialist Report Requirements.

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae.	Section a
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority.	*Declaration of Independence*
(c) Indication of the scope of, and the purpose for which, the report was prepared.	Section 1
(cA) An indication of the quality and age of base data used for the specialist report.	Section 3.4.
(cB) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 9
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 3.4
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 3
(f) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of site plan identifying site alternatives.	Section 7, 8 and 9
(g) Identification of any areas to be avoided, including buffers.	Section 7,8 and 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers.	Section 8
(I) Description of any assumptions made and any uncertainties or gaps in knowledge.	Section 3.7
(j) A description of the findings and potential implications of such findings on the impact of the proposed activity including identified alternatives on the environment or activities.	Section 1.3
(k) Mitigation measures for inclusion in the EMPr.	Section 9.1 and 9.5
(l) Conditions for inclusion in the environmental authorisation.	Section 9. 1 and 9.5
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation.	Section 9.6
(n) Reasoned opinion - (i) As to whether the proposed activity, activities or portions thereof should be authorised; (iA) Regarding the acceptability of the proposed activity or activities; and (ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan.	Section 9.3
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 5
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	Refer to the BA report
(q) Any other information requested by the competent authority.	No other information requested at this time

Executive Summary

Kareerand BESS (Pty) Ltd, is proposing the construction of the Kareerand Battery Energy Storage (BESS) Facility, consisting of a BESS and solar photovoltaic (PV) infrastructure located on Portion 3 of the Farm Kareerand No. 444, approximately 22 km east of Klerksdorp within the North West Province.

Kareerand BESS (Pty) Ltd, is also proposing to upgrade the existing access road on Portion 3 of the Farm Kareerand No. 444, Portion 4 of the Farm Kareerand 444, Portion 16 of the Farm Kromdraai 420, Portion 17 of the Farm Kromdraai 420, Farm Umfula No. 575, Portion 20 of Farm Umfula No. 567 and Portion 56 of the Farm Kromdraai 420; and to construct new 132kV grid connection infrastructure on Portion 3 of the Farm Kareerand No. 444, Portion 15 of the Farm Kromdraai 443, Remainder of Portion 5 of Farm no. 422, Portion 6 of the Farm Buffelsfontein 443, Portion 3 of the Farm Kareerand 444, Portion 2 of the Farm Buffelsfontein 443, Portion 103 of the Farm Hartebeestfontein 422, Portion 38 of the Farm Hartebeestfontein 422, Portion 79 of the Farm Hartebeestfontein 422, Portion 8 of the Farm Hartebeestfontein 422, Portion 2 of the Farm Mapaiskraal No. 441, Portion 41 of the Farm Hartebeestfontein 422 and Portion 4 of the Farm Mapaiskraal 441.

The Project area is situated within the City of Matlosana Local Municipality and JB Marks Local Municipality within the Dr Kenneth Kaunda District Municipality of the North West Province. Kareerand BESS (Pty) Ltd, appointed Beyond Heritage to conduct a Heritage Impact Assessment (HIA) for the Project and the study area was assessed through a desktop assessment and by a non-intrusive pedestrian field survey. Key findings of the assessment include:

- The Project area is situated in an altered landscape marked by agricultural activities and extensive mining including historical mining of gold;
- The project area is largely flat and lacks any topographic features which would have attracted Stone Age or Iron Age occupation;
- During the survey, heritage resources were limited to a possible grave (KRR01) marked by white rocks packed into the shape of a cross situated just outside the 132 kV grid corridor;
- According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study area is of varying sensitivities of very high, high, moderate, low, and insignificant paleontological sensitivity and an independent study by Prof Marion Bamford concluded that it is extremely unlikely that any fossils would be preserved in the overlying soils and sands of the Quaternary. There is a very small chance that fossils may occur below ground in dolomites of the Malmani Subgroup so a Fossil Chance Find Protocol should be added to the EMPr.

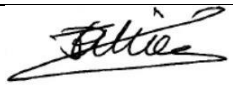
The impact on heritage resources can be mitigated to an acceptable level, and the Project can be authorised provided that the recommendations in this report are adhered to and based on the SAHRA's approval.

Recommendations:

The following recommendations for Environmental Authorisation apply and the Project may only proceed after receiving comment from SAHRA:

- The possible grave KRR01 should be avoided with a 30m buffer zone;
- Development activities must be confined to the approved development footprint only;
- Monitoring of the Project area by the ECO during pre-construction and construction phases for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.

Declaration of Independence

Specialist Name	JP Celliers
Declaration of Independence	I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 107 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations (as amended), that I: • I act as an independent specialist in this application; • I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant; • I declare that there are no circumstances that may compromise my objectivity in performing such work; • I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity; • I will comply with the Act, Regulations and all other applicable legislation; • I have no, and will not engage in, conflicting interests in the undertaking of the activity; • I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; • All the particulars furnished by me in this form are true and correct; and • I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 49 A of the Act.
Signature	
Date	09/02/2024

a) Expertise of the specialist

JP Celliers is a seasoned Heritage Specialist who has been involved in Heritage Impact Assessment and archaeological research projects since 2003. He holds an MA Degree with specialisation in Archaeology (UP).

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ABBREVIATIONS

ASAPA	Association of South African Professional Archaeologists
BGG	Burial Ground and Graves
CFPs	Chance Find Procedures
CMP	Conservation Management Plan
CoGHSTA	Co-operative Governance, Human Settlements and Traditional Affairs
CRR	Comments and Response Report
CRM	Cultural Resource Management
DFFE	Department of Fisheries, Forestry and Environment,
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment*
EIA	Early Iron Age*
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
ESA	Early Stone Age
ESIA	Environmental and Social Impact Assessment
GIS	Geographical Information System
GPS	Global Positioning System
GRP	Grave Relocation Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MEC	Member of the Executive Council
MIA	Middle Iron Age
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MSA	Middle Stone Age
NCHM	National Cultural History Museum
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID	Notification of Intent to Develop
NoK	Next-of-Kin
PRHA	Provincial Heritage Resource Agency
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site	Remains of human activity over 100 years old
Earlier 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 the historic period
The Iron Age	~ AD 400 to 1840
Historic	~ AD 1840 to 1950
Historic building	Over 60 years old

1 Introduction

Beyond Heritage was appointed to conduct a Heritage Impact Assessment (HIA) for the proposed construction of the Kareerand Battery Energy Storage (BESS) Facility, consisting of a BESS and solar photovoltaic (PV) infrastructure located on Portion 3 of the Farm Kareerand No. 444, approximately 22 km east of Klerksdorp within the North West Province.

Kareerand BESS (Pty) Ltd, is also proposing to upgrade the existing access road on Portion 3 of the Farm Kareerand No. 444, Portion 4 of the Farm Kareerand 444, Portion 16 of the Farm Kromdraai 420, Portion 17 of the Farm Kromdraai 420, Farm Umfula No. 575, Portion 20 of Farm Umfula No. 567 and Portion 56 of the Farm Kromdraai 420; and to construct new 132kV grid connection infrastructure on Portion 3 of the Farm Kareerand No. 444, Portion 15 of the Farm Kromdraai 443, Remainder of Portion 5 of Farm no. 422, Portion 6 of the Farm Buffelsfontein 443, Portion 3 of the Farm Kareerand 444, Portion 2 of the Farm Buffelsfontein 443, Portion 103 of the Farm Hartebeestfontein 422, Portion 38 of the Farm Hartebeestfontein 422, Portion 79 of the Farm Hartebeestfontein 422, Portion 8 of the Farm Hartebeestfontein 422, Portion 2 of the Farm Mapaiskraal No. 441, Portion 41 of the Farm Hartebeestfontein 422 and Portion 4 of the Farm Mapaiskraal 441. The Project area is situated within the City of Matlosana Local Municipality and JB Marks Local Municipality within the Dr Kenneth Kaunda District Municipality of the Northwest Province of South Africa (Figure 1.1 to 1.3). The report forms part of the Basic Assessment (BA) and Environmental Management Programme (EMPr) for the development.

The aim of the study was to survey the proposed development footprint to understand the cultural layering of the area, and if heritage features are found, to assess their importance within local, provincial, and national context. It further served to assess the impact of the proposed Project on non-renewable heritage resources. The study will submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. Recommendations are included to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999) (NHRA).

The report outlines the approach and methodology utilized before and during the survey, which includes:

- Phase 1, review of relevant literature;
- Phase 2, the physical surveying of the area on foot and by vehicle;
- Phase 3, reporting the outcome of the study.

During the survey, a possible grave was recorded in the study area. General site conditions and features in the study area were recorded by means of photographs, GPS locations and descriptions. Possible impacts were identified, and mitigation measures are proposed in this report.

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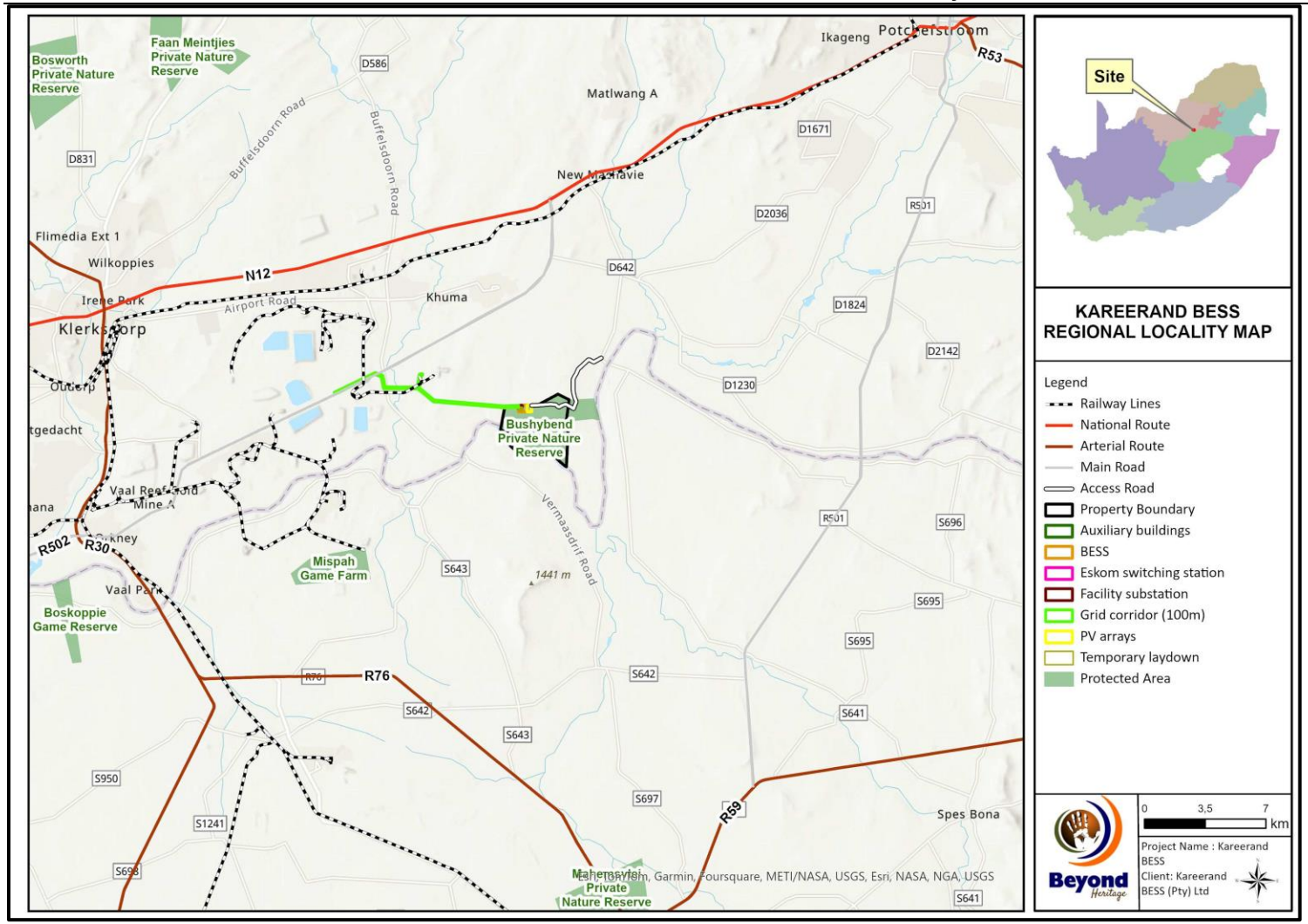


Figure 1.1. Regional setting of the Project.

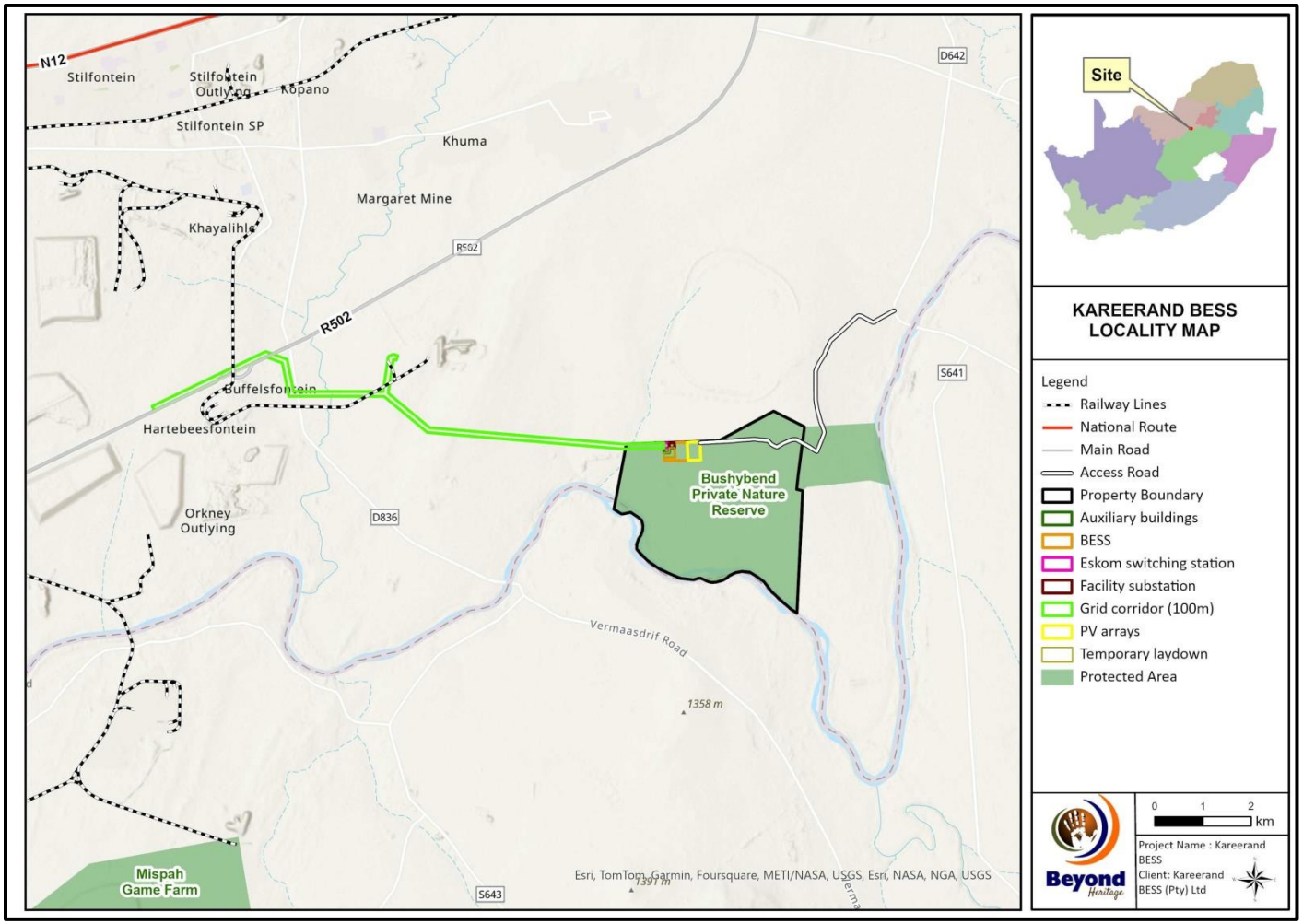


Figure 1.2. Local setting of the Project.

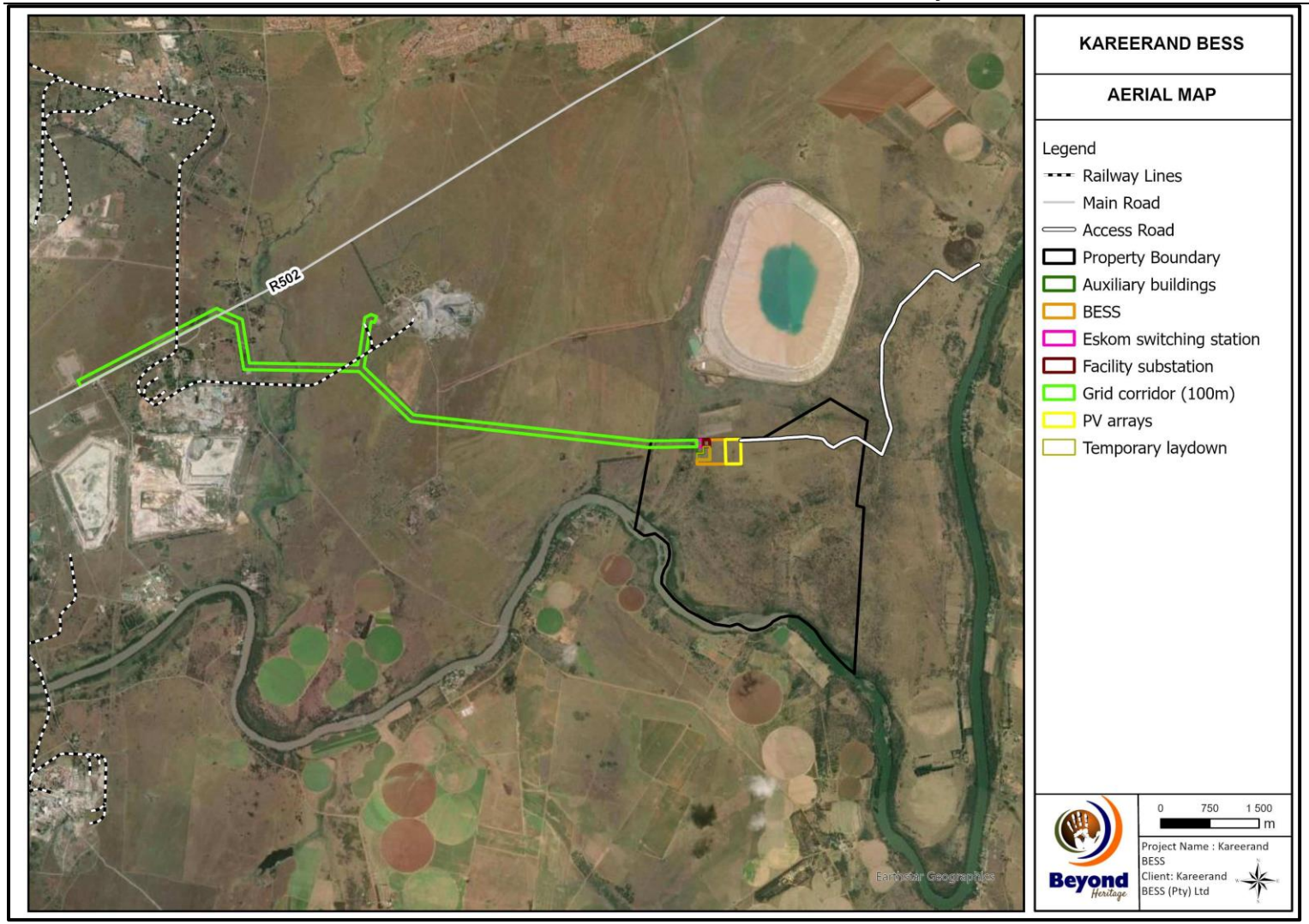


Figure 1.3. Aerial image of the Project area and surrounds.

1.1 Terms of Reference

The following Terms of Reference were adhered to in conducting this HIA.

Field study

Conduct a field study to: (a) survey the development footprint to understand the heritage character of the impact area; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed development.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed Project activity may have on the identified heritage resources for all 3 phases of the project, i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of Association of South African Professional Archaeologists (ASAPA).

Recommendations are provided to assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

1.2 Project Description

Project components and the location of the Kareerand Battery Energy Storage (BESS) Facility are outlined in Tables 2 and 3.

Table 2: Project Description

Magisterial District	City of Matlosana Local Municipality and JB Marks Local Municipality within the Dr Kenneth Kaunda District Municipality
Central co-ordinate of the development	26°54'43.85"S 26°52'59.78"E
1:50 000 Topographic Map Number	2626 DD

Table 3: Infrastructure and project activities

Type of development	Kareerand Battery Energy Storage (BESS)
Maximum export capacity	77MW

Project Details:

The proposed Kareerand BESS facility will include the following infrastructure:

- PV modules and mounting structures (up to 10 ha).
- Inverters and transformers.
- Solid State Battery Energy Storage System (BESS) (up to 10 ha).
- Site and internal access roads (up to 8m wide).
- Operation and Maintenance buildings including a gate house and security building, control centre, offices, warehouses and workshops for storage and maintenance (up to 1 ha).
- Laydown areas (3 ha temporary and 1 ha permanent).
- A 132 kV facility substation (up to 1 ha).
- 33 kV cabling between the project components and the facility substation.

The project will also include Grid connection infrastructure consisting of:

- A 132 kV Eskom Switching Station (up to 1 ha).
- 132 kV powerline (up to 11.5 km long) connecting the Eskom switching station to the Hermes Main Transmission Substation (a grid connection corridor of 100m wide will be assessed to allow for environmental sensitivities and/or micro-siting).

The Grid connection infrastructure, although assessed cumulatively with the BESS, will be subject to a separate environmental application process administered by the provincial authority.

1.3 Alternatives

No alternatives were provided, but the area assessed allows for siting of the development to avoid impacts to heritage resources.

2 Legislative Requirements

The HIA, as a specialist study to the EIA, is required under the following legislation:

- National Heritage Resources Act ((NHRA), Act No. 25 of 1999)
- National Environmental Management Act ((NEMA), Act No. 107 of 1998 - Section 23(2)(b))

A Phase 1 HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of heritage specialist input is to:

- Identify any heritage resources, which may be affected;
- Assess the nature and degree of significance of such resources;
- Assess the negative and positive impact of the development on these resources; and
- Make recommendations for the appropriate heritage management (or avoidance) of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMPr, to the Provincial Heritage Resource Agency (PHRA) or to The South African Heritage Resources Agency (SAHRA). SAHRA will ultimately be responsible for the evaluation of Phase 1 HIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 HIA reports and additional development information, as per the impact assessment report and/or EMPr, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 HIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

SAHRA as a commenting authority under section 38(8) of the NHRA require all environmental documents, compiled in support of an EA application as defined by the National Environmental Management Act (NEMA) (Act No 107 of 1998) to be submitted to SAHRA for commenting. Environmental Impact Assessment (EIA) Regulations section 40 (1) and (2). The Environmental Impact Assessment (EIA) Regulations, Government Notice Regulation (GN) R.982 were published on 04 December 2014 and promulgated on 08 December 2014. Together with the EIA Regulations, the Minister also published GN R.983 (Listing Notice No. 1), GN R.984 (Listing Notice No. 2) and GN R.985 (Listing Notice No. 3) in terms of Sections 24(2) and 24D of the NEMA, as amended) Upon submission to SAHRA the project will be automatically given a case number as reference. As such the EIA report and its appendices must be submitted to the case as well as the EMPr, once it's completed by the Environmental Assessment Practitioner (EAP).

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level). Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 HIAs are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance (refer to Section 3.5). Relevant conservation or mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Section 3 of the NHRA distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;

- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa

Conservation or mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision-making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement. After mitigation of a site, a destruction permit must be applied for with SAHRA by the applicant before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36 and GNR 548 as well as the SAHRA BGG Policy 2020. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 of the National Heritage Resources Act (NHRA), as well as the National Health Act of 2003 and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925) re-instituted by Proclamation 109 of 17 June 1994 and implemented by CoGHSTA as well as the National Health Act 2003 and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under the National Health Act of 2003

3 METHODOLOGY

3.1 Literature Review and background study

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS). Findings are included in Section 6.1 and 6.2.

3.2 Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 topographic maps of the area were utilised to identify possible places of heritage sensitivity might be located; these locations were marked and visited during the fieldwork phase. The database of the Genealogical Society of South Africa (GSSA) was consulted to collect data on any known graves in the area. Results are included in Section 6.3.

3.3 Public Consultation and Stakeholder Engagement:

Stakeholder engagement is a key component of any EIA process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process undertaken by the EAP was to capture and address any issues raised by community members and other stakeholders. Results are included in Section 5 and the final BA report.

3.4 Site Investigation

The aim of the site visit was to:

a) survey the proposed Project area to understand the heritage character of the area and to record, photograph and describe sites of archaeological, historical or cultural interest;

b) record GPS points of sites/areas identified as significant areas;

c) determine the levels of significance of the various types of heritage resources recorded in the Project area.

Table 4: Site Investigation Details

	Site Investigation
Date	19 January 2024
Season	Summer – The time of year and season had some effect on the results of the survey as the groundcover grasses were dense. The Project area was however sufficiently covered to understand the heritage character of the area (Figure 3.1).

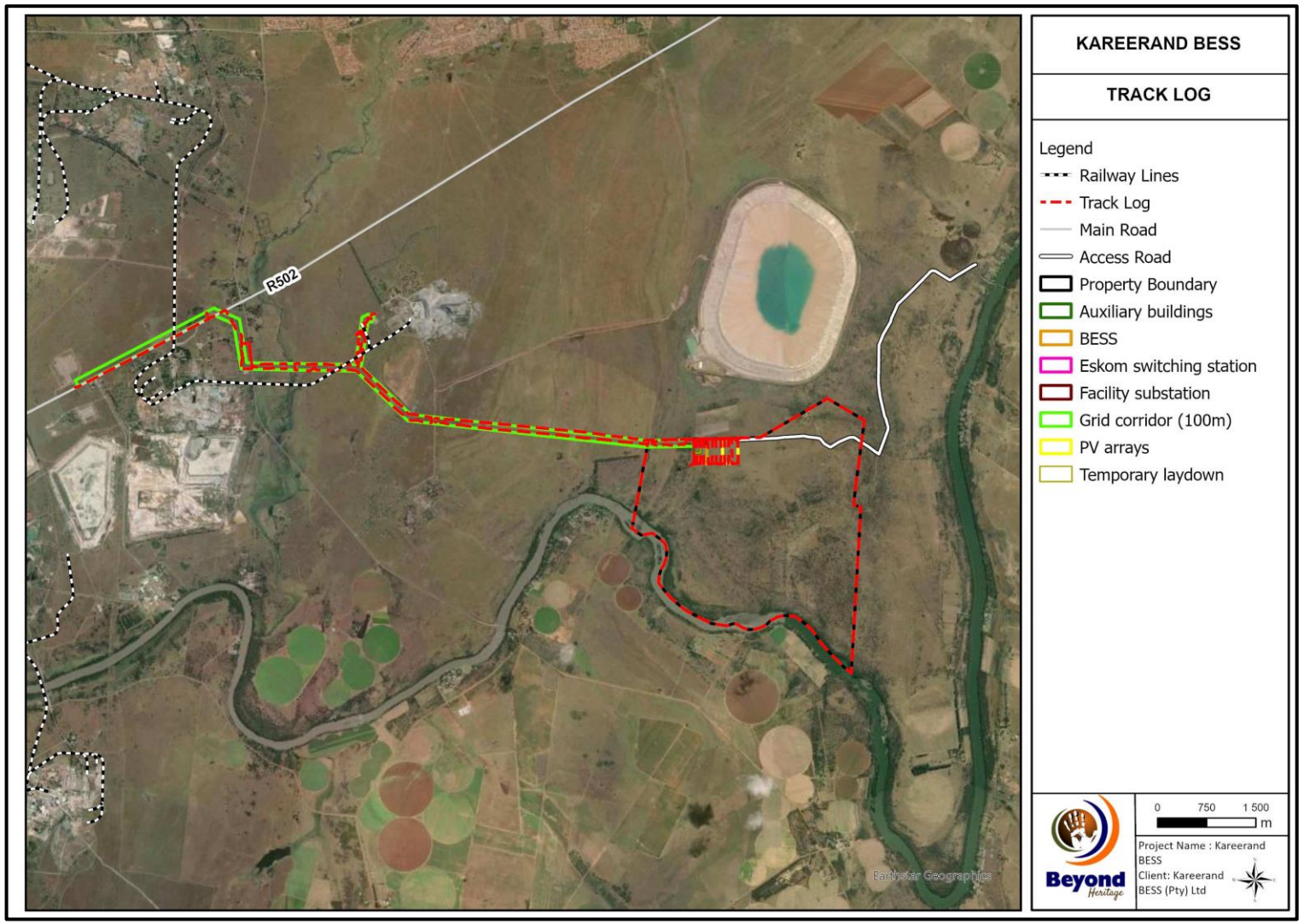


Figure 3.1. Tracklog of the survey path in green.

3.5 Site Significance and Field Rating

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire Project area, or a representative sample, depending on the nature of the project. In the case of the proposed Project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

- The unique nature of a site;
- The integrity of the archaeological/cultural heritage deposits;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined/is known);
- The preservation condition of the sites; and
- Potential to answer present research questions.

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

Table 5. Heritage significance and field ratings

FIELD RATING	*GRADE*	*SIGNIFICANCE*	*RECOMMENDED MITIGATION*
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP. A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

3.6 Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
  - the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - medium-term (5-15 years), assigned a score of 3;
  - long term (> 15 years), assigned a score of 4; or
  - permanent, assigned a score of 5;
  - The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
  - The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
  - The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
  - the **status**, which will be described as either positive, negative or neutral.
  - the degree to which the impact can be reversed.
  - the degree to which the impact may cause irreplaceable loss of resources.
  - the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:
S= (E+D+M) P
S = Significance weighting
E = Extent
D = Duration
M = Magnitude
P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

3.7 Assumptions and limitations of the study

- The authors acknowledge that the brief literature review is not exhaustive of the literature of the area.
- Due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered/recorded and the possible occurrence of graves and other cultural material cannot be excluded. This limitation is successfully mitigated with the implementation of a Chance Find Procedure (CFP) and monitoring of the study area by the Environmental Control Officer (ECO).
- This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys.
- Field data were recorded by handheld GPS and Mobile GPS applications. It must be noted that during the process of converting spatial data to final drawings and maps the accuracy of spatial data may be compromised. Printing or other forms of reproduction might also distort the spatial distribution in maps. Due care has been taken to preserve accuracy.
- This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components will be highlighted through the public consultation process if relevant. This process is facilitated by the EAP and if not done this can be considered a significant limitation and as a potential Project risk. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.
- It is assumed that no structures will be demolished for the proposed powerline construction.

4 Description of Socio-Economic Environment

The Dr Kenneth Kaunda District Municipality (DRKKDM) consists of three local municipalities namely: - Matlosana NW 405, Tlokwe – Ventersdorp and Maquassi Hills, the background analyses are based upon demarcation of 2015 when Tlokwe and Ventersdorp were amalgamated into JB Marks Local Municipality.

According to Statistics South Africa (Census 2011), the population of the Dr Kenneth Kaunda District, (based on 2015 boundaries) is 695 933, increased from 599 670 in 2001 population is unevenly distributed among the three Local Municipalities and average annual growth rate of the district is 1.49%.

More than half of the population (51%) is female at age 85 and older, there were more than twice as many women as men. People under 15 years of age made up over a quarter of the population (30,9%), people aged between 15 and 64 constitute more than half of the population (60,9%), and people aged 65 and older made up 8,2% of the population.

The spatial development framework of the District Municipality is shaped by the rich mining and agricultural history characterizing large pieces of land in the area. It is against this backdrop that mining, and agriculture have become focal points in all economic development prospects for the District Municipality constituency (Kaundadistrict.gov.za).

5 Results of Public Consultation and Stakeholder Engagement:

In line with the NHRA, stakeholder engagement is a key component of any EA process, it involves stakeholders interested in, or affected by the proposed development. At the time of writing no heritage concerns have been raised.

6 Contextualising the study area

6.1 Archaeological Background

6.1.1 Stone Age

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

Earlier Stone Age: The period from ± 2.5 million yrs. - ± 250 000 yrs. ago. Acheulean stone tools are dominant. No Acheulean sites are on record near the study area, but isolated finds may be possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a site of significance. The lack of any ESA sites was confirmed during the field investigation.

Middle Stone Age: The Middle Stone Age includes various lithic industries in SA dating from ± 250 000 yrs. – 25 000 yrs. before present. This period is first associated with archaic Homo sapiens and later Homo sapiens sapiens. Material culture includes stone tools with prepared platforms and stone tools attached to handles.

Later Stone Age: The period from ± 25 000-yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with Homo sapiens sapiens. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art. Sites located in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. The well-known rock art site of Bosworth, north of Klerksdorp that also included Later Stone Age artifacts (Mason 1962). The site includes around 600 San and Khoekhoen rock engravings.

6.1.2 Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

- The Early Iron Age: Most of the first millennium AD.
- The Middle Iron Age: 10th to 13th centuries AD
- The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living. No Sites dating to the Iron Age have been recorded for the study area. However, towards Zeerust and towards Mafikeng, the area is well known for Later Iron Age stone walled settlements archaeologically referred to as Molokwane settlements (Pistorius 1992, Booyens 1998, Huffman 2007). Bergh (1999) reported on some 88 Late Iron Age sites towards Klerksdorp.

There are some Late Iron Age sites in the larger geographical area north and west of the town of Klerksdorp (Bergh 1999: 6-7). The larger region is more known for LIA occupation with Batswana groups, including the Barolong, Bahurutshe, Bakwena, Bakhatla, Baphiring, Bataung, and Batlokwa groups from the 18th century onwards. Their widespread occupations included Klerksdorp as well as areas further away such as Marico, Pilanesberg, Rustenburg, Potchefstroom (Breutz 1953; 1954). Some well-known examples of LIA stonewalled sites are Platberg (Wells 1933) and Buisfontein (Thabeng) (Maggs 1976). Another site Palmietfontein, (30km north of Klerksdorp), excavated in 1975 by D.A. White. An article on this work also indicated that the area north of Klerksdorp is relatively rich in terms of Late Iron Age sites, and that the Rolong capital of Thabeng lies within this area (White 1977: 89). Based on the research by Huffman it is possible that sites are related to the *Olifantspoort* facies of the Urewe Tradition, dating to around AD 1500-1700, and the *Thabeng* facies of the

same tradition (AD 1700-1840) could possibly be found in the area (Huffman 2007). The LIA settlements of the larger region have been classified as Type Z settlement pattern sites (Maggs 1976).

6.1.3 Historical Background

Klerksdorp was founded in 1837 when the Voortrekkers settled on the banks of the Schoonspruit, which flows through the town. The first settlers included C.M. du Plooy, he claimed a farm of about 160 km² and allied it Elandsheuwel. Du Plooy gave plots of land and communal grazing rights on this farm to other Voortrekkers in return for their assistance in building a dam and an irrigation canal. This collection of smallholdings was later given the name of Klerksdorp after the first magistrate of the area, Jacob de Clerq (Raper 2004). In August 1886, gold was discovered in the Klerksdorp district as well as on the Witwatersrand about 160 km to the east. Fortune-seekers descended on the small village, turning it into a town with 70 taverns and even a stock exchange of its own. The nature of the gold reef demanded expensive and sophisticated equipment to mine and extract the gold, causing most diggers to move away in the late 1890's and a decline in the gold mining industry. The gold mining industry was revived by large mining companies in 1932, causing the town to grow, which accelerated after World War II.

6.1.4 Anglo-Boer War

During the Anglo-Boer War (1899-1902), there were many battles in the area around Klerksdorp and the area also housed a large concentration camp. The most famous battle in the Klerksdorp area, is the Battle of Ysterspruit which took place on the 25th of February 1902 (samilitaryhistory.org). The Boer General, Koos de la Rey, achieved a great victory here and the battle is one of the most celebrated of the general's career. General de la Rey led a Boer force of around 900 men to attack a British troop of 900 men who were led by Colonel William Campbell Anderson. It was this battle in which the Boer soldiers pioneered the art of firing from horseback. The site of the Battle of Ysterspruit is situated 15km northeast of the project area.

On April 11, 1920, Rooiwal, near Klerksdorp, saw the Battle of Rooiwal, the last major engagement of the war, where a Boer charge was beaten off by entrenched British troops.

Just under a thousand graves of the victims of the concentration camps, namely Boer women and children can still be visited today in the old cemetery just outside of Klerksdorp. Klerksdorp was connected by rail to Krugersdorp on 3 August 1897 and to Kimberley in 1906. Blockhouses and sangars which were built during the war can be still found spread throughout Klerksdorp and Potchefstroom (Bergh 1999).

6.2 Literature Review (SAHRIS)

Several Cultural Resource Management (CRM) surveys are on record for the general area and the relevant results of these studies are briefly discussed below and outlined in Table 6.

Table 6. Studies consulted for the project.

Author	Year	Project	Findings
Van der Walt, J.	2016a	Archaeological Impact Assessment for the Proposed Buffels Solar 1 Solar Energy Facility, North West Province.	Remains of demolished mining infrastructure.
Van der Walt, J.	2016b	Archaeological Impact Assessment for the Proposed Buffels Solar 2 Solar Energy Facility, North West Province.	Remains of demolished mining infrastructure.
Mann, N.	2021	Heritage Impact Assessment for the Proposed Kareerand Pipelines Project for Harmony Mine, Between Klerksdorp and Potchefstroom,	No sites were identified.

		North West Province.	
Birkholtz, P.	2020	Heritage Impact Assessment Proposed Kareerand TSF Expansion Project, located on certain Portions of the Farms Kromdraai 420 IP, Hartebeestfontein 422 IP, Wildebeestpan 442 IP, Buffelsfontein 443 IP Umfula 575 IP and Megadam 574 IP, east and south-east of Klerksdorp, City of Matlosana and Potchefstroom Local Municipalities, Borth West Province.	Six cemeteries, possible graves, multiple historic farmsteads, Stone Age sites, recent structures.
Henderson, Z., Koortzen, C.	2007	Heritage Assessment Report Mercury Substation Expansion, Zaaiplaats 190/3, Fezile Dabi (DC20) District, Free State, South Africa	Stone tools
Coetzee, F.P.	2012	Cultural Heritage Survey of the Proposed Kabi Vaalkop PV Solar Facility near Orkney, Dr Kenneth Kaunda District, North West Province.	Demolished structures
Huffman, T.N.	2005	Archaeological Assessment of the Mispah Tailings Dam Extension. A Phase I Report prepared for AngloGold Ashanti.	Two cemeteries, historical house complex.
Dreyer, C.	2005	Archaeological and Historical Investigation of the Proposed Residential Developments on Subdivision 13 of the Farm Pretoriuskraal 53, Viljoenskroon, Free State.	No sites were identified.
Dreyer, C.	2007	First Phase Archaeological and Cultural Heritage Assessment of the Proposed Garona-Mercury Transmission Power Line, Northern Cape, North-West Province & Free State.	No sites near Orkney.
Küsel, U.	2006	Cultural Heritage Resources Impact Assessment of Goudkoppie Klerksdorp North West Province.	Remains of gold mining shafts, remains of a British blockhouse, a replica of a blockhouse, initials of British soldiers carved into a rock as well as the British regiments coat of arms, replica of an Early Tswana settlement, LSA artefacts.

6.3 Google Earth and the Genealogical Society of South Africa (Graves and Burial Sites)

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. The database of the Genealogical Society of South Africa indicated no known grave sites within the study area.

7 Heritage Baseline

7.1 Description of the Physical Environment

The vegetation of the Project area belongs to the Vaal Reefs Dolomite Sinkhole Woodland and the Rand Highveld Grassland of the Grassland Biome. The Vaal Reefs Dolomite Sinkhole Woodland described as slightly undulating landscape dissected by prominent rocky chert ridges and supporting a grassland-woodland vegetation complex. The most typical vegetation feature is the woodland, which occurs naturally in clumps around sinkholes, especially in places of dolomite outcrops. The Rand Highveld Grassland Highly variable landscape with extensive sloping plains and a series of ridges slightly elevated over undulating surrounding plains. The vegetation is species-rich, wiry, sour grassland alternating with low, sour shrubland on rocky outcrops and steeper slopes. Most common grasses on the plains belong to the genera *Themeda*, *Eragrostis*, *Heteropogon* and *Elionurus*. High diversity of herbs, many of which belong to the Asteraceae, is also a typical feature. Rocky hills and ridges carry sparse (savannoid) woodlands with *Protea caffra* subsp. *caffra*, *P.*

welwitschii, *Acacia caffra* and *Celtis africana*, accompanied by a rich suite of shrubs among which the genus *Rhus* (especially *R. magalismonata*) is most prominent (Mucina and Rutherford 2006).

The Project area is situated approximately 22km east of Klerksdorp within a landscape which is altered through extensive mining and agricultural activities and is located in the Moderate Eastern Plateau climatic region. The project area consists of short grasses of the Grassland biome with occasional trees and shrubs. The project area is mostly flat but does fluctuate between 1290 and 1340 metres above sea level. No rocky outcrops are in the study area. There is a stream that intersects the grid corridor. Degraded modern structures were noted along the gird corridor along the R502 and towards the Buffelsfontein Gold Mine, the structures are probably related to mining activities and hold no heritage value. General site conditions are indicated in (Figure 7.1 to 7.4).

Figure 7.1. General site conditions of the Project area.

Figure 7.2. Modern features that was possibly a storage area.

Figure 7.3. Degraded two-story building near the grid corridor along the R502.

Figure 7.4. Derelict structure.

7.2 Heritage Resources

Heritage observations within the study area was limited to a possible grave and was recorded as a waypoint. General site distribution of the recorded observations (including the modern structures at KRR 002, 003 and 004) in relation to the Project layout is spatially illustrated in Figure 7.5 and briefly described in Table 7. Selected features are illustrated in Figure 7.6.

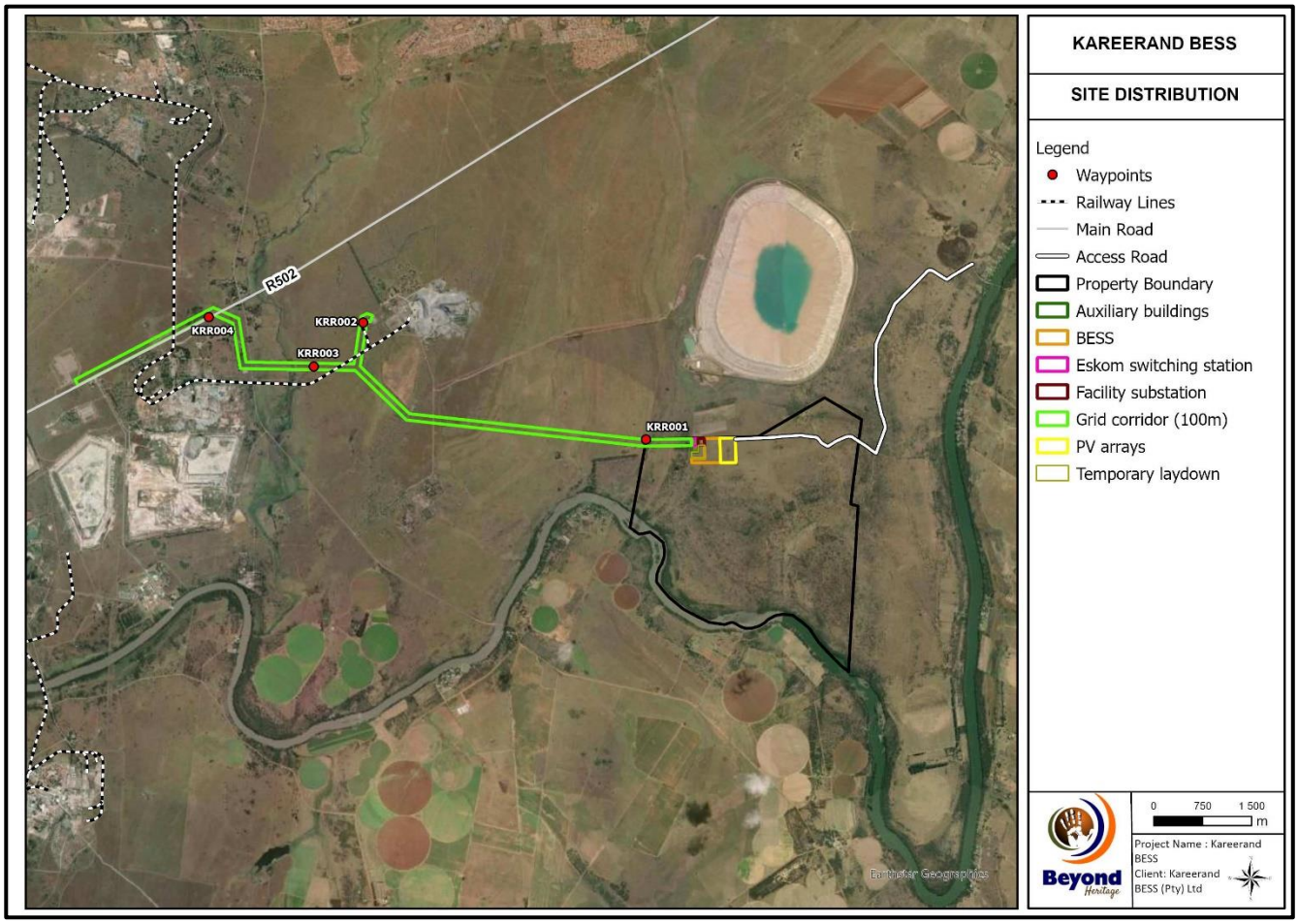


Figure 7.5. Site distribution map

Table 7. Sites recorded in the study area.

Label	Longitude	Latitude	Description	Significance
KRR001	26° 52' 23.0"E	26° 54' 37.9"S	The site consists of rocks that are painted white and laid down on the ground (1.5x1.5m square) in the shape of a cross. The cross could be a possible grave marker. This site is located on the border of the mine's property, Sally Barraclough's property and an open area. It lays on the side of the open property and close to the grid corridor.	Local Significance 3A

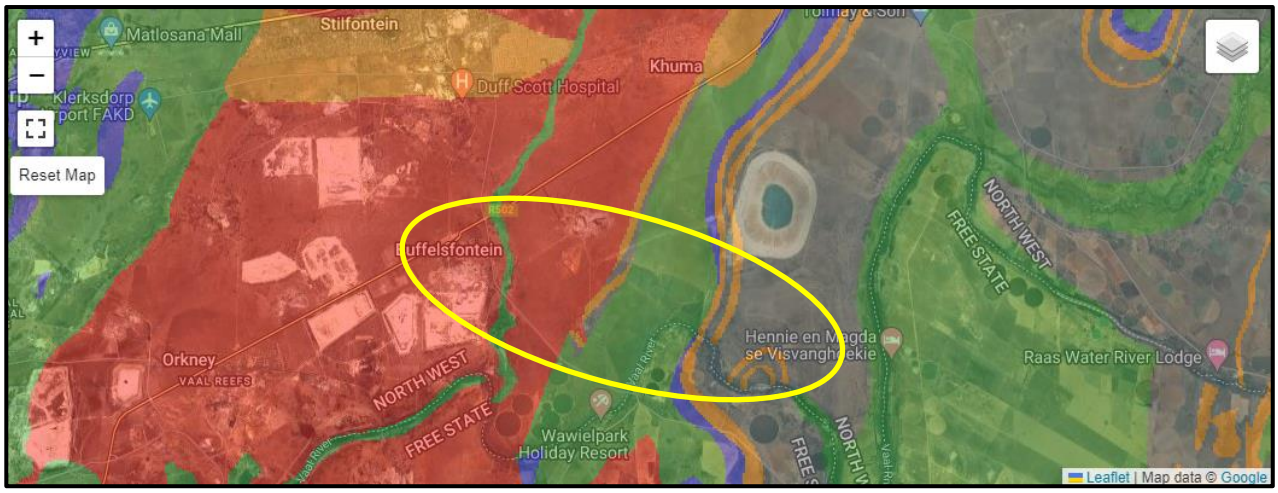
Figure 7.6. KRR001 Painted stones laid down in a cross.

7.3 Cultural Landscape

The Project area is situated an area which has historically had a predominantly agricultural character with vast open areas. The area has more recently been transformed by extensive mining and associated developments and has consequently adopted a more industrial character.

7.4 Paleontological Heritage

According to the SAHRA palaeontological sensitivity map, the study area is indicated as varying sensitivities of very high, high, moderate, low, and insignificant palaeontological sensitivity (Figure 7.10) and an independent study was conducted by Prof Marion Bamford for this aspect (Bamford 2024). The study indicated that the proposed BESS, PV site and upgraded access road lie on non-fossiliferous volcanic rocks so will have no impact on the palaeontology. The grid connection route close to the Hermes MTS is on potentially very highly sensitive dolomites of the Malmani Subgroup (Chuniespoort Group, Transvaal Supergroup) that might have trace fossils such as stromatolites or microbialites. Fieldwork in the area found that there are no stromatolites in the area. Nonetheless, a Fossil Chance Find Protocol should be added to the EMPr.



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

Figure 7.7. Paleontological sensitivity of the approximate study area (yellow polygon) as indicated on the SAHRA Palaeontological sensitivity map.

8 Assessment of impacts

8.1 Impacts on tangible heritage resources.

The main cause of impacts to archaeological resources is physical disturbance of the material itself and its context during removal of topsoil and vegetation as well as the excavations associated with the establishment of infrastructure.

Although the possible grave KRR01 is situated outside of the gird corridor, the site could be indirectly impacted, and the site should be avoided with a 30m buffer zone. If the site cannot be avoided, further investigation will be required to verify that the site is a grave or not.

8.1.1 Cumulative impacts

The proposed project will have a low cumulative impact as no known heritage resources will be directly affected.

8.2 Impact Assessment Tables

Table 8. Impact assessment for KRR01.

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects.		
	Without mitigation	**With mitigation (Preservation/ excavation of site)**
Extent	Local (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Moderate (6)	Moderate (6)
Probability	Probable (3)	Improbable (2)
Significance	**36 (Medium)**	**24 (Low)**
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	NA	NA
Mitigation: • The possible grave at KRR01 should be avoided with a 30m buffer zone; • Development activities must be confined to the approved development footprint only; • Monitoring of the Project area by the ECO during pre-construction and construction phases for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.		
Residual Impacts: Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted on, but this cannot be quantified.		

9 Conclusion and recommendations

The Project area is situated within a disturbed landscape of extensive mining and some agricultural activities. The Project area is also largely flat and lacks any topographic focal points which would have attracted human occupation in antiquity. Some partially demolished structures are situated in the western section of the 132 kV grid corridor. These structures are all under 60 years old and are not considered to be heritage resources.

During the survey, a possible grave (KRR01) marked by white rocks packed into the shape of a cross was recorded just outside the grid corridor near the BESS area. The possible grave is situated outside the grid corridor and should be avoided with a 30m buffer zone. No heritage resources were recorded within the BESS facility area.

According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study area is of varying sensitivities of very high, high, moderate, low, and insignificant paleontological sensitivity and an independent study by Prof Marion Bamford concluded that it is extremely unlikely that any fossils would be preserved in the overlying soils and sands of the Quaternary. There is a very small chance that fossils may occur below ground in dolomites of the Malmani Subgroup so a Fossil Chance Find Protocol should be added to the EMPr.

The impact to heritage resources can be mitigated to an acceptable level provided that the recommendations in this report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval.

9.1 Recommendations for condition of authorisation

The following recommendations for Environmental Authorisation apply and the Project may only proceed based on approval from SAHRA:

- The possible grave at KRR01 should be avoided with a 30m buffer zone;
- Development activities must be confined to the approved development footprint only;
- Monitoring of the Project area by the ECO during pre-construction and construction phases for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.

9.2 Chance Find Procedure

9.2.1 Heritage Resources

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below and monitoring guidelines applicable to the Chance Find procedure is discussed below and monitoring guidelines for this procedure are provided in Section 9.5.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this Project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

9.2.2 Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (trace fossils, fossils of plants, insects, bone or coalified material) should be put aside in a suitably protected place. This way the Project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones (for example see Bamford (2024). This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this Project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the Project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished, then no further monitoring is required.

9.3 Reasoned Opinion

The overall impact of the Project with the recommended mitigation measures is acceptable and residual impacts can be managed to an acceptable level through implementation of the recommendations made in this report. The socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures are implemented for the Project.

9.4 Potential risk

Potential risks to the proposed Project are the occurrence of intangible features and unrecorded cultural resources (of which graves, and subsurface cultural material are the highest risk). This can cause delays during construction, as well as additional costs involved in mitigation and possible layout changes. The stakeholder engagement process will assess intangible heritage resources further if this is listed as a concern.

9.5 Monitoring Requirements

Day to day monitoring can be conducted by the ECO. The ECO or other responsible persons should be trained along the following lines:

- *Induction training:*
  - Responsible staff identified by the developer should attend a short course on heritage management and identification of heritage resources.
  - Staff should also receive training on the CFP.
- *Site monitoring and watching brief*: As most heritage resources occur below surface, all earth-moving activities need to be routinely monitored in case of accidental discoveries. The greatest potential impacts are from pre-construction and construction activities. The ECO should monitor all such activities. If any heritage resources are found, the chance finds procedure must be followed as outlined above.

Table 9. Monitoring requirements for the Project

Heritage Monitoring					
Aspect	**Area**	**Responsible for monitoring and measuring**	**Frequency**	**Proactive or reactive measurement**	**Method**
Cultural Heritage Resource Chance Find	Entire Project area	ECO	Weekly (Pre construction and construction phase)	Proactively	If risks are manifested (accidental discovery of heritage resources) the chance find procedure should be implemented: 1. Cease all works immediately; 2. Report incident to the Sustainability Manager; 3. Contact an archaeologist to inspect the site; 4. Report incident to the competent authority; and 5. Employ reasonable mitigation measures in accordance with the requirements of the relevant authorities. Only recommence operations once impacts have been mitigated.

9.6 Management Measures for inclusion in the EMPr

Table 10. Heritage Management Plan for EMPr implementation

Area	Mitigation measures	Phase	Timeframe	Responsible party for implementation	Target	Performance indicators (Monitoring tool)
General Project area	Monitoring of the Project area by the ECO during pre-construction and construction phases for chance finds, if chance finds are encountered to implement the Chance Find Procedure for the project	Pre-Construction & Construction	Weekly	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 34, 35, 36 and 38 of NHRA	ECO Checklist/Report
General Project Area	Development activities must be confined to the approved development footprint only.	Construction	Construction	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report
KRR01	The possible grave at KRR01 should be avoided with a 30m buffer zone. If the site cannot be avoided, then further investigation (including Ground Penetrating Radar (GPR) and Test Excavations) will be required to verify whether or not the site is a grave. If confirmed to be a grave, it can be moved with the necessary approvals.	Pre-Construction & Construction	Pre-Construction	Applicant Construction Contractor	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report

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