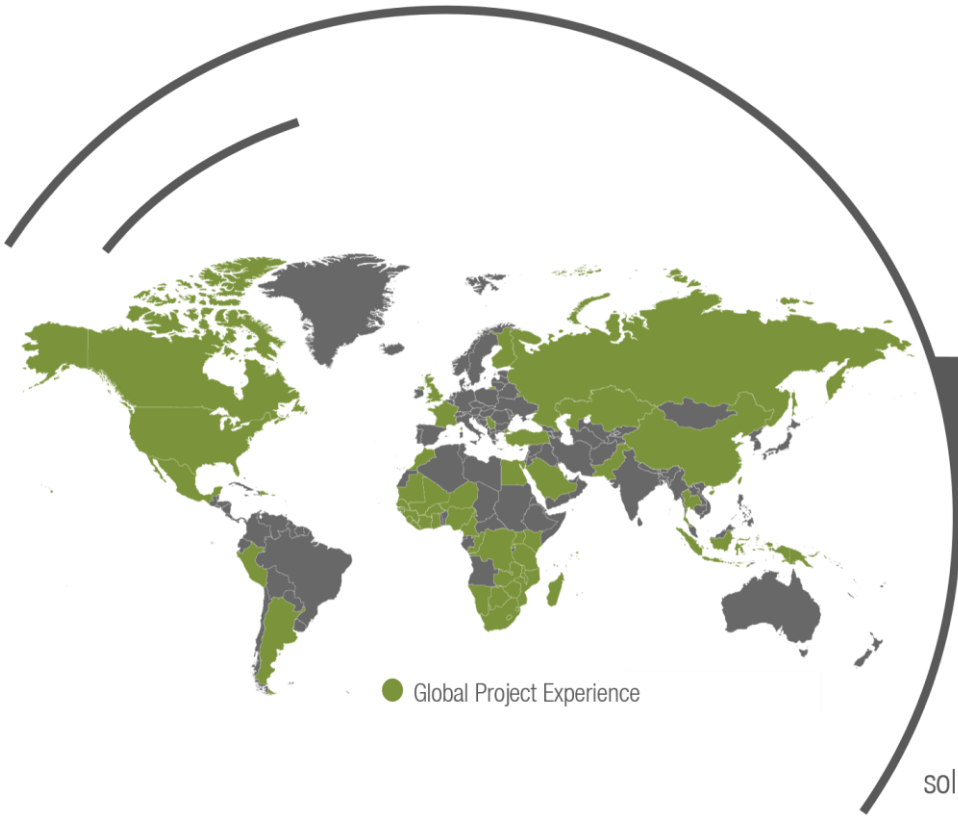

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Environmental Impact Assessment Process for the Proposed Iphiva 400/132 kV Substation, KwaZulu-Natal

Heritage Impact Assessment

Prepared for:
SiVEST SA (Pty) Ltd

Project Number:
PEC7505

June 2023

Digby Wells and Associates
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This document has been prepared by Digby Wells Environmental.

Report Type:	Heritage Impact Assessment
Project Name:	Environmental Impact Assessment Process for the Proposed Iphiva 400/132 kV Substation, KwaZulu-Natal
Project Code:	PEC7505

Name	Responsibility	Signature	Date
Nokubonga Dlamini Heritage Specialist (Historian)	Baseline Compilation		May 2022
Shannon Hardwick HRM Consultant ASAPA Member: 451	Report Compilation Pre-disturbance Survey		June 2023
Elijah Dumisani Katsetse Heritage Specialist ASAPA Member 0399	Technical Review		

DETAILS AND DECLARATION OF THE SPECIALIST

Digby Wells and Associates (South Africa) (Pty) Ltd

Contact person: Shannon Hardwick

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Full name:	Shannon Hardwick
Title/ Position:	Heritage Resources Management Consultant
Qualification(s):	Master of Science (MSc) Archaeology
Experience (years):	5 years
Registration(s):	ASAPA, ICOMOS

I, Shannon Hardwick, declare that: –

- I act as the 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 24F of the Act.

Signature of the Specialist *Date*

Findings, recommendations, and conclusions provided in this report are based on the best available scientific methods and the author's professional knowledge and information at the time of compilation. Digby Wells employees involved in the compilation of this report, however, accepts no liability for any actions, claims, demands, losses, liabilities, costs, damages, and expenses arising from or in connection with services rendered, and by the use of the information contained in this document.

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Any recommendations, statements or conclusions drawn from or based on this report must clearly cite or make reference to this report. Whenever such recommendations, statements or conclusions form part of a main report relating to the current investigation, this report must be included in its entirety.

EXECUTIVE SUMMARY

Eskom Holdings SOC Ltd (hereinafter Eskom) initiated the “Northern KwaZulu-Natal (KZN) Strengthening Project” in 2017. Eskom appointed an independent Environmental Assessment Practitioner (EAP) to complete an Environmental Impact Assessment (EIA) process in 2018 and thereafter received Environmental Authorisation (EA) to go ahead with the Project. Following subsequent investigations, the authorised footprint for the Iphiva Substation has been deemed not financially viable due to the terrain and the cost of making this site suitable for the construction of the substation. Eskom is therefore assessing an additional footprint, potentially more suitable for construction (the Project).

The proposed (unauthorised option for the) substation and supporting infrastructure triggers Listed Activities in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (GN R 982 of 4 December 2014 as amended by GN R 326 of 7 April 2017) (EIA Regulations, 2014) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). Eskom has therefore appointed SiVEST SA (Pty) Ltd (SiVEST), through Margen Industrial Services CC (hereinafter Margen), as the independent Environmental Assessment Practitioner (EAP) to undertake the required EIA process required for the EA.

The EIA process includes a specialist Heritage Resources Management (HRM) process in compliance with the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) (KZNARIA) and National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA). This document comprises the specialist Heritage Impact Assessment (HIA) report in support of the EIA process for submission to the Heritage Resources Authorities (HRAs). In this case, the applicable HRAs include the South African Heritage Resources Agency (SAHRA) and the KwaZulu-Natal Amafa and Research Institute Authority (the Institute).

As part of this HRM process, Digby Wells undertook a pre-disturbance survey of the 1 km by 1 km study area earmarked for the potential placement of the substation. Digby Wells completed this survey on 18 May 2022 and identified Ten heritage resources. Additional field work was undertaken on 10 and 11 May 2023 to assess the potential impact of the newly proposed access road to the substation. Two additional heritage resources were identified bringing the total number of heritage resources to twelve. These heritage resources and their significance are presented in the table below.

Summary of the Cultural Significance of Identified Heritage Resources

Resource ID	Description	INTEGRITY	Significance
PEC7505-001, PEC7505-002, PEC7505-006, PEC7505-008, PEC7505-009 and PEC7505-011	Burial grounds and graves	4	Very High
PEC7505-012	Living Cultural Heritage	4	Very High

Resource ID	Description	INTEGRITY	Significance
PEC7505-003, PEC7505-004, PEC7505-005, PEC7505-007 and PEC7505-010	Archaeological findspots	2	Negligible

The proposed Project poses risks of direct negative impacts to four of these heritage resources - PEC7505-002, PEC7505-008, PEC7505-009, and PEC7505-012. A summary of the assessment of these impacts is provided in the (last) table below.

Additionally, the proposed Project presents a risk of direct negative impact to heritage resources that may exist within the Project area, and which have not been identified to date. The table below summarises the risk to these resources.

Summary of the potential risk to heritage resources

Unplanned event	Potential impact
Accidental exposure of fossil bearing material implementation of the Project.	Damage or destruction of heritage resources generally protected under Section 37 of the KZNARIA (Section 34 of the NHRA).
Accidental exposure of *in situ* archaeological material during the implementation of the Project.	Damage or destruction of heritage resources generally protected under Section 40 of the KZNARIA (Section 35 of the NHRA).
Accidental exposure of *in situ* historical built environment sites during the implementation of the Project.	Damage or destruction of heritage resources generally protected under Section 34 of the NHRA
Accidental exposure of *in situ* burial grounds or graves during the implementation of the Project.	Damage or destruction of heritage resources generally protected under Sections 39 (and possibly Section 38) of the KZNARIA (Section 36 of the NHRA).
Accidental exposure of human remains during the construction phase of the Project.	

Considering the nature, location and scope of the proposed Project, Digby Wells recommends the following:

- Eskom must avoid impacts to the specific heritage resources through Project design or redesign to avoid these heritage resources and implement a 30 m no-go buffer zone around these heritage resources;
- Eskom must appoint a suitably-qualified heritage specialist to be present when any construction activities occur within 50 m of the identified heritage resources. Alternatively, an Environmental Control Officer (ECO), or similar responsible person, may complete this oversight to ensure that the heritage resources are not impacted;

- Where Project design amendments are not feasible, Eskom will need to embark on a consultation process to assess whether a Grave Relocation Process (GRP) is feasible;
- Burial Grounds and Graves as well the identified agricultural plot (Living Cultural Heritage) occur within or adjacent to households and/or yards due to traditional practices of burying within properties. A social consultative process with communities is recommended to ensure where graves are present and where they will need to be relocated to avoid impact; and
- Eskom develop and implement a Chance Find Protocol (CFP), if this has not been done as part of the previous process in support of the approved substation layout (and associated powerlines). If this document has been developed, it must be amended to include this Project.

Where these recommendations are implemented, Digby Wells does not object to the Project going forward from a heritage perspective.

Summary of the Impact Assessment

Impact	Duration	Extent	Intensity	Consequence	Probability	Significance
	Pre-mitigation:					
Direct impact to BGG	Permanent	International	Extremely high - negative	Extremely detrimental	Probable	Moderate - negative
Impact	**Post-mitigation:**					
Direct impact to BGG	Beyond project life	Local	High - positive	Highly beneficial	Likely	Minor - positive

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ACRONYMS, ABBREVIATIONS AND DEFINITION

Abbreviation	Meaning
ASAPA	Association of Southern African Professional Archaeologists
BA	Bachelor of Arts, or Basic Assessment (*the applicable term will be defined in the report*)
BCE	Before Common Era (also: Before Christ or BC)
BID	Background Information Document
BSc	Bachelor of Science
c.	Circa, meaning approximately
CE	Common Era (also: *Anno Domini* or AD)
CFP	Chance Find Protocol
CRR	Comments and Response Report
CS	Cultural Significance
Digby Wells	Digby Wells Environmental
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EFC	Early Farming Community (*also known as Early Iron Age, see below*)
EIA	Environmental Impact Assessment. *Please note that EIA can also refer to the 'Early Iron Age'; however, in this document, this time period is referred to as 'Early Farming Community'.*
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
ESA	Early Stone Age
GIS	Geographical Information System
GN R	Government Notice Regulation
GPS	Global Positioning System
HIA	Heritage Impact Assessment
Hons	Honours degree
HRAs	Heritage Resources Authorities
HRM	Heritage Resources Management
HSMP	Heritage Site Management Plan
ICOMOS	International Council on Monuments and Sites

Abbreviation	Meaning
Kya	Thousand years ago
KZNARIA	KwaZulu-Natal Amafa and Research Institute Act (No 05 of 2018)
LED	Local Economic Development
LFC	Late Farming Community also known as Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MR	Mining Right (boundary)
MRA	Mining Right Application
MSA	Middle Stone Age
MSc	Master of Science
Mtpa	Million tonnes per annum
Mya	Million years ago
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
PCD	Pollution Control Dam
PHRA	Provincial Heritage Resources Authority
RoD	Record of Decision
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SCF	Statutory Comment Feedback
SEP	Stakeholder Engagement Process
SoW	Scope of Work
ToR	Terms of Reference
The Institute	KwaZulu-Natal Amafa and Research Institute
Wits	University of the Witwatersrand
Werf	A farmstead or multiple outbuildings associated with a farmhouse or agricultural activities. Plural: *werwe* (Afrikaans).

Refer to Appendix A for a Glossary of Terms.

NHRA and GN R 326 Appendix 6 Legislated Requirements

Description	App. 6	NHRA	Section
Declaration that the report author(s) is (are) independent.	1(b)	-	Page iii-iv
An indication of the scope of, and the purpose for which, the report was prepared.	1(c)	-	1.1 1.2
Details of the person who prepared the report and their expertise to carry out the specialist study.	1(a)	-	1.3
Outlines the legislative framework relevant to the specialist heritage study.	-	-	3
Identifies the specific constraints and limitations of the HIA, including any assumptions made and any uncertainties or gaps in knowledge.	1(i)	-	4
Describes the methodology employed in the compilation of this HIA.	1(e)	-	5
An indication of the quality and age of base data used for the specialist report.	1(cA)	-	5.4 15
The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.	1(d)	-	5.5
Provides the baseline cultural landscape.	-	38(3)(a)	6
Motivates for the defined CS of the identified heritage resources and landscape.	-	38(3)(b)	7.1
A description of the potential impacts to heritage resources by project related activities, including: - Existing impacts on the site; - Possible risks to heritage resources; - Cumulative impacts of the proposed development; - Acceptable levels of change; and - Heritage-related risks to the project.	1(cB)	38(3)(c)-	7
A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.	1(j)	38(3)(c)	
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 a site plan identifying site alternatives.	1(f)	-	7 **Error! Reference source not found.**

Description	App. 6	NHRA	Section
Considers the development context to assess the socio-economic benefits of the project in relation to the presented impacts and risks.	-	38(3)(d)	6.4 12
A description of any consultation process that was undertaken during the course of preparing the specialist report and the results of such consultation.	1(o)	38(3)(e)	10
A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	1(p)	38(3)(e)	
Details the specific recommendations based on the contents of the HIA.	-	38(3)(g)	11
An identification of any areas to be avoided, including buffers.	1(g)		
Any mitigation measures for inclusion in the Environmental Management Programme (EMPr)	1(k)		8
Any conditions for inclusion in the environmental authorisation.	1(l)		11
Any monitoring requirements for inclusion in the EMPr or environmental authorisation.	1(m)		9
A reasoned opinion— (i) 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	1(n)	38(3)(g)	13
Collates the most salient points of the HIA and concludes with the specific outcomes and recommendations of the study.	-	38(3)(f) 38(3)(g)	14
Lists the source material used in the development of the report.	1(cA)	-	15
A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	1(h)	-	**Error! Reference source not found.**
Any other information requested by the competent authority.	1(q)	-	N/A

1. Introduction

Eskom Holdings SOC Ltd (hereinafter Eskom) initiated the “Northern KwaZulu-Natal (KZN) Strengthening Project” in 2017. This projected aimed to alleviate existing and future network constraints in Northern KZN through “de-loading” the primary sub-transmission network and improving voltage regulation. Eskom intended to achieve this through the establishment and operation of two 400 kV powerlines, an additional 165 km of 135 kV distribution powerlines and a substation. Eskom appointed an independent Environmental Assessment Practitioner (EAP) to complete an Environmental Impact Assessment (EIA) process in 2018 and thereafter received Environmental Authorisation (EA) to go ahead with the Project.

Following subsequent investigations, the authorised footprint for the Iphiva Substation has been deemed not financially viable due to the terrain and the cost of making this site suitable for the construction of the substation. Eskom is therefore assessing an additional footprint, potentially more suitable for construction (the Project).

The proposed (unauthorised option for the) substation and supporting infrastructure triggers Listed Activities in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (GN R 982 of 4 December 2014 as amended by GN R 326 of 7 April 2017) (EIA Regulations, 2014) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). Eskom has therefore appointed SiVEST SA (Pty) Ltd (SiVEST), through Margen Industrial Services CC (hereinafter Margen), as the independent Environmental Assessment Practitioner (EAP) to undertake the required EIA process required for the EA.

The EIA process includes a specialist Heritage Resources Management (HRM) process in compliance with the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) (KZNARIA) and National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA). This document comprises the specialist Heritage Impact Assessment (HIA) report in support of the EIA process for submission to the Heritage Resources Authorities (HRAs). In this case, the applicable HRAs include the South African Heritage Resources Agency (SAHRA) and the KwaZulu-Natal Amafa and Research Institute Authority (the Institute).

1.1. Terms of Reference

SiVEST appointed Digby Wells as the independent Environmental Assessment Practitioner (EAP) to undertake the various specialist studies, including the HRM process, in support of the EIA process required through the triggering of activities listed in the EIA Regulations, 2014, as amended. This HRM process includes a HIA in compliance with the KZNARIA and the NHRA.

1.2. Scope of Work

The Scope of Work (SoW) for the specialist HRM process included the compilation of an HIA report to comply with the requirements encapsulated in the KZNARIA and Section 38(3) of the NHRA. Digby Wells completed the following activities as part of the SoW:

- Description of the predominant cultural landscape supported through primary and secondary data collection;
- Assessment of the Cultural Significance of the identified heritage resources;

- Identification of potential impacts to heritage resources based on the Project description and Project activities;
- An evaluation of the potential impacts to heritage resources relative to the sustainable socio-economic benefits that may result from the Project;
- Recommending feasible management measures and/or mitigation strategies to avoid and/or minimise negative impacts and enhance potential benefits resulting from the Project; and
- Submission of the HIA (as well as the EIA report and supporting specialist reports) to the HRAs for Statutory Comment as required under Section 38(8) of the NHRA.

1.3. Expertise of the Specialist

Table 1-1 presents a summary of the expertise of the specialists involved in the compilation of this report. Complete curriculum vitae (CVs) of these specialists are attached in Appendix B.

Table 1-1: Expertise of the Specialists

Team Member	Bio Sketch
Nokubonga Dlamini	
Shannon Hardwick ASAPA Member: 451 ICOMOS Member 38048 Years' Experience: 5	Shannon joined the Digby Wells team in May 2017 as a Heritage Management Intern and has most recently been appointed as a Heritage Resources Management Consultant. Shannon is an archaeologist who obtained a Master of Science (MSc) degree from the University of the Witwatersrand in 2013, specialising in historical archaeobotany in the Limpopo Province. She is a published co-author of one paper in *Journal of Ethnobiology*. Since joining Digby Wells, Shannon has gained generalist experience through the compilation of various heritage assessments, including Heritage Scoping Reports (HSRs), HIAs, Heritage Basic Assessment Reports (HBARs) and Section 34 permit applications. Her other experience includes compiling a Community Health, Safety and Security Management Plan (CHSSMP) and various social baselines. Shannon's experience in the field includes pre-disturbance surveys in South Africa, Malawi and the Democratic Republic of the Congo and other fieldwork in Malawi.

Team Member	Bio Sketch
Johan Nel ASAPA Member 095 ICOMOS Member Years' Experience: >20	Johan is a qualified archaeologist, heritage specialist and Manager of the Heritage Services department in Digby Wells. He obtained a BA Honours degree in Archaeology from the University of Pretoria in 2001. He also completed a Professional Development Certificate in Integrated Heritage Resources Management through Rhodes University in 2016. Johan is a professional and accredited member of the Association of Southern African Professional Archaeologists (ASAPA) and a member of the International Council on Monuments and Sites (ICOMOS) South Africa. He has more than 20 years' extensive and diverse experience in heritage resource management. Johan has worked in numerous African settings including South Africa, Botswana, the Democratic Republic of Congo, Liberia, and Sierra Leone. His current interests include ways to empower local communities to use, conserve, and manage heritage resources themselves, as well as integrating living and intangible heritage practices with the more traditional heritage approaches to heritage management. Key concepts he is exploring include cultural humility and so-called People-centred Approaches to conservation of both natural and cultural heritage.

2. Project Description

The proposed substation will comprise the following:

- A total footprint of 600 x 600 m (i.e., 36 ha) will be required for the development, within a site-specific study area of 1km x 1 km. This footprint will include construction requirements and will be rehabilitated and fenced theoff.
- The 36-ha development footprint area includes provisions for the following:
    - An 80 m high microwave radio communication mast, and
    - An oil and fuel storage facilities, and an oil bund to contain any accidental transformer oil spills.
- The proposed substation will comprise standard electrical equipment, including transformers, reactors, busbars, and isolators.

A new main access road will be established to provide access to the Iphiva Substation. The proposed road will be as follows:

- The main access road (gravel) will be approximately 6 - 7m wide and approximately 2.1km in length.
- It should be noted that the proposed project site will be accessed via a new proposed road from the P234 Gravel Road which branches off the N2 National Road. The proposed project location is approximately 9km north-west of the N2 National Road.

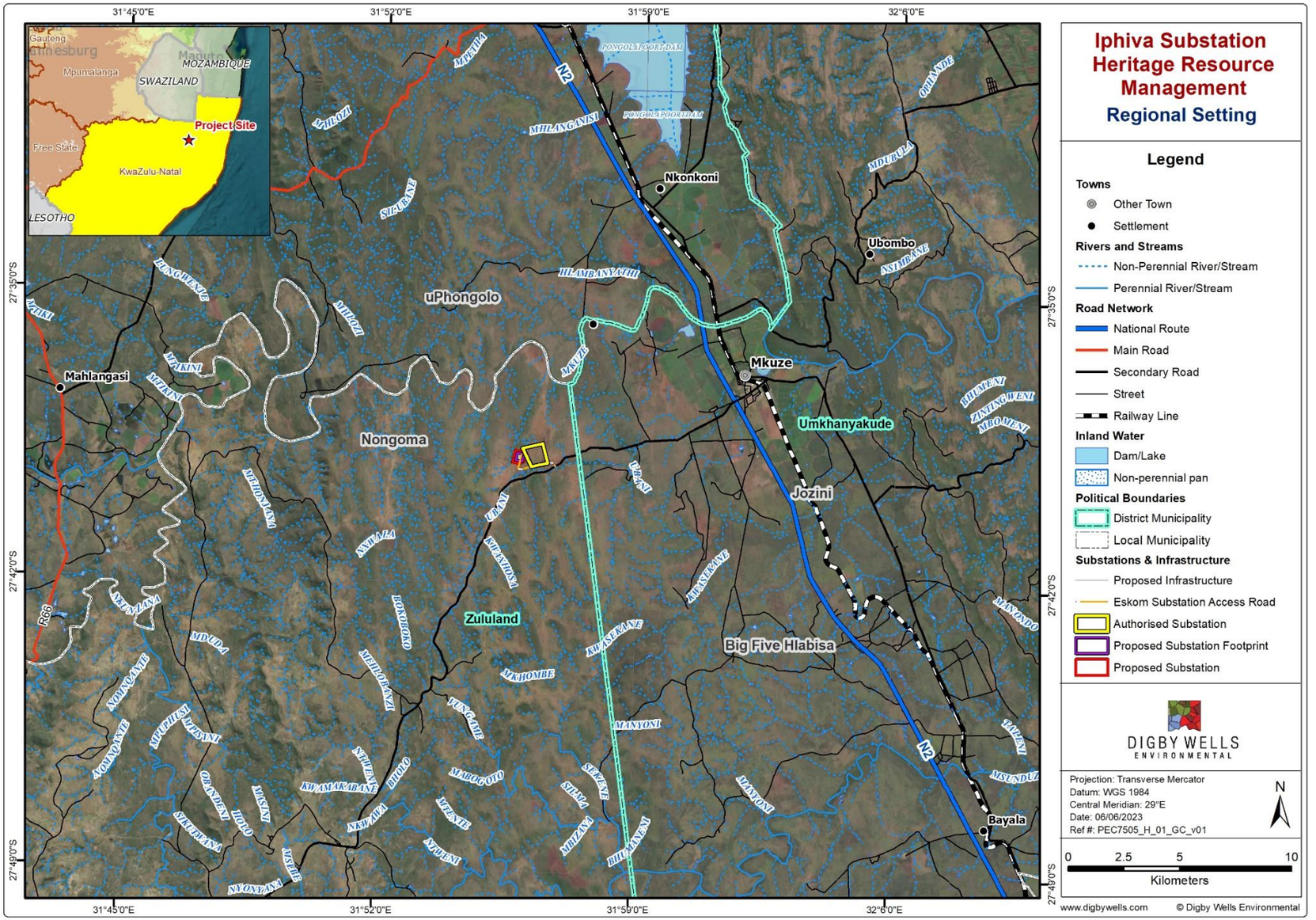
Construction is expected to start in 2023 and will take about 24 months to complete. Staff will be transported on site each day during construction and operation – no staff will be accommodated on site.

2.1. Proposed Infrastructure and Activities

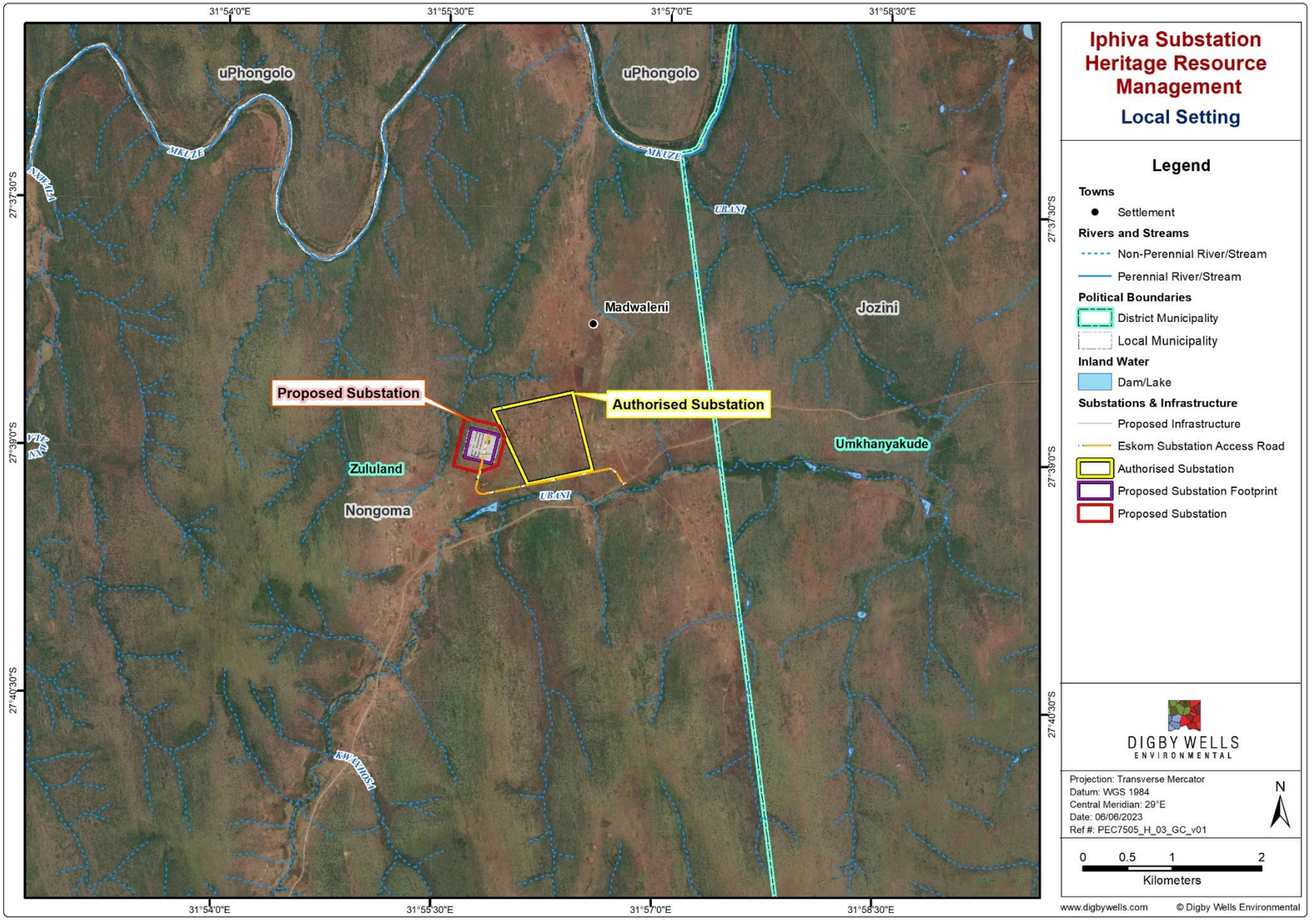
Table 2-1 presents a summary of the Project-related activities for the construction, operation and decommissioning of the proposed substation. Plan 3 shows Project infrastructure layout.

Table 2-1: Project Phases and Associated Activities

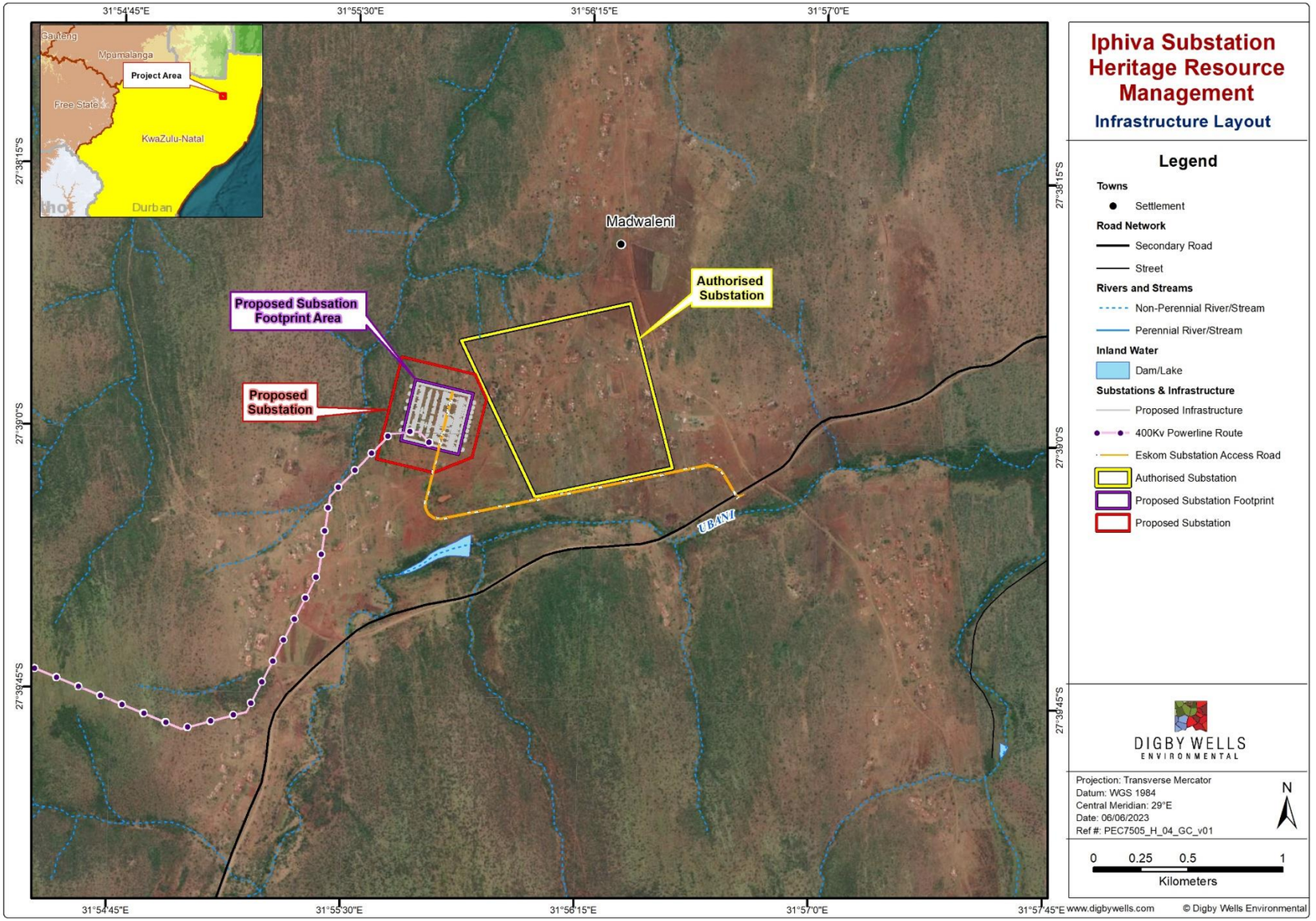
Project Phase	Activity
Construction Phase	Clearing of vegetation.
	Levelling and terracing of the land surface.
	Road upgrades or construction of access roads. Water crossings may require upgrades.
	Construction of foundations and concrete works, including stormwater drainage pipes, concrete slabs, bund walls, a control room and a small building and storage area.
	Installation of crushed stone in open areas between transformer plinths and other switchgear foundations.
	Erection of steelworks.
	Delivery and installation of transformers.
Operational Phase	Operation of the substation and powerlines.
	Maintenance activities (unspecified)
Decommissioning Phase	Rehabilitation Activities (unspecified)



Plan 1: Regional Setting of the Project



Plan 2: Local Setting of the Project



Plan 3: Project Infrastructure and Layout

2.2. Alternatives Considered

The EIA process does not consider any alternatives as these have been explored in the previous EIA processes undertaken in support of the EA received for the authorised Project design and activities.

The HRM process considered the 'no-go' alternative. Should the Project not obtain approval, or not go ahead for any reason, potential negative environmental impacts associated with the construction and operation of the proposed additional infrastructure will not occur. However, the potential benefits (associated with the Project described in Section 12) would also not occur.

3. Relevant Legislation, Standards and Guidelines

This section describes the international, national and regional legislative documents and policy documents that inform the legislative and policy framework of the HRM process. The objective is to ensure that the assessments meet all stipulated requirements to ensure legal compliance and successful integration into the regional planning context.

3.1. National Legislation and Policy

Table 3-1 presents a summary of the national legislation applicable to this HRM process and illustrates how it will be considered in the HIA. Table 3-2 below presents the applicable policies considered in the HRM process.

Table 3-1: Applicable Legislation considered in the HRM Process

Applicable legislation used to compile the report	Reference where applied
National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) The NHRA is the overarching legislation that protects and regulates the management of heritage resources in South Africa, with specific reference to the following Sections: • 5. General principles for HRM • 6. Principles for management of heritage resources • 7. Heritage assessment criteria and grading • 38. Heritage resources management The Act requires that Heritage Resources Authorities (HRAs), be notified as early as possible of any developments that may exceed certain minimum thresholds in terms of Section 38(1), or when assessments of impacts on heritage resources are	This report was compiled to comply with Section 5, 38(3), (4) and (8) of the NHRA. This report was submitted to the responsible HRAs, which in this instance is SAHRA and the Institute.

Applicable legislation used to compile the report	Reference where applied
required by other legislation in terms of Section 38(8) of the Act.	
NHRA Regulations, 2000 (GN R 548) The NHRA Regulations regulate the general provisions and permit application process in respect of heritage resources included in the national estate. Applications must be made in accordance with these regulations. The following Chapters are applicable to this assessment: • II. Permit Applications and General Provisions for Permits; • III: Application for Permit: National Heritage Site, Provincial Heritage Site, Provisionally Protected Place or Structure older than 60 years; • IV: Application for Permit: Archaeological or Palaeontological or Meteorite; • IX: Application for Permit: Burial Grounds and Graves; • X: Procedure for Consultation regarding Protected Area; • XI: Procedure for Consultation regarding Burial Grounds and Graves; and XII: Discovery of Previously Unknown Graves.	The HRM process was undertaken with cognisance of the applicable regulations. The proposed mitigation strategies and management measures must comply with these requirements.
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996) Section 24 of the Constitution states that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that – i. Prevent pollution and ecological degradation; ii. Promote conservation; and iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development	The HRM process was undertaken to identify heritage resources and determine heritage impacts associated with the Project. As part of the HRM process, applicable mitigation measures, monitoring plans and/or remediation were recommended to ensure that any potential impacts are managed to acceptable levels to support the rights as enshrined in the Constitution.

Applicable legislation used to compile the report	Reference where applied
National Environmental Management Act, 1998 (Act No. 107 of 1998) The NEMA, as amended, was set in place in accordance with Section 24 of the Constitution of the Republic of South Africa. Certain environmental principles under NEMA have to be adhered to, to inform decision making on issues affecting the environment. Section 24 (1)(a), (b) and (c) of NEMA state that: *The potential impact on the environment, socio-economic conditions and cultural heritage of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of state charged by law with authorizing, permitting, or otherwise allowing the implementation of an activity.* 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.	The application process was undertaken in accordance with the principles of Section 24 of NEMA as well as with the EIA Regulations 2014 (as amended), promulgated in terms of NEMA.
GN R. 982: Environmental Impact Assessment Regulations, 2014 (as amended by GN R 326 of 7 April 2017) These three listing notices set out a list of identified activities which may not commence without an Environmental Authorisation from the relevant Competent Authority through one of the following processes: • Regulation GN R. 983 (as amended by GN R 327) - Listing Notice 1: This listing notice provides a list of various activities which require environmental authorisation, and which must follow a basic assessment process. • Regulation GN R. 984 (as amended by GN R 325) – Listing Notice 2: This listing notice provides a list of various activities which require environmental authorisation, and which must follow an environmental impact assessment process.	Refer to the EIA report for a full description of the Listed Activities triggered by the proposed Project. To comply with the regulations, an EIA process must be completed in support of EA in terms of the applicable Listing Notice. This HIA was completed to inform the EIA process to comply with Section 24 of the NEMA.

Applicable legislation used to compile the report	Reference where applied
• Regulation GN R. 985 (as amended by GN R 324) – Listing Notice 3: This notice provides a list of various environmental activities which have been identified by provincial governmental bodies which if undertaken within the stipulated provincial boundaries will require environmental authorisation. The basic assessment process will need to be followed.	
KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) (KZNARIA) The KZNARIA provides for the management of heritage resources within the province as encapsulated in Section 41. The Act further provides for general and special protection, including: ▪ General protection of structures (Section 37), graves of victims of conflict (Section 38); informal and private burial grounds (Section 39) and battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications and meteorites and meteorite impact sites (Section 40); and ▪ Special: protected areas (Section 42), heritage landmarks (Section 44), provincial landmarks (Section 45), graves of members of Royal Family (Section 46), battlefields, public monuments and memorials (Section 47) and heritage objects (Section 49). Permits are required to undertake any activity that may involve an identified generally-protected heritage resource, such as the alteration of historical buildings or archaeological mitigations. In terms of the KZNARIA, the Institute must be notified of proposed developments through the submission of a Needs and Desirability Application (NDA) form. After receiving this form, the Institute will issue comments regarding the necessity of further heritage studies.	The HIA was compiled to comply with the NHRA (as above) but takes into consideration to requirements encapsulated in Section 41 of the KZNARIA. The NDA (“Form J”) has been submitted to the Institute online via the South African Heritage Resources Information System (SAHRIS) as required by the Institute together with the HIA report.

Table 3-2: Applicable policies considered in the HRM process

Applicable policies used to compile the report	Reference where applied
SAHRA Archaeology, Palaeontology and Meteorites (APM) Guidelines: Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports (2007) The guidelines provide the minimum standards that must be adhered to for the compilation of a HIA (2007). Chapter II Section 7 outlines the minimum requirements for inclusion in the heritage assessment as follows: • Background information on the Project; • Background information on the cultural baseline; • Description of the properties or affected environs; • Description of identified sites or resources; • Recommended field rating of the identified sites to comply with Section 38 of the NHRA; • A statement of Cultural Significance in terms of Section 3(3) of the NHRA; and • Recommendations for mitigation or management of identified heritage resources.	This report was compiled to adhere to the minimum standards as defined by Chapter II of the SAHRA Minimum Standards (2007).

3.2. Regional Regulatory Context

The HRM process was completed to comply with the requirements of the South African national legislative framework as described above. Provincial legislation and municipal by-laws are applicable to graves and cemeteries and are considered in our recommendations where a Grave Relocation Process (GRP) may be required. These would include applicable provincial regulations or local by-laws relevant to exhumations and/or reburials.

4. Assumptions, Limitations and Exclusions

Digby Wells encountered constraints and limitations during the compilation of this report. Table 4-1 presents an overview of these limitations and the consequences.

Table 4-1: Constraints and Limitations

Description	Consequence
Whilst every attempt was made to obtain the latest available information, the reviewed literature does not represent an exhaustive list of information sources for the various study areas.	The cultural heritage baseline presented in Section 6 below is considered accurate but may not include new data or information which may not have been made available to the public.
Whilst every attempt was made to survey the extent of the site-specific study area, this report does not present an exhaustive list of identified heritage resources. Overgrown vegetation limited visibility at the time of the pre-disturbance survey.	Previously unidentified heritage resources may be encountered. Should this occur, Eskom must alert the HRAs of the find and may need to enlist the services of a suitably qualified archaeologist or palaeontologist to advise them on the way forward.
Archaeological and palaeontological resources commonly occur at subsurface levels. These types of resources cannot be adequately recorded or documented by assessors without destructive and intrusive methodologies and without the correct permits issued in terms of Section 35 of the NHRA.	The reviewed literature, previously-completed heritage assessments and the results of the field survey are in themselves limited to surface observations. Subsurface tangible heritage may be exposed during Project activities. Should this occur, Eskom must alert the HRAs of the find and may need to enlist the services of a suitably qualified archaeologist or palaeontologist to advise them on the way forward.
The final location of the substation within the study area layout was not available at the time of the survey or compilation of this report.	Every effort was made to cover the extent of the study area[1]. This notwithstanding, there is potential for low risks and unplanned events to occur, considering the limitations above. The final location of the substation will be informed in part by the results of the heritage assessment.
Results from previously-completed heritage assessments as sourced from SAHRIS, that may have formed part of the Project area were not verified in-field.	It is assumed the previously recorded heritage resources are accurate and true. Digby Wells did not identify any heritage resources in the current study area during the previous HRM process. As such, no verification of the heritage resources identified during the precious process was undertaken during this in-field assessment.

[1] Refer to Section **Error! Reference source not found.** for a description of the study area.

5. Methodology

The following section presents a summary of the methodologies employed in the HRM process. Appendix C includes a more detailed description of the methodologies employed during the HRM process.

5.1. Defining the Study Areas

Heritage resources do not exist in isolation to the greater natural and social environment (which includes the socio-economic, socio-political, and socio-cultural aspects). To develop an applicable cultural heritage baseline for the Project, Digby Wells defined three nested study areas to be considered. These include:

- The *site-specific study area*: the farm portions extent associated with the proposed Project and proposed infrastructure, including a 500 m buffer area. The site-specific study area may extend linearly, in which case the site-specific study area will include the linear development and a 200 m buffer on either side of the footprint. In this case, the site-specific study area refers to the 1 km by 1 km study area considered for the potential location of the proposed substation;
- The *local study area:* the area most likely to be influenced by any changes to heritage resources in the Project area, or where project development could cause heritage impacts. The local study area is defined as the area bounded by the local municipality and includes particular reference to the immediate surrounding properties or farms. The local study area is specifically examined to offer a backdrop to the socio-economic conditions within which the proposed development will occur. The local study area furthermore provides the local development and planning context that may contribute to cumulative impacts. The Project area is situated within the Nongoma Local Municipality (NLM); and
- The *regional study area:* the area bounded by the district municipality demarcation. In this case, the Project is located in the Zululand District Municipality (ZDM). Where necessary, the regional study area may be extended outside the boundaries of the district municipality to include areas closest to the Project area. The aim of this is to include much wider expressions of specific types of heritage resources and historical events. The regional study area also provides the regional development and planning context that may contribute to cumulative impacts.

5.2. Statement of Significance

Digby Wells designed the significance rating process to provide a numerical rating of the Cultural Significance of identified heritage resources. This process considers heritage resources assessment criteria set out in subsection 3(3) of the NHRA, which determines the intrinsic, comparative, and contextual significance of identified heritage resources. A resource's importance rating is based on information obtained through review of available

credible sources and representativity or uniqueness (i.e., known examples of similar resources to exist).

The rationale behind the heritage value matrix takes into account that a heritage resource's value is a direct indication of its sensitivity to change (i.e., impacts). Value, therefore, was determined prior to completing any assessment of impacts.

The matrix rated the potential, or importance, of an identified resource relative to its contribution to certain values – aesthetic, historical, scientific and social. Resource significance is directly related to the impact on it that could result from Project activities, as it provided minimum accepted levels of change to the resource.

5.3. Definition of Heritage Impacts

Potential impacts to heritage resources may manifest differently across geographical areas or diverse communities when one considers the simultaneous effect to the tangible resource and social repercussions associated with the intangible aspects. Furthermore, potential impacts may concurrently influence the Cultural Significance of heritage resources. This assessment therefore considers three broad categories adapted from Winter & Baumann (2005, p. 36). Table 5-1 presents a summary of these impact categories.

Table 5-1: Impact Definition

Category	Description
Direct Impact	Affect the fabric or physical integrity of the heritage resource, for example destruction of an archaeological site or historical building. Direct impacts may be the most immediate and noticeable. Such impacts are usually ranked as the most intense but can often be erroneously assessed as high-ranking.
Indirect Impact	Occur later in time or at a different place from the causal activity, or as a result of a complex pathway. For example, restricted access to a heritage resource resulting in the gradual erosion of its Cultural Significance that may be dependent on ritual patterns of access. Although the physical fabric of the resource is not affected through any direct impact, its significance is affected to the extent that it can ultimately result in the loss of the resource itself.
Cumulative Impact	Result from in-combination effects on heritage resources acting within a host of processes that are insignificant when seen in isolation, but which collectively have a significant effect. Cumulative effects can be: • Additive: the simple sum of all the effects, e.g., the reclamation of a historical Tailings Storage Facilities (TSFs) will minimise the sense of the historic mining landscape. • Synergistic: effects interact to produce a total effect greater than the sum of the individual effects, e.g., the removal of all historical TSFs will sterilise the historic mining landscape.

Category	Description
	• Time crowding: frequent, repetitive impacts on a particular resource at the same time, e.g., the effect of regular blasting activities on a nearby rock art site or protected historical building could be high. • Neutralizing: where the effects may counteract each other to reduce the overall effect, e.g., the effect of changes from a historic to modern mining landscape could reduce the overall impact on the sense-of-place of the study area. • Space crowding: high spatial density of impacts on a heritage resource, e.g., density of new buildings resulting in suburbanisation of a historical rural landscape.

5.4. Secondary Data Collection

Data collection assists in the development of a cultural heritage baseline profile of the study area under consideration. Qualitative data was collected to inform this HIA report and was primarily obtained through secondary information sources, i.e., desktop literature review.

A survey of diverse information repositories was made to identify appropriate relevant information sources. These sources were analysed for credibility and relevance. These credible, relevant sources were then critically reviewed. The objectives of the literature review include:

- Gaining an understanding of the cultural landscape within which the proposed Project is located; and
- Identify any potential fatal flaws, sensitive areas, current social complexities and issues and known or possible tangible heritage.

Repositories that were surveyed included the SAHRIS, online/electronic journals and platforms and select internet sources. This report includes a summary and discussion of the most relevant findings. Table 5-2 lists the sources consulted in the literature review (refer to Section 15 for more detailed references).

Table 5-2: Qualitative Data Sources

Reviewed Qualitative Data	
Databases	
Genealogical Society of South Africa (GSSA) database (2011)	SAHRIS Palaeosensitivity Map (PSM)
Statistics South Africa (2011)	Wazimap (2017)

Reviewed Qualitative Data		
Cited Text		
Badenhorst, 2003	Bishop, n.d.	Butzer, 1978
Clark, 1982	Gold, 2006	Hamilton, 1985
Johnson, et al., 2006	Mitchell, 2012	Mucina & Rutherford, 2010
Ngubane, 2005	Open Up, 2017	Smith & Zubieta, 2007
Winter & Baumann, 2005		

5.5. Primary Data Collection

Shannon Hardwick and Tyron Hopf undertook a pre-disturbance survey of the Project area on 18 May 2022. The survey was predominantly a pedestrian survey, which aimed to survey a representative subsection of the study area. The survey was non-intrusive (i.e., no sampling was undertaken).

The aim of the survey was to:

- Visually record the current state of the cultural landscape; and
- Record a representative sample of the visible, tangible heritage resources present within the development footprint area, site-specific study area and greater study area.

Identified heritage resources were recorded as waypoints using a handheld GPS device. These heritage resources were also recorded through written notes and photographs. **Error! Reference source not found.** presents the results of the pre-disturbance survey, including the waypoints and GPS tracks.

5.6. Site Naming Convention

Following the naming convention used in the original HRM process, heritage resources identified by Digby Wells during the field survey are prefixed by the project code and followed by a site number (e.g., PEC7505-001).

Heritage resources identified through secondary data collection are prefixed by the relevant SAHRIS case or map identification number (*where applicable*) and the original site name as used by the author of that assessment (e.g., 11829/BGG-001).

6. Findings and Discussion

This section presents a description of the cultural heritage baseline informed through primary and secondary data collection. The section also includes a summary of the developmental context within which the Project is located and presents the potential socio-economic benefits

anticipated to arise from the Project. As required by Section 38(3)(d) of the NHRA, the socio-economic benefits are compared to the heritage impacts is considered in Section 12.

6.1. Cultural Heritage Baseline Description

6.1.1. Geological and Palaeontological Context

The proposed transmission line routing options are triggered by several different geological stratigraphic units. This section, thus, considers only the lithostratigraphic units that are known to have high palaeontological sensitivities, as defined by the Palaeontological-Sensitivity Map (PSM) available on the SAHRIS.

The site-specific study area is affected by lithologies associated with the Karoo and Pongola Supergroups. The Pongola Supergroup dates to the Mesoarchean Eon (~3000 million years ago [Ma]) and developed in two separate basins. The main Pongola Basin extends from Amsterdam in the north through the Hartland area south of Swaziland as far as the White Mfolozi Inlier in the south. The second basin, known as the Nkandla Basin, only preserved rocks of the Nsuze Group (Gold, 2006). Lithostratigraphic units associated with the Pongola Supergroup that have been identified in the transmission line routing options, are considered to have negligible to low palaeontological sensitivity (SAHRA, 2022)and are not considered further in this assessment.

This region of KZN which is underlined by lithostratigraphic units associated with the Karoo Supergroup (Main Karoo Basin), ranging in age from Late Carboniferous to Middle Jurassic. The bulk of the Karoo strata occur in the main basin, covering an area of approximately 700 000 km2, which was much more extensive during the Permian Period. The Karoo Supergroup is famously known for its terrestrial vertebrate fossils, distinctive plant assemblages, thick glacial deposits and extensive dolerite dykes and sills. Identified lithostratigraphy underlying the proposed transmission line routing options include units of the Dwyka, Ecca and Beaufort Groups, as well as the Durban-Lebombo Belt (Johnson, et al., 2006).

Based on the review of the PSM, this section considers the geological of the Karoo Supergroup with a high to very-high palaeontological sensitivity. These include the Emakhwezini, Ntabene and Nyoka Formations of the Beaufort Group, and the Volksrust and Vryheid Formations of the Ecca Group [Uys, J. (2007).

- **The Emakhwezini Formation** comprises alternating blue-grey, grey-green and black mud rocks and subordinate fine-to-coarse grained feldspathic sandstones. This formation is associated with 11 low-grade coal seams, and plant fossils are thought to be fairly common, primarily plant fossils of Glossopteris (Johnson, et al., 2006; SAHRA, 2022).
- **The Ntabeni Formation** comprises medium- to-coarse-grained, cross bedded sandstones and subordinate grey to green shales deposited by braided rivers

(Johnson, et al., 2006). This formation is commonly associated with dicroidium[2] ferns and most diverse plant and insect assemblages in the Gondwana Geological Terrain.

- **The Nyoka Formation** comprises primarily of red or purple mudstone with calcareous concretions. Grey, blue-grey or greenish shale and siltstone, as well as thin beds of fine- to coarse grained sandstone are also present, though to have been deposited on the floodplains of slow-flowing meandering rivers under arid conditions (Johnson, et al., 2006). The fossil heritage includes reptilian, mainly dinosaur of lower Euskelosaurus range zone and upper Massospondylus range zone, consisting of Ornithishia and Saurischia, Thecodontia and Crocodilia (SAHRA, 2022).
- **The Volksrust Formation** is a predominantly argillaceous unit which interfingers with the overlying Beaufort Group. The formation consists of grey to black silty shale with thin, usually bioturbated siltstone and sandstone lenses and beds. The substantial thickness, fine grained lithology and great lateral extent suggest it represents a transgressive, open “shelf” sequence. Paleontologically, the Volksrust Formation is associated with a low diversity of marine and non-marine trace fossil assemblages including rare temnospondyl amphibian remains, invertebrates (bivalves, insects), minor coals with plant remains, petrified wood, and organic microfossils (SAHRA, 2022).
- **The Vryheid Formation** rests directly on Pre-Karoo rocks or the Dwyka Group, its lithofacies mainly arranged in upward-coarsening cycle essentially deltaic in origin (Johnson, et al., 2006). This formation consists of sandstone, shale, mudstone and coal. The Vryheid Formation has a high potential to contain fossil heritage inclusive of Permian Glossopteris flora, diverse palynomorphs, rare insects and fossil woods, and non-marine bivalves (SAHRA, 2022).

6.1.2. Archaeological context

The Stone Age is broadly defined as a pre-historic development period when weapons and tools were made of stone and/or organic materials such as bone, wood and horn. In southern Africa, these developments are divided into three chronological periods, the Early Stone Age (± 2 million years ago (mya) – 250 000 thousand years ago [kya]) (ESA), the Middle Stone Age (300 kya – 20 kya) (MSA) and the Later Stone Age (40 kya – historical period) (LSA). The principal characteristics of these are briefly presented in this section.

It is important to note that, large hand axes and cleavers produced from coarse-grained material dominate ESA assemblages (Esterhuysen & Smith, 2007). The ESA is generally associated with the first Homo species (e.g., H. habilis), and possibly with some Australopithecus species. Within the area under consideration, no sites associated with the ESA have been identified in the available literature. This period is not considered further.

[2] Dicroidium is an extinct genus of fork-leaved seed ferns that were widely distributed over Gondwana during the Triassic. Their fossils are known from South Africa, the Arabian Peninsula, Australia, New Zealand, South America, Madagascar, the Indian subcontinent and Antarctica.

- Early MSA industries are characterised by high proportions of minimally modified blades, represented by the Levallois technique (Clark, 1982). The MSA is generally associated with ancient H. sapiens (e.g., H. rhodesiensis) through to early anatomically modern H. sapiens-sapiens. In general, the MSA can be broadly defined by the occurrence of blades and points produced from good quality raw material (Deacon & Deacon, 1999). Noteworthy sites associated with MSA deposits in KZN include Border Cave, Sibudu Cave, iNkolimhashi Shelter and the Umhlathuzana Shelter (Badenhorst, 2003).
- Border Cave is situated 45 Kms North of the proposed Project in the Lebombo Mountains of KZN. This site is well-known for its MSA sequence, associated hominids and the earliest demonstratable LSA strata in southern Africa (Butzer, 1978). The material remains associated with Border Cave have played a crucial role in understanding the emergence of modern cultural behaviour (Mitchell, 2012). Analysis of the artefacts from Border Caves 1WA and 1BS Lower B+C layers specifically, demonstrate sometime after 56 kya the stone tool manufacturers deliberately avoided using points and other restored pieces associated with the MSA in favour of a simplified microlithic technology (~44 kya – 42 kya). Furthermore, the newly emphasised microliths were hafted as evidence of organic adhesive was recorded. When compared to historically known hunter-gatherer societies, the microlith, organic finds and associated material indicators arguably represent the oldest instance of modern culture.
- The LSA dates from approximately 40 kya to the historical period and is wholly associated with anatomically modern H. sapiens sapiens. Lithics associated with the LSA are specialised: specific tools being created for specific purposes, and the inclusion of bone tools into the assemblages (Mitchell, 2002). LSA sites commonly contain diagnostic artefacts, such as microlithic scrapers and segments. In a southern African context, the LSA is closely associated with hunter-gatherer groups, (i.e. the San). Due to the nomadic nature of LSA people, open sites are difficult to identify and usually poorly preserved. In addition to the production of LSA lithics, this period is characterised by evidence of ritual practises and complex societies, as well as rock art (Deacon & Deacon, 1999).

6.1.3. Rock art

Within southern Africa, there are three predominant rock art painting traditions represented. Each of these is associated with particular cultural groups. These comprise the following:

- African hunter-gatherers: Fine line paintings associated with autochthonous LSA hunter-gatherer groups;
- African pastoralists and herders: Finger paintings associated with the later arrival of pastoralists; and
- African farmers: Finger paintings associated with much later and possibly historic farming communities.

The region within which the proposed Project is situated is primarily associated with the art of African hunter-gatherers. This form of rock art is broadly described as produced using fine brushes, quills or sticks largely done in red, white and black, and more rarely bichrome and polychrome (Smith, 2007). This category of rock art is understood and explained in terms of aspects of hunter-gatherer knowledge systems. The images comprise realistic and proportionally correct animals, such as various antelope species, human figures and more symbolic beings associated with a range of shamanistic beliefs, rituals and experiences (Eastwood, et al., 2002).

These depictions can be identified as isolated images on rock surfaces, or compositions made by one or mare painters that include complex groupings and superimpositions that show the interdigitating of the spirit realm with the material world (Lewis-Williams, 1998). This understanding of attests to rock art not only being a tangible heritage resource that can be recorded visually, but also to the intangible aspects it may hold to specific groups for spiritual reasons.

In contrast to the African hunter-gatherer tradition, art created by pastoralists and farming communities is not as prolific in the region. Broadly, the African pastoralist tradition is typified by finger-painted geometric images, composed entirely of circles, finger lines, finger dots, and handprints that are red and white in colour. Farming community art was created by the ancestors to the Nguni in this region, and formed part of their expressive culture. Research suggests that the Nguni art is almost exclusively engravings.

At least four rock art panels have been identified in the area under consideration. These have generally been described as poorly preserved and comprising of red pigment. Panels associated with WAA051 are described as including human figures in seated positions and dancing postures.

6.1.4. Farming community period

The Stone Age, in a southern African context, is followed by the Farming Community period, associated with various Bantu-speaking groups and their migration through the landscape. Southern African Farming Community archaeology is subdivided primarily into two periods to distinguish between widespread events:

- Early Farming Communities (EFC) (200 CE – 1000 CE); and
- Late Farming Communities (LFC) (1000 CE – 1840 CE).

With reference to early Nguni (i.e. farming community of KZN) history interpretations are based on linguistic, anthropological and archaeological evidence. For the purposes of this discussion, focus is given to the archaeological context (for detailed discussions on linguistic and anthropological evidence (Huffman, 2004). Here, the primary visible indicators for the presence of Farming Community sites are material cultural remains, and stonewalled settlements; based on the nature of Nguni material culture, however, the associated archaeology is difficult to study as related ceramics are seldom decorated, and beehive huts do not preserve well. These limitations notwithstanding, an abbreviated account of the relevant ceramic sequence is presented here.

The early Nguni ceramic sequence contains four phases: Blackburn (AD 1050-1500), Moor Park (AD 1350-1700), Nqabeni (AD 1700-1850) (Huffman, 2004; 2007) and Ntsuanatsatsi (AD 1450-1650) (Huffman, 2007). Considering the accepted distribution of these facies, Blackburn and Nqabeni occur within the regional study area. Blackburn ceramics have been recorded along the north and south coasts of KZN. These ceramics are sparsely decorated, and include rim-notching, appliqué bumps, incised parallel lines and oblique panels of punctate and stamping (Huffman, 2004; 2007). The precise ceramic origin of this facies is unknown, but it is proposed that similarities with the Kalambo Branch of the Urewe Tradition suggest a likely source (Huffman, 2007). Nqabeni ceramics emphasise a high buff with black or red colouring, appliqué decoration and panels of fingernail impressions. This ceramic style centres on northern KZN and is described as being indirectly derived from Blackburn. This ceramic facies, unlike Blackburn, is associated with stonewalled settlements that emphasise a centre / side access that align kraal entrances facing uphill. It has been noted that regional variances in the stonewalled patterns exist, but these primarily attest to the small scale of Nguni group identities (Huffman, 2004).

6.1.5. Historical context

6.1.5.1. Pre-colonial context

The pre-colonial historical context of northern KZN is intrinsically associated with the movement, control and assimilation of various Nguni clans through time. This, in part, has been demonstrated through the archaeological record introduced in the section above, and expanded upon here based on historical oral and written records.

Within northern KZN, the territories initially comprised a number of relatively small chiefdoms. These forms of socio-political structures changed during the eighteenth century when political consolidation processes were well underway, resulting in the emergence of a number of power blocks (Ngubane, 2005). The political consolidation can be understood in terms of an African Frontier Model where mechanisms within social systems trigger repeated fission, migration and fusion of polities leading to the formation of new polities on the margins of, or in the spaces between more established societies (Kopytoff, 1987). The balance between political and economic power shifts between chiefdoms produced a myriad of frontier like interactions. Relevant polities within the regional context include the Mthethwa Paramountcy (c. 1780 – 1817), Ndwandwe Chiefdom (c. 1780 – 1817) and the Zulu Kingdom (c. 1818 – 1897).

The Mthethwa originally settled in the Lebombo Mountains, just north of the proposed Normandie-Iphiva corridor before migrating to Mfolozi area under the reign of Khayi (then of the Nyambose clan). This area was occupied by the Mbokazi, the dominant chiefdom in the area at the time. To secure access to the land, Khayi gave their allegiance of the Mthethwa, secured through the marriage of the Mthethwa heir, Jobe, to a Mbokazi princess. Through time, an increase in the ivory trade resulted in a shift of the Mthethwa being a beneficiary to patron, as evidenced by the Khoza of several chiefdoms to Mthethwa, including the Dletsheni, Mkhwanazi, Cambini and Gegeni (Hamilton, 1985). Khayi was succeeded by Jobe, whose reign was characterised by greater participation in the Delagoa Bay trade, greater degree of militarisation, more active expansion and failure to assimilate their latest subjects (i.e. recognise kin-relations with the Mthethwa). The establishment of the *Amabutho* system at this

time provided the institutional framework necessary for the co-ordination of the activities of large numbers of men and could be used to expand the territorial area and under the chief authority to extend the control of natural resources and labour.

Shaka ka Senzangakhona, was born as the son of the Zulu chief Senzangakhona. Driven into exile with his mother at approximately 1794, they took refuge with the Langeni. By the early 19th century, Shaka left his home and placed himself under the protection of the Mthethwa under Jobe. At around this time, in an attempt to assert his independence from Mbokazi, Jobe attempted to kill two of his sons Tana and Dingiswayo, born from his Mbokazi wife, and declare his son Mawewe as the heir. Jobe was unsuccessful at killing Dingiswayo, who returned to the Mthethwa after his death in 1807 and succeeded in ascending to the chieftaincy (Hamilton, 1985; Ngubane, 2005).

Dingiswayo embarked on a course of consolidation and expansion to stabilise the northern, coastal and inland reaches of the society. This was facilitated by a policy of Dingiswayo to remove unruly chiefs and replace them with minors or known loyalists. It is also during this time that the Mthethwa Chiefdom was relocated from the Mfolozi confluence into the coastal lowlands. This campaign is thought to be in large part to secure areas of superior grazing in light of a marked climatological crisis, and maintenance of the trade monopoly now based on cattle rather than ivory. While the cattle areas in the east and south were clearly the main focus of Mthethwa activities, expansion into the interior was also occurring in response to the threat of the Buthelezi, who had defeated their neighbours, the Zulu under Senzangakhona. Dingiswayo ultimately integrated the Buthelezi and Zulu through a sort of coalition.

The processes discussed in terms of the formation of the Mthethwa Chiefdom is echoed in the Ndwandwe to the north. Here too, domination of the region in an attempt to control, firstly trade networks and secondly, natural resources facilitated the Ndwandwe to become centralised and militarised overtime (Ngubane, 2005). The history and origins of the Ndwandwe, however, have largely been overshadowed by the rise of the Zulu Kingdom under Shaka and was under researched.

During the campaign for regional dominance, Shaka fought alongside the Mthethwa in several battles, including against the Ndwandwe, and displayed extraordinary military skills that placed him in favour with Dingiswayo. Dingiswayo placed considerable trust in Shaka, who became a prominent figure (Ngubane, 2005). After the death of Shaka's father, Senzangakhona, Dingiswayo backed Shaka's claim for the Zulu chieftainship and aided in the assassination of the designated heir, Sigujana. The strategy was to create a subsidiary satellite chiefdom in the west under Shaka which would entail the unification of its neighbours that would be available for Amabutho[3] and sub-contraction into military responsibilities. Tensions between the Mthethwa and Ndwandwe for regional control culminated between 1817 and 1818. The Ndwandwe, under the leadership of Chief Zwide ka Langa, in an effort to expand their borders moved against the Mthethwa. Dingiswayo, in reaction to the looming threat, called for the Zulu Chiefdom under Shaka to provide military support in 1818. Shaka, however, did not provide this support in what is argued a deliberate action to assert the independence of the Zulu

[3] Amabutho were a means of exercising central control over the most productive element in the group – its young men and prior to the emergence of the Zulu kingdom in the 1820s, each chiefdom had raised its own Amabutho. (Bancroft, 1988).

Chiefdom from the Mthethwa hegemony, leading to the capture and killing of Dingiswayo and ultimately the collapse of the Mthethwa Chiefdom (Ngubane, 2005).

In response to the vacuum created by the collapse of the Mthethwa Chiefdom under Dingiswayo, Shaka assumed the leadership of the various tributary chiefdoms of the Mthethwa alliance (Ngubane, 2005). Notably, Shaka amended the approach of the Mthethwa loose bonds of cohesion and integrated clans on the basis of equality, promoting within the army and civil service on a basis of merit and not due to circumstances of birth. This approach facilitated indebted relations and dependence on Shaka (Ngubane, 2005). Furthermore, developed numerous attack tactics that helped him win many battles.

To prevent the impending threat of the Zulu Chiefdom under Shaka, the Ndwandwe under Chief Zwide launched an attack at Gqokli Hill in 1818. Knowing the advantage held by Zwide in terms of the number of warriors (in excess of 12 000), Shaka strategically placed his 5 000 strong force in positions on the summit and around the base of the hill, as well as deploy a decoy of 500 warriors to draw away and deplete the ranks of the Ndwandwe (Ngubane, 2005). From the ensuing battle, the Zulu lost approximately 2000 men, far less than the 7 500 of the Ndwandwe. This victory set the stage for Shaka to conquer and absorb surrounding chiefdoms, consolidating his power in the area north of the Tugela (Von der Hyde, 2013). The Ndwandwe Chiefdom, however, did not collapse until the death of Zwide after the two-day running Battle of Mhlatuze River in 1819, which saw most of the Ndwande abandon their lands and migrate northwards. This period of great upheaval and violence within the region has been collectively termed as the Mfecane (Von der Hyde, 2013).

The colonial context refers to the initial contact between European settlers and the local indigenous inhabitants of the region. The proposed Normandie – Iphiva and Duma – Iphiva corridors are however, situated north of the area in which initial contact and several of the historic events occurred. This section, therefore, provides an abbreviated history of the colonial context.

The Boers had been populating the interior since approximately 1815 in scattered farms. From approximately 1824, British colonists began to arrive in significant numbers with considerable interest making contact with the Zulu Kingdom (Bishop, n.d.). Shaka, himself, is believed to have heard of the “white tribe” and was interested in finding out as much information about them as possible. To this affect, Shaka granted permission to Europeans to enter and operate within the Zulu territory on rare occasions. This is most notably recorded in his interactions with Henry Francis Fynn. The reign of Shaka did not last long. Conquering the majority of the chiefdoms, and after the death of his mother Nandi in 1827, he turned his aggression inward on his Kingdom, inflicting atrocities on his own people (Bancroft, 1988). In September of 1828, in retaliation of his actions and drive of succession, Shaka was assassinated by his younger brothers, Dingane and Mhlangana at his KwaDukuza kraal**Error! Bookmark not defined.**. Dingane ultimately succeeded Shaka as the King of the Zulus, embarking on an extensive campaign to purge pro-Shaka elements and chieftains. During the reign of Dingane, he fought many battles against his brother Mpande, and resisted the expansion of the Boers into the interior and the establishment of the Boer Republics on the borders of Zulu Kingdom. At this time, the established trade network and market was economically attractive to the Boers and other exiles from the Cape. The prospect of establishing profitable trade relations with the

Portuguese held for the Boers the promise of wealth and independence from British rule (Bancroft, 1988 & Bishop n.d.).

Piet Retief, one of the principal Voortrekker[4] leaders, led his group across the Drakensberg Mountains in the hope of settling in the fertile lands of the Zulu Kingdom and exploiting the established trade network. While efforts were made by Retief to settle in the region with the approval of Dingane through the signing of a treaty, the Retief and his party were slaughtered by Dinganes' men on 6 February 1838 at the Zulu royal homestead. After the slaying, Dingane ordered his warriors to penetrate south of the Tugela River and drive out the remainder of the Voortrekkers (Von der Hyde, 2013). These actions ultimately saw the Voortrekkers, under the command of Andries Pretorius, retaliate at the Battle of Blood River marking the end of the Dingane's power and the brief dominance of the Boers in Natal.

Mpande forged an alliance with the European expansionists and succeeded to the thrown in 1840. Mpande was considered a "peace-loving" ruler who enjoyed relations with the Boers, and the British after they annexed Natal in 1843 (Bancroft, 1988 & Bishop n.d.). Mpande died in 1872 and was succeeded by his son, Cetshwayo who patterned his mode of rule on that of Shaka, strengthening his army to retain the independence of Zululand. This threat created unease amongst the British, ultimately seen as an obstacle to the confederation that resulted in several battles. The most notable in the regional study area under consideration being the Battle of Hlobane on 8 March 1879 and Battle of Ulundi on 4 July 1879.

Following the defeat of the British column at Isandlwana and the besiegement of the column in Eshowe, Colonel Evelyn Wood's infantry undertook an expedition of cattle-rustling from their stronghold near Vryheid to the Hlobane Mountains. During the attempt to herd cattle from the summit, an approaching Zulu army was spotted, and an order to retire was given in the hopes of a safe escape. This, however, was not the case, and resulted in the defeat of the British, who suffered a loss of approximately 130 at the hands of the Zulu army (Bancroft, 1988 & Bishop n.d.). The defeats suffered by the British at the hands of the Zulu army prompted the redirection of the war effort, resulting in a number of victories culminating in the Siege of Ulundi and the subsequent defeat of the Zulu Kingdom. This was considered the final battle of the Anglo-Zulu War, with a reinforced British army dealing a final blow to the Zulu Kingdom by attacking the Zulu warriors on the open plains close to King Cetshwayo's dwelling at Ondini. All the Zulu camps were torched by the British during the battle, King Cetshwayo was eventually captured and the Kingdom was divided into thirteen chiefdoms which marked the end of an independent kingdom (Bancroft, 1988 & Bishop n.d.).

Following the collapse of the Zulu Kingdom, the most notable historical events within KZN are associated with the South African War of 1899 – 1902 (i.e. Second Anglo-Boer War). The Second Anglo Boer War officially started on 9 October 1899 as a result of tensions and conflicting political agendas between the Boers and the British. Events associated with this time period occur on the peripheries of the areas under consideration.

[4] Voortrekkers: were Afrikaner emigrants during the 1830s & 1840s who left the Cape Colony moving into the interior of what is now South Africa. This movement called The Great Trek which was an eastward migration of Dutch-speaking settlers who travelled by wagon trains from the Cape Colony into the interior of modern South Africa from 1836 onwards, seeking to live beyond the Cape's British colonial administration. (SAHO accessed May 2022)

6.2. Site-Specific Heritage Landscape

Digby Wells undertook a pre-disturbance survey of the then-proposed project related infrastructure, including the now-authorised substation footprint area in May 2017. During this survey, 22 heritage resources were identified. These resources included archaeological material, a historical battlefield, monuments and memorials, burial grounds and graves, historical built environment resources and intangible / living heritage resources.

Of the identified heritage resources, two were located in the authorised substation. None of these heritage resources occur within the current site-specific study area.

6.3. Results from the Pre-disturbance Survey

Shannon Hardwick undertook a pre-disturbance survey of the site-specific study area on 18 May 2022. This survey focused on areas covered by proposed infrastructure not investigated in the previous surveys and was predominantly pedestrian. The survey was recorded as GPS tracks and identified heritage resources were marked as waypoints. Identified heritage resources were also recorded through written notes and photographs. The GPS data are provided in **Error! Reference source not found.**.

The following sections describe the observations made during the survey and the outcomes of the survey.

6.3.1. Existing Environment

The natural vegetation of the site-specific study area has been disturbed in varying degrees by human activities. Table 6-1 presents a summary description of the natural environment within which the Project is situated. Figure 6-1 below presents an overview of the environment at the time of the pre-disturbance survey.

The environment at the time of the verification survey was disturbed through anthropogenic and animal activities. There is evidence that animals graze on the land, including cattle, goats and donkeys. There is potential for archaeological materials to be disturbed or trampled by these grazing animals.

At the time of the survey, residential houses and associated outbuildings were present in the site-specific survey. Some of these buildings were in use at the time of the survey, and some stood vacant (these have apparently been abandoned). Other observed anthropogenic disturbances were associated with the residential nature of the site and included informal roads, powerlines and a school.

Table 6-1: Summary of the Vegetation Setting of the Project

Biome	Bio-region	Vegetation Type
Savanna	Lowveld	Zululand Lowveld (SVI23) This vegetation type includes various bushveld units occurring on extensive flat or slightly undulating landscapes. This unit is comprised of a mosaic of tall grassveld types with sparsely scattered solitary trees and shrubs and typical savanna thornveld, bushveld and thicket patches. The Zululand Lowveld vegetation occurs on sediments within the Dwyka, Ecca and Beaufort Groups and the igneous rocks of the Lebombo Group, all within the Karoo Supergroup. This type is considered to be vulnerable as roughly 26% has been transformed. Most of this transformation has occurred as a result of cultivation. Some of this vegetation type has been conserved in national and private game farms, lodges and nature reserves. Within this type, erosion is variable from high to low.

Adapted from Mucina & Rutherford (2010)

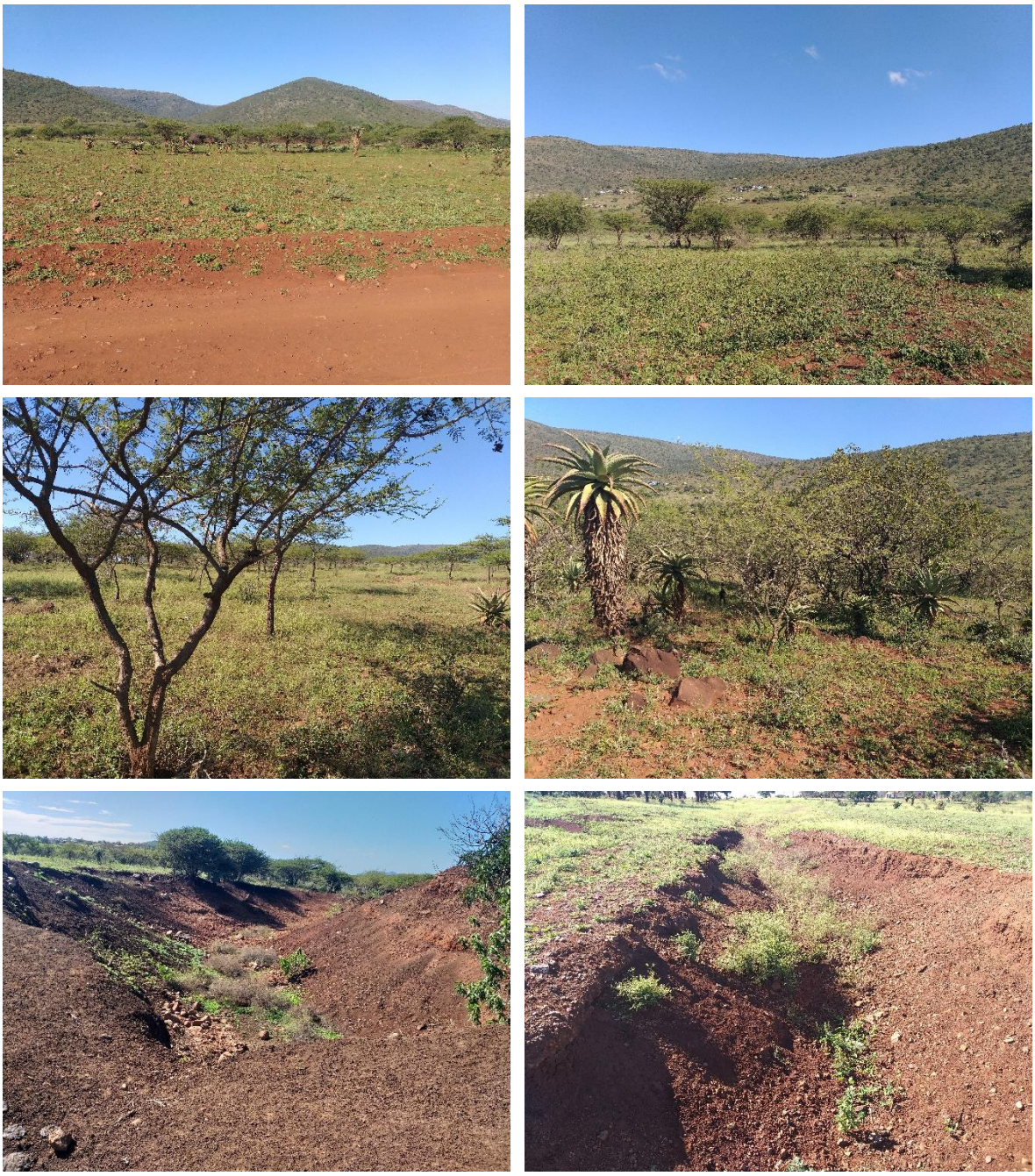


Figure 6-1: State of the Environment during the Pre-disturbance Survey

6.3.2. Newly Identified Heritage Resources

During the pre-disturbance survey undertaken for the current HRM process, ten additional heritages resource were identified. Table 6-2 includes a summary of this heritage resource and Figure 6-2 includes photographs. Plan 4 includes the results of the pre-disturbance survey.

Table 6-2: Heritage Resources identified during the Survey

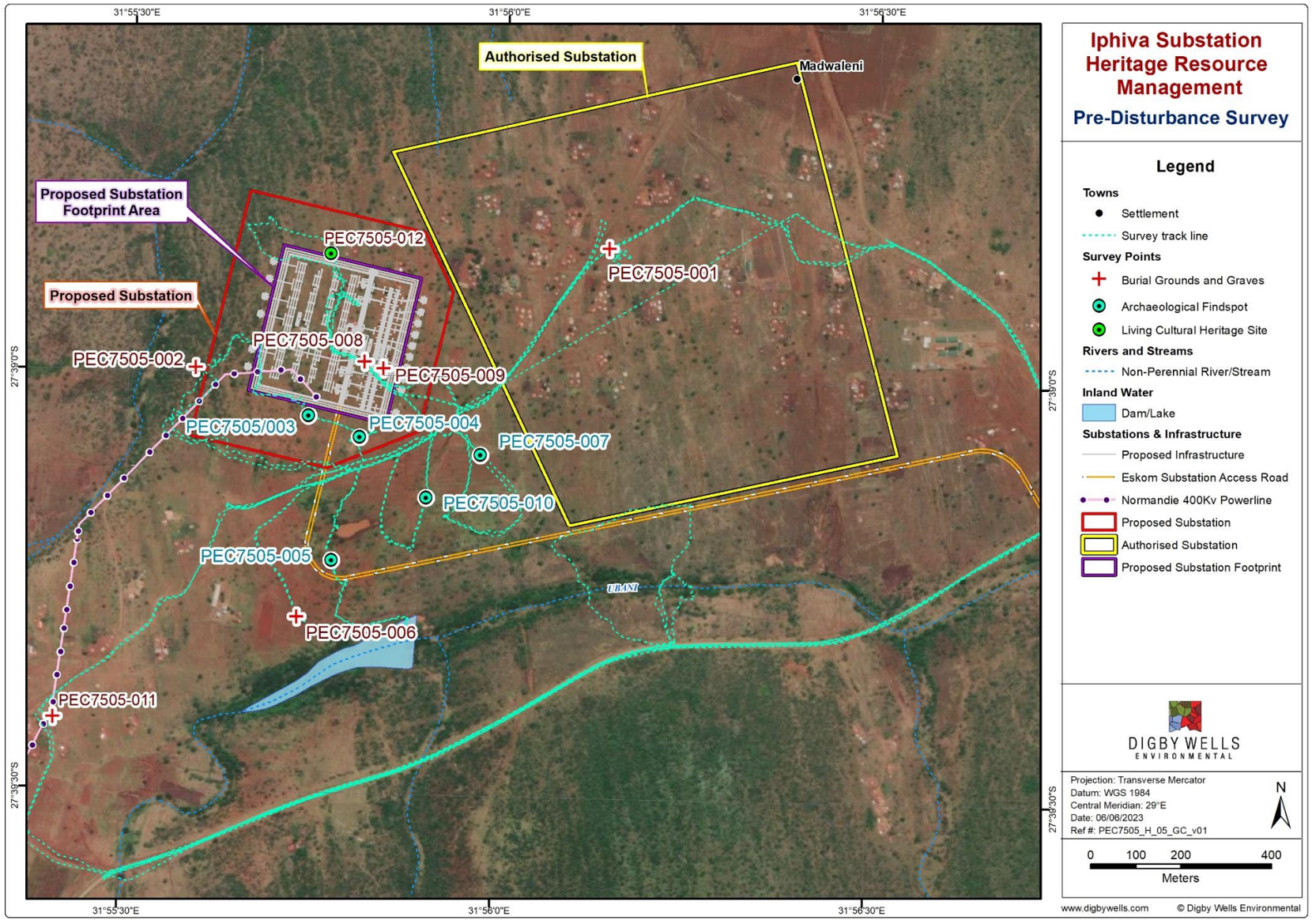
Heritage Resource	Description
PEC7505-001	Burial ground of 12 visible graves. One of these graves is marked with a cement headstone (in the shape of a cross) and cement border. No inscription is visible on the headstone. This grave is longer than average and may include multiple interred. The other graves are marked by stone piles and do not have headstones. Three of the graves in this burial ground are smaller and may represent child graves. The burial ground is not demarcated by a fence or signage and is not overgrown. At the time of the survey, grave goods, including an enamel cup, were present within the burial ground.
PEC7505-002	Single grave marked by a stone pile with no headstone. The grave is not demarcated by a fence or signage.
PEC7505-003	Isolated archaeological findspot – an individual lithic found on a slope near a fence post. This artefact is likely not in its original context.
PEC7505-004	Isolated archaeological findspot – an individual stone flake found downslope of PEC7505-003. This artefact is likely not in its original context.
PEC7505-005	Isolated archaeological findspot – a potential core.
PEC7505-006	Single grave marked by a stone pile with no headstone, although an aloe is present at the head. The grave is not demarcated by a fence or signage.
PEC7505-007	Isolated archaeological findspot – an upper grinding stone.
PEC7505-008	Single grave marked by a stone pile. This grave was located in someone's yard and so the team did not enter to record this heritage resource in detail. The grave is not demarcated by a fence or signage.
PEC7505-009	Single grave marked by a stone pile. There is no headstone, but an upright stone may serve this purpose. The grave is not demarcated by a fence or signage.
PEC7505-010	Isolated archaeological findspot – a lower grinding stone. There was minimal use wear but some polish evident on the stone.
PEC7505-011	A possible grave identifiable by a large pile of rocks near a rubbish pile. The feature was confirmed as a grave by a local who identified as Next-of-Kin of the deceased (a brother who lives across the road).
PEC7505-012	A disturbed area used for low-scale subsistence farming. The feature can be linked to the existing village. This feature is defined as Living Cultural Heritage.

Graves at PEC7505-006 and PEC7505-008

Stone tools at PEC7505-003 and at PEC7505-005

Upper and lower grinding stones at PEC7505-007 and PEC7505-010

Figure 6-2: Select Photographs of the Newly Identified Heritage Resources identified during the Pre-disturbance Survey



Plan 4: Results of Pre-Disturbance Survey

6.4. Socioeconomic Setting

The Project is located within Ward 1 the NLM of the ZDM in the KwaZulu-Natal Province. This section presents a brief summary of the demographic statistics relevant to the potential socio-economic benefit derived from the Project, informed by data collected during the 2011 Census (Statistics South Africa, 2011)[5].

As of the 2011 Census, KwaZulu-Natal had a population of 10 267 300, which accounts for approximately 20% of the national population (Wazimap, 2017). The province includes 11 municipalities, of which the ZDM is the fourth largest in terms of population. The district included 803 575 residents (almost 8% of the population of the province). The ZDM is itself divided into five local municipalities. The NLM is the second largest of the local municipalities in terms of population, which included 194 908 people in 2011 (24% of the population in the ZDM).

The NLM includes 21 wards. Ward 1 includes a population of 10 597 people (Wazimap, 2017). The ward is predominantly rural, but does include some small settlements, including Bhanganomo, Mkuze, Entweni and Siwela. The area is characterised by agriculture and scattered residential areas (with associated infrastructure).

Unemployment is a challenge within ward, local municipality, and district municipality. While the unemployment numbers are relatively low, the discouraged work seekers and other people who are not economically active are disproportionally high compared to the employed population and municipalities in other provinces. Table 6-3 presents an overview of the employment status of the populations within the regional study area.

Table 6-3: Employment Status of the Populations within the Study Area

Employment Statistics (Census 2011)	Ward 1		NLM		ZDM	
	No.	%	No.	%	No.	%
Total Population	10 597	-	194 908	-	803 575	-
Working Age (18-64)	4 270	40.3	86 686	44.5	384 485	47.8
Employed	545	5.1	12 838	6.6	83 361	10.4
Discouraged Work Seeker	1 460	13.8	14 456	7.4	50 253	6.3
Unemployed	367	3.5	12 469	6.4	58 247	7.2
Other not economically active	2 772	26.2	63 910	32.8	256 469	31.9

Adapted from Wazimap (2017)

[5] Wazimap (2017) has adjusted these data to conform with the updated ward and municipality boundaries which were altered ahead of the 2016 Municipal Elections (Open Up, 2017).

7. Impact Assessment

This section presents a description of the Cultural Significance of identified heritage resources informed through primary and secondary data collection. The Cultural Significance of the heritage resources informs the minimum required mitigation encapsulated in the NHRA and the SAHRA Minimum Standards.

7.1. Cultural Significance of the Identified Heritage Resources

Heritage resources are intrinsic to the history and beliefs of communities. They characterise community identity and cultures and are finite, non-renewable and irreplaceable. Considering the innate value of heritage resources, HRM acknowledges that these have lasting worth as evidence of the origins of life, humanity and society. Notwithstanding the inherent value ascribed to heritage, it is incumbent on the assessor to determine the significance of these resources to allow for the implementation of appropriate management. This is achieved through assessing the value of heritage resources relative to the prescribed criteria encapsulated in policies and legal frameworks.

This section presents a statement of Cultural Significance as is relevant to newly identified heritage resources and the greater cultural landscape of the site-specific study area. The statement of significance considers the importance or the contribution of the identified heritage resources and the landscape to four broad value categories: aesthetic, historical, scientific and social, to summarise the Cultural Significance and other values described in Section 3(3) of the NHRA.

During the pre-disturbance survey, two categories of heritage resources was recorded – five burial grounds and graves and five archaeological findspots.

The assessment of the Cultural Significance and Field Ratings demonstrated that the identified resources have negligible and very high significance. Table 7-1 presents a summary of this assessment. Sites of the same type that share the same Cultural Significance have been grouped together in terms of the impact assessment (refer to Sections 0 to 7.4 below).

Table 7-1: Cultural Significance and Field Ratings of Newly Identified Heritage Resources within the Project Area

Resource ID	Description	Aesthetic	Historic	Scientific	Social	INTEGRITY	Designation	Recommended Field Rating	Field Rating Description	Minimum Mitigation[6]
PEC7505-001 **PEC7505-002** **PEC7505-006** **PEC7505-008** **PEC7505-009** **PEC7505-011**	Burial Grounds & Graves	- Burial grounds and graves were not assessed against aesthetic criteria as defined in Section 3(3) of the NHRA.	- Burial grounds and graves were not assessed against historic criteria as defined in Section 3(3) of the NHRA.	- Burial grounds and graves were not assessed against scientific criteria as defined in Section 3(3) of the NHRA.	5 Burial grounds and graves have specific connections to communities or groups for spiritual reasons. The significance is universally accepted.	4 The integrity of burial grounds is considered to be excellent with both tangible and intangible fabric preserved.	Very High 20	Grade I	Heritage resources with qualities so exceptional that they are of special national significance.	Project design must change to avoid the resource completely and resources must be included in Heritage Site Management Plan (HSMP). A GRP may be necessary should the project design not be changed.
PEC7505-012	Living Cultural Heritage (Agricultural plot)	The agricultural plot was not assessed against the aesthetic criteria as defined in Section 3(3) of the NHRA	Agricultural plot was assessed against historic criteria as defined in Section 3(3) of the NHRA.	Agricultural plot was not assessed against historic criteria as defined in Section 3(3) of the NHRA.	Agriculture is viewed as a vernacular practice and play a significant role in the socio-ecological and traditional practices of communities. Agricultural practice's structure societies in terms of social status and religious as well spiritual practices linked to ritual practices.	The integrity of Living Cultural Heritage can be viewed in the continued practice of such activities.	Very High 20	Grade IIIA	Some aspects of Living Cultural Heritage such as farming are not protected in heritage legislation. However, communities assign a high level of significance to such practices.	Project design must change to avoid the resource completely and resources must be included in Heritage Site Management Plan (HSMP). Offsetting may be considered as a possible mitigation strategy in consultation with local communities.

[6] Please not, the recommended mitigation refers to the minimum mitigation requirements as encapsulated in the SAHRA Minimum Standards. Project-specific mitigation measures are presented in Section 11.

Resource ID	Description	Aesthetic	Historic	Scientific	Social	INTEGRITY	Designation	Recommended Field Rating	Field Rating Description	Minimum Mitigation[6]
PEC7505-003 **PEC7505-004** **PEC7505-005** **PEC7505-007** **PEC7505-010**	Archaeological findspots	- Archaeological findspots were not assessed against aesthetic criteria as defined in Section 3(3) of the NHRA.	1 There is no specific historical importance or community connection associated with this resource.	2 The information potential demonstrated by this resource is not commonly found in these contexts but is diminished by the lack of context associated with this resource.	- Archaeological findspots were not assessed against aesthetic criteria as defined in Section 3(3) of the NHRA.	1 While the fabric and meaning of the heritage resource are intact, the heritage resource is found *ex situ* and the original setting is lost.	Negligible 2	General Protection IV C	Resources under general protection in terms of NHRA sections 34 to 37 with Negligible Significance.	Sufficiently recorded, no mitigation required.

The SAHRA Minimum Standards recommend that heritage resources with negligible Cultural Significance require no mitigation. The inclusion of such resources into an HIA report is considered sufficient in terms of recording. The impacts to PEC7505-003, PEC7505-004, PEC7505-010 and the potential impacts to PEC7505-005 and PEC7505-007 are therefore not discussed further in this report.

7.2. Construction Phase

Table 7-2 presents the activities expected to occur during the Construction Phase and the expected impacts to the cultural heritage landscape that may arise from these activities.

Table 7-2: Interactions and Impacts of Construction Phase Activities

Interaction	Impact
Clearing of vegetation.	Potential direct negative impacts (destruction of or damage to) to PEC7505-002, PEC7505-008 PEC7505-009 and PEC7505-012
Levelling and terracing of the land surface.	
Road upgrades or construction of access roads. Water crossings may require upgrades.	
Construction of foundations and concrete works, including stormwater drainage pipes, concrete slabs, bund walls, a control room and a small building and storage area.	
Installation of crushed stone in open areas between transformer plinths and other switchgear foundations.	
Erection of steelworks.	
Delivery and installation of transformers.	

This impact is explored in more detail in Section 7.2.1 below.

7.2.1. Impact Description

PEC7505-002 is located 30 m outside the 1 km by 1 km site-specific study area but it is within the proposed substation footprint. PEC7505-008 and PEC7505-009 are located within the 1 km by 1 km site-specific study area and are located in the proposed substation footprint. PEC7505-012 is located on the border of the proposed 1 km by 1 km site-specific substation area. As such, these heritage resources may be directly impacted through the site establishment and construction of the proposed infrastructure. Table 7-3 presents a summary of the potential direct impact to these heritage resources.

Table 7-3: Summary of the Potential Direct Impact to Resources of Very High Cultural Significance

<table>
<tr><th colspan="5">IMPACT DESCRIPTION: Direct impact to PEC7505-002, PEC7505-008 and PEC7505-009</th></tr>
<tr><th>Dimension</th><th>Rating</th><th colspan="3">Motivation</th></tr>
<tr><td colspan="5">PRE-MITIGATION</td></tr>
<tr><td>Duration</td><td>Permanent (7)</td><td>Unmitigated change will result in permanent damage to the heritage resource.</td><td rowspan="3">Consequence: Extremely detrimental
(-21)</td><td rowspan="4">Significance: Moderate – negative
(-84)</td></tr>
<tr><td>Extent</td><td>International (7)</td><td>Damage to these resources could potentially have an international effect in terms of reputational risk for Eskom, service providers and/or subcontractors working on the project.
Next-of-Kin could potentially reside outside South Africa.</td></tr>
<tr><td>Intensity x type of impact</td><td>Extremely high - negative (-7)</td><td>Destruction would constitute a major change to resource of Very High significance.</td></tr>
<tr><td>Probability</td><td>Probable (4)</td><td colspan="2">Given the location of these heritage resources in relation to the proposed Project footprint, it is possible that this risk will manifest during the construction phase.</td></tr>
<tr><td colspan="5">MITIGATION:</td></tr>
<tr><td colspan="5">The project related mitigation must aim to amend the project design to avoid the potential negative impact to heritage resources and implement a 30 m no-go buffer zone around these heritage resources. Digby Wells recommends a heritage practitioner or Environmental Control Officer (ECO) (or equivalent responsible person) be present at the time of vegetation clearing and excavation of land and installation of infrastructure occurs within a 50 m buffer of the identified heritage resources to ensure no damage occurs to these heritage resources.
Additionally, these heritage resources must be incorporated into an HSMP for implementation. Should Eskom have an existing HSMP, the affected heritage resources must be incorporated into the existing HSMP and be subject to the same requirements encapsulated therein.</td></tr>
</table>

<table>
<tr><th colspan="5">IMPACT DESCRIPTION: Direct impact to PEC7505-002, PEC7505-008 and PEC7505-009</th></tr>
<tr><th>Dimension</th><th>Rating</th><th colspan="3">Motivation</th></tr>
<tr><td colspan="5">Where Project design (or redesign) and in situ conservation is not feasible based on the Project design and layout requirements, heritage related mitigations must be employed. Heritage related mitigations will need to be undertaken in accordance with the requirements of the KZNARIA, NHRA and the associated regulations will be required. Such mitigations may include a Burial Grounds and Graves Consultation to assess whether a GRP is feasible. A GRP must be undertaken in accordance with:
Section 39 of the KZNARIA and the KZNARIA Regulations (2018); and
Section 36 of the NHRA and Chapter IX and XI of the NHRA Regulations.
Digby Wells assumes that Project design amendment to include a buffer is the preferred alternative, and the post-mitigation impact assessment considers this mitigation strategy.</td></tr>
<tr><td colspan="5">POST-MITIGATION</td></tr>
<tr><td>Duration</td><td>Beyond project life (6)</td><td>If the mitigation measures are put into place, specifically the in situ conservation and management of the resource through an HSMP, the benefits may continue after the Project is complete.</td><td rowspan="3">Consequence: Highly beneficial (14)</td><td rowspan="4">Significance: Minor – positive (70)</td></tr>
<tr><td>Extent</td><td>Local (3)</td><td>The proposed mitigation measures will apply to the specific heritage resources.</td></tr>
<tr><td>Intensity x type of impact</td><td>High - positive (5)</td><td>In situ conservation and management would constitute a minor change to a resource of Very High significance.</td></tr>
<tr><td>Probability</td><td>Likely (5)</td><td colspan="2">Should Eskom implement the mitigations effectively, it is highly probable that the anticipated positive impact will manifest.</td></tr>
</table>

7.3. Operational Phase

Table 7-4 presents the activities expected to occur during the Operational Phase and the expected impacts to the cultural heritage landscape that may arise from these activities.

Table 7-4: Interactions and Impacts of Operational Phase Activities

Interaction	Impact
Operation of the substation and powerlines.	Digby Wells envisages no impact to the cultural heritage landscape, given the nature of the proposed activities and the location of identified heritage resources in relation to the proposed Project infrastructure.
Maintenance activities (unspecified)	

Digby Wells does not envisage any impact to the identified heritage resources from the above-mentioned activities and has therefore not assessed these impacts further in this report.

7.4. Decommissioning Phase

Table 7-5 presents the activities expected to occur during the Decommissioning Phase and the expected impacts to the cultural heritage landscape that may arise from these activities.

Table 7-5: Interactions and Impacts of Decommissioning Phase Activities

Interaction	Impact
Rehabilitation Activities (unspecified)	Digby Wells envisages no impact to the cultural heritage landscape, given the nature of the proposed activities and the location of identified heritage resources in relation to the proposed Project infrastructure. Should any infrastructure intended for demolition increase in age to older than 60 years during the Project lifecycle, the structure must be considered a heritage structure. Any alterations to these structures will be subject to a NHRA Section 34 permit application process

Digby Wells does not envisage any impact to the identified heritage resources from the above-mentioned activities and has therefore not assessed these impacts further in this report.

7.5. Cumulative Impacts

Cumulative impacts occur from in-combination effects of various impacts on heritage resources acting within a host of processes that result in an incremental effect. The importance of identifying and assessing cumulative impacts is that the whole is often greater than the sum of its parts. This implies that the total effect of multiple stressors or change processes acting simultaneously on a system may be greater than the sum of their effects when acting in isolation.

This Project in conjunction with other planned developments in line with the strategic development plans for the KwaZulu-Natal Province requires consideration to identify the possible in-combination effects of various impacts to known heritage resources. Table 7-6 presents a summary of the possible cumulative impacts of the Project.

Table 7-6: Summary of Potential Cumulative Impacts

Type	Cumulative Impact	Direction of Impact	Extent of Impact
Space-crowding	The proposed infrastructure will add to the existing infrastructure associated with activities characterising the area immediately surrounding the proposed Project area and further afield. This installation of this infrastructure will result in a loss of the area within which heritage resources can exist. The area earmarked for the proposed infrastructure does, however, occur within an area approved for mining activities.	Negative	Local Cultural Heritage Landscape

7.6. Unplanned and Low Risk Events

This section considers the potential risks to protected heritage resources, as well as the potential heritage risks that could arise for Eskom in terms of implementation of the Project. These two aspects are discussed separately in this section.

Section 6.3.2 describes the heritage resources identified during the pre-disturbance survey. This list is, however, not an exhaustive list of all heritage resources within the Project area. If heritage resources are subsequently identified, and where Eskom knowingly does not take proactive management measures, potential risks to Eskom may include litigation in terms of Section 51 of the NHRA and social or reputational repercussions. Table 7-7 presents a summary of the primary risks that may arise for Eskom.

Table 7-7: Identified Heritage Risks that may arise for Eskom

Description	Primary Risk
Heritage resources with a high CS rating are inherently sensitive to any development in so far that the continued survival of the resource could be threatened. In addition to this, certain heritage resources are formally protected thereby restricting various development activities.	Negative Record of Decision (RoD) and/or development restrictions issued by the Institute and/or SAHRA in terms of Section 38(8) of the NHRA.

Description	Primary Risk
Impacting on heritage resources formally and generally protected by the NHRA without following due process. Due process may include social consultations and/or permit application processes to SAHRA and/or the Institute.	• Fines; • Penalties; • Seizure of Equipment; • Compulsory Repair / Cease Work Orders; and • Imprisonment.

If additional heritage resources are identified during decommissioning and dismantling of the proposed infrastructure and/or activities undertaken during the rehabilitation processes, potential risks to those heritage resources will need to be assessed. Table 7-8 provides an overview of these potential unplanned events, the subsequent impact that may occur and mitigation measures and management strategies to remove or reduce these risks.

Table 7-8: Identified Unplanned Events and Associated Impacts

Unplanned event	Potential impact	Mitigation / Management / Monitoring
Encountering unidentified in situ remnants of historical built environment resources during the implementation of the Project.	Damage or destruction of heritage resources generally protected under Section 37 of the KZNARIA (Section 34 of the NHRA).	Establish Project-specific Chance Find Procedures (CFPs) as a condition of authorisation. Refer to Section 11 for more detailed recommendations.
Accidental exposure of fossil bearing material implementation of the Project.	Damage or destruction of heritage resources generally protected under Section 40 of the KZNARIA (Section 35 of the NHRA).	
Accidental exposure of *in situ* archaeological material during the implementation of the Project.		
Accidental exposure of *in situ* burial grounds or graves during the implementation of the Project.	Damage or destruction of heritage resources generally protected under Sections 39 (and possibly Section 38) of the KZNARIA (Section 36 of the NHRA).	
Accidental exposure of human remains during the decommissioning and rehabilitation and closure phases of the Project.		

8. Environmental Management Plan

Table 8-1 below summarises the outcomes of the HRM process that must be included in the Environmental Management Plan (EMP).

Table 8-1: Environmental Management Plan

Activity/Activities	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
• All activities outlined in Section 2.1 above	Damage to or destruction of PEC7505-002, PEC7505-008, PEC7505-009 and PEC7505-012	Cultural Heritage	Construction	• Project redesign to avoid the heritage resource and implement a 30 m no-go buffer zone around the resource. • Social consultation to identify resources to be impacted to discuss relocation and/or offsetting	***Avoid and/or mitigate***	Before the commencement of the Project
• All activities outlined in Section 2.1 above	Damage to or destruction of previously unidentified heritage resources.	Cultural Heritage	Construction	• Develop and implement CFP.	***Control***	Before the commencement of the Project

9. Monitoring Programme

Section 7.2 (and Section 11 below) includes recommended mitigation measures and management strategies. These recommendations do not require a monitoring programme but do require a heritage practitioner (or ECO or similar responsible person) be present on-site during construction activities that occur within 50 m of the identified heritage resources to ensure these resources are not impacted.

10. Stakeholder Engagement Comments Received

The Public Participation Process (PPP) required in terms of the NEMA as a component of the EIA process has not been completed in part to date but will be completed as a process separate to the heritage specialist assessment. This consultation process affords Interested and Affected Parties (I&APs) opportunities to engage in the EIA process. The objectives of the PPP or Stakeholder Engagement Process (SEP) include the following:

- To ensure that I&APs are informed about the project;
- To provide I&APs with an opportunity to engage and provide comment on the project;
- To draw on local knowledge by identifying environmental and social concerns associated with the project;
- To involve I&APs in identifying methods in which concerns can be addressed;
- To verify that stakeholder comments have been accurately recorded; and
- To comply with the legal requirements.

Site surveys can often present an opportunity for informal consultation with specific stakeholders (usually farm owners, managers and employees). This consultation can result in the identification of burial grounds and graves – importantly, these could include formal burial grounds or graves, sometimes with no visible surface markers – or in the identification of sacred sites or other places of importance, which may not otherwise be identified. No such informal consultation was undertaken as part of this assessment, in part because few members of the community were encountered during the pre-disturbance survey.

11. Recommendations

Considering the nature and the scope of the Project, Digby Wells recommends the following additional recommendations be implemented prior to the commencement of the Project:

- Eskom must avoid impacts to PEC7505-002, PEC7505-008, PEC7505-009 and PEC7505-012 through Project design or redesign to avoid these heritage resources and implement a 30 m no-go buffer zone around these heritage resources;
- Eskom must appoint a suitably-qualified heritage specialist to be present when any construction activities occur within 50 m of the identified heritage resources.

Alternatively, an ECO (or similar responsible person) may complete this oversight to ensure that the heritage resources are not impacted;

- Where Project design amendments are not feasible, Eskom will need to embark on a consultation process to assess whether a GRP is feasible;
- Burial Grounds and Graves as well the identified agricultural plot (Living Cultural Heritage) occur within or adjacent to households and/or yards due to traditional practices of burying within properties. A social consultative process with communities is recommended to ensure where graves are present and where they will need to be relocated to avoid impact; and
- Eskom develop and implement a CFP as part of the EMP, if this has not been done as part of the previous process in support of the approved substation layout (and associated powerlines). If this document has been developed, it must be amended to include this Project.

12. Socio-economic Benefits versus Heritage Impacts

Based on a review of the applicable planning documents and available socio-economic data detailed in Section 6.4 above, the potential socio-economic benefits that will arise from the Project outweigh the identified risks and impacts to the known heritage resources within the site-specific study area. This statement is supported by the following statements:

- The identified impacts to the heritage resources can be mitigated through the recommendations included in Section 11;
- The construction of additional infrastructure may create short-term employment opportunities and will generate revenue which will feed into the local economy; and
- The Project aims to improve service delivery through the strengthening of the existing electrical infrastructure.

13. Reasoned Opinion Whether Project should Proceed

Based on the understanding of the Project while considering the results of this assessment, Digby Wells does not object to the Project provided the recommendations detailed in Section 11 above are adopted

14. Conclusion

The aim of the HRM process was to comply with regulatory requirements contained within Section 38 of the NHRA through the following:

- Defining the cultural landscape within which the Project is situated;
- Identifying, as far as is feasible, heritage resources that may be impacted upon by the Project as well as define the Cultural Significance;
- Assessing the possible impacts to the identified heritage resources;

- Considering the socio-economic benefits of the Project; and
- Providing feasible mitigation and management measures to avoid, remove or reduce perceived impacts and risks.

These objectives were met as presented in Sections 6 through 13 above. Based on the understanding of the Project while considering the results of this assessment, Digby Wells does not object to the Project provided the recommendations detailed above are adopted.

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Appendix A: Glossary of Terms

GLOSSARY OF TERMS

Term	Definition
Archaeological	Material remains resulting from human activity that are in a state of disuse and older than 100 years, including artefacts, human and hominid remains and artificial features and structures. Rock art created through human agency older than 100 years, including any area within 10 m of such representation. Wrecks older than 60 years - either vessels or aircraft - or any part thereof that was wrecked in South Africa on land, internal or territorial waters, and any cargo, debris or artefacts found or associated therewith. Features, structures and artefacts associated with military history that are older than 75 years and the sites on which they are found, e.g. battlefields.
Archaeologist	A trained professional who uses scientific methods to excavate, record and study archaeological sites and deposits.
Artefact	Any object manufactured or modified by human beings.
Burial Grounds and Graves Consultation (BGGC)	The regulated consultation process required in terms of Section 36 of the NHRA and Regulation GNR 548 to the Act when burial grounds and graves are identified within a project area.
Ceramic (syn. pottery)	In an archaeological context any vessel or other object produced from natural clay that has been fired. Indigenous ceramics associated with Farming Communities are low-fired wares, typically found as potsherds. Imported and more historic ceramics generally include high-fired wares such as porcelain, stoneware, etc.
Ceramic facies / facies	Subgroups of a primary ceramic tradition or sequence. Typically used in ceramic analyses. Various facies are attributed to different temporal periods based of radiometric dates obtained from archaeological contexts. Facies are often used to infer cultural identity of archaeological groups. However, in context of this study identified ceramic facies merely provide a relative temporal context for archaeological sites in the landscape.
Ceramic tradition	The sequence of ceramic styles that develop out of each other and form a continuum. A tradition is the primary group to which subsequent ceramic facies belong. A ceramic tradition can be broadly associated with various linguistic and cultural groups, but do not represent any given ethnic identity, especially during the LFC period.
Conservation	In relation to heritage resources includes the protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance.

Term	Definition
Cultural significance	The aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. A heritage may have cultural significance or other special value because of its: • Importance in the community, or pattern of South Africa's history; • Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage; • Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage; • Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects: • Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group; • Importance in demonstrating a high degree of creative or technical achievement at a particular period; • Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; • Strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and • Significance relating to the history of slavery in South Africa.
Development	Any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including: • Construction, alteration, demolition, removal or change of use of a place or a structure at a place; • Carrying out any works on or over or under a place; • Subdivision or consolidation of land comprising, a place, including the structures or airspace of a place; • Constructing or putting up for display signs or hoardings; • Any change to the natural or existing condition or topography of land; and • Any removal or destruction of trees, or removal of vegetation or topsoil.
Early Farming Community/ies	The first Farming Communities (also known as Early Iron Age) that appear in the southern archaeological record during the early first millennium CE. The EFC period is generally dated from c. 200 CE to 1000 CE.

Term	Definition
Early Stone Age	The South African ESA dates from ~3 Mya to c. 250 Kya. This period is associated with later *Australopithecus and* early *Homo* species. The lithic industries that characterise the ESA include Oldowan and Early Acheulian, typically as simple core tools, choppers handaxes and cleavers.
Excavation	The scientific excavation, recording and retrieval of archaeological deposit and objects through the use of accepted archaeological procedures and methods, and excavate has a corresponding meaning.
Farming Community/ies	Term signifying the appearance in the southern African archaeological of Bantu-speaking agriculturally based societies from the early first millennium CE. The term replaces the *Iron Age* as a more accurate description for groups who practiced agriculture and animal husbandry, extensive manufacture and use of ceramics, and metalworking. The Farming Community period is divided into an Early and Late phase. The use of Later Farming Communities especially removes the artificial boundary between archaeology and history.
Field Rating	SAHRA requires heritage resources to be provisionally rated in accordance with Section 7 of the NHRA that provides a three-tier grading system of resources that form part of the national estate. The rating system distinguishes between four categories: • Grade I: Heritage resources with qualities so exceptional that they are of special national significance; • Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; • Grade III: Other heritage resources worthy of conservation; and • General Protected: i.e., generally protected in terms of Sections 33 to 37 of the NHRA.
Formal protection	Places with qualities so exceptional that they are of special national significance as national heritage sites or that have special qualities as provincial heritage sites.
General protection	General protections are afforded to: • Objects protected in terms of laws of foreign states; • Structures older than 60 years; • Archaeological and palaeontological sites and material and meteorites; • Burial grounds and graves; and • Public monuments and memorials.

Term	Definition
Grave	A place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place.
Heritage Impact Assessment (HIA)	An assessment of the cultural significance of, and possible impacts on, diverse heritage resources that may be affected by a proposed development. A HIA may include several specialist elements such as archaeological, built environment and palaeontological studies. The HIA must supply the heritage authority with sufficient information about the sites to assess, with confidence, whether or not it has any objection to a development, indicate the conditions upon which such development might proceed and assess which sites require permits for destruction, which sites require mitigation and what measures should be put in place to protect sites that should be conserved. The content of HIA reports are clearly outlined in Section 38(3) of the NHRA and SAHRA Minimum Standards.
Heritage resource	Any place or object of cultural significance.
Heritage resources management	Process required when development is intended categorised as: • Any linear development exceeding 300 m in length; • Construction of a bridge or similar structure exceeding 50 m in length; • Any activity which will change the character of a site exceeding 0.5 hectares in extent or involving three or more existing erven or subdivisions thereof or that have been consolidated within the past five years or costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority; • Re-zoning of a site exceeding one hectare in extent; and • Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.
Heritage site	Any place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority.
Late Farming Community/ies	Farming Communities who either developed / evolved from EFC groups, or who migrated into southern African from the late first millennium / early second millennium CE. The LFC period evidences distinct changes in socio-political organisation, settlement patterns, trade and economic activities, including extensive trade routes. The LFC period is generally dated from c. 1000 CE well into the modern historical period of the nineteenth century.

Term	Definition
Late Stone Age	The South African LSA dates from ~30 Kya. This period is associated with modern *Homo sapiens sapiens* and the complex hunter-gatherer societies, ancestral to the Bushmen / San and Khoi. The LSA lithic assemblage contains microlithic technology and composite tools such as arrows commonly produced from fine-grained cryptocrystalines, quarts and chert. The LSA is also associated with archaeological rock art including both paintings and engravings.
Living / intangible heritage	The intangible aspects of inherited culture that could include cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems, the holistic approach to nature, society and social relationships.
Management	In relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the NHRA.
Middle Stone Age	The South African MSA dates from ~300 Kya to c. 30 Kya. This period is associated with the changing behavioural patterns and the emergence of modern cognitive abilities in early *Homo sapiens species.* The lithic industries that characterise the MSA are typically more complex tools with diagnostic identifiers, including convergent flake scars, multi-faceted platforms, retouch and backing. Assemblages are characterised as refined lithic technologies such as prepared core techniques, retouched blades and points manufactured from good quality raw material.

Term	Definition
National estate	The national estate as defined in Section 3 of the NHRA, i.e., heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations. The national estate may include: • Places, buildings, structures and equipment of cultural significance; • Places to which oral traditions are attached or which are associated with living heritage; • Historical settlements and townscapes; • Landscapes and natural features of cultural significance; • Geological sites of scientific or cultural importance; • Archaeological and palaeontological sites; • Graves and burial grounds, including ancestral graves, royal graves and graves of traditional leaders, graves of victims of conflict, graves of individuals designated by the Minister by notice in the Gazette, historical graves and cemeteries, and other human remains which are not covered in terms of the National Health Act, 2003; • Sites of significance relating to the history of slavery in South Africa; • Movable objects, including objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens; objects to which oral traditions are attached or which are associated with living heritage; ethnographic art and objects; military objects; objects of decorative or fine art; objects of scientific or technological interest; and • Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).
Palaeontological	Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trance.
Palaeontologist	A trained professional who uses scientific methods to excavate, collect, record and study palaeontological sites and fossils.
Pedestrian survey	A method of examining a site in which surveyors, spaced at regular intervals, systematically walk over the area being investigated.

Term	Definition
Phase 1 Archaeological Impact Assessment (AIA)	Phase 1 AIAs generally involve the identification and assessment of sites during a field survey of a portion of land that is going to be affected by a potentially destructive or landscape-altering activity.
Phase 2 Archaeological Impact Assessment (AIA)	Phase 2 AIAs are primarily based on salvage or mitigation excavations preceding development that will destroy or impact on a site. This may involve collecting of artefacts from the surface and / or excavation of representative samples of the artefactual material to allow characterisation of the site and the collection of suitable materials for dating the sites. Phase 2 AIAs aim to obtain a general idea of the age, significance and meaning of the site that is to be lost and to store a sample that can be consulted at a later date for research purposes. Phase 2 excavations can only be done under a permit issued by SAHRA, or other appropriate heritage agency, to the appointed archaeologist.
Phase 3 Management Plan / Conservation Management Plan (CMP)	On occasion, a site may require a Phase 3 programme involving the modification of the site or the incorporation of the site into the development itself as a site museum, a special conservation area or a display. Alternatively it is often possible to relocate or plan the development in such a way as to conserve the archaeological site or any other special heritage significance the place may have. For example, in a wilderness area or open space when sites are of public interest the development of interpretative material is recommended and adds value to the development. Permission for the development to proceed can be given only once the heritage resources authority is satisfied that measures are in place to ensure that the archaeological sites will not be damaged by the impact of the development or that they have been adequately recorded and sampled. Careful planning can minimise the impact of archaeological surveys on development projects by selecting options that cause the least amount of inconvenience and delay. The process as explained above allows the rescue and preservation of information relating to our past heritage for future generations. It balances the requirements of developers and the conservation and protection of our cultural heritage as required of SAHRA and the provincial heritage resources authorities (ASAPA).
Pre-disturbance survey (syn. reconnaissance)	A survey to record a site as it exists, with all the topographical and other information that can be collected, without excavation or other disturbance of the site.

Term	Definition
Reconnaissance	A broad range of techniques involved in the location of archaeological sites, e.g. surface survey and the recording of surface artefacts and features, the sampling of natural and mineral resources, and sometimes testing of an area to assess the number and extent of archaeological resources. However, in terms of South African practice, reconnaissance during a so-called Phase 1 AIA never includes sampling as this is a permitted activity, usually undertaken during so-called Phase 2 AIAs (ASAPA).
Site	Any area of land, including land covered by water, and including any structures or objects thereon.
Structure	Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.
Tangible heritage	Physical heritage resources such as archaeological sites, historical buildings, burial grounds and graves, fossils, etc. Tangible heritage may be associated with intangible elements, e.g. the living cultural traditions, rituals and performances associated with burial grounds and graves and deceased persons.

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Appendix B: Specialist CV

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Appendix C: HRM Methodology