



PGS HERITAGE

THE PROPOSED AGRIZONE 2, DUBE TRADE PORT, KWAZULU NATAL PROVINCE

Phase II Heritage Assessment

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Declaration of Independence

I, Wouter Fourie, declare that –

General declaration:

- I act as the independent heritage practitioner in this application
- I will perform the work relating to the application objectively, 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 heritage impact assessments, 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 will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- 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 concerning 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;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in regulation 71 of the Regulations and is punishable in section 24F of the NEMA.

Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

HERITAGE CONSULTANT:

PGS Heritage (Pty) Ltd

CONTACT PERSON:

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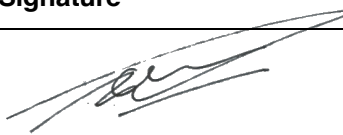
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ACKNOWLEDGEMENT OF RECEIPT

Report Title	Phase II Heritage Assessment - The Proposed Agrizone 2, Dube Trade Port, KwaZulu Natal Province		
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EXECUTIVE SUMMARY

Raubex KZN appointed PGS Heritage (Pty) Ltd (PGS) to undertake a Phase II Heritage Assessment of three heritage resources previously identified during the Heritage Impact Assessment (HIA) conducted for the development of the Dube Trade Port (DTP) AgriZone 2 development close to King Shaka International Airport in the Province of KwaZulu Natal.

The previous HIA conducted in 2013 identified three areas with heritage resources with varying heritage significance. These were:

DUB01 – the remnants of a possible early farming community associated with the Late Iron Age;

DUB02 – a low density scatter of stone tools on the side of a hill; and,

DUB03 – a multi-component site consisting of possible Early farming community remains associated with the Earlier Iron Age and a more recent occupation dating to the early part of the 20th century up to recent times.

A field assessment done by PGS has revealed that the two sites at **DUB01** and **DUB02** have very low heritage significance and is not conservation worthy, and will not require any further mitigation or permitting for destruction.

The recent assessment of site **DUB03** observed very-low-density occurrences of Iron Age ceramics. The large concrete building rubble on-site is most probably associated with the chicken broiler coups constructed in the late 1960s and not the farmsteads from the 1930s. The fieldwork conducted by PGS at **DUB03** has not identified any burials or graves in the cleared areas. The thick vegetation cover and rubble in other sections of the site also made visibility of the surface difficult. Therefore, the location at **DUB03** is only rated as having a low to moderate heritage significance due to the possibility of burials associated with the Iron Age and the original farmsteads of the 1930s.

Section 5 of this report provides guidelines on the mitigation and management measures required for the identified heritage resources. **Table E 1** below provides a summary of the management measures.

Table E 1 - Heritage Management Plan for EMP implementation

Area and site no.	Mitigation measures
DUB01 and 2	No further mitigation or permitting is required due to the non-significance of the resource.
DUB03	Monitoring of bush clearing and topsoil stripping by a qualified archaeologist for the occurrence of archaeological remains or the presence of burial grounds and graves at this site.

Area and site no.	Mitigation measures
Chance finds Archaeological remains	Refer to section 5.1.2
Chance finds Burial grounds and graves	Refer to section 5.1.3
Palaeontology	It is recommended that a palaeontologist assess the exposed mudstone on-site and make recommendations of further management if necessary

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TERMINOLOGY AND ABBREVIATIONS

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the 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 in 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 boards;
- 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 Stone Age

The archaeology of the Stone Age between 700 000 and 3 300 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- 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, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800s, associated with iron-working and farming activities such as herding and agriculture.

Middle Iron Age

The archaeology of the period between 900-1300AD, associated with the development of the Zimbabwe culture, defined by class distinction and sacred leadership.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

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 trace.

Table 1 – List of abbreviations used in this report

Abbreviations	Description
AIA	Archaeological Impact Assessment
APHP	Association of Professional Heritage Practitioners
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
EIAs practitioner	Environmental Impact Assessment Practitioner
ESA	Earlier Stone Age
GN	Government Notice
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
IAIASA	International Association for Impact Assessment South Africa
KNARIA	KwaZulu-Natal AMAFA and Research Institute Act, 5 of 2018
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NCW	Not Conservation Worthy
PGS	PGS Heritage (Pty) Ltd
PHRA	Provincial Heritage Resources Authority
PDA	Palaeontological Desktop Assessment
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

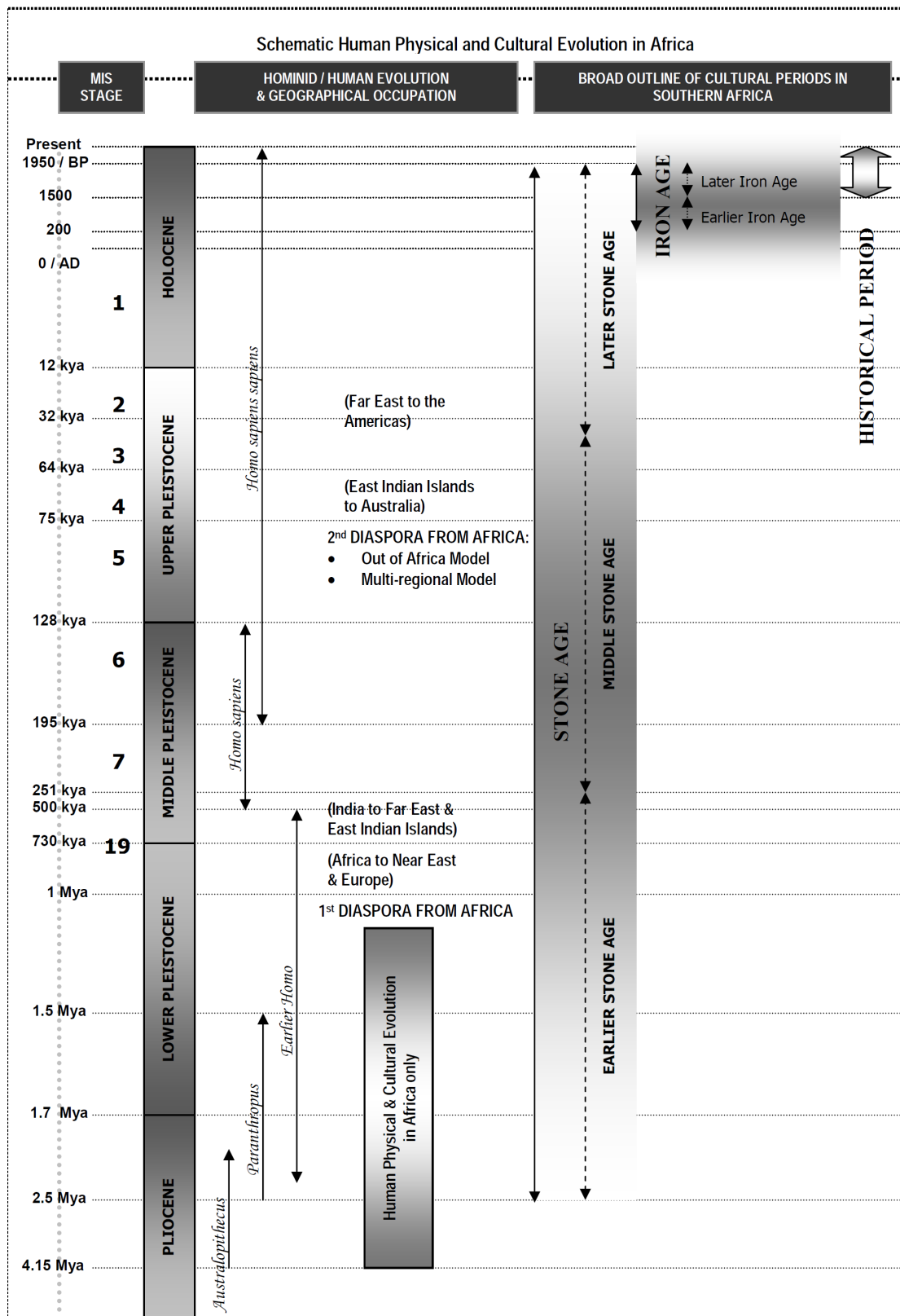


Figure 1 – Human and Cultural Timeline in Africa (Morris, 2008)

1 INTRODUCTION

Raubex KZN appointed PGS Heritage (Pty) Ltd (PGS) to undertake a Phase II Heritage Assessment of three heritage resources previously identified during the Heritage Impact Assessment (HIA) conducted for the development of the Dube Trade Port (DTP) AgriZone 2 development close to King Shaka International Airport in the Province of KwaZulu Natal.

The previous HIA conducted in 2013 identified three areas with heritage resources with varying heritage significance. These were:

DUB01 – the remnants of a possible early farming community associated with the Late Iron Age;

DUB02 – a low density scatter of stone tools on the side of a hill; and,

DUB03 – a multi-component site consisting of possible Early farming community remains associated with the Earlier Iron Age and a more recent occupation dating to the early part of the 20th century up to recent times.

1.1 Scope of the Study

The aim of the report:

- Review the available data as contained in the 2013 HIA
- Report on the findings of the field assessment done as part of the reassessment
- Provide guidelines and recommendations on the measures to be taken to safeguard any possible heritage resources that could be found

1.2 Specialist Qualifications

PGS compiled this Phase II assessment.

The staff at PGS have a combined experience of nearly 70 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. PGS will only undertake heritage assessment work with the relevant expertise and knowledge to undertake that work competently.

Wouter Fourie, the Principal Heritage Specialist and Archaeologist, is registered with the ASAPA as a Professional Archaeologist and is accredited as a Principal Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).

1.3 Assumptions and Limitations

Not detracting from the comprehensiveness of the research undertaken, it is necessary to realise that the heritage resources located during the desktop research and fieldwork do not necessarily represent all the possible heritage resources present within the area.

Such observed or located heritage features and objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to assess the significance of the site (or material) in question. This applies to graves and burial grounds as well.

The area around the site DUB03 was overgrown in certain areas and also disturbed by previous rubble dumping and demolition of structures predating the current development. This made visibility and fieldwork difficult in certain areas.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact, or find in the South African context is required and governed by the following legislation:

1.4.1 Statutory Framework: *The National Heritage Resources (Act 25 of 1999)*

The NHRA has applicability, as the study forms part of an overall HIA in terms of the provisions of Section 34, 35, 36 and 38 of the NHRA and forms part of a heritage scoping study that serves to identify key heritage resources, informants, and issues relating to the palaeontological, archaeological, built environment and cultural landscape, as well as the need to address such cases during the impact assessment phase of the HIA process.

- Section 34 – Structures

According to Section 34 of the NHRA, no person may alter, damage, or destroy any structure older than 60 years and which forms part of the site's built environment without the necessary permits from the relevant provincial heritage authority.

- Section 35 – Archaeology, Palaeontology and Meteorites

According to Section 35 (Archaeology, Palaeontology and Meteorites) and Section 38 (Heritage Resources Management) of the NHRA, PIAs and AIAs are required by law in the case of developments in areas underlain by potentially fossiliferous (fossil-bearing) rocks, especially where substantial bedrock excavations are envisaged, and where human settlement is known to have occurred during prehistory and the historic period.

- Section 36 – Burial Grounds & Graves

A section 36 permit application is made to the SAHRA or the competent provincial heritage authority which protects burial grounds and graves that are older than 60 years and must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit. SAHRA must also identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with these graves and must maintain such memorials. A permit is required under the following conditions:

Permit applications for burial grounds and graves older than 60 years should be submitted to the South African Heritage Resources Agency:

- a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of the conflict, or any burial ground or part thereof which contains such graves.
- b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- d) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant.

- Section 38 - HIA as a Specialist Study within the EIA in Terms of Section 38(8)

A NHRA Section 38 (Heritage Impact Assessments) application is required when the proposed development triggers one or more of the following activities:

- a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- b) the construction of a bridge or similar structure exceeding 50 m in length;
- c) any development or other activity which will change the character of a site,
 - i. exceeding 5 000 m² in extent; or
 - ii. involving three or more existing erven or subdivisions thereof; or
 - iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or

- iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- d) the re-zoning of a site exceeding 10 000 m² in extent; or
- e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority

In this instance, the heritage assessment for the property is to be undertaken as a component of the EIA for the project. Provision is made for this in terms of Section 38(8) of the NHRA, which states that:

- An HIA report is required to identify, and assess archaeological resources as defined by the NHR Act, assess the impact of the proposal on the said archaeological resources, review alternatives and recommend mitigation (see methodology above).

Section 38 (3) Impact Assessments are required, in terms of the statutory framework, to conform to basic requirements as laid out in Section 38(3) of the NHRA. These are:

- The identification and mapping of heritage resources in the area affected;
- The assessment of the significance of such resources;
- The assessment of the impact of the development on the heritage resources;
- An evaluation of the impact on the heritage resources relative to sustainable socio/economic benefits;
- Consideration of alternatives if heritage resources are adversely impacted by the proposed development;
- Consideration of alternatives; and
- Plans for mitigation.

1.4.2 KwaZulu-Natal AMAFA and Research Institute Act, 5 of 2018

In terms of Section 23 of the NHRA 25 of 1999, the KwaZulu-Natal Amafa and Research Institute is the provincial heritage resources authority for the KwaZulu-Natal Province. In the province, the KwaZulu-Natal AMAFA and Research Institute Act, 5 of 2018 (KZNARIA) provides guidance regarding the identification, protection and management of heritage resources with the KwaZulu-Natal Province.

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

- *Section 38 General Protection: Graves of victims of conflict*

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

- (a) the grave of a victim of conflict;
- (b) a cemetery made up of such graves; or
- (c) any part of a cemetery containing such graves,

Without the prior written approval of the Institute having been obtained on written application to the Institute and in terms of the Regulations to this Act.

- *Section 39 General Protection: Informal and private burial grounds*

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

- (a) Not otherwise protected by this Act: and
- (b) (b) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute.

- *Section 40 General Protection: Battlefield sites, archaeological sites, rock art sites, paleontological sites, historic fortifications or meteorite or meteorite impact sites*

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

2 SITE LOCATION AND DESCRIPTION

2.1 Locality and Site Description

The DTP AgriZone 2 is situated on the western border of the King Shaka International Airport, some 5 kilometres south of Tongaat town (**Figure 2**). The approximate midpoint of the project is at S29.61043 E31.10014.

Dube Trade Port – AgriZone 2 Locality Map

PGS Heritage (Pty) Ltd
Heritage Management
Unit



Figure 2 – Locality map

2.2 Site Significance

Site significance classification standards used based on the heritage classification of s3 in the NHRA and developed for implementation, keeping in mind the grading system approved by SAHRA for archaeological impact assessments. The updated classification and rating system as created by Heritage Western Cape (2016) is implemented in this report

Site significance classification standards prescribed by the Heritage Western Cape Guideline (2016) were used for this report (**Table 2**).

Table 2 - Rating system for archaeological resources

Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
I	Heritage resources with qualities so exceptional that they are of special national significance. Current examples: Sibudu Cave Langebaanweg (West Coast Fossil Park), Cradle of Humankind	May be declared as a National Heritage Site managed by SAHRA. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Highest Significance
II	Heritage resources with special qualities which make them significant, but do not fulfil the criteria for Grade I status. Current examples: Blombos, Paternoster Midden.	May be declared as a Provincial Heritage Site managed by HWC. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Exceptionally High Significance
III	Heritage resources that contribute to the environmental quality or cultural significance of a larger area and fulfils one of the criteria set out in section 3(3) of the Act but that does not fulfil the criteria for Grade II status. Grade III sites may be formally protected by placement on the Heritage Register.		
IIIA	Such a resource must be an excellent example of its kind or must be sufficiently rare. Current examples: Varschedrift; Peers Cave; Brobartia Road Midden at Bettys Bay	Resource must be retained. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	High Significance
IIIB	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree.	Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.	Medium Significance
IIIC	Such a resource is of contributing significance.	Resource must be satisfactorily studied before impact. If the recording already done (such as in an HIA or permit application) is not sufficient, further recording or even mitigation may be required.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant or the consultant and approved by the authority.	No research potential or other cultural significance

3 CURRENT STATUS QUO

3.1 Site Description

Construction activity is already ongoing on-site since May 2021. Large tracts of vegetation are already removed while levelling through cut and fill activities are continuing on site.



Figure 3 – Vegetation clearing on site



Figure 4 – Cut and fill activities on site

4 FIELDWORK AND FINDINGS

A site assessment was conducted by a senior archaeologist from PGS on foot on **31 August 2021** to reassess the previous identified archaeological sites (**Figure 5**).

The assessment of the three identified areas is contained in **Table 3** below.



Dube Trade Port – AgriZone 2 Investigated features



PGS Heritage (Pty) Ltd
Heritage Management
Unit





Figure 5 – Heritage features




Table 3 - Assessment of the previously identified heritage resources

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DUB01	-29.6152	31.0935	<p>The area of DUB01 was demarcated and barricaded with a safety mesh as part of the protection of the archaeological site as identified in the HIA (Anderson, 2013). Anderson identified a low density scatter of thin-walled sherds, one lower and one upper grinding stone in an area of 100x50m. He further states that – “<i>There is unlikely to be a deep archaeological deposit. The deposit that did occur has been disturbed by farming activity.</i>”</p> <p>A walkthrough of the barricaded area (20x25m) produced a total of 5 pieces of undecorated ceramics with no indication of any other cultural features or deposits in the area.</p> <p>The absence of other cultural material and archaeological deposits makes these finds nothing more than sporadic, and any other possible remains that were present in 2013 is no longer found.</p> <p>Based on the above, the site has no cultural heritage significance and is not conservation worthy.</p> <p>No further mitigation or permitting is required.</p>	No research potential or other cultural significance	NCW
			 <p>Figure 6 – View of the barricaded area of DUB01</p>	 <p>Figure 7 – Extent of ceramics found on site</p>	

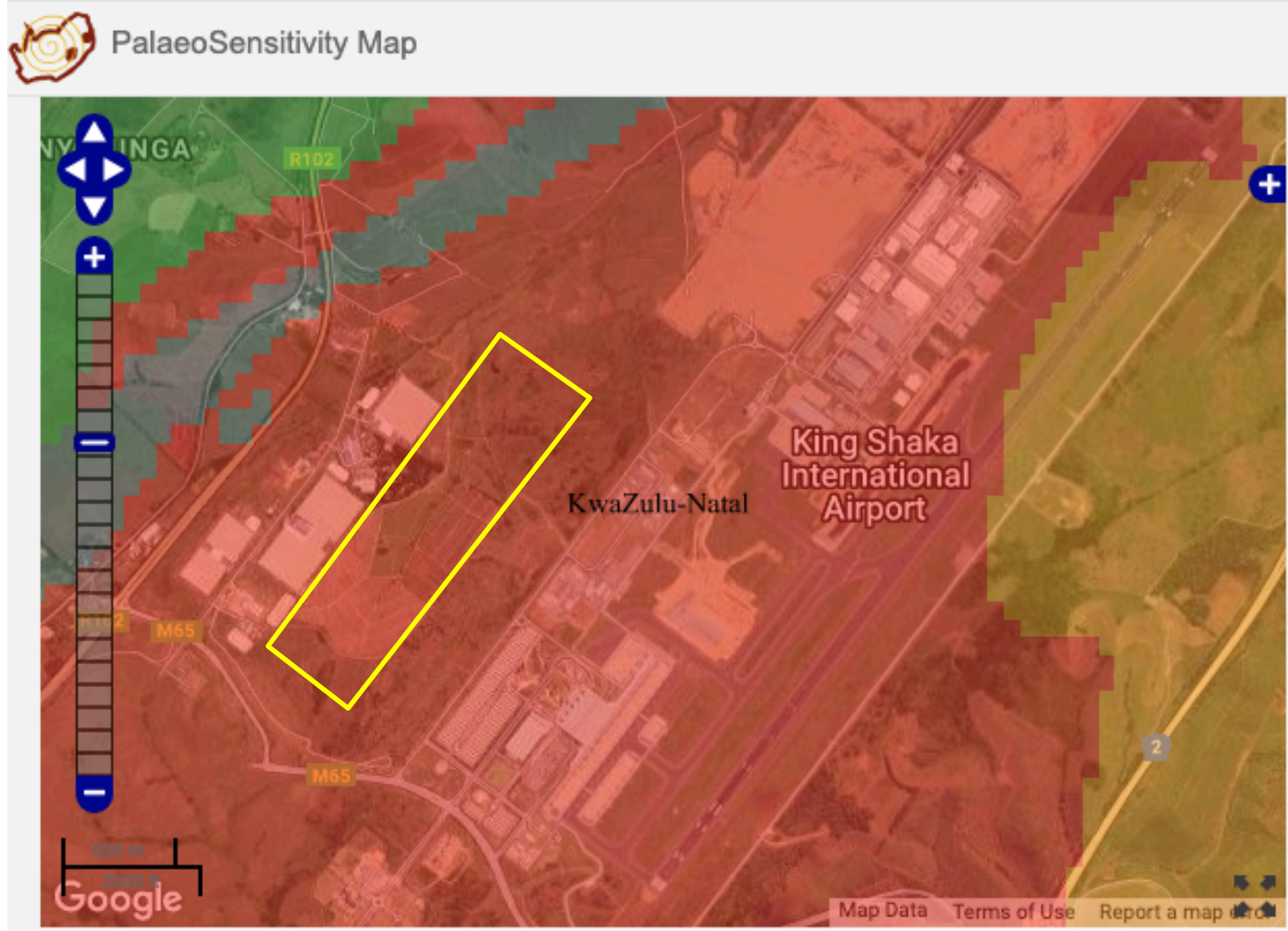
Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DUB02	-29.6151	31.0981	<p>The 2013 HIA identified a low density scatter of Middle Stone Age “cores and flakes of various sizes” along a track and erosion gully extending for some 150 meters. Anderson further states that “The deposit that did occur has been disturbed by farming activity. The stone tools are thus in a secondary context as well.”</p> <p>During the reassessment of the archaeological material, it was found that an area of 20x70meter was barricaded in the vicinity of the GPS point as identified in the HIA. A walked through of the area produced a few MSA lithics and flakes in a secondary context. Figure 9 indicates the extent of the lithics found on site. No further deposits were</p> <p>Based on the above, the site has no cultural heritage significance and is not conservation worthy.</p>	No research potential or other cultural significance	NCW
					
<p>Figure 8 – General view of the demarcated area</p>			<p>Figure 9 – Extent of lithics found on site</p>		

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
DUB03	-29.6088	31.10282	<p>Anderson (2013) identified a multi-component site at DUB03 consisting of possible Early farming community remains associated with the Earlier Iron Age and a more recent occupation dating to the early part of the 20th century up to recent times. The author further noted the presence of demolished structures from the mid to late 20th century. Both these temporal occurrences can have human burials that could be exposed during construction.</p> <p>The recent assessment of the site observed very-low-density occurrences of Iron Age ceramics. The large concrete building rubble on-site is most probably associated with the chicken broiler coups that was constructed in the late 1960s (Figure 11)</p> <p>Assessing the historical imagery available since 1937, 1953 and 1975, it is evident that the land use has changed over time from the original small scale subsistence farming and settlement (1937) (Figure 12) through a total fallow and cleared fields (1953) (Figure 13) to the chicken farms and broiler house set up in 1973 after which the area was utilised for planting (Figure 14).</p> <p>The area at DUB03 is only rated as having a low to moderate heritage significance due to the possibility of burials associated with the Iron Age and the original farmsteads of the 1930s.</p> <p>The fieldwork conducted by PGS has not identified any burials or graves in the cleared areas. The thick vegetation cover and rubble in other sections of the site also made visibility of the surface difficult.</p> <p>Based on the field assessment and analysis of the historical photogrammetry, it is recommended that the site is monitored during vegetation clearing and topsoil stripping during construction by a qualified archaeologist for the occurrence of archaeological remains or the presence of burial grounds and graves. If such occurrences are identified, the chance finds procedure must be implemented.</p>	Low to moderate	IIIC

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
			 <p><i>Figure 10 – General view of bush cleared areas</i></p>  <p><i>Figure 11 – Northern section of the bush cleared area</i></p>		

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
					
			<p>Figure 12 – Settlement in the area of DUB03 - 1937</p>	<p>Figure 13 – The cleared area of DUB3 - 1953</p>	<p>Figure 14 – Chicken broiler houses - 1973</p>
Possible palaeontological sensitive area	-29.6151	31.0932	<p>Exposed Vryheid shale formation was identified during the field visit in a cutting just to the west of DUB01 (Figure 15). As per the original Palaeontological desktop Assessment (PDA) (Groenewald, 2013). The desktop assessment identified the geology as having a moderate palaeontological sensitivity. Subsequent development of the SAHRIS website and its palaeontological sensitivity maps flagged the area with a very high palaeontological sensitivity (Figure 16).</p> <p>The PDA informed that: “<i>The ECO and EAP must be informed of the possibility of the occurrence of fossils during deep excavations into the Vryheid Formation. If fossils are recorded, a professional palaeontologist must be appointed to record them.</i>”</p> <p>As the identification of fossil occurrences is a specialised skill, it is recommended that a palaeontologist assess the exposed mudstone on-site and make recommendations for further management if necessary</p>	Low	IIIC

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
<div data-bbox="483 223 1120 1082" data-label="Image"> </div> <div data-bbox="1144 223 1783 1082" data-label="Image"> </div> <p>Figure 15 – Exposed mudstone in cutting</p>					

Site number	Lat	Lon	Description	Heritage Significance	Heritage Rating
<div data-bbox="423 199 1834 1227">  <p>PalaeoSensitivity Map</p> <p>KwaZulu-Natal</p> <p>King Shaka International Airport</p> <p>R102</p> <p>M65</p> <p>2</p> <p>0 500 m</p> <p>Google</p> <p>Map Data Terms of Use Report a map</p> </div> <p>Figure 16 – SAHRIS palaeontological sensitivity map indicating a very high palaeontological sensitivity</p>					

5 MANAGEMENT RECOMMENDATIONS AND GUIDELINES

5.1.1 Construction phase

The project will encompass a range of activities during the construction phase, including ground clearance, the establishment of construction camp areas and small-scale infrastructure development associated with the project.

It is possible that cultural material will be exposed during construction and may be recoverable, keeping in mind delays can be costly during construction and, as such, must be minimised. Development surrounding infrastructure and construction of facilities results in significant disturbance, however, foundation holes do offer a window into the past, and it thus may be possible to rescue some of the data and materials.

Temporary infrastructure developments, such as construction camps and laydown areas, are often changed or added to the project as required. In general, these are low impact developments as they are superficial, resulting in minor alteration of the land surface, but still, need to be catered for.

During the construction phase, it is vital to recognise any cultural heritage significant material being unearthed, making the correct judgment on which actions should be taken. Therefore, it is recommended that the following chance find procedure should be implemented.

5.1.2 Chance finds procedure

- An appropriately qualified heritage practitioner/archaeologist must be identified to be called upon if any possible heritage resources or artefacts are identified.
- Should an archaeological site or cultural material be discovered during construction (or operation), the area should be demarcated and construction activities halted.
- The qualified heritage practitioner/archaeologist will need to come out to the site, evaluate the extent and importance of the heritage resources, and make the necessary recommendations for mitigating the find and the impact on the heritage resource.
- The contractor, therefore, should have some sort of contingency plan so that operations could move elsewhere temporarily while the materials and data are recovered.
- Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner/archaeologist.

5.1.3 Burial grounds and graves

If graves or burial grounds are identified, and it is not possible for the burial grounds and individual graves to be avoided by the proposed construction activities, the following mitigation measures would be required to allow for the development to continue:

- A grave relocation process must be undertaken.
- A detailed social consultation process, at least 60 days in length, comprising the attempted identification of the next-of-kin to obtain their consent for the relocation.
- Bilingual site and newspaper notices indicating the intent of the relocation.
- Permits from all the relevant and legally required authorities.
- An exhumation process that keeps the dignity of the remains and family intact.
- An exhumation process that will safeguard the legal rights of the families as well as that of the construction company.
- The process must be done by a reputable company well versed in the mitigation of graves.

5.2 Timeframes

It must be kept in mind that mitigation and monitoring of heritage resources discovered during construction activity will require permitting for collection or excavation of heritage resources, and lead times must be worked into the construction time frames. **Table 4** gives guidelines for lead times on permitting.

Table 4 - Lead times for permitting and mobilisation

Action	Responsibility	Timeframe
Application for permits to do necessary mitigation work	Service provider – Archaeologist and SAHRA	Three months
Documentation, excavation and archaeological report on the relevant site	Service provider – Archaeologist	Three months
Handling of chance finds – Graves/Human Remains	Service provider – Archaeologist and Amafa	Two weeks
Relocation of burial grounds or graves in the way of construction	Service provider – Archaeologist, Amafa, local government and provincial government	Six months

The following findings and recommendations related to assessing the identified heritage resources on site are provided in **Table 5** below.

Table 5 - Heritage Management Plan for EMP implementation

Area and site no.	Mitigation measures	Phase	Timeframe	The responsible party for implementation	Monitoring Party (frequency)	Target	Performance indicators (monitoring tool)
DUB01 and 2	No further mitigation or permitting is required due to the non-significance of the resource.	Construction	During construction	Confirmation by Amafa	None	Ensure compliance with relevant legislation and recommendations from Amafa under Section 37-40 of KNARIA	Final confirmation by Amafa
DUB03	Monitoring of bush clearing and topsoil stripping by a qualified archaeologist for the occurrence of archaeological remains or the presence of burial grounds and graves at this site.	Construction	During Construction	Applicant Environmental Control Officer (ECO) Archaeologist	Daily during soil stripping and bush clearing	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 39 and 40 and burial ground policies of KNARIA	ECO Monthly Checklist/Report
Chance finds Archaeological remains	Refer to section 5.1.2	Construction	During Construction	Applicant Environmental Control Officer (ECO) Archaeologist	Daily during soil stripping and bush clearing	Ensure compliance with relevant legislation and recommendations from KNARIA under Section 39 and 40 and burial ground policies of NHRA	ECO Monthly Checklist/Report
Chance finds Burial grounds and graves	Refer to section 5.1.3	Construction	During Construction	Applicant Environmental Control Officer (ECO) Archaeologist	Daily during soil stripping and bush clearing	Ensure compliance with relevant legislation and recommendations from Amafa under Section 39 and burial ground policies of KNARIA	ECO Monthly Checklist/Report
Palaeontology	It is recommended that a palaeontologist assess the exposed mudstone on-site and make recommendations for further management if necessary	Construction	During Construction	Applicant Environmental Control Officer (ECO) Palaeontologist	Before the closing of cuttings	Ensure compliance with relevant legislation and recommendations from Amafa under Section 39 and burial ground policies of KNARIA	Once off with possible further mitigation

6 REFERENCES

Anderson, Gavin. 2013. Heritage Survey of the Dube Trade Port Agrizone 2. Umlando

Groenewald, G. 2013. Desktop Palaeontological Assessment of the Agrizone Study Area, Kwa-Zulu Natal

WOUTER FOURIE

Professional Heritage Specialist and Professional Archaeologist and Director PGS Heritage

Summary of Experience

Specialised expertise in Archaeological Mitigation and excavations, Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including, *among other things* -

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave “rescue” excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments within South Africa, including -

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects
 - Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring
 - Involvement with various Heritage Impact Assessments, outside South Africa, including -
- Archaeological Studies in the Democratic Republic of Congo
- Heritage Impact Assessments in Mozambique, Botswana and DRC
- Grave Relocation project in DRC

Key Qualifications

BA [Hons] (Cum laude) - Archaeology and Geography - 1997

BA - Archaeology, Geography and Anthropology - 1996

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

CRM Accreditation (ASAPA) -

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Field Supervisor – Colonial Period and Stone Age
- Accredited with Amafa KZN

Key Work Experience

2003- current - Director – Professional Grave Solutions (Pty) Ltd

2007 – 2008 - Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand

2005-2007 - Director – Matakoma Heritage Consultants (Pty) Ltd

2000-2004 - CEO– Matakoma Consultants

1998-2000 - Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998 - Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

Worked on various heritage projects in the SADC region including, Botswana, Mozambique, Malawi, Mauritius, Zimbabwe, Zambia and the Democratic Republic of the Congo